

WALL STREET BANK INVOLVEMENT WITH PHYSICAL COMMODITIES

HEARINGS

BEFORE THE

PERMANENT SUBCOMMITTEE ON INVESTIGATIONS
OF THE

COMMITTEE ON
HOMELAND SECURITY AND
GOVERNMENTAL AFFAIRS
UNITED STATES SENATE
ONE HUNDRED THIRTEENTH CONGRESS

SECOND SESSION

VOLUME 1 OF 2

NOVEMBER 20 and 21, 2014

Available via the World Wide Web: <http://www.fdsys.gov>

Printed for the use of the
Committee on Homeland Security and Governmental Affairs



U.S. GOVERNMENT PRINTING OFFICE

91-522 PDF

WASHINGTON : 2014

For sale by the Superintendent of Documents, U.S. Government Printing Office
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WALL STREET BANK INVOLVEMENT WITH PHYSICAL COMMODITIES

THURSDAY, NOVEMBER 20, 2014

U.S. SENATE,
PERMANENT SUBCOMMITTEE ON INVESTIGATIONS,
OF THE COMMITTEE ON HOMELAND SECURITY
AND GOVERNMENTAL AFFAIRS,
Washington, DC.

The Subcommittee met, pursuant to notice, at 9:34 a.m., in room SD-106, Dirksen Senate Office Building, Hon. Carl Levin, Chairman of the Subcommittee, presiding.

Present: Senators Levin, Pryor, Baldwin, McCain, and Portman.

Staff present: Elise J. Bean, Staff Director and Chief Counsel; Mary D. Robertson, Chief Clerk; Tyler Gellasch, Senior Counsel; Adam Henderson, Professional Staff Member; Angela Messenger, Detailee (GAO); Joel Churches, Detailee (IRS); Ahmad Sarsour, Detailee (FDIC); Tom McDonald, Law Clerk; Tiffany Eisenbise, Law Clerk; Tiffany Greaves, Law Clerk; Ken Reidy (Sen. Baldwin); Henry J. Kerner, Staff Director and Chief Counsel to the Minority; Michael Lueptow, Counsel to the Minority; Scott Wittmann, Research Assistant to the Minority; Elise Mullen, Research Assistant to the Minority; Kyle Brosnan, Law Clerk to the Minority; Christina Bortz, Law Clerk to the Minority; Jennifer Junger, Law Clerk to the Minority; Ferdinand Kramer, Law Clerk to the Minority; Chapin Gregor, Law Clerk to the Minority; and Derek Lyons (Sen. Portman).

OPENING STATEMENT OF SENATOR LEVIN

Senator LEVIN. Good morning, everybody.

Today, the Subcommittee meets to discuss the product of a 2-year investigation into Wall Street bank involvement with physical commodities. Our 396-page bipartisan Report with nearly 800 pages of exhibits provides facts and details that, for too long, have been missing from the public debate about the growing role of large Wall Street banks in sectors of the economy outside of banking—in this case, activities involving physical commodities such as oil, metal, coal, and electricity—while at the same time trading in financial instruments whose value could be affected by a bank's involvement with those physical commodities.

For more than a century, the United States, by law and practice, has worked to maintain the separation of banking from commerce, directing banks to concentrate on taking deposits, transferring funds, and providing credit, and to avoid commercial activities like supplying oil, producing electricity, or storing aluminum. The prin-

ciple of separating banking from commerce wisely seeks to reduce risk to the economy and risk to the integrity of commodity markets.

Our investigation found that this principle has eroded and, predictably, that erosion has increased risk for the economy, markets, industry, and consumers. We found that banks—and for clarity’s sake, I will use that term generically to refer to federally insured banks and their holding companies registered with the Federal Reserve—we found that banks have vastly accelerated their physical commodity activities, and are competing directly with commercial businesses that lack the big banks’ easy access to government-subsidized capital. At the same time, these banks have taken on dramatic new risks—risks that, because of the size of these banks, fall not just on them, but on the larger financial system and, therefore, our entire economy. In addition, their activities raise significant questions about whether banks are profiting at the expense of end-users who must wait longer and pay more for critical raw materials. And they give Wall Street the opportunity to use valuable non-public information to gain unfair trading advantages or to profit from the manipulation of prices.

Today’s hearing will focus on the activities of three major banks—Goldman Sachs, JPMorgan Chase, and Morgan Stanley—that over the last 10 years have become very active in physical commodity markets.

If you like what Wall Street did for the housing market, you will love what Wall Street is doing for commodities. Some of the same people who brought us the synthetic mortgage-backed security—and with it, the term “toxic asset” and the recent financial crisis—now dominate the commodities futures markets. Producers and end users once held 70 percent of commodities futures; by 2011, that had fallen to about 30 percent, with the majority of futures held by speculators looking to profit from price volatility. This means commodities markets are increasingly unable to fulfill their purpose—which is to allow end-users, from shipbuilders to beverage companies, and from automakers to airlines, to manage their risks.

These Wall Street banks have stored and sold aluminum, operated coal mines and metal warehouses, stockpiled aluminum and copper, operated oil and gas storage facilities and pipelines, planned a compressed natural gas facility, supplied oil refineries, sold jet fuel to airlines, and operated power plants. They have acquired staggeringly large positions and executed massive trades in oil, metal, and other physical commodities. While Wall Street’s growing role in physical commodities has been discussed and debated, the scope of this involvement, and the potential for abuse, have not been widely known.

Those physical commodity activities bring with them many risks. Goldman Sachs’ involvement with uranium and coal mines exposed it to the kinds of environmental and catastrophic-event risks that traditional banks do not usually face. Morgan Stanley used shell companies in its plans to build a compressed natural gas plant, exposing itself then to direct liability should disaster strike. The Federal Reserve recently reported: “[C]atastrophes involving environmentally sensitive commodities may cause fatalities and economic damages well in excess of the market value of the commodities involved or the committed capital and insurance policies of market

participants.” Should a catastrophe occur, it could undermine a bank or spur fears that it might fail, sparking a bank run, a shut-down of lending, and turmoil in the U.S. economy.

Wall Street has made legal arguments contending that its liability risk is limited and manageable. But at times even the banks acknowledge that they could be held liable if they, for example, are negligent in managing these activities. And even if courts eventually upheld a bank’s legal defense, even the possibility of liability judgments on the scale of a Deepwater Horizon or Exxon Valdez could freeze a bank’s access to capital and risk a Lehman Brothers-style crisis.

And there is much more. Bank involvement with physical commodities also raises concerns about unfair trading. In some cases, banks have been implicated in outright market manipulation. JPMorgan recently paid \$410 million to settle charges by the Federal Energy Regulatory Commission that it used manipulative bidding schemes at its power plants to elicit \$124 million in excessive electricity payments in California and Michigan.

Activities involving physical commodities also give Wall Street banks access to valuable non-public information with which they can profit in physical and financial commodity markets at the expense of other market participants. The banks and their regulator, the Federal Reserve, acknowledge as much. JPMorgan, in a 2005 application for authority to make physical commodities investments, said that its plan would “provide access to information regarding the full array of actual [production] and end-user activity in those markets.” And it went on: “The information gathered through this increased market participation will help improve projections of forward and financial activity and supply vital price and risk management information that JPM Chase can use to improve its financial commodities derivative offerings.”

Similarly, a Morgan Stanley executive publicly spoke of the advantage of its involvement in oil storage and pipelines: “We’re right there seeing terminals filling up and emptying.” And a Fed analysis of Morgan Stanley and Goldman Sachs said the banks’ physical commodities activities provided “important asymmetrical information—which a market participant without physical infrastructure would not necessarily be privy to.”

Our bipartisan Report contains nine case studies illustrating the risks and unfair trading concerns raised by bank involvement with physical commodities. Each is worthy of its own hearing. Today we will examine activities at three banks, and we will highlight one case study in particular, to demonstrate how actions taken by a single financial institution—in this case Goldman Sachs—in a single commodity—aluminum—has given that Wall Street giant the ability to affect prices and supplies of that commodity while trading in financial instruments related to that commodity.

In 2010, Goldman Sachs bought a company called Metro International Trade Services, which owns a global network of warehouses certified by the London Metal Exchange, or LME, the world’s largest market for trading metals. LME certification means that Metro can store metal that has been warranted as meeting LME standards for quality and quantity and is approved for use in settling LME aluminum trades. Under Goldman’s ownership,

Metro mounted an unprecedented effort to dominate the North American market for storing aluminum. By early this year, Goldman's warehouses in the Detroit area held nearly 1.6 million metric tons of aluminum—roughly 25 percent of the annual aluminum consumption in North America—and 85 percent of the LME-warranted aluminum in the United States.

Now, why is this important? Because aluminum warehouses owned by Goldman, and overseen by a board consisting entirely of Goldman employees, manipulated their operations in a way that impacted the price of aluminum for consumers, while at the same time Goldman was trading in aluminum-related financial products.

Goldman's subsidiary achieved this dominant position through aggressive incentives for metal owners to store aluminum in its warehouses—incentives that appear to be inconsistent with the LME's prohibition on “exceptional inducements.” One set of incentives involved a series of “merry-go-round” transactions that bottled up millions of tons of aluminum and appears to have affected prices for businesses and consumers.

Those merry-go-round transactions first came to the public's attention through a 2013 *New York Times* article. We dug into the facts behind the story and uncovered a troubling set of practices that included six merry-go-round trades involving more than 600,000 metric tons of aluminum.

To remove LME-warranted metal from an LME warehouse, the metal's owner must cancel its warrants and pay any rent or storage bills. Then the metal is placed in line for load-out. That line is the “queue” which you will hear a lot about today.

Until Goldman bought Metro, aluminum in the load-out line was shipped from a warehouse in a matter of days or weeks. But as you can see from that chart we have up there, Exhibit 1f,¹ since Goldman's acquisition of Metro, the queue to exit the Detroit warehouses has gotten longer and longer. In January 2010, it was about 40 days; by September of this year, it had grown to an unprecedented 600 days. Why? Because of actions taken by Metro, the Goldman-owned warehouse operator. And what difference does it make? A big difference. The price consumers must pay for aluminum is made up of the benchmark price set on the LME's exchange, plus a regional premium based on regional storage and logistics costs. The longer the queue, the higher the storage costs, and the higher the storage costs, the higher the premium consumers must pay. Statistical analysis shows an extremely high correlation between the length of the queue and the U.S. premium level.

LME rules require that warehouses each day load out a minimum quantity of metal. That minimum was 1,500 metric tons a day for large warehouses such as Metro's, until April 2012, when it was increased to 3,000 metric tons. Goldman's warehouses have treated the LME minimum as a maximum, shipping no more than the minimum. In addition, Metro formed a single exit line for all 28 of its Detroit-area warehouses combined, and decreed that the daily minimum applied to that single exit line.

¹ See Exhibit No. 1f, which appears in the Appendix on page 821.

Now, the merry-go-round deals increased the length of the queue and clogged the exit line. In most of the merry-go-round deals, the metal owner agreed to cancel warrants on a large amount of aluminum and put that metal in the exit queue. When the owner got to the front of the line, it loaded out its metal onto trucks, but the metal did not leave the Metro system. Instead, the trucks moved the aluminum to a nearby Metro warehouse, and the metal owner eventually re-warranted the metal. In exchange, Metro paid millions of dollars to the metal owners—once when they canceled the warrants and again when they re-warranted the metal in another Metro warehouse.

It is important to understand that the first of these deals, reached with Deutsche Bank just 7 months after Goldman bought Metro, came after Deutsche Bank simply asked for a discount on rent for its aluminum. Nothing prevented Metro from simply giving such a discount. Instead, the warehouse proposed the convoluted merry-go-round, which effectively gave Deutsche Bank the discount it wanted, but with the added benefit to Metro and Goldman of adding 100,000 tons of aluminum to the exit queue.

Metro used this same model in several subsequent deals. In some deals, metal was loaded onto a truck and shipped a mere 200 yards to a different warehouse building. Most of the deals involved shuffling virtually identical loads of aluminum among multiple warehouses, which is why a forklift operator called it a “merry-go-round of metal.” Because each deal involved between 100,000 and 265,000 metric tons of aluminum, loaded out at 1,500 and then 3,000 metric tons a day, the net effect was that each deal added weeks or months to the queue.

The lengthening queue had a number of effects. First, it boosted revenue at Goldman’s warehouses—the more metal stored in the warehouses, the more rent and fees.

The longer queue also affected aluminum prices. The “all-in” price that consumers pay for aluminum has several components, but the two major components are the LME Official Price, set on LME’s exchange, and a regional premium that reflects local variations in storage and delivery costs. The regional premium in the United States is known as the Midwest Aluminum Premium. And as the chart shows, Exhibit 1f,¹ as the queue in Metro’s Detroit-area warehouses increased, so did the Midwest Premium. As the queue increases, the premium increases.

Most market participants believe that a higher Midwest Premium means higher all-in prices, which means Goldman’s warehouses are using a tactic that earns the bank higher rents at the expense of a wide range of businesses that use aluminum. Those businesses include Austal, a company that builds combat ships for our Navy and which told the Subcommittee that the effects of rising Midwest Premiums have forced it to take costly steps that damage not just the company, but cost U.S. taxpayers.

Goldman argues that these market participants are incorrect, and that the total price of aluminum was unchanged by the merry-go-round deals and the longer queues. It argues that as the Midwest Premium rises, the LME price falls. That is the Goldman ar-

¹ See Exhibit No. 1f, which appears in the Appendix on page 821.

gument. The Midwest Premium rises, the LME price falls, so that the all-in price remains unchanged. Again, that is not what other market participants say. But even if that were true, Goldman's warehouses are still engaged in unacceptable manipulation. As the queue-inflated Midwest Premium has risen, it has taken up an increasing share of the all-in price for aluminum—from just 6 percent of the all-in price in 2010 to over 20 percent this year. That increase means that the LME price has fallen as a percentage of the all-in price, making LME futures a less effective tool to hedge price risk.

Now, in addition to assessing supply and demand, aluminum users must try to hedge just how long a load-out queue Goldman's warehouses can engineer. What's more, if Goldman's theory is correct and the LME price goes down as the premium goes up, Goldman has the ability to manipulate the LME price by manipulating the Midwest Premium, and then to make trades taking advantage of that manipulation. Goldman's ability to influence any portion of the price for a key component of the industrial economy is simply unacceptable.

While the LME has rules designed to prevent a situation where a warehouse could share valuable confidential information with traders, those rules are porous. Under LME rules, Metro shares confidential information with more than 50 Goldman employees, including top executives who manage Goldman's commodities trading, while also sitting on Metro's Board of Directors. The Metro Board, which has consisted exclusively of Goldman employees, reviewed and approved all significant business decisions at Metro, including the merry-go-round deals. In other words, a warehouse strategy that materially affected the aluminum market was approved by executives of a bank uniquely positioned to trade profitably on the effects of that strategy. Think about the opportunity for Goldman to affect the premium and price at the same time it was trading in that metal.

In fact, the information to which Goldman's top commodities executives have access through Metro is so sensitive and valuable that LME will not publish it. In a 2013 report, LME said it does not publish detailed information on warehouse stock and queues because "the danger is that those merchants and trading houses with the most well-staffed analytical capabilities will take advantage of the availability of data to derive a trading advantage." It is hard to think of a trading house that better fits that description than Goldman Sachs.

There is little doubt that if we were talking about the stock market, rather than commodities transactions, the use of inside information that affects prices would be strictly prohibited. But until passage of Dodd-Frank, there were no legal prohibitions on using valuable non-public information to trade commodities, and even now, regulators' authority to stop such abuse is untested.

So, the potential for abuse is great, and the only protections against abuse are company policies against sharing information. Given the recent history of banks improperly sharing information to manipulate electricity, LIBOR, and foreign exchange rates, the reliance on voluntary policies at companies that have an economic

interest in the opposite direction is not enough protection for consumers, to put it mildly.

This concern is especially relevant given Goldman's rapid increase in aluminum trading after it acquired Metro. After buying Metro in 2010, Goldman's physical aluminum stockpile grew from less than \$100 million to, at one point, more than \$3 billion, a 30-fold increase. This stockpile also allowed Goldman itself to add to the queue at its Metro warehouses, where in 2012, Goldman canceled warrants on about 300,000 metric tons of its own aluminum, adding months to the queue. Goldman made a series of massive aluminum trades at the same time its warehouses' dealings were pushing the Midwest Premium higher, including trades in 2012 involving more than 1 million metric tons of metal.

Goldman contends that it adheres to rules preventing the sharing of useful information between its warehouses and its traders. That contention is hard to square with the bank's stated justification for its involvement in physical commodities. In a 2011 presentation to Goldman's board, its executives wrote that Goldman's commodities division would achieve higher value "if the business was able to grow physical activities, unconstrained by regulation and integrated with the financial activities." Goldman's goal, in the words of its own executives, is to profit in its financial activities using the information that it gains in the physical commodities business.

All of these issues and concerns come back to the principle of separating banking and commerce. Banks are not supposed to be running commercial businesses like warehouses, natural gas facilities, or power plants. Those activities open the door to higher prices and greater uncertainty for businesses and consumers, and to price manipulation and trading based on information not available to other market participants. To restore confidence in commodity markets as well as reduce risk in the banking system, it is time to reduce bank involvement with physical commodities and to prohibit the use of non-public information in transactions involving commodities that the banks themselves control.

Our Report offers a number of ways to address the issue, and the Federal Reserve's possible rulemaking provides a needed opportunity to address these problems. Today we will explore banks' physical commodity activities and the dangers that result. Tomorrow we will hear from additional experts and regulators.

And now I turn to my partner in this bipartisan investigation, and my partner in so many other efforts over the years, Senator McCain.

OPENING STATEMENT OF SENATOR MCCAIN

Senator MCCAIN. I thank you, Mr. Chairman, and before I begin, I want to say what an honor and privilege it has been to serve alongside you in this Subcommittee. Your tireless efforts and steadfast dedication to exposing misconduct and abuse by financial institutions and government regulators have set a new standard for thoughtful and thorough congressional investigations.

Whether the topic was the 2008 financial crisis, Swiss banking secrecy, or JPMorgan's "London Whale" debacle, professionals in the industry and the public at large knew that they could count on

you to get to the bottom of it with authoritative reports and hearings. Your tenacity in uncovering wrongdoing sparked significant changes in the financial sector.

I also commend you on zealously and effectively pursuing your investigations in a way that has furthered this Subcommittee's long-standing tradition of bipartisanship. We may have had our disagreements, but we did not let them get in the way of finding common ground in most cases.

While your retirement may come as a relief to some of those on Wall Street, your patience, thoughtfulness, and commitment to bipartisanship will be deeply missed on this Subcommittee, on the Armed Services Committee, and in the U.S. Senate.

Today's hearing explores the way in which major banks produce, store, and sell physical commodities like aluminum, natural gas, and uranium. It sheds light on the little-known yet large role that banks play in the commodities markets and the risks inherent in those activities. This lack of insight into the banks' commodities operations raises concerns about, among other things, potential market manipulation and excessive risk that could, in extreme circumstances, lead to taxpayer bailouts.

This investigation has shown how, through their commodities activities, some of the country's largest financial institutions have taken on arguably excessive levels of risk, raised suspicions of market manipulation, and potentially gained unfair trading advantages.

JPMorgan, for example, paid fines for energy price manipulation relating to its dozens of power plants, I believe \$410 million. Morgan Stanley has entered the oil industry and even supplies several airlines with jet fuel at airports across the country. Goldman Sachs has uranium holdings and manages coal mines in Colombia. In each of these operations, there are dangers of toxic spills, deadly explosions, and other disasters. These are not the risks we normally associate with banks, whose primary role should be focused on more traditional banking activities.

The American people are all too familiar with costly accidents in these industries. For example, BP incurred around \$40 billion in damages resulting from the Deepwater Horizon oil spill. Imagine if BP had been a bank. The losses and the liability resulting from the spill would have led to the bank failing and another round of taxpayer bailouts. Even if a bank survived such a catastrophe, the resulting financial shock might hurt ordinary investors and pension holders.

Similarly, inappropriate activities undertaken by financial institutions in commodities markets could lead to unfair trading advantages and conflicts of interest for the banks, and artificially higher prices for consumers.

Mr. Chairman, I think you have just outlined that some of the activities have already led to artificially higher prices for consumers, including aluminum.

Little is known about these activities, and even less has been done to combat some of the biggest concerns about risk and manipulation. This warrants oversight by Congress and financial regulators as well as potential changes to laws and regulations, to curb the dangers to the economy and halt unfair practices.

While Chairman Levin has recommended, and our witnesses may offer, some potential solutions in our hearing today, I think we should be mindful of unintended consequences. But these concerns are serious, and, again, part of it goes back to our failure to commit after the catastrophe of 2008 that no institution would ever be too big to fail. I do not believe that anyone in America believes that these three financial institutions before us, that we have reduced them to the state where they are not too big to fail.

I thank you, Mr. Chairman.

Senator LEVIN. Thank you very much, Senator McCain, for your warm comments, for our long friendship and collaboration on so many matters, for your defense of this country, and your taking the gavel at the Armed Services Committee is surely going to be a very important moment in the future of this country and that committee. And your work and your staff's work on this Subcommittee has been essential to whatever successes we have had in terms of our investigations and recommendations. So thank you very much.

We are going to have a number of votes today at 2 o'clock. There could be up to five votes, and my plan is to recess the hearing during those votes, which will also allow people time to have lunch. That is not what we planned for, but that is what the Senate schedule has brought us to. So it is not certain but it is likely that we will adjourn for about 90 minutes—it could be 60 to 90 minutes—at around 1:45.

We will now call our first panel of witnesses for this morning's hearing: Christopher Wibbelman, President and Chief Executive Officer of Metro International Trade Services LLC, Allen Park, Michigan; and Jacques Gabillon, Head of the Global Commodities Principal Investment Group of Goldman Sachs & Co., London, England.

Gentlemen, I appreciate both of you being with us this morning. We look forward to your testimony, and as you, I think, are already aware of, all witnesses testifying before this Subcommittee are required to be sworn, so I would ask you now to raise your right hand as I administer the oath.

Do you swear that the testimony that you will provide to this Subcommittee will be the truth, the whole truth, and nothing but the truth, so help you, God?

Mr. WIBBELMAN. I do.

Mr. GABILLON. I do.

Senator LEVIN. Under our timing system today, at about 1 minute before a red light comes on you will see the lights change from green to yellow. That will give you the opportunity to conclude your remarks. And your written testimony will be printed in the record in its entirety. We would appreciate your limiting your oral testimony to 5 minutes. And, Mr. Wibbelman, we will have you go first.

**TESTIMONY OF CHRISTOPHER WIBBELMAN,¹ PRESIDENT AND
CHIEF EXECUTIVE OFFICER, METRO INTERNATIONAL
TRADE SERVICES LLC, ALLEN PARK, MICHIGAN**

Mr. WIBBELMAN. Thank you, Chairman Levin, Ranking Member McCain, and Members of the Subcommittee. My name is Chris Wibbelman, and I am the CEO of Metro International Trade Services. I have been with Metro since it was founded in 1991 as a startup company in Michigan, and I have served as its CEO since 2006.

I was born and raised in Detroit. I attended Detroit public schools and graduated from Michigan State University. I have worked my entire life in the greater Detroit area, managed and ran several businesses. I have also served as Manager of Small Business Development for the Greater Detroit Chamber of Commerce.

Metro operated LME warehouses since 1992 when we secured approval for Detroit to serve as an eligible LME delivery point. Much of Metro's growth occurred following the global financial crisis when worldwide consumption of aluminum declined and the demand for storage of metal increased.

Starting in 2008, Metro purchased or leased 5.1 million square feet of warehouse space, much of which was unused industrial buildings. The process of renovating the industrial space and installing rail track and rail sidings created jobs when many Detroit residents were out of work or being laid off.

The first thing to understand about the aluminum warehousing business is that it is driven by broader economic forces. Given the cyclical nature of this business, from 1994 to 2001, Metro had virtually no aluminum whatsoever in its Detroit warehouses. During that period, we managed the business efficiently and remained committed to Detroit. And when the aluminum consumption dropped beginning in 2008, Metro was in a position to respond rapidly to the needs of aluminum producers.

I believe that we were instrumental in allowing North American smelters to keep producing aluminum during the period of collapsing demand.

The LME rules govern the way in which all LME warehouses are operated. These rules are established by the LME and not the warehouse companies. One such rule is the amount of metal that the LME warehouses must load out each day. When the new LME rule increasing the load-out rate was suspended by a court in the United Kingdom, Metro announced that it would comply with the rule voluntarily, even though it was not required to do so. More aluminum has been loaded out of Metro's Detroit warehouses than from any other warehouse company in the United States. In 2014 alone, we expect to load out approximately 600,000 metric tons of aluminum.

The Subcommittee's Report makes repeated references to aluminum "queues," and it is important to understand that all of the aluminum stored in and out of aluminum warehouses, 80 percent of it is not subject to any queue. Consumers can purchase aluminum from producers or any owner of aluminum that is stored in

¹ The prepared statement of Mr. Wibbelman appears in the Appendix on page 139.

or out of the LME system, and that metal is available for immediate outbound shipment.

It is also important to understand two other aspects of the queues.

First, they are the result of independent decisions of owners of metal to realize the relative value of that metal compared to other metal. In order to realize that value, the owners must remove the metal from Metro's LME warehouse.

Second, metal owners pay rent for all metal in Metro's warehouses, regardless of whether it is in a queue or not. Metro's revenues are not dependent on the length of queues.

The Subcommittee's Report also refers to the July 2013 *New York Times* article you mentioned, which described supposed "merry-go-round transactions" involving the movement of metal off-warrant from one warehouse to another. As the article itself acknowledged, there is no suggestion that the activities violate any laws or regulations. Metro offered its customers the opportunity to store metal off-warrant in a different Metro warehouse. Such customers had various other options, including storing their metal with competing companies, many of which have warehouses near to Metro's.

Metro offered these off-warrant transactions to compete for storage of their metal once it was loaded out and it was no longer part of the LME system. But it was always up to the owner, not Metro, to decide what to do with the metal.

The metal at issue in these relatively few transactions was loaded by Metro at the owner's instructions onto a truck, issued a bill of lading, and moved to another location at the owner's direction. Once the owner made the choice, the LME rules required that Metro follow the owner's instructions and treat the metal as loaded out and reduce its LME inventory stocks accordingly. The fact that the metal owner moves the metal between Metro warehouses in the Detroit area is no different under the LME rules than if it moves to an equally close non-Metro warehouse.

I appreciate the opportunity to provide this information about Metro's warehouse business, and I hope it will contribute to the Subcommittee's understanding.

Senator LEVIN. Thank you very much, Mr. Wibbelman.

Mr. Gabillon.

TESTIMONY OF JACQUES GABILLON,¹ HEAD, GLOBAL COMMODITIES PRINCIPAL INVESTMENT GROUP, GOLDMAN SACHS & CO., LONDON, ENGLAND

Mr. GABILLON. Chairman Levin, Ranking Member McCain, and Members of the Subcommittee, my name is Jacques Gabillon. I lead Goldman Sachs' Global Commodities Principal Investment Group, or GCPI, and I also serve as chairman of the board of directors of Metro.

In early 2010, GCPI believed that the Metro warehouse was a sound investment because the global recession had reduced worldwide demand for aluminum and would increase demand for storage. It was a good investment.

¹ The prepared statement of Mr. Gabillon appears in the Appendix on page 142.

At the time of the investment, customers had already deposited over 800,000 tons of aluminum at Metro, and we believed that the surplus condition would persist. Consequently, Metro was well positioned to continue to realize this demand for storage.

Metro's board of directors sets the general strategy and conducts oversight in keeping with standards of good corporate governance and the requirements of the Bank Holding Company Act. The board has always included people from the firm's control functions, including the Compliance Department.

As you know, Metro is subject to the rules of the LME, including the minimum amount of metal required to be loaded out of warehouses each day. Often the dynamics of this LME system are mistaken for the broader aluminum market, which supplies most consumer products.

As a starting point, the price negotiated between many sellers and buyers of aluminum in the United States is commonly referred to as the "all-in price." The difference between this all-in price and the price for an LME warrant is referred to as the "Midwest Physical Premium." But one thing is clear: The all-in price has actually fallen substantially since 2008. Consequently, any suggestion that end users are paying more for aluminum because of a higher premium is simply not supported by the facts.

Like every other market, the price of aluminum is established through supply and demand, and those trends have been unmistakable. There has been a consistent surplus of aluminum since 2008, resulting in a large volume that has been placed in storage. That is why there has never been a shortage of aluminum.

In addition, there are large quantities of aluminum stored outside the LME system. So together with non-queue aluminum, there is approximately 9.6 million tons of aluminum to be sold for immediate delivery to any user.

I would like to briefly address the issues of queues. To begin with, the length of the queue to remove metal from Metro's warehouse is not the result of any action by either Goldman Sachs or Metro. General economic confidence and availability of credit improved, making off-warrant storage a more attractive alternative. This occurred not only in Detroit, but also in another major city for metal warehousing, Vlissingen in the Netherlands.

One more thing occurred at the time. The LME changed its rule to double the minimum load-out requirement from 1,500 to 3,000 tons per day. The Subcommittee should know that when the LME doubled the minimum load-out requirement, the result was actually longer, not shorter, queues. And most importantly, based on the reports we have provided to the Subcommittee, these queues do not drive the all-in price that consumers pay.

On a related issue, we have provided a significant amount of information to the Subcommittee on the issue of incentives. Operators may offer an up-front payment on future rent collections to customers who place metal on warrant in their warehouses. In other instances, operators offer discounted rent to customers who agreed to store their metal for specific durations. These incentives are similar to those offered by landlords, such as offering one month's free rent to attract a tenant or reducing rent for a tenant who signs a long-term lease.

Metro has offered both of these incentives, consistent with the LME rules and industry practice. The inducements that have been offered result from arm's-length negotiations between Metro and a sophisticated customer.

Finally, I will briefly conclude with a description of the information barriers that exist between Goldman Sachs and Metro. The LME rules require that an information barrier be established between a warehouse company and affiliated trading entities. Goldman Sachs has such a barrier in place which not only meets, but exceeds, the LME's requirements. We take this issue very seriously.

For example, much of the material that Metro generates and distributes to its board is not actionable for a trader and, in any event, is dated and sanitized to remove the names of counterparties. Regular reviews by Goldman Sachs personnel and outside auditors have not found a single instance where confidential Metro information went to the metals trading personnel of Goldman Sachs.

Mr. Chairman and Senators, in the many hours we have spent with the Subcommittee staff, we have described the market fundamentals that dictate price and availability, and I look forward to continuing that discussion today. Thank you.

Senator LEVIN. Thank you very much.

First, Mr. Wibbelman, you are the Chief Executive Officer of Metro. Mr. Gabillon, you were for most of the period an executive in Goldman's Global Commodities Principal Investment Group, and you were chairman of Metro's board of directors. So in the very first board meeting, after Goldman bought Metro in 2010, the board discussed the incentives that Metro would pay to attract more aluminum to its warehouses in Detroit.

If you look at Exhibit 1b,¹ that is a chart which was sent to us by Goldman's legal counsel on the total amount of freight incentives or allowances paid by Metro in each year from 2010 to 2013. You will see that each year after Goldman acquired Metro, Metro paid more and more cash incentives to attract aluminum to its Detroit warehouses, going from about \$36 million to over \$128 million. That does not count expanding rent discounts and other incentives, so that is an increase of about 350 percent over just a few years for freight allowances.

Are those figures accurate? Were those allowances and subsidies increased as shown on that chart?

Mr. GABILLON. I do not recognize exactly the numbers.

Senator LEVIN. Are they approximately right?

Mr. GABILLON. But the trend is correct and is a reflection of the evolution of the aluminum markets.

Senator LEVIN. Now, Mr. Wibbelman, you told the Subcommittee that after Goldman acquired Metro, you generally had to run all your major decisions by Metro's board or a board subcommittee. That was made up totally of Goldman people. Did you consult with Mr. Gabillon and the board before increasing Metro's incentives?

Mr. WIBBELMAN. So, Senator, I had a level of authority for incentives at various time periods, and that would be adjusted by the

¹ See Exhibit No. 1b, which appears in the Appendix on page 817.

board of directors. And then as circumstances changed, that would be occasionally reviewed from time to time or it would be—we would make a specific request on a specific case basis, and it would be either approved by the Commercial Subcommittee or it would——

Senator LEVIN. Of the board?

Mr. WIBBELMAN. Of the board, or it would not.

Senator LEVIN. So as to whether you consulted with Mr. Gabillon and the board before increasing Metro's incentives, the answer, I take it, is generally yes, although you had some authority between those approvals. Is that correct?

Mr. WIBBELMAN. Yes.

Senator LEVIN. So basically it was a joint decision to go ahead with this program and these incentives, is that correct?

Mr. WIBBELMAN. Well, Senator, if I might, you know, the market itself at that point in time was, you know, incredibly dynamic and unique, and so, you know, it was—at that point in time, we were evaluating really a wave of surplus metal that was making itself available to us. And Metro was trying to respond operationally in order to be able to receive it all, and that is——

Senator LEVIN. You were giving incentives to bring more into your warehouse. Is that correct?

Mr. WIBBELMAN. Incentives have been a part of our business for the 23 years——

Senator LEVIN. I understand, but the amount of the incentives dramatically increased. Is that correct?

Mr. WIBBELMAN. Because the magnitude of the metal also increased.

Senator LEVIN. Did the amount of the incentives dramatically increase?

Mr. WIBBELMAN. They increased over the full 5-year period of time.

Senator LEVIN. As shown on that chart?

Mr. WIBBELMAN. Yes.

Senator LEVIN. And that was a joint decision, was it, between you and the board and the board subcommittee?

Mr. WIBBELMAN. Generally, yes.

Senator LEVIN. OK. Now, if you look at Exhibit 1d,¹ this is a list of Metro board members, and this was supplied to us by Goldman's legal counsel. Are these all Goldman employees? Is that correct?

Mr. WIBBELMAN. Not currently anymore, no.

Senator LEVIN. They were?

Mr. WIBBELMAN. At the time of their service, yes.

Senator LEVIN. And, Mr. Gabillon, did Mr. Wibbelman talk to you personally as well as to other board members about increasing the amount of freight incentives that Metro would pay to attract metal to its Detroit warehouses? Did you have personal conversations with Mr. Wibbelman about that?

Mr. GABILLON. Yes, we had many conversations in the context of the board, yes.

Senator LEVIN. About that subject?

Mr. GABILLON. Yes.

¹ See Exhibit No. 1d, which appears in the Appendix on page 819.

Senator LEVIN. And then the board members approved these increased amounts generally. Is that correct?

Mr. GABILLON. I think there were many times where we did not approve an increase.

Senator LEVIN. You disapproved an increase?

Mr. GABILLON. Yes, there were many times where we kept the level of approval constant.

Senator LEVIN. OK. But when there were increased amounts, the board generally approved them. Is that correct?

Mr. GABILLON. Yes, that is correct.

Senator LEVIN. Now, we are going to spend some time talking about LME warrants, queues, and so I want to explain this as clearly as I can. The LME is the world's largest metals exchange, and when you buy a future contract on the LME, in a fixed period of time you can settle the contract by paying money and taking delivery of warrants, which are documents that convey actually legal title to specific lots of metal that are stored in an LME-approved warehouse. In aluminum, these lots of metal are 25 metric tons or about 2,200 pounds. And when an owner of the metal wants to take physical possession of the metal, the owner has to cancel the warrants and get in the exit line or queue to leave the warehouse.

But the LME warehouses only have to load out a specific amount of metal every day. For the largest warehouses, it used to be 1,500 metric tons. It was raised to 3,000 metric tons. So for warehouses that store hundreds of thousands or millions of tons, if an owner of a lot of aluminum cancels his warrants at once, it can dramatically increase the queue, making everyone else stay in the warehouse and continue paying rent longer.

But that is not the only thing. As we will learn more about later, the length of that queue impacts the prices of metal and related financial products. It is highly correlated to the premium, and that premium, when added to the LME price, is the so-called all-in price.

Mr. Wibbelman, beginning shortly after Goldman bought Metro and over the next few years, Metro entered into what became six deals that involved owners of metal being paid incentives by Metro for waiting in the queue, moving metal from one Metro warehouse to another, and re-warranting. And I am going to call them "merry-go-round deals." That is what a forklift operator called them.

Mr. Wibbelman, you told the Subcommittee that Metro had never done deals like that prior to being acquired by Goldman. Is that correct?

Mr. WIBBELMAN. Yes, but I do not think it was anything to do with Goldman as to why that was not the case, Senator.

Senator LEVIN. I understand. But before you were acquired by Goldman, you never entered deals like that. Is that correct?

Mr. WIBBELMAN. Yes, but there was never a market dividend like that either.

Senator LEVIN. OK. Now, before doing this new type of deal, did you consult with Mr. Gabillon or others at Goldman?

Mr. WIBBELMAN. Yes.

Senator LEVIN. And did you consult with Goldman employees on Metro's board before finalizing each of these deals?

Mr. WIBBELMAN. Yes.

Senator LEVIN. So it was a joint decision to go ahead.

Mr. WIBBELMAN. Yes, I think it——

Senator LEVIN. Is that fair to say?

Mr. WIBBELMAN. I would say that there was an alignment of understanding about the deals. Probably some of those deals I might have had the authority to execute without formal written authority, and other ones I did not, but all of them were thoroughly vetted.

Senator LEVIN. And jointly decided upon. Is that correct?

Mr. WIBBELMAN. Yes.

Senator LEVIN. OK. Now, this is what happened on 1 day, December 27, 2013. Workers at eight of Metro's warehouses were rapidly shuffling about 5.5 million pounds of aluminum between Metro's warehouses. Workers at a warehouse in Detroit on East McNichols Road were busy shipping out ten truckloads of aluminum, which is more than 860,000 pounds, to a warehouse on Lynch Road. The Lynch Road warehouse workers were busy shipping 17 truckloads of aluminum, totaling about 1.4 million pounds, right back to East McNichols Road.

Now, if that were not enough, three other warehouses, on Lafayette Street, Pennsylvania Road, and 22d Street, shipped millions of pounds of aluminum to three other nearby warehouses located at East Nine Mile Road, Ecorse Road, and West Jefferson.

Now, when you look at these deals and look at the specifics, this is what happened. Look at Exhibit 1c.¹ This was provided by Metro's legal counsel. It shows that as of January of this year, over 600,000 metric tons of metal were moved between Metro warehouses in Detroit. All of those 600,000 tons, if you look at Exhibit 1c, came from just those six deals that you identified. Is that correct? First of all, look at Exhibit 1c and do you agree—this was provided, again, by Metro legal counsel—that all 600,000 of those tons came from just those six deals that we have talked about. Is that correct?

Mr. WIBBELMAN. Yes.

Senator LEVIN. Now, the merry-go-round deals required Metro to organize and pay for thousands of truck shipments between its own warehouses, pay millions of dollars in incentives to its warehouse customers. We have details on the incentive payments for just two of those six deals, but those invoices alone show Metro owing two warehouse customers, Red Kite, which is a hedge fund, and Glencore a total of about \$37 million. And Exhibit 22a² is an invoice summary of just the most recent two deals.

Can you tell us first, Mr. Wibbelman, how much Metro paid for the first four deals? We know it was about \$37 million in subsidies and incentives for the two that I have mentioned, but just for the first four, do you know what that total is?

Mr. WIBBELMAN. I do not know what that total is, Senator.

Senator LEVIN. The two deals alone that we are talking about required 6,500 truckloads of aluminum to be shuttled between Metro's Detroit warehouses. Do you know how many thousands of

¹ See Exhibit No. 1c, which appears in the Appendix on page 818.

² See Exhibit No. 22a, which appears in the Appendix on page 1002.

trucks Metro had to arrange and pay for under the previous four deals, Mr. Wibbelman?

Mr. WIBBELMAN. I do not know that, Senator.

Senator LEVIN. That is OK. These deals were so important that they were taken to Metro's board of directors for approval.

Now, they were not in a formalized contract. Is that correct? These deals did not result in a formalized contract?

Mr. WIBBELMAN. Overwhelmingly, none of our deals takes place on a formal contract.

Senator LEVIN. All right. There was an effort at a formal contract, was there not, with Deutsche Bank?

Mr. WIBBELMAN. If a customer wants to have a contract, we will look at it and talk about whether we need to have one or not. But our deals are settled incrementally over time.

Senator LEVIN. That is fine.

Mr. WIBBELMAN. So we tend not to need them.

Senator LEVIN. And Deutsche Bank wanted one?

Mr. WIBBELMAN. They provided one.

Senator LEVIN. And signed it?

Mr. WIBBELMAN. And signed it.

Senator LEVIN. And you did not?

Mr. WIBBELMAN. I do not believe it was countersigned.

Senator LEVIN. And why?

Mr. WIBBELMAN. I think they just decided they did not need it.

Senator LEVIN. Oh, they did not want it, Deutsche Bank?

Mr. WIBBELMAN. I do not have that recollection at this time. It was not a material component of whether the deal took place. We knew we would not have had to make any of our payments if it had not been executed like it was supposed to.

Senator LEVIN. Now, we only have the details on the last two of these deals, but, again, the six deals involved Metro arranging and paying for thousands of trucks to move over 600,000 metric tons of aluminum from one warehouse to another. In one case, the aluminum was moved from one warehouse to another about 200 feet away.

Now, was the point of all these truckloads shifting metal from one warehouse to another Metro warehouse to enable Metro to claim it was meeting the LME daily minimum load-out rule that said that a warehouse had to load out a minimum of 1,500 pounds, later 3,000 pounds a day, while at the same time ensuring that virtually no metal actually left the Metro system?

Mr. WIBBELMAN. Well, Senator, I mean, it starts with the——

Senator LEVIN. Was that the point of it, is my question.

Mr. WIBBELMAN. I am trying to answer. It starts with the recognition of the customer that the metal that is available within the Metro system is of relatively better value than any other metal it can purchase. And, typically, for example, in the first deal that you mentioned, the owner wanted to own metal and finance it for a duration of time. And the way for them to capture that was to own the metal, and once they owned the metal, the way for them to protect their value was to put it in the queue and plan to take it out.

Senator LEVIN. They could have continued to own the metal and leave it in the warehouse. Is that correct?

Mr. WIBBELMAN. They could have, but it would have cost them more, and so they chose not to do that.

Senator LEVIN. And you gave them a subsidy to go through this rinky-dink merry-go-round system. They could have——

Mr. WIBBELMAN. Well, Senator, we do not——

Senator LEVIN. You could have given them a subsidy, a discount, and leave it in the warehouse, could you not?

Mr. WIBBELMAN. Well, you can——Senator, we are a commercial business, right?

Senator LEVIN. Is that right? You could have given them a discount and left it in the warehouse.

Mr. WIBBELMAN. Yes.

Senator LEVIN. But you moved it to another warehouse, sometimes 200 feet across, and the result of that was it stays in your warehouse but it also lengthens the queue. Were you aware of the fact that the queue would be lengthened when they did what you arranged for them to do?

Mr. WIBBELMAN. We did not arrange for it, right? The customer chose to do it——

Senator LEVIN. No, but the customer was also paid to do it.

Mr. WIBBELMAN. The customer was paid——

Senator LEVIN. By you.

Mr. WIBBELMAN. In the event that they moved it to another warehouse and then chose to warrant it later. They did not have to make that choice, and they did not.

Senator LEVIN. They were paid by you, were they not, they were paid by you to keep that in your warehouse?

Mr. WIBBELMAN. That was a choice they made.

Senator LEVIN. Would they be penalized if they did not do it under the contract?

Mr. WIBBELMAN. Well, it was a contract where they——what they did is they, by freedom of contract, chose to agree on an economic set of conditions.

Senator LEVIN. And under that contract, was there a penalty if they did move to another warehouse other than yours? Was there a penalty?

Mr. WIBBELMAN. Well, we presumed that we would get a revenue stream in order to provide the incentives we provide, and if they chose a different route, they were effectively going to refund us back that amount.

Senator LEVIN. Mr. Wibbelman, I am asking you a very direct question. You gave them an incentive to, first of all, de-warrant, right? They would have to then go to the head of the queue, and then you gave them an incentive in a contract, in an agreement to go to another warehouse, sometimes a few hundred feet away, and join another queue. Is that correct?

Mr. WIBBELMAN. No, because they had many options, Senator. They had the option——

Senator LEVIN. Not under the contract they did not.

Mr. WIBBELMAN. Yes, they did. They had the option——

Senator LEVIN. They could break the contract.

Mr. WIBBELMAN. They can break the contract.

Senator LEVIN. OK. That is not much of an option for most business people to break——

Mr. WIBBELMAN. That was the——

Senator LEVIN. Wait a minute. Let me finish. That is not much of an option for most business people. You say they had the freedom to break the contract. You entered a contract which, if they lived up to it, required them to move, sometimes a few hundred feet, their metal to another Metro warehouse. You paid them to do that, and then there was a penalty if they did not under that contract. They had the freedom to break the contract. Most business people do not consider that a choice.

Mr. WIBBELMAN. Well, Senator, they set the contract up in the beginning——

Senator LEVIN. Did you not? Were you not a party to that contract?

Mr. WIBBELMAN. Of course. I am one part. The other party is the counterparty.

Senator LEVIN. Of course.

Mr. WIBBELMAN. And so that was the agreement——

Senator LEVIN. But under the contract—let us be clear—you insisted in that contract that they would pay a penalty if they did not put their metal into another Metro warehouse. You paid them a subsidy to do that, and there was a penalty if they did not do that. Is that correct under that contract?

Mr. WIBBELMAN. That was correct, but it was also in response to costs that we incurred or revenues that we did not receive. So we were effectively trying to get a reimbursement for things that we would otherwise have been able to receive or expenditures were made.

Senator LEVIN. And you could have given them an incentive to stay in the original warehouse, could you not? You could have kept them there with a discount? Is that correct?

Mr. WIBBELMAN. Yes, we could——

Senator LEVIN. You were allowed to do that.

Mr. WIBBELMAN. We could have given them anything, but commercially, as a business, that is not what we choose to do.

Senator LEVIN. No. But you chose instead to do this in a way which, will you agree, lengthened the queue?

Mr. WIBBELMAN. So we——

Senator LEVIN. I am just asking you. Was the effect of this to lengthen the queue?

Mr. WIBBELMAN. Senator, anyone that cancels a warrant in a warehouse for that moment adds to the queue. But it could have been any—remember, there are tons of other warehouses.

Senator LEVIN. I am just getting a direct answer from you, if I can. The effect of this arrangement was that the queue was lengthened. Is that correct? It is a simple, direct question. And you are under oath. Was the effect of that to lengthen the queue?

Mr. WIBBELMAN. If they chose to cancel their warrants——

Senator LEVIN. Not if they chose. Did the contract provide——

Mr. WIBBELMAN. Yes, but if they chose that, they had to actually obtain warrants and cancel them, and that was something that was their choice.

Senator LEVIN. This is warranted metal in your warehouse.

Mr. WIBBELMAN. Yes, but the warrants are freely floating title documents.

Senator LEVIN. Of course.

Mr. WIBBELMAN. They have to go find one, right?

Senator LEVIN. I understand.

Mr. WIBBELMAN. And once they find it, they have to actually cancel it.

Senator LEVIN. I want to get a straight answer from you, if I can.

Mr. WIBBELMAN. I am trying to give you them.

Senator LEVIN. OK, but let me go through this. You entered into a contract which required the counterparty, is that not correct—if they lived up to the contract—

Mr. WIBBELMAN. Yes, if they chose to.

Senator LEVIN. If they chose to live up to a contract, do not most people you deal with honorably live up to their contract?

Mr. WIBBELMAN. But it was always their option.

Senator LEVIN. To cancel—to not live up to the contract?

Mr. WIBBELMAN. It was always if you do it, then you will get the incentive.

Senator LEVIN. The contract you entered into required them to immediately cancel their warrants. Is that correct?

Mr. WIBBELMAN. I do not recall that it was a requirements contract. I recall it was an optional contract, an option.

Senator LEVIN. Well, we will get into the words of the contract and which you did not want to put in writing, but we do have one contract that is in writing. And I just want to sum—just get to the bottom line. The contract which you entered into required them, if they lived up to the contract—

Mr. WIBBELMAN. Which they did not have to do, right?

Senator LEVIN. Let me just finish this. If they live up to the contract, they were required to immediately cancel the warrants, move the metal to another warehouse, and the result of that is to lengthen the queue. Is that accurate? If they lived up to the contract.

Mr. WIBBELMAN. If they made all those choices, which they did not have to make by the contract, in my recollection.

Senator LEVIN. If they lived up to the contract, is my question.

Mr. WIBBELMAN. My recollection is that the contract was an option contract where they had the option to do it.

Senator LEVIN. The option to enter the contract?

Mr. WIBBELMAN. They had the option—they never had to cancel the metal in the first place.

Senator LEVIN. OK. Senator McCain.

Senator MCCAIN. Remarkable. Mr. Wibbelman, it used to take 40 days for Metro to remove aluminum from its warehouses for its clients. Now it takes over 600 days. How do you explain that?

Mr. WIBBELMAN. Senator, that is a recognition of the relative value of the metal that is in Metro's warehouses compared to any other metal that exists in the LME system or with any other private owner in the world, and that is—what happens is those warrants are canceled when someone perceives it as being a value, a relative value.

Senator MCCAIN. That has to do with the time that it takes to remove aluminum from a warehouse?

Mr. WIBBELMAN. Well, the LME system, Senator, is a seller's choice contract. So, in other words, if someone sells metal, they get

to pick which warrant that they want to surrender in satisfaction of that contract.

Senator MCCAIN. Someone wants Metro to remove aluminum from its warehouse, a client does. Now it takes over 600 days, and it used to take 40 days. And you are saying that has to do with the nature of the contract?

Mr. WIBBELMAN. No. Well, I am saying that it is a reflection of the fact that the London Metal Exchange price moves in relation to the relative value of the available warrants that are freely floating in the market.

Senator, if I can explain—

Senator MCCAIN. Mr. Gabillon, Metro's warehouses are approved by the London Metal Exchange. Isn't it true that LME raised concerns about the merry-go-round scheme in your warehouse operations? Is it true that they raised concerns about it?

Mr. GABILLON. First, Senator, if I may, we do not call them "merry-go-round transactions" for a very precise reason. We refer to them as "off-warrant transactions" because that is what Metro offers to its customers.

Senator MCCAIN. I am just asking, is it true or not true, yes or no, that LME raised concerns about your warehouse operations?

Mr. GABILLON. They started an investigation on a very specific point, yes.

Senator MCCAIN. Mr. Gabillon, over 50 Goldman employees received confidential information about Metro's warehousing operations. So, therefore, they have access to commercially valuable non-public information. And Goldman, as we know, has other interests, including trading. What procedures does Goldman have or do you have to ensure that its traders do not have access to commercially sensitive information?

Mr. GABILLON. So we have a very precise system, and as I said in my opening statement, we take that very seriously. So if I can describe briefly, as you know, it is an LME requirement to have an information barrier between a warehouse company and affiliated trading companies. So right at the acquisition time, we put in place a procedure that actually goes beyond the LME requirements on a couple of levels, and effectively restrict to a very small list, not the 50 people you mentioned but I believe it is 8 people right now. We receive some sanitized, aggregated information, which are really the people in my team and some of my superiors that represent the shareholders of Metro, because you will relate to that. But Metro is owned 100 percent by Goldman Sachs, and it is actually consolidated in the Goldman Sachs Group, so this means that we need—we have a need for information.

So some of the people you referred to—and I believe the number is well below 50 currently, constitute of people that receive non-commercial information, primarily financial information, and they sit in our Financial Control Department. They will also sit in our Legal and Compliance Department. There are also some people that actually sit in the E-Mail Surveillance Group, and that's the information received.

Then we have this policy where all this information is restricted to that very small group of people, and nothing goes to the metal sales and trading people. We have a segregated room, and we have

email surveillance which is perfected by our Compliance Department. And I would say in the last 5 years, since acquisition, we never had a breach of that policy.

Senator MCCAIN. How would you know that, Mr. Gabillon? Don't Goldman employees oversee the operations of your warehousing business? How would you know whether they used that information or not?

Mr. GABILLON. I am not sure what you meant by Goldman Sachs people oversees the—

Senator MCCAIN. Goldman employees have access to sensitive information about your operations, right? Because they own it, and I think that is legitimate. What confidence do we have that they do not share it with the other aspects of Goldman's operations, which they could use to their advantage?

Mr. GABILLON. We have two levels. We have the system that I described, and nothing has ever come up, so we have email surveillance which has confirmed—

Senator MCCAIN. So nothing has ever come up is the answer to the fact that they have access to sensitive information which could give them an advantage in their other operations. So nothing has ever come up so it is OK?

Mr. GABILLON. No, I would say two things. One, they do not—metal and sales trading people do not have access to any of the Metro information. Even myself as chairman of the board, the data I get from the Metro people for the perfecting of the—as a shareholder—

Senator MCCAIN. Is there a prohibition from them sharing operation—

Mr. GABILLON. Yes, there is.

Senator MCCAIN. There is?

Mr. GABILLON. There is under our policies, yes.

Senator MCCAIN. And how do we know that that is enforced?

Mr. GABILLON. OK. So the second thing I was going to say, I believe 2½ years ago the LME introduced a further requirement on the information barriers which would require Metro to have a third-party certification of the information barrier policy. This audit has been performed twice by PwC, and twice Metro has passed successfully, the fact that no information, no confidential information went to metal trading people at Goldman Sachs. So that is a third-party certification which might give you additional comfort.

Senator MCCAIN. Well, I am glad you have that confidence. Unfortunately, we have seen time after time instances where that is not necessarily true, and to me it sets up a relationship which could over time lead to manipulation, and because you have had no complaint does not mean necessarily that that is the case.

Mr. Chairman, I have no more questions.

Senator LEVIN. Thank you.

Senator PORTMAN, are you ready? I can go, or you, either way.

Senator PORTMAN. Mr. Chairman, I will go ahead if that is OK.

Senator LEVIN. Sure. Senator Portman.

OPENING STATEMENT OF SENATOR PORTMAN

Senator PORTMAN. And I apologize. I was on the floor talking about one of Senator McCain's and your favorite topics—in fact, I mentioned you—which is the issue in Ukraine and what is going on with Russia. But I am happy to be here, and I appreciate your holding the hearing, which gives us an opportunity to explore the role that banks play in the commodities markets.

Since Gramm-Leach-Bliley was enacted, banks have had this legal authority to engage in physical commodity activities, and I know that many end users of commodities think that the banks' involvement in this area has been beneficial. I know municipalities in my State of Ohio have told me that. The natural gas market is an example for them where they think it has been helpful.

Nevertheless, I agree this is a responsible use of our oversight responsibilities to revisit that decision by Gramm-Leach-Bliley periodically and to ensure that banks are using that authority in responsible ways that do not threaten the security of our financial system.

The focus of this panel is on how one particular bank, Goldman Sachs, has used its authority under Gramm-Leach-Bliley to participate in the market for a particular commodity, so this is, as I understand it, focused on one particular issue, and that is aluminum. Specifically, Goldman used its authority to purchase a company called Metro that warehouses aluminum. I understand the aluminum market is characterized by two types of warehouses: One are warehouses governed by the rules established by the London Metals Exchange, known as the LME warehouses, and then those not governed by LME rules, known as the non-LME. Metro's LME warehouses are the focus, as I understand it, of this Subcommittee's inquiry today, and I also understand that aluminum owners have three basic options for what they do with their metal. They can sell it to end users. They can store it for sale later. If they choose to store it, they can do so in LME warehouses or in non-LME warehouses.

So my questions, I guess, are more about how does this all work? If you could just explain to me—and I know some of this discussion has already occurred, although we had somebody monitoring the hearing earlier who said that some of these issues have not come out yet, so let me ask some specific questions.

Describe for us how the aluminum warehousing system really works. Why do aluminum owners warehouse their metal at all? How do they decide whether to use an LME warehouse or a non-LME warehouse?

And let me go ahead and give you the second question that I have, which is: Since 2008 it seems that aluminum owners have increasingly chosen to warehouse their metal instead of selling all of it under the physical market. This has resulted in rising warehouse inventories, particularly at LME warehouses. Can you explain why? Why are these warehouse inventories, particularly LME inventories, increasing over the last several years? In some cases, these inventories have risen dramatically.

So how do aluminum owners decide where they are going to put their metals, LME or non-LME? And why, since 2008, have we seen the increasing inventories?

Mr. WIBBELMAN. Well, Senator, the London Metal Exchange operates as a futures market, and it is a market unto itself. It can be interacted with by the consumers if they choose to do that, but it has provided itself a market by which producers could continue to produce metal during periods when the demand was collapsing.

So following the global financial crisis, for example, since that point in time, Metro has received into Detroit 3.6 million metric tons of metal, and that really acts as a strategic stockpile and a buffer stock, which really gives the consumers a chance to have some alternative sources of metal.

Now, they have not entered the warehouse to take metal out directly very often, but what has happened is Metro has been shipping metal out in great quantity—600,000 tons a year for the last several years—and that metal goes to the particular owners. And those owners have a choice. They can put it back onto the LME. They can put it back—they can sell it to consumption, or they can store it off-warrant in off-warrant storage areas.

And so what the LME system has done is essentially allow us to create a strategic stockpile within North America, a large one. And so that is why the argument about pricing. I mean, Metro's activities have done really, I think, nothing but amplify the competitive options that people have had, when you are talking about 3.6 million metric tons that really might never have been produced in the first place. And really it was only when the LME system rules were under some revision that smelters started to really amplify their shutdowns, for example, in your State.

And so really the LME system has been quite vital for producers to be able to have a predictable customer when no customer exists in the physical consumption world.

Senator PORTMAN. Mr. Gabillon, any additions to that?

Mr. GABILLON. Yes, maybe I will just add one thing, because you asked a question about whether people decide to store on the LME or not on the LME.

Senator PORTMAN. Right.

Mr. GABILLON. I think to put things in context—and I think it is relevant to the earlier debate that took place on those off-warrant transactions. In the LME, you are under rules set by the LME, but you have a lot of benefits that are attached to it because you have what we call liquidity, which is, each metal is described as a warrant, and there is a trading place where you can buy and sell futures contracts that will deliver on these warrants.

So if you want to be, for instance, a financier and you want to finance your metal, you will find that if you own metal under the LME, meaning stored in an LME-approved warehouse's warrant, banks will give you a lot of financing, you will have a lot of liquidity, because if your collateral needs to be foreclosed, it will be very easy for the bank to foreclose on it and then sell it into the market. And so that is under the contract of the LME.

Of course, the downside of that, the LME has to have rules, so, for instance, the minimum load-out rules and when you can take it, and you might have to wait.

Senator PORTMAN. But customers are willing to have those restrictions in order to get the benefits, including more liquidity?

Mr. GABILLON. Yes. And when we say "customer," I think we should try to be a bit more precise. The other thing I would say of this LME warehousing system, it is not a supply storage system. It is an LME warehouse system that has been built and established to support the LME as a marketplace. So not a lot of people would use that. Producers would use that as a market of last resort when it happened in 2008 because suddenly there was a collapse of demand, and the only people that could actually buy this aluminium and finance it, to your point, was on the LME. But that is easy to deliver onto. If you buy onto the LME, for instance, it is actually the seller that decides which ones they are going to deliver. So they could be in Malaysia, they could be in Rotterdam, or they could be in Detroit. You do not know in advance. So people generally have not used the LME to provide.

Then if you are storing off-warrant, very quickly, which is part of what our customers sought to do in the past, you are taking much more risk because you are on your own, if you like. You are storing metal in a warehouse somewhere. There are no rules, right? It is a bit more difficult to get financing. You need to organize the logistics.

Senator PORTMAN. And more exposure.

Mr. GABILLON. And more exposure because most of the people are storing aluminum, and that is something we have not gone through yet. It is a bit more complicated, but when people own the commodity, most of the time they would have hedged it. If you have done all of that on the LME, again, your risk is very reduced because if something happened, you can just wait and deliver your LME warrant. If you are doing that in a field, though, in a warehouse which is far from an LME delivery point, you run a lot of risk between the two, and it is more complicated, and that is why banks are reluctant. So people always have to decide between those two, and right after the financial crisis, there was not a lot of confidence, funding was difficult, so that is why all this material went onto the LME. And now as the situation has improved, that is why the LME metal is trying to get out. Sorry for the long answer.

Senator PORTMAN. As the economy began to pick up—one of the questions I have, just hearing you all—what percent of the market does this particular warehouse and this company represent? The Goldman investment is in Metro, I take it. Do you have other warehouses? You are the Goldman guy, right?

Mr. GABILLON. We own 100 percent of Metro. That is it. It is a bit difficult to answer the question about market share because it does vary over time. So as I said, at the beginning of the financial crisis, all this metal went onto the LME, and not a lot of metal was stored outside. If you look at it today—

Senator PORTMAN. What percent of aluminum is in this warehouse today, the Metro warehouse?

Mr. GABILLON. Today it is about a million.

Mr. WIBBELMAN. About a million.

Mr. GABILLON. A million tons, and the annual market for aluminum is about 50 million tons, and probably observers of this market would tell you you probably have something like 12 million tons being stored on the planet right now. It is difficult—we know

about the LME because it is publicized, but what is outside, we do not have the data.

Senator PORTMAN. Are you saying 2 percent? Are you saying 50 and 1?

Mr. GABILLON. Two percent of production; 2 percent of annual production is stored right now in Metro.

Senator PORTMAN. OK. And what percent of the aluminum that is stored is in your warehouses?

Mr. GABILLON. Then it would be 1 versus 12, so 8 percent.

Senator PORTMAN. One of the things that the Subcommittee staff Report indicates is that the LME warehousing facilities at Metro affected price movements for aluminum in the United States. It sounds like it is about 8 percent of the stored aluminum. In your opinion, do LME warehousing practices have a meaningful effect on the physical price of aluminum? If not, what other factors influence that price?

Mr. WIBBELMAN. Senator, I would say that there are a lot of actors in the marketplace, and so you have what producers choose to do, if they continue to produce metal or not. You have got financiers. We have been operating in a zero interest rate environment lately, and so the people who are owning metal are often owning it because the returns on—the safe returns on owning metal and deploying their capital into metal create a return of between 5 and 8 percent for many of these institutions and trades. That is why a lot of these institutions have wanted to own metal and were willing to buy metal in order to do it. It is because they are looking at the difference between a 0-or a 1-percent return versus a 5-or 8-percent return during this whole 5-year period at various times.

Senator PORTMAN. So how do you respond to the concern that the way you have stored the product at Metro affects pricing? What is your response to that specific concern?

Mr. GABILLON. Well, Senator, I think as we discussed, there are two parts in what we call the all-in price, which is the price paid by customers. We have the LME price, which it is called the LME price because it is the price on the LME, so it is affected by LME rules, clearly. And then you have the physical premium. So as the physical premium has gone up, the LME price has actually gone down. And if you may, we have a graph which we think is pretty relevant, if we could show it to you.

Senator PORTMAN. My time is up, so it is up to the Chairman.

Senator LEVIN. Sure, if you want to.

Senator PORTMAN. Yes, let us see the chart if you have one.

Mr. GABILLON. I will start to describe it, but you are going to have it in one second.

Senator PORTMAN. And while we are getting the chart, what is the comparison to what goes on, say, in the Asian market, the Japanese market, for instance, where there is a significant amount of aluminum used, or the European market?

Mr. GABILLON. Well, I think if you look globally, you will see it is not perfect in timing. But the markets tend to be reacting at the same time, so if you wanted to look at those equivalents of the physical premium in the United States and in Europe and in Asia, you would say that they have all risen at the same time. And part

of the reason is also because the LME price—we have talked a lot about the United States here, but the LME price is a global price, because as I said, when you deliver aluminum on the LME, you decide where you can deliver it. So people are always calculating which metal to deliver when, and the LME price, if you think about the LME price today, it probably reflects much more the situation in Vlissingen in the Netherlands than it did. But at another point in time it would be different, so you have a constant evolution.

If you look at this chart we have provided,¹ just to put it in context, it is between the beginning of 2007 to very recently. The light blue curve is what we call the aluminum all-in price, and you could see that it was quite elevated before the financial crisis. Then it went down a lot. And then it has been moving—we have a kind of trend line. It has been moving down over the last of those years. And then we have represented as one example of what has been going on the LME, what we call the aluminum queue calculated in this, which reflects something which is well known to observers, that those queues have risen. Actually, they actually started to fall off quite a lot this year, and you can see when everything is said and done, you can see that actually there is no correlation between the increase of the queue and the all-in price that is paid by customers in the United States.

So we know it is complicated. There are many factors. At times it varies, the dynamic varies. A lot of the people that actually observe those markets, including us, sometimes get it very wrong. But when everything is said and done, you can see that there is no correlation. So we do not believe that the LME rules impact the all-in price for customers.

Senator PORTMAN. And of all those factors—and you say it is complicated—you would say that the economy would be the No. 1 factor, in other words, the demand in the economy?

Mr. GABILLON. On the all-in price, definitely. If you see again this graph, you can see that the all-in price went down pretty much a lot until the end of last year. And actually, it is only this year, with the combination of increased demand, in particular in the United States, and also a lot of smelters closures in the United States and in Europe in response to those prices, that the situation has started to shift, and now the aluminum all-in price is starting to rise at a time where the queues are very limited.

Actually, if you look at it specifically in 2014, you would see that at the beginning of the year, even if you think about the physical premium itself, it started the year at 250, finished the year at—currently we are at 500. For instance, the queue in Detroit has actually been reduced a lot during the same period. So that is why I am trying to say when it is complicated, at times the correlations change. But overall we think this graph summarizes the situation.

Senator PORTMAN. If the EU economy were growing right now and the U.S. economy having picked up some steam recently, you would see this light blue line going back to here it was probably in early 2008?

Mr. GABILLON. I mean, it is always difficult to speculate, but that is not impossible.

¹ See chart provided by Mr. Gabillon, which appears in the Appendix on page 147.

I think the other thing which is starting to drive that price is as smelters have closed here, the North American sector needs to import aluminum, in particular, to the United States, and, therefore, they need to import it from abroad, and that has higher transportation costs and most of the production increase is in China these days.

Senator PORTMAN. OK. I have additional questions, Mr. Chairman, but I do not want to take your time.

Senator LEVIN. Thank you.

Just while we are on that point, I think most experts in the field will say there is a relationship, by the way, between queue length and the price that people pay for aluminum. But we are going to—and that is an important argument, but to me, an equally important argument is whether there is a relationship between queue length and what you call and everyone else calls the “premium.” Would you acknowledge there is a relationship—and this is something Senator Portman was getting to, I think. Is there a relationship, a direct correlation, in fact, a very high correlation between queue length and premium? Just, yes, is there a high correlation?

Mr. WIBBELMAN. Senator, what I would say is that when the premium goes up, the value of the available metal within Metro’s warehouses becomes more attractive, and so then people look for it and try to cancel warrants, and then, therefore, it becomes a longer queue. So I think it is just a question of cart before the horse.

Senator LEVIN. No, my question is: Is there a direct, high correlation between queue length and premium?

Mr. GABILLON. Senator, I would say if you look at 2014, I would say no.

Senator LEVIN. In general, is there a high correlation, yes or no?

Mr. GABILLON. First, correlation does not mean causality.

Senator LEVIN. I did not say it meant causality. I did not ask you causality. I asked you correlation.

Mr. GABILLON. If you ask me as a statistician, including the data up to today, I would say the correlation is not great, no.

Senator LEVIN. OK. Then that is a major argument here. If you can say there is no correlation between premium and the length of the queue, then you are in a very different mathematical world than most of the mathematicians that look at this. OK?

By the way, on your chart, when there was a big jump in the queue length, what happened there? Weren’t there a whole lot of cancellations right there?

Mr. GABILLON. So there were——

Senator LEVIN. Can you give me a yes or a no to that question?

Mr. GABILLON. Yes, cancellation drives queue, so yes, there were a lot of cancellations.

Senator LEVIN. That is, as far as I am concerned, the most important six words I have heard yet this morning. Cancellations drive the queue, and we all ought to remember that. OK? And then if there is a correlation between the queue and the premium, which most statisticians will say there is, then you have the important connection between the premium and the queue. And if the queue is driven by cancellations and if your contracts require cancellations—which they do if they are living up to—at that point you

have your contracts requiring cancellations. In order to get discounts, you have to cancel the warrants, which in turn drives the queue, which in turn is correlated to the premium. And the premium is, by your argument, just part of the all-in price. You say it does not affect the all-in price. Most of the users will say it sure does. But that is an argument that we will take up with every panel as to whether or not the premium, if it goes up, leads to higher all-in prices. You folks differ with most users on that issue, but in terms of the premium—the premium is clearly an important part of the all-in price, and your actions are directly correlated to the premium, because you are driving the queue, as you just pointed out, and the queue has a direct correlation to the premium.

Now, that is not just the price of aluminum we are talking about, folks. This is also the transactions in aluminum which Goldman are involved in, because the premium—there are transactions based on premium. And if you are right that if the premium goes up, the other part of the price will go down—that is what your argument is—you are saying then that the LME price will go down if the premium goes up. There are huge amounts of aluminum-related transactions that are based on the LME price.

So if your argument is right and, again, most users disagree with your argument, and I think most experts would disagree with your argument, and we are going to hear from some of those on the next panel. But if your argument is right, two things then are affected: First, the premium, if it goes up, there are financial transactions based on that premium; second, your argument, the premium goes up, LME price goes down because there is no effect on the all-in price. At that point the effect on the LME price by the increase in the premium is part of your argument. You are saying premium is up, LME price has to go down, because the all-in price is the same. That is your argument. At that point, now driving the queue, which is obviously driven by cancellations, and the queue correlation to the premium is directly affected to the LME price, by your argument.

Again, most people do not agree with your argument. Most people that use aluminum believe that when you increase the premium, which is what the queue does—forget causation, it is correlated, the length of the queue to the premium is correlated, that is what most mathematicians will say in a very high way, you are having a very significant impact on LME price and—and this is significant for Goldman, because this is what I believe it is mainly about for Goldman, are the financial transactions, because their impact on the queue by what they do with cancellations—and that is what these contracts are about. These contracts are about you must cancel. That is in the contract. I know, they do not have to live up to the contract. I understand that. They can violate the contract. But most people do not enter into contracts to violate them. And so if they live up to the contract, under the words of the contract you must immediately cancel, which means the queue goes up, cancellations drive the queue, you just said it. And the relationship, the correlation between the length of the queue at that point and the premium is a direct correlation. And at that point, under your own argument, it seems to me you lose a very significant

other argument, and that is the relationship here between premium and the LME price.

So I do not know if Senator Portman wants to go on. I have a lot of additional questions, but the issue, Senator, which we have just been talking about is the relationship between the premium and the queue, and there is a high correlation. This is the all-in price. They are arguing here that the all-in price is not driven by queue length, because their argument is that if the queue length goes up, the LME price—excuse me, if the premium goes up, the LME price goes down, because the all-in price stays the same. But it is the premium issue which is the issue here as well as the effect of the queue on the all-in price. But there is not much doubt in most statisticians' minds and beliefs that there is a direct, high correlation between the length of the queue and the premium.

I know their argument, and I have heard it. Most of the people that we are going to hear from do not agree with the argument that the length of the queue does not have any effect on the all-in price, on the price of aluminum. But even if they are right—and most people disagree with it—where they are clearly wrong by almost any statistical analysis is the fact that there is a high correlation between the premium and the length of the queue. And once that is true, if, as they argue, the all-in price is made up of two components—one the premium, the other one the LME price—then the LME price is affected by the premium going up or down, and at that point the LME price is very significant in terms of financial transactions.

So this chart is very much disagreed with, again, by most users, including the auto industry, which is using aluminum, which is a big, big problem with the way in which aluminum prices are set.

Senator PORTMAN. You are part of this, too, so I will get back to you. But they care a lot about the all-in price.

Senator LEVIN. They do.

Senator PORTMAN. I am admitting I am no expert in the aluminum market, but why is the premium so important as compared to the price? And is this a matter of—you say correlation. Does that mean causation? And are there other things that could explain that correlation?

Senator LEVIN. Well, when you look at their chart, that big line jump right there, is when there was a whole bunch of cancellations of warrants. The queue went up, including the ones we are talking about today. Many of them, right at that big jump right there. And this is the queue length. And so, again, the high correlation becomes critical because under their contracts, for instance, that Deutsche Bank had to immediately cancel warrants—under all their contracts. If we are talking about these six contracts, all the warrants had to be immediately canceled. That immediately caused the queue to increase. You can see it with that huge jump right there. And so the queue increases, and then the question is: Is there a correlation between the length of the queue and the premium? And there is a high correlation at that point. And the premium is a big, growing part of the all-in price, by the way. It used to be 5 percent of the all-in price. A few years ago, the premium was 5 percent of the all-in price. It is now over 20 percent of the all-in price.

Senator PORTMAN. Let me just ask you gentlemen about that. The question I just asked a second ago is does correlation mean causation? And what else would you think, assuming you agree with the correlation, would be the causation? Is it the LME rules? What is your sense of that?

Mr. GABILLON. So if I may, first, to come back to our graph, that is not the theory, with just the observation of this, I think everybody can conclude from that graph.

If we go back to the precise point of premium versus cancellation—and, again, I appreciate it is complicated—there is effectively—that is a factor. The queue is a factor in the premium, and there is a simple fact, which is if you receive a warrant on the LME and there is a long queue in front of you, the owner of that warrant is going to have to pay the storage fee for that period of time. So as that period goes, the LME price will go down. That is the various effect of the premium.

Now, when we say queue—and this is where it gets a bit more complicated—it depends which queue you are talking about. So there is a period of time where maybe for a few days—the queue in Detroit was the longest in the LME system, and then that might have a bigger impact. But there was a period when, if you look at it today, the queue on aluminum is not the longest in Detroit. It is actually in Vlissingen. And this is a global market. This is a global contract. In the LME you do not have a contract in United States, a contract in Europe, a contract in Asia. You have one global contract, and everything is priced out. So right now the queue in Vlissingen has probably a bigger impact than any other queues in the world. So that works like this. At another period it might be different, and that is why the correlation can vary from time to time. And, yes, I mean with correlation, we can have people fighting all the time. But there are periods where it is different, and so the correlation exists at that time. And sometimes, as Mr. Wibbelman said, it is the other way around. When premium—when you look back at why cancellations started to happen, it is because the premium was starting to go up. That was a signal to the market, which is take that metal which is on-warrant, cancel it, and bring it outside. So sometimes it works both ways. That is why the correlation-causality is more complicated than that. And this market is complicated, and people disagree all the time. That is what makes markets.

I will give you one anecdote how complicated it is, and Senator Levin referred to it when he showed us the big increase in cancellations in Detroit. By the way, if you had the chart of other parts of the LME system, you would see there was an even bigger cancellation a few weeks before that event, and that event happened when the LME, after doing an independent report on queues, reached the conclusion, had a consultation, and implemented the rule to double the load-out from large warehouses like ours, with a view to reduce queues. The impact on the market was that queue did not shorten, but queues became longer as a result of that.

So that is an example of how even when you have the best brains that have studied this market, you look at it and try to understand what drives what and when, it is not that simple.

So I appreciate that, it is a very complicated issue of correlation between premium and things, but I think it is more complicated than that.

Senator PORTMAN. By the way, the LME rules under which Metro operates, are these rules that if you were to sell the warehouse, which I understand you are thinking of doing, that the new owners would also operate under?

Mr. GABILLON. That is correct.

Senator PORTMAN. And who might the new owners be if you sold the warehouse?

Mr. GABILLON. We are running a sales process right now, and we have a variety of interest from companies in Europe, Russia, and China. There is a variety of them right now.

Senator PORTMAN. You think it would be a foreign owner? I do not mean to probe here, but I will.

Mr. GABILLON. I think it is possible, yes.

Mr. WIBBELMAN. Even if it is not a foreign owner, it is safe to say that the center of gravity of the business generally is going to move from the United States to Europe or to Asia, and essentially it is because the competitive environment that Metro operates in. I mean, all of the other warehouse company owners are essentially unregulated traders that operate in those areas, and so they are able to do things to acquire metal for their own warehouse companies, which will essentially create strategic stockpiles elsewhere or within those companies.

Senator PORTMAN. So if it is not owned by a bank or Goldman, it is likely to be owned by a trading company. And let me just be clear: Is that trading company going to be living under the same LME rules or not?

Mr. WIBBELMAN. It will not have all the banking restrictions if it is not a bank, right? So it will not necessarily have that type of restriction. Many of the companies that own LME warehouse companies, the parent companies, are trading conglomerates in some cases, and they essentially, source metal for their own warehouse company, and the profit will go up vertically into the same ownership structure. I mean, Metro has been run from a profit center basis, completely separately from Goldman. In other words, we act maybe as counterparties occasionally, but not as a unified, vertical structure.

Senator PORTMAN. Thank you, Mr. Chairman. I have, unfortunately, another appointment I cannot miss, and I appreciate your testimony, gentlemen, and thank you, Mr. Chairman, for letting me come and indulging me with the time.

Senator LEVIN. Thank you very much, Senator Portman.

Let us now start with the Deutsche Bank contract under which they were required to cancel their warrants, the first one. Now, that deal was in September 2010, just a few months after Goldman acquired Metro, and it involved Deutsche Bank and 100,000 metric tons of aluminum. Here is what Deutsche Bank told us: That in September of—

Senator Baldwin.

OPENING STATEMENT OF SENATOR BALDWIN

Senator BALDWIN. Thank you, Chairman Levin. I actually wanted to start by thanking you for your leadership of this Subcommittee. I remember our first meeting together as I became a new Senator and you talking about the importance and the power of the gavel of this particular Subcommittee, and you have wielded it so much in the interest of the American people, and I deeply, deeply appreciate your work and leadership on this Subcommittee.

I also want to thank you for holding today's hearing. I am greatly concerned about the role that financial institutions are playing in physical commodities markets, and particularly aluminum, because I have heard about this issue from manufacturers all across my home State of Wisconsin, from breweries that use aluminum in their cans to Mason jar manufacturers to heavy trucks, and if you are making a product with aluminum in it, you know this issue very well.

The fundamental basis for any well-functioning commodity futures market is that futures and cash converge, and I think we have seen a massive disconnect in the aluminum market, and today's Report identifies the reason.

Mr. Chairman, because I know you have probed during this first panel into the relationship between the queue and the premium, my real interest is asking some questions of the second panel. I know it is going to be a little while before they come. I wanted to come here today to note my concerns. I hope to be back to ask my questions of the second panel. If that is not possible, I am going to leave my questions with you for the record, but I do not have any questions right now of this panel.

I thank the Chairman for your indulgence in allowing me to thank you and state my interests in this issue.

Senator LEVIN. We are always happy to indulge colleagues who want to thank me. Believe me, it is——

[Laughter.]

Senator LEVIN. Thank you, Senator Baldwin, for your great involvement in so many issues involving consumers, as well as this one, and for your comments about me. I very much appreciate them.

Let us get to the Deutsche Bank deal again. This was September 2010. It was just a few months after Goldman acquired Metro. It involved 100,000 metric tons of aluminum. Deutsche Bank told us that in September 2010 it entered into negotiations with Metro seeking cheaper rent for the metal that it was storing at Metro warehouses in Detroit.

The LME told the Subcommittee that no LME rule prevented Metro from giving Deutsche Bank a rent discount for LME storage. So Metro could just give, if they had decided to, Deutsche Bank the discounted rent while still on-warrant in the first warehouse. Is that correct? You had the power to do that?

Mr. WIBBELMAN. We could do that, yes.

Senator LEVIN. And Metro has given rent discounts for LME-warranted metal in the past. Is that correct?

Mr. WIBBELMAN. Yes.

Senator LEVIN. Metro did not do that here. Metro instead proposed that Deutsche Bank cancel warrants on its 100,000 metric

tons of aluminum “as soon as possible.” Cancel warrants as soon as possible, and then wait in the queue; when it got to the head of the queue, send its metal from one set of Metro warehouses to another. After a brief period, Deutsche Bank would then re-warrant the metal at the new warehouses.

Again, Mr. Wibbelman, why not just let Deutsche Bank stay in the first warehouse and give it a cheaper rent?

Mr. WIBBELMAN. Well, I mean, we are a commercial business, and we evaluate every commercial opportunity independently, according to what is in the best interests of our commercial position. In that case, I can tell you that Deutsche Bank had the optionality to move the metal out or not move the metal out. And, in fact, they did not move a great deal of the metal out. They left it in the warehouse and re-warranted it in place because it was commercially more viable for them to do that.

Senator LEVIN. How many tens of thousands of tons did they move to a different Metro warehouse?

Mr. WIBBELMAN. My recollection was of the 100,000 tons, they moved 70,000 metric tons, and they did not move 30,000 metric tons, and they re-warranted all the stock in—whether having left the warehouse or not having left the warehouse.

Senator LEVIN. Exactly. It was important to you, however, that they move to another warehouse. Is that correct?

Mr. WIBBELMAN. Well, they wanted the optionality—

Senator LEVIN. Was it important to you that you required them to cancel the warrants as part of this deal?

Mr. WIBBELMAN. Senator, the issue for them—

Senator LEVIN. I am just asking you if it was important to you.

Mr. WIBBELMAN. I am trying to explain that the issue is that if they do not put the metal in the queue, Metro having at that point, for example—I am just guessing—a million tons of metal in storage, then someone else could cancel metal, and that they could then jump ahead of them and make their metal less valuable. So the LME rules actually—

Senator LEVIN. I am just asking a simple question. Was it important to you? And is that why it was in the contract that they cancel the warrants?

Mr. WIBBELMAN. Metro was going to make the same amount of—

Senator LEVIN. So it was not important to you?

Mr. WIBBELMAN. So it was—we gave them an option to do it.

Senator LEVIN. I am just asking you whether or not, if they live up to the contract, did they have to cancel warrants? That is all. It is a pretty simple question.

Mr. WIBBELMAN. Yes, I would say that the—what we were doing was we were providing them options for once the metal left the warehouse, if that is what they chose to do, and that was the basis of the contract.

Senator LEVIN. I take it you are not going to answer the question as to whether or not it was important to you that they cancel the warrants.

Mr. GABILLON. Maybe I can try—

Senator LEVIN. No.

Mr. WIBBELMAN. I am trying to answer the question, Senator. I am sorry. I think it was probably not important to me personally whether it happened—

Senator LEVIN. Not personally. I am talking about the company. You paid them to move 70,000 tons, did you not? You gave them a discount. Is that correct?

Mr. WIBBELMAN. We gave them some discounts if they moved it.

Senator LEVIN. Right.

Mr. WIBBELMAN. But it was their choice.

Senator LEVIN. It was not their choice whether to cancel or not?

Mr. WIBBELMAN. Yes, it was. They owned the metal.

Senator LEVIN. No, but wait a minute. If they lived up to the contract, they had to cancel. Once they sign a contract, is it not true that, to live up to that contract, they had to cancel the warrants? Yes or no.

Mr. WIBBELMAN. It was not a requirements contract, it did not require them to cancel metal. If they wanted to achieve the—if they wanted to put it back on warrant from a different warehouse, then they would—

Senator LEVIN. Take a look at Exhibit 23,¹ would you, please? Page 5, Section 3.1: “. . . the Parties agree that [Deutsche Bank] will request the maximum number of Slots and place the Goods or part of the Goods off-warrant as soon as possible thereafter . . .” That means cancel the warrants, doesn’t it? Does that mean cancel the warrants?

Mr. WIBBELMAN. Cancellation would be required for that, yes.

Senator LEVIN. OK. The parties agree that they would “as soon as possible thereafter,” obviously “dependent on existing demand for slots.” But, nonetheless, as soon as possible. And then they canceled, and look what happened to the queue. See that big jump in the queue? That is what happened when they canceled the warrants. Do you think there is a correlation there between canceling warrants and the length of the queue?

Mr. WIBBELMAN. Oh, if they cancel, there is definitely—the queue would lengthen until the metal ships out, until some of the metal shipped out. That is right.

Senator LEVIN. OK. So I am glad we finally got to that point, that there is a correlation between canceling the queue—canceling the warrants and queue length. That is progress.

Let us keep going then with Deutsche Bank. The contract was signed by Deutsche Bank, not by Metro. Did it reflect the agreement that was reached between you?

Mr. WIBBELMAN. I mean, it was—my recollection is this was written by Deutsche Bank. It was signed and sent over by them, and that it was never executed, and—

Senator LEVIN. You mean never signed by you?

Mr. WIBBELMAN. Yes.

Senator LEVIN. You do not mean executed.

Mr. WIBBELMAN. Well, it was never signed by me or executed by us, yes.

Senator LEVIN. It was not executed. Didn’t you live up to this contract?

¹ See Exhibit No. 23, which appears in the Appendix on page 1011.

Mr. WIBBELMAN. Well, I do not—sir, I cannot tell you that these terms were—

Senator LEVIN. Did you live up to a contract with Deutsche Bank which was like this contract?

Mr. WIBBELMAN. No question, generally speaking, this type of thing took place, yes.

Senator LEVIN. Not this type. This thing took place.

Mr. WIBBELMAN. So the reason, sir, why we do not have contracts is because how Metro's business operates is it is basically a timeline.

Senator LEVIN. OK. Let me go back. That is not my question. Basically this contract was executed. Is that correct? This agreement was executed?

Mr. WIBBELMAN. I can tell you that the amount of tons that were contemplated when this contract was sent across ultimately did get canceled, and some of it did ship out.

Senator LEVIN. OK. And did you live up to the section that said that Deutsche Bank would have to pay \$65 per metric ton if it sold the metal instead of moving it to another Metro warehouse and re-warranting? Was that part of the deal?

Mr. WIBBELMAN. They did not ultimately sell any of the metal.

Senator LEVIN. No, I know. But would they have had to—was there a penalty here? Come on, let us just get to it. The section says Deutsche Bank would have to pay—this is Section 3.8—\$65 per ton if it sold the metal instead of moving it to another Metro warehouse. Am I reading it right? Was that part of the deal?

Mr. WIBBELMAN. So generally we do have break fees to our agreements, yes. If they agree to do—

Senator LEVIN. I am not talking about generally. Was that part of the deal with Deutsche Bank?

Mr. WIBBELMAN. I cannot recall specifically, Senator, I am sorry to tell you, but I would not doubt that it was not part of the deal. I just cannot tell you for certain that it was.

Senator LEVIN. OK. You have no recollection as to whether that was part of the deal or not?

Mr. WIBBELMAN. I do not know, Senator, if it was actually ultimately invoiced and paid out that way.

Senator LEVIN. I am not talking about ultimately invoiced. I am talking about the deal.

Mr. WIBBELMAN. It was perhaps a term contemplated by this agreement. Again, I do not know if it was followed through upon.

Senator LEVIN. That would be a \$6.5 million penalty for 100,000 tons of aluminum.

Now, if Deutsche Bank broke the agreement to send the metal to a Metro warehouse, then Deutsche Bank would have to pay \$65 a ton. That is not free metal to me, by the way. You may want to talk about as free metal, then you may want to talk about choice. But when you enter into a contract, a business contract, you have given up choice. You can break the contract. That is always a choice. You could run a red light. You have got a choice. You made a deal. I do not know why you want to suggest you did not make a deal. You are in business. You made a deal.

Mr. WIBBELMAN. Absolutely. Yes, we did.

Senator LEVIN. And part of that deal with that they would cancel warrants as soon as possible, and as you point out, finally, there is a direct relationship between canceling warrants and queue length. And most statisticians will tell you—and they will in the next panel—there is a direct correlation between the length of the queue and the premium. That may not always be true, by the way. Maybe that is not true every day or every year, but it is generally true. There is a correlation between queue length and premium. Why? Because the longer the queue length, the more rent that is going to be paid, and that is part of the premium, is how much rent do you have to pay on top of what the LME price is. That is what the premium is all about. It is cost of storage.

So Deutsche Bank did not pay any penalty here because, after canceling warrants for all 100,000 tons, Deutsche Bank ended up keeping 30,000 warrants, as you pointed out, in the original warehouse and re-warranting it, and they sent about 70,000 tons into other Metro warehouses, and they re-warranted it.

Now, let us talk about correlation. The contract, or the “deal”—let me put it in your words—was dated September 15, 2010. Is that correct?

Mr. WIBBELMAN. Yes.

Senator LEVIN. Thanks. And then on September 20, 2010, Deutsche Bank canceled warrants for 100,000 metric tons pursuant to the deal.

Now, would you say that you had some influence over the cancellation by entering into a deal which required them to cancel if they lived up to the deal?

Mr. WIBBELMAN. Well, I think there were incentives that they were trying to capture, but those incentives were not all Metro. Some of those incentives were what the market was offering in terms of its ability to capture a higher interest rate on the capital it deployed, plus whenever Deutsche Bank would enter into a transaction like that, they would gain the optionality. They would have this metal, and then if the market moved in any direction or another, they would be able to take advantage of that movement. And so, for example, when the market must have moved in some way where they decided not to ship, for example, the 30,000 tons and to put it back on-warrant within its existing location, they probably did that in exchange of some market movement, I am guessing.

Senator LEVIN. Did that contract have an effect on cancellations?

Mr. WIBBELMAN. Certainly I would say that their choice to take advantage—

Senator LEVIN. No. Did the agreement—

Mr. WIBBELMAN. We were providing a solution—

Senator LEVIN. I am talking about did the agreement itself provide for cancellations. Did the deal say if they lived up to it. I know they did not have to.

Mr. WIBBELMAN. We are part of the market. We are part of the LME's market, and I believe that this contract was—allowed Deutsche Bank to have solutions to its—to the problems that come with its—

Senator LEVIN. I am sure that is why Deutsche Bank signed the contract, because they were given some money to keep the ware-

house there and they were penalized if they did not keep the metal in the warehouse. OK.

Now let me go back to my question. Did the agreement have a provision that related to cancellations? I will read it to you again if you want.

Mr. WIBBELMAN. Any—

Senator LEVIN. Not any, this one. The deal that you made with Deutsche Bank?

Mr. WIBBELMAN. It is a condition precedent for them to cancel the warrants should they want to have the option of the incentives we were offering. That is right.

Senator LEVIN. Did it have a provision relative to cancellations?

Mr. WIBBELMAN. It talked about—

Senator LEVIN. Not talked. Come on. They do not talk. Contracts, written things, do not talk. You talk.

Mr. WIBBELMAN. OK. Again, Senator—

Senator LEVIN. I am trying to get you to just acknowledge what is obvious. This contract had a provision saying that if they lived up to the contract and if they exercised the options and all the rest, that they would cancel as soon as possible.

Mr. WIBBELMAN. That is right, as long as it is with the “if.”

Senator LEVIN. Of course. You never have to live up to a contract. You can pay a penalty. Or you cannot live up to it—you can create a reputation for yourself that you do not live up to contracts. You do not have to obey a red light. You could go through a red light.

Now, did you enter into a deal with them?

Mr. WIBBELMAN. Certainly there was a deal that took place.

Senator LEVIN. And did that deal, if lived up to, relate to cancellations?

Mr. WIBBELMAN. If they did cancel the metal, then, yes—

Senator LEVIN. No. Did it say they would cancel as soon as possible?

Mr. WIBBELMAN. Sir, I am trying to tell you that was the contract that they wrote, that we—

Senator LEVIN. I do not care who wrote it. Did you agree to it? You did not sign it. Did you agree to a deal?

Mr. WIBBELMAN. We had a deal. There is no question about that.

Senator LEVIN. Well, you had a deal. You did not agree to the deal?

Mr. WIBBELMAN. Yes, our deal was conditional. If they chose to—

Senator LEVIN. No. Did you have a deal?

Mr. WIBBELMAN. Yes, we had a deal.

Senator LEVIN. Did you agree to the deal?

Mr. WIBBELMAN. Yes, we did.

Senator LEVIN. Did the deal have a provision that, if lived up to, would require cancellations as soon as possible?

Mr. WIBBELMAN. The deal was that if they cancel, then we will make these payments. But it was their choice to cancel or not cancel. We were not going to sue them if they did not. It was a regular—

Senator LEVIN. Did it say they would cancel as soon as possible if they lived up to it and exercised it? Did it have that provision? Are the words that I am looking at, am I reading them accurately?

Mr. WIBBELMAN. Senator, I am just trying to tell you that the actual written document does not have as much weight as you are imagining and in the way the actual transaction took place.

Senator LEVIN. Was it in your interest that they cancel?

Mr. WIBBELMAN. I mean, they had to cancel in order to get our incentives. That is certainly true.

Senator LEVIN. Was it also in your interest that they keep the metal in your warehouse and that they cancel?

Mr. WIBBELMAN. Well, in our interest, Senator, would be if nobody shipped metal out of the warehouse.

Senator LEVIN. Did they cancel?

Mr. WIBBELMAN. They did cancel.

Senator LEVIN. Was it in your interest that they cancel?

Mr. WIBBELMAN. No, I do not think it was.

Senator LEVIN. So you entered into a deal that said they would cancel as soon as possible, but that was not in your interest?

Mr. WIBBELMAN. Well, remember that the relative bargaining power, the owner can cancel with or without our involvement, right? So we are trying to give them solutions that involve us if they move us, right? And so that is what we were doing. We were trying to provide solutions to them in the event that they canceled and moved the metal.

Senator LEVIN. You are just telling us under oath that you did not care whether they canceled or not.

Mr. WIBBELMAN. I cannot tell you that it was—I do not know if they have—

Senator LEVIN. I am asking you. You are telling us under oath you did not care if they canceled or not.

Mr. WIBBELMAN. Well, I would have to say, Senator, that I do not recall then because I cannot tell you with certainty that I cared. I can tell you that the intent of the deal was that we are providing them with options to move—in the event that they moved it.

Senator LEVIN. So the Deutsche Bank deal was approved by Metro's board of directors, all Goldman employees, that explicitly called for Deutsche Bank to cancel warrants for 100,000 tons of aluminum "as soon as possible." That is the agreement.

Then right afterwards, on September 20, Deutsche Bank canceled warrants for 100,000 tons of aluminum. So now let us look at the queue. There is the chart on the queue. This is what happened when they cancel, that dramatic spike upward in the length of the queue, jumped from about 25 days to 120 days. That is when Deutsche Bank canceled. A hundred days more now the queue is, and the queue is correlated to the premium, and the premium is an important part of the price, and unhappily, a growing part of the price for aluminum buyers. You at least I think have acknowledged now that that spike was a result of cancellation. I think you gave us that much acknowledgment. Is that correct?

Mr. WIBBELMAN. Yes.

Senator LEVIN. OK. And just for the record, that chart is Exhibit 1k.¹

Let us look at another deal now, the fourth Red Kite deal. Metro told the LME, London Metal Exchange, that the deal was approved by a subcommittee of Metro's board on November 1. Was that an accurate statement by LME, that the fourth Red Kite deal was approved by a subcommittee of your board, which is all Goldman employees?

Mr. WIBBELMAN. That could be true. I do not have a recollection exactly, but it would be——

Senator LEVIN. OK.

Mr. WIBBELMAN. I would not say it is untrue.

Senator LEVIN. Take a look at Exhibit 25,² if you would. This is an email, I guess, from Gabriella Vagnini. Is that correct?

Mr. WIBBELMAN. Yes.

Senator LEVIN. She works for Metro?

Mr. WIBBELMAN. Worked for Metro.

Senator LEVIN. Worked for Metro at the time?

Mr. WIBBELMAN. Yes.

Senator LEVIN. And this was to someone named Barry Feldman, who was at Red Kite. Is that correct?

Mr. WIBBELMAN. Yes.

Senator LEVIN. And they are a hedge fund in London?

Mr. WIBBELMAN. Yes.

Senator LEVIN. And it says, "Dear Barry, I hope this email finds you well. Please note, Metro's issued deal number"—there is a deal number here. There is an agreement. Do you see the word "agreement" there or "deal"? Do you see those two words?

Mr. WIBBELMAN. Yes.

Senator LEVIN. And then they lay out the deal between you and Red Kite. And if you look down at the bottom of that Exhibit 25, it says \$36 per metric ton will be paid within 2 weeks of cancellation. That is a freight allowance, right?

Mr. WIBBELMAN. Yes.

Senator LEVIN. And that is like a subsidy that you are going to pay them if they do what this deal provides for. Is that correct?

Mr. WIBBELMAN. Yes.

Senator LEVIN. OK. And Metro is going to truck this material to an off-warrant Metro storage facility in Detroit. Is that correct?

Mr. WIBBELMAN. Yes.

Senator LEVIN. And then at the top of the next page, it says Metro will incur the shipping costs. Metro, you guys are going to pay the shipping cost to the other warehouse, right?

Mr. WIBBELMAN. Yes.

Senator LEVIN. And then it says Red Kite cancels 150,000 metric ton of aluminum in Detroit immediately. That was part of the deal?

Mr. WIBBELMAN. Should they take up on it, yes.

Senator LEVIN. I am saying it was part of the deal. I asked you before, part of the deal was you are going to incur shipping costs. That is if you accepted the deal, right?

¹ See Exhibit No. 1k, which appears in the Appendix on page 826.

² See Exhibit No. 25, which appears in the Appendix on page 1026.

Mr. WIBBELMAN. Yes. But what I am trying to explain is that there are deals that are conditional. A condition to us paying all this stuff is that they do that.

Senator LEVIN. Right, exactly. Red Kite cancels 150,000 metric tons of aluminum immediately.

Mr. WIBBELMAN. Yes, because timing is important in these transactions.

Senator LEVIN. Yes. You wanted immediate cancellation of the warrants, right?

Mr. WIBBELMAN. Just in order for this economics to apply.

Senator LEVIN. Right. That is what you wanted. That was part of the deal that you agreed to, right?

Mr. WIBBELMAN. Yes.

Senator LEVIN. And Red Kite fulfills the requirements to get into the queue.

Mr. WIBBELMAN. Yes.

Senator LEVIN. There is a requirement to get into the queue.

Mr. WIBBELMAN. Yes, only if they want to cancel and only if they want to ship it out.

Senator LEVIN. And you are going to incur shipping costs only if they ship it out, right.

Mr. WIBBELMAN. That is right, yes.

Senator LEVIN. So it is like every other part of this deal.

Mr. WIBBELMAN. That is right. That is how they all work.

Senator LEVIN. Yes, exactly. You have obligations, responsibilities, commitments. You are going to pay what you call a freight allowance, a subsidy. You will pay it if they do these things, and you are going to truck the material. If they follow through, you got to follow through. Metro will take care of the shipping costs. And they will cancel. Is it not part of all one deal here?

Mr. WIBBELMAN. Well, it is, Senator, but they have—things happen, like just with the—

Senator LEVIN. I know things—I am just saying—

Mr. WIBBELMAN. With the Deutsche Bank transaction—

Senator LEVIN. Is it part of one deal or isn't it?

Mr. WIBBELMAN. It is. But it is not to say that that is the only path by which this can be fulfilled.

Senator LEVIN. No, they cannot—

Mr. WIBBELMAN. Right.

Senator LEVIN [continuing]. Pursue the deal.

Mr. WIBBELMAN. And just like with the Deutsche Bank—

Senator LEVIN. And you do not have to pursue the deal either, do you?

Mr. WIBBELMAN. No. But with the Deutsche Bank transaction, for example, they decided not to ship the last amount. That did not happen.

Senator LEVIN. The 30,000—

Mr. WIBBELMAN. Right.

Senator LEVIN. I understand. They did not ship 30,000. They kept it in your warehouse. I got it.

Did Red Kite, in fact, cancel 150,000 metric ton of aluminum immediately or promptly? Did they do that?

Mr. WIBBELMAN. I expect they did.

Senator LEVIN. No, not expect. You know whether they did or not, don't you?

Mr. WIBBELMAN. Senator, there is a long timeline of this business activity. I do not have the particular recall of one deal at one moment in time, but I do not—

Senator LEVIN. Just another 150,000 metric tons of aluminum on trucks, hundreds of trucks going back and forth. You do not have any memory of the Red Kite at all?

Mr. WIBBELMAN. Oh, I have a memory of it.

Senator LEVIN. Well, let me refresh your recollection. Take a look at the deal, will you? Exhibit 25. You agreed it is all one deal?

Mr. WIBBELMAN. What page are you on, sir?

Senator LEVIN. Page 2. Since you do not have any recollection as to what the deal was here with Red Kite, top of page 2, "Red Kite cancels 150,000 [metric tons] of aluminum . . . immediately." Does that help your recollection?

Mr. WIBBELMAN. Sir, can you give me a page number?

Senator LEVIN. Sure. Page 2 of Exhibit 25.

Mr. WIBBELMAN. This page? OK.

Senator LEVIN. Does that refresh your recollection, "Red Kite cancels 150,000 [metric tons] of aluminum in Detroit immediately"?

Mr. WIBBELMAN. Well, yes, I know that was part of the deal if they did it. The only question I am having is, I just do not recall that they did it. But I assume that they did.

Senator LEVIN. OK. And then it says, "Red Kite fulfills the requirements to get into the queue." Does that refresh your recollection, that there is a requirement to get into the queue?

Mr. WIBBELMAN. Well, what that refers to, sir, is that—

Senator LEVIN. Not refers to. Does that refresh recollection that there was a requirement that they get in the queue?

Mr. WIBBELMAN. That is not what this says, sir. What this is saying is that there are requirements to getting into the queue besides just canceling metal. They have to give us shipping instructions. They have to provide us with—

Senator LEVIN. It is all there.

Mr. WIBBELMAN [continuing]. The rental payment, right.

Senator LEVIN. With instructions. Yes, it says, "Red Kite fulfills the requirements to get into the queue . . ."

Mr. WIBBELMAN. Right.

Senator LEVIN [continuing]. ". . . with shipping instructions for maximum appointments asap."

Mr. WIBBELMAN. I am trying to make the distinction—

Senator LEVIN. What does "asap" mean?

Mr. WIBBELMAN. As soon as possible.

Senator LEVIN. Get into the queue as soon as possible. I agree, with shipping instructions for maximum appointments.

Mr. WIBBELMAN. The distinction I was trying to make, Senator, is it was not a requirement that they fulfill to get into the queue. It was that they had to fulfill requirements that Metro generally has in order to get into the queue, right? In other words, we had a series of steps which all of these businesses have to fulfill in order to get into the queue at all.

Senator LEVIN. Were they required to get into the queue?

Mr. WIBBELMAN. No, they were not required to get into the queue. They were required to do it if they wanted to take advantage of the economics of this deal, though.

Senator LEVIN. In other words, if they wanted to live up to the deal, they had to get into the queue? Yes or no.

Mr. WIBBELMAN. OK. If they wanted to—they could have canceled the deal and not done it.

Senator LEVIN. If they wanted to live up to the deal, they had to get into—

Mr. WIBBELMAN. It was not a requirements deal, sir.

Senator LEVIN. I am just asking a very direct question. If they were going to live up to this deal, did they have to get into the queue?

Mr. WIBBELMAN. If they wanted the benefit of our economics in this deal, then they had to do that, yes.

Senator LEVIN. I do not know how that is any different than what I am saying. If they were going to live up to the deal and get the benefits that they saw in the deal, they had to get into the queue.

Mr. WIBBELMAN. Yes. I am just saying it is an option for them. They had the choice. You are saying it is a requirement.

Senator LEVIN. I am going to keep asking it until you give me an answer.

Mr. WIBBELMAN. I have given one.

Senator LEVIN. In order to have the economic advantages that they saw in this deal, and if they were going to live up to the deal, they had to get into the queue.

Mr. WIBBELMAN. That is right.

Senator LEVIN. It took an hour to get there.

Mr. WIBBELMAN. You asked it differently.

Senator LEVIN. No, not really, because you knew very well that people enter deals with the intent to live up to them, and they enter deals because there is an economic benefit to them. You know that. You are a business person, a very active business—

Mr. WIBBELMAN. In this case, it was an option deal, right? They had the option to take advantage of this or they did not.

Senator LEVIN. To enter the deal or not, to live up to the deal or not. It is always an option. Break the deal or not. You are free in that sense. We are all free to break deals. Not if you want to stay in business for very long.

Now, I think you have already answered this question. You paid them \$27 million, I believe, is that correct, as part of this deal? We can go through the invoice.

Mr. WIBBELMAN. Could have been.

Senator LEVIN. Does that sound about right?

Mr. WIBBELMAN. Could have been. We think of things in dollars per metric ton. We do not tend to look at totals too much.

Senator LEVIN. Do you want to go through these with me? Because I can take the time and do it.

Mr. WIBBELMAN. No, I will stipulate to your facts.

Senator LEVIN. OK.

Mr. WIBBELMAN. I am just telling you how it works.

Senator LEVIN. That is fine. Now, would you agree with me—I think you already have, but I better ask it to be sure—that for

100,000 tons of metal where warrants are canceled for that amount, that at a load-out rate of 3,000 tons a day, that the queue would increase from that cancellation? I think you have already agreed to that.

Mr. WIBBELMAN. Or from any cancellation, yes.

Senator LEVIN. Including that one?

Mr. WIBBELMAN. Yes.

Senator LEVIN. Now, Goldman canceled warrants, its own warrants, for over 300,000 metric tons of aluminum in 2012. Do you remember that?

Mr. WIBBELMAN. I know Goldman has canceled warrants, yes.

Senator LEVIN. OK. Assume that for the purpose of discussion that they canceled warrants for over 300,000 metric tons of aluminum in 2012. You do not dispute that?

Mr. WIBBELMAN. No.

Senator LEVIN. So with those cancellations by Goldman, did Goldman through that action lengthen the queue?

Mr. WIBBELMAN. Yes, if they did cancel them, they would have lengthened the queue. Any cancellation lengthens the queue.

Senator LEVIN. I believe in your written testimony today that you said that, "The length of the queue to remove metal from Metro's Detroit warehouse is not the result of action by either Goldman Sachs or Metro." Now, that statement would not be true relative to the 300,000 warrants of their own that Goldman canceled. Would you agree that your written statement, at least that part of it, is not accurate?

Mr. WIBBELMAN. What I am trying to say there is that—

Senator LEVIN. No, not trying to say. Would you agree that as a matter of fact that when Goldman canceled 300,000 warrants, that it did as a matter of fact increase the length of the queue?

Mr. WIBBELMAN. Any cancellation increases—

Senator LEVIN. My question wasn't any cancellation. You are answering any cancellation. My question is Goldman's cancellation.

Mr. WIBBELMAN. Yes.

Senator LEVIN. When Goldman canceled warrants for over 300,000 metric tons of aluminum in 2012, did that cancellation directly lead to the lengthening of the queue?

Mr. WIBBELMAN. They occupied spots in the queue and, therefore, yes, Senator, it lengthened the queue.

Senator LEVIN. So, therefore, you would want to modify your statement, which you are free to do, and I am not your lawyer, but I would suggest you would be wise to do, that your written testimony says that, "The length of the queue to remove metal from Metro's Detroit warehouse is not the result of action by either Goldman Sachs or Metro." In that case, at least, I believe you would want to acknowledge that when Goldman canceled the warrants on 300,000 metric tons that it owned, that that did have a direct effect on the queue?

Mr. WIBBELMAN. Yes.

Senator LEVIN. OK. Now, next question. At least one person who worked for you was concerned by this type of deal which we have been talking about. If you would take a look at Exhibit 28,¹ this

¹ See Exhibit No. 28, which appears in the Appendix on page 1052.

is an email sent by Mark Askew, who is co-head of sales at Metro, a long-time warehouse executive. I believe he worked for you, for several years. Is that true so far? Do you know who Mark Askew is?

Mr. WIBBELMAN. Yes. Your characterization is accurate.

Senator LEVIN. OK. In this email, Mr. Askew relays a rumor that another trading company had heard about the 100,000-ton cancellation and that “we were blocking others.” Do you know what Mr. Askew meant when he said “we were blocking others” by that cancellation? I think that is the Deutsche Bank cancellation.

Mr. WIBBELMAN. Well, sir, at the time it was a rumor by another trader at another conference, so I did not think I paid much attention to it at the time.

Senator LEVIN. All right. So you do not remember seeing it?

Mr. WIBBELMAN. Well, I do not say that I did not see it. I am just saying that I do not recall having seen it at the time.

Senator LEVIN. Do you know what he referred to when he was saying “we were blocking others”?

Mr. WIBBELMAN. Well, I think, as you pointed out, that he was saying that if there is a cancellation, it would occupy spaces in the queue.

Senator LEVIN. Does that mean he would be blocking others from leaving the queue? Is that what you understand he meant?

Mr. WIBBELMAN. No. I mean, the LME system—

Senator LEVIN. The answer is no, that is not what you think he would mean by that?

Mr. WIBBELMAN. I was trying to explain that the LME system is effectively a jump ball, whoever gets there first. So it is a system where people cancel metal, and the first actor in the system is the one that is able to get in the queue.

Senator LEVIN. In that same email, Exhibit 28, he uses the term “Q management.” What does that mean?

Mr. WIBBELMAN. Well, I think that at the time we were marketing our off-warrant services to our own customers, effectively people already in the warehouse. And so what we were doing was offering them options on what they would do when the metal left the Metro system. And so part of those options were that it could be re-warranted. And, remember, at this same time, we had a lot of metal that was going to our other off-warrant competitors. It was leaving Metro and going—again, another thousand feet or whatever to Metro competitors who were LME warehouses. And so we were just competing for that same business.

Senator LEVIN. The Deutsche Bank deal was, as we have said, the first of six of these merry-go-round deals, and the next four were with Red Kite. As we indicated, that is the hedge fund in London. It took place in 2012. They involved a total of over 400,000 metric tons. And in each deal, they agreed to cancel warrants, wait in the queue, get to the head of the queue, transfer the metal from one set of Metro warehouses to another, and then re-warrant the deal.

Each time, if Red Kite did anything other than send the aluminum to another Metro warehouse, it had to pay a substantial penalty. And in January, February, and March 2012, Metro entered into three separate merry-go-round deals with Red Kite. In

these deals, Red Kite was paid to cancel its warrants, join the queue, pay again to re-warrant the aluminum in other Metro warehouses.

Mr. Wibbelman, before entering these deals, did you consult with Mr. Gabillon and the Metro board of directors or a board subcommittee?

Mr. WIBBELMAN. Yes.

Senator LEVIN. Would you say then it is fair to say that each of these deals was a joint Goldman-Metro decision?

Mr. WIBBELMAN. Some of the deals were specifically authorized by the subcommittee, and others of the deals were sort of vetted and understood. But generally we were aligned on the transactions.

Senator LEVIN. So is it fair to say these basically followed a joint Goldman-Metro decision?

Mr. WIBBELMAN. Yes.

Senator LEVIN. OK. Now, the fourth and the last Metro deal with Red Kite was on November 5. It called for Red Kite to start canceling warrants "immediately." Red Kite started canceling warrants 2 days later, on November 7, and the deal ultimately included over 180,000 metric tons of aluminum. The invoice, Exhibit 22a,¹ showed Metro owed Red Kite \$26 million in payments due under this deal.

Now, Exhibit 25,² if you will take a look at it, Mr. Wibbelman, reflects the terms of the last Red Kite deal. It is an email from Metro to Red Kite on November 5. And if you will go to the top of page 2, where it says, "Red Kite will cancel 150,000 [metric tons] of aluminum . . . immediately." And we have gone through that word "immediately," and Red Kite will cancel, and I think it is pretty obvious you cared if they were going to comply, and you finally agreed that if they were going to comply with the deal, it was important that they comply with the whole deal, and that was that they cancel 150,000 metric tons of aluminum immediately. And then they will fulfill the requirements as part of this deal "to get into the queue with shipping instructions for maximum appointments asap"—as soon as possible.

Now, if you go back to page 1 of that deal, Metro agreed to pay Red Kite \$36 per metric ton within 2 weeks of cancellation, cancellation of the warrants. Metro agreed to pay and ultimately did pay, and you have, I think, agreed to that so far. Right?

Mr. WIBBELMAN. Yes.

Senator LEVIN. And Red Kite got in line to leave. Is that correct?

Mr. WIBBELMAN. Yes, to my recollection.

Senator LEVIN. And then when Red Kite canceled, you now, I think, have agreed finally that that will lengthen the queue.

Mr. WIBBELMAN. Yes.

Senator LEVIN. Mr. Wibbelman, at the end of the fourth Red Kite deal in December 2012, the queue to leave the Metro warehouses in Detroit was about 500 days long.

Mr. WIBBELMAN. Yes.

Senator LEVIN. Did Red Kite's cancellation of warrants on 400,000 metric tons of aluminum over the course of the year con-

¹ See Exhibit No. 22a, which appears in the Appendix on page 1002.

² See Exhibit No. 25, which appears in the Appendix on page 1026.

tribute to the length of the queue? I know there were lots of cancellations, but did their cancellations contribute to the length of the queue?

Mr. WIBBELMAN. Any cancellation——

Senator LEVIN. Including those.

Mr. WIBBELMAN. Including those, yes.

Senator LEVIN. Mr. Wibbelman, the LME told us that queues were never terribly long nor persistent prior to Metro's acquisition by Goldman. Was that accurate, what the LME told us?

Mr. WIBBELMAN. Yes.

Senator LEVIN. And then shortly after Goldman acquired Metro, the queue grew from under a month to nearly 2 years. Metro has the power, I believe, to load out more metal and bring down the queue. Is that correct? You could do that if you wanted to? The 3,000 tons is a minimum, not a maximum, right?

Mr. WIBBELMAN. Right. We did adjust from 1,500 to 3,000, so we presumably could adjust further upward if the LME changed the rules, yes.

Senator LEVIN. Well, you could do that without LME changing the rules.

Mr. WIBBELMAN. Yes. But our business model is based on the LME rules and our conforming to them.

Senator LEVIN. Yes, but you could do that. You are not violating the rules by loading out more than 3,000 tons, are you?

Mr. WIBBELMAN. No, but Ford could sell cars for \$2,000 also. They do not do it.

Senator LEVIN. I am not suggesting that—and I do not know what Ford's pricing is. What you said may be true, it may be not true. I am sure they subsidize some cars and make profit on other cars. But that is a different issue. The point here is you could load out more than 3,000 tons if you want to, right?

Mr. WIBBELMAN. If we adjusted the business, yes, we could.

Senator LEVIN. And the queue then is significantly in your control, the length of the queue.

Mr. WIBBELMAN. We have——

Senator LEVIN. You say you have no control over the queue. You enter contracts which require people to increase the queue. If they live up to the contract——

Mr. WIBBELMAN. But there are many other participants in the contract that—and in the queue with whom we did not have any such contracts.

Senator LEVIN. I understand. I am just talking about the contracts that you did have, probably hundreds of thousands of tons.

Mr. WIBBELMAN. But there are also many other pricing components in the whole marketplace, other warehouses around that have as much as 4.5 million tons of metal that is available without going through the queue.

Senator LEVIN. Exactly right.

Mr. WIBBELMAN. So we are not the only actor.

Senator LEVIN. Oh, I know. That is exactly the point, without going through a queue, a queue that is very important to Goldman. Instead we have these incredible merry-go-round deals that I do not know—they never existed before Goldman. Do you know of any other warehouse that goes through those kind of deals, they move

from one warehouse to another, a few hundred feet sometimes, pay people to cancel warrants, and then they penalize them if they do not do that, if they live up to the deal, and then they pay them again to re-warrant at another warehouse? Do you know of any other company that does that?

Mr. WIBBELMAN. Well, Senator, I do not have visibility into what all of my competitors do, but all of the warehouses in the LME system are quite close together, generally. Detroit is really an exception where we have 1,600 square miles of eligible space in the tri-county area. So a lot of these areas are in tiny little ports.

Senator LEVIN. Mr. Gabillon, in addition to sitting on the Metro board, you have a full-time job, I believe, as an executive at Goldman Sachs. Is that correct?

Mr. GABILLON. That is correct.

Senator LEVIN. And right now you are head of the Global Commodities Principal Investments Group at Goldman?

Mr. GABILLON. That is correct.

Senator LEVIN. And in 2010 you led the analysis to acquire Metro. Is that correct?

Mr. GABILLON. That is correct.

Senator LEVIN. And at the time Goldman acquired Metro, according to Goldman's records, Goldman owned no physical aluminum and in the months leading up to it had less than 50,000 metric tons of aluminum. And after acquiring Metro, Goldman's physical aluminum trading spiked to over 1.5 million metric tons in December 2012. Is that true, sound true?

Mr. GABILLON. I do not know the specific numbers, but that sounds the right direction.

Senator LEVIN. Sound about right?

Mr. GABILLON. I do not know the exact numbers, but the direction of travel, yes.

Senator LEVIN. Well, would you say it sounds about right? I know the directions are right, but the direction would be right if they moved from 50,000 to 100,000. I am saying here the direction, according to Metro, Goldman's physical aluminum trading spiked to over 1.5 million metric tons from zero or at the most 50,000 metric tons before it bought Metro, and my question is: Does that sound about right?

Mr. GABILLON. That sounds about right, except I do not know the numbers, but I believe the metal trading group made some hires in 2010 and 2011 that probably resulted into this increased business activity, yes.

Senator LEVIN. OK. Now, you told the Subcommittee that about the time that Metro was acquired by Goldman that Goldman hired two aluminum traders that you had referred to them, and these were traders that you knew from your years in the business with whom—I am sorry. This is to Mr. Wibbelman.

Mr. WIBBELMAN. That was my testimony.

Senator LEVIN. I misspoke. This is to Mr. Wibbelman. That at the time Metro was acquired by Goldman—and let me repeat it because I was addressing the wrong witness. I apologize.

Mr. Wibbelman, you told the Subcommittee that about the time Metro was acquired by Goldman that Goldman hired two aluminum traders that you had referred to them, traders that you

knew from your years in this business and with whom you had good relationships. Is that true?

Mr. WIBBELMAN. Yes, Senator.

Senator LEVIN. OK. I want to talk about these information barriers that is your policy. LME-approved warehouses acquire the following kind of information: Warehouse metal stocks, information about the size of those stocks, the current and future metal shipments, LME warrant cancellations, warehouse queue length information that is not available generally to market participants.

Now, the LME has recognized that traders privy to this kind of warehouse information before it becomes available to the broader market could use that non-public information to benefit their trading strategies, which would gain an unfair advantage over the rest of the market and over their counterparties.

Now, as I said before, this type of information about warehouse queues is so sensitive and valuable that the LME will not publish it. And in a 2013 report, the LME said it does not publish detailed information on warehouse stock in queues because “the danger is that those merchants and trading houses with the most well-staffed analytical capabilities will take advantage of the availability of data to derive a trading advantage.”

To prevent confidential information from the warehouse from improperly flowing to traders, the LME requires warehouses to create information barriers. Metro has a policy implementing that requirement, and I happen to agree with what I believe Senator McCain was driving at before about the potential value of that information and how that value is very readily available to somebody who could profit from it.

Now, we have 50 Goldman personnel who have been approved to receive confidential information about the warehouse. If you will look at Exhibit 40,¹ pages 2 and 3, those are two lists of Goldman personnel who are allowed to receive confidential Metro information. Exhibit 40. And that list includes, if you look at it, people who trade commodities and who supervise commodity traders. Is that right? That is for you, Mr. Gabillon.

Mr. GABILLON. This list includes some people that are involved in trading, but not in metal trading.

Senator LEVIN. OK. But they are involved in trading?

Mr. GABILLON. I believe there is one board member who is involved in natural gas trading.

Senator LEVIN. And that is a commodity?

Mr. GABILLON. Yes.

Senator LEVIN. He is a commodity trader?

Mr. GABILLON. But he is not a metal trader.

Senator LEVIN. Right. Not metal, but he is a commodity trader. Now, I do not believe that we should have to rely on Goldman employees not sharing this information with other Goldman employees, information which is important to the economic interest of the company that they work for. I just do not think we can rely on a private policy to make sure that this does not happen. The stakes here are too great, and it ought to be—as far as I am concerned, it should be illegal to share this kind of information. It is also un-

¹ See Exhibit No. 40, which appears in the Appendix on page 1236.

ethical, that is clear, but when you have a huge economic interest that is on the other side of ethical interests, too often the ethical interests give way.

Now, Mr. Wibbelman, in June 2013, Mr. Whelan—that is Mark Whelan, I believe—quit. And take a look at Exhibit 30,¹ which is Mr. Whelan’s resignation email. And here is what he writes. He says: “I have some questions and concerns regarding the Chinese Wall Policy that is in place which regulates the interaction between Metro International, its customers, and J Aron.” Now, J. Aron—and I want to finish the email, and then I will tell you who J. Aron is. But he says: “I have some questions and concerns regarding the . . . Policy that is in place which regulates the interaction between Metro . . . , its customers, and J Aron.” And then he goes on to say, “This morning’s confrontation was extremely questionable.”

Now, J. Aron is Goldman’s leading commodities subsidiary that executes its trades. Is that correct, Mr. Wibbelman or Mr. Gabillon?

Mr. WIBBELMAN. Yes.

Mr. GABILLON. Yes.

Senator LEVIN. OK. And what was the confrontation all about, Mr. Wibbelman?

Mr. WIBBELMAN. So the trader in the middle of our night approached Mr. Gabillon with a complaint effectively about Metro in a transaction. But it was referred immediately to Goldman Compliance, who investigated the issue, and the issue was about Goldman’s, J. Aron’s trading information. In other words, the Chinese Wall Policy is meant to protect information from Metro from flowing up to Goldman. This was about J. Aron’s own trading information, and so it was not really confidential information; it was really just flowing in the other direction than the policy is intended to block. In other words, Goldman could tell people about their own trading positions if they chose to.

Senator LEVIN. And there is nothing in the Chinese Wall Policy, even if it is implemented properly, that stops Goldman from sending direction and information to you?

Mr. WIBBELMAN. Well, this is about their own business in which we were usually conversing.

Senator LEVIN. They own you, right?

Mr. WIBBELMAN. Yes. But we are owned by the private equity side of Goldman, not the trading arm.

Senator LEVIN. I understand. Goldman owns you.

Mr. GABILLON. But I think—

Senator LEVIN. No, wait. Goldman owns you. Is that right?

Mr. WIBBELMAN. We are owned by a subsidiary of Goldman, yes.

Senator LEVIN. And there is nothing in even the Chinese Wall Policy, if it were implemented, if you could rely on it, which affects information flowing from Goldman to you?

Mr. WIBBELMAN. That is not what the Chinese Wall Policy is intended to do. That is right.

Senator LEVIN. And is there anything that prevents information coming from Goldman to you?

¹ See Exhibit No. 30, which appears in the Appendix on page 1060.

Mr. WIBBELMAN. They have their own confidentiality policies about their own information, but that is not what this is about.

Senator LEVIN. But the Chinese Wall Policy does not stop that flow?

Mr. WIBBELMAN. It does not.

Senator LEVIN. OK.

Mr. WIBBELMAN. It is not intended to.

Senator LEVIN. Is there anything that stops Goldman from giving you direction, saying we want you to do X, Y, and Z? Is there anything that stops them from doing that?

Mr. WIBBELMAN. So the way that it was set up, Senator, is that Metro operates in a silo, and J. Aron operates in a silo, and occasionally we have—we do sort of commercial business like with any other customer. And so we really do not listen much to J. Aron about anything other than their own business.

Senator LEVIN. But there is nothing that stops that information from flowing?

Mr. WIBBELMAN. There is no——

Senator LEVIN. There is no policy that stops the information from flowing to you?

Mr. WIBBELMAN. I do not know about J. Aron's internal policies.

Senator LEVIN. You do not know about a policy?

Mr. WIBBELMAN. Not about their policy——

Senator LEVIN. Or Goldman's policy.

Mr. WIBBELMAN. So I know about what Metro can——

Senator LEVIN. No. I know what Metro can convey in that direction. I am talking about the other direction.

Mr. WIBBELMAN. Correct. I do not have any visibility into that.

Senator LEVIN. All right. So the Chinese Wall Policy, even if it is not a tissue paper, is a one-way information barrier.

Mr. WIBBELMAN. It is, but we are the ones with what is supposed to be the confidential information, right? So they have information which may or may not be confidential, and that is for them to determine.

Senator LEVIN. Did Goldman traders routinely talk to Metro employees about their metal and about seeking discounted or free rent? Is that a routine matter?

Mr. WIBBELMAN. It is at least an occasional matter, and at various times it has been—we talk to them about their own metal or about just their ability to acquire metal, yes.

Senator LEVIN. And about discounted or free rent? Have you talked to Goldman traders about that?

Mr. WIBBELMAN. Have, yes.

Senator LEVIN. Goldman approved the freight incentives? The freight incentives, the subsidies, that was approved, as you said already, by Goldman?

Mr. WIBBELMAN. Yes, we had transactions in which there were freight incentives involved, yes.

Senator LEVIN. All right. And it approved each and every one of the six merry-go-round deals and decided not to take steps to shorten the queue, when it could have? Goldman can shorten that queue anytime it wants. You have already acknowledged that. They can load out more. They can tell you to load out more. And you have the power to load out more and to reduce the queue. At the same

time all of this is happening, Goldman is trading in aluminum-related financial instruments whose prices are impacted by those decisions. If that is not a recipe for manipulation, then I have not seen recipes for manipulation. It is just vivid. I mean, they are engaged in financial transactions involving aluminum. They can change the queue and the length of the queue which affects the premium, and that premium, even by Goldman's argument, is an important part, it is a growing important part, now 20 percent, of the all-in price for aluminum. I mean, that is just a recipe, again, for the kind of manipulation which—we have to prevent that, I believe.

Now, company policy I know says on a slightly different issue, information about your transactions, Mr. Wibbelman, are not supposed to go to Goldman. I understand that. But a whole bunch of their employees get that information who are engaged in trading. Maybe not trading metals. Engaged in trading. And just to rely on a company policy in terms of information sharing, which is very beneficial and useful to a trader, is not good enough for me.

Do you think we ought to make it illegal for a company to be using that kind of non-public information?

MR. WIBBELMAN. Well, Senator, to answer that, I would say that one thing you need to do if you do that is to take a look at the whole complex of actors in the international system and not just banks, because the banks act somewhat commercially, and economically they do. But there are other actors that act with sovereign interests and as unregulated traders. And they also own warehousing companies, and they also have large inventories, and they have trading positions, and they act vertically.

So we act separately with intentionally separate economic interests, and they act vertically with a lot of cooperation.

Senator LEVIN. Well, we cannot protect our economy from other—we can, but not in this particular discussion. There are other ways of protecting our economy from wrongdoing from other countries. But we have to protect our economy from banks—

MR. WIBBELMAN. Well, Senator, what I would say is that—

Senator LEVIN. Excuse me. We have to protect our economy from banks that engage in huge involvement in commodities which can open up some real possibilities about their own health, and that means the economy's health. But I am particularly interested in this potential here and this reality of manipulation, because there is just no doubt that queues were affected, influenced, and manipulated in contracts which this warehouse company entered into, a warehouse company owned by Goldman. There is no doubt that these six deals that we talked about, which you obviously welcomed as a warehouse company and Goldman approved, had a direct influence, as we can see from the chart, on the length of the queue, given the correlation between the length of that queue and the premium price of aluminum and the importance of that premium price, by everybody's measure—even Goldman acknowledges it affects the all-in—not the total all-in price, but it affects the size of the LME price, because Goldman argues that if the premium price goes up, the LME price then goes down. That is Goldman's argument. So, therefore, the length of the queue even by Goldman's ar-

gument has an impact on how the pieces of that price, that all-in price, come together. And Goldman is trading on those pieces.

Mr. WIBBELMAN. Senator, I would say one thing, and that is that—

Senator LEVIN. You do not have to—you can respond. I will give you a minute. But I am talking about Goldman here.

Mr. GABILLON. Senator, can I—

Senator LEVIN. We will give you a chance to respond.

Mr. GABILLON. Thank you.

Mr. WIBBELMAN. I would just like to say one thing, which is that there are, as I mentioned, many international actors in the system and you have to give us credit—Metro credit for having brought in 4.6 million metric tons of aluminum into the system, and that created, again, a buffer stock for these consumers without which they would have only a single source of supply, the actual producers of metal. Someday those producers might only be in Russia, right?

And so we brought a strategic stockpile into the United States. I mean, China has an actual entity which actually collects strategic stockpile—

Senator LEVIN. The issue is not whether you bring a strategic stockpile into the United States. The question is the rules of the game relative to that strategic stockpile, and we cannot allow that stockpile to be used to manipulate a premium on aluminum. We cannot allow that because that premium, in the eyes of most, affects the price of aluminum, and even in the eyes of Goldman affects the LME price, because Goldman argues the LME price goes down as the premium goes up, and that means that the overall price, the all-in price is not affected by these kinds of maneuvers.

OK. If Goldman is right, then they still have this huge potential to use the queue length in order to affect the premium, and they deal in these premiums, and they deal in the LME price in their financial transaction side. That is what we cannot allow. I do not have any problem in your business gaining more aluminum. It is the way in which Goldman is using this product, this particular facility.

Mr. GABILLON. So, Senator, if I may, sir?

Senator LEVIN. Yes.

Mr. GABILLON. So we are absolutely aware of the risk that you mentioned, and this is why we have all those information barriers. And as I mentioned earlier, we do not rely only on the Goldman Sachs surveillance that takes place. PwC has audited the information barriers twice in the last—it is now a requirement under the LME rule. It has happened twice already. It is going to happen every year going forward. And all those audits have been successfully passed.

Our information barrier policy goes above and beyond the LME. I am responsible on the board. I see all the information. There is no confidential information that goes to those 50 people.

Senator LEVIN. You do not mean that there is no confidential information that goes to those 50 people. Those 50 people get confidential information.

Mr. GABILLON. No. I think most of the 50 people here are in our financial control and compliance and legal to actually help the risk—to control the risk on this company.

Senator LEVIN. Are they all allowed to get that confidential—

Mr. GABILLON. No, they are not. Compliance conveyed—even the information I receive, Senator, is not actionable as a trader. It is delayed, it is sanitized, it is aggregated. It is not per location. It is all controlled. We have a system in place on that.

Senator LEVIN. Different people get that information in different real time. Is that correct?

Mr. GABILLON. Not real time—

Senator LEVIN. No. Some of those 50 people get it in real time.

Mr. GABILLON. No, nobody ever gets—

Senator LEVIN. Are they allowed to get it in real time?

Mr. GABILLON. No, they are not.

Senator LEVIN. OK. We are going to take that up later.

Mr. GABILLON. We are up here to discuss it. The other point I would make—

Senator LEVIN. OK. I want to go back to one thing that Mr. Wibbelman said, by the way, when you say you are a reasonable source of supply, with a 600-day wait—

Mr. WIBBELMAN. But people are choosing to cancel warrants during that time because they perceive the relative value, right? Here is the issue. The other warehouses in the world, the metal is not available without the consent of the seller, right?

Senator LEVIN. Of course.

Mr. WIBBELMAN. The difference was Metro's warehouses really from day one, the metal has been freely available, and that is what has been giving people the chance to make a value decision on whether it has been worthwhile or not to cancel.

Senator LEVIN. Is it freely available with a 600-day wait? Is that aluminum available?

Mr. WIBBELMAN. Those are the warrants at that time that were in circulation. If you would trade on the LME—

Senator LEVIN. I am just asking, is that aluminum freely available? That is all I am asking.

Mr. WIBBELMAN. It is available to own, and they make a decision—

Senator LEVIN. Not own. To get.

Mr. WIBBELMAN. It was available to get, but—

Senator LEVIN. Not was. Is.

Mr. WIBBELMAN. Well, the warrants were available to get.

Senator LEVIN. Not warrants. Is the aluminum available?

Mr. WIBBELMAN. But they generally know that, and then they do not—

Senator LEVIN. I am asking, is that aluminum, which is subject to a 600-day wait, available? That is all I am asking. And the answer is no, that aluminum is not.

Mr. WIBBELMAN. It is relatively more available than the metal in all of the other warehouses where the seller does not want to sell.

Senator LEVIN. Well, it is more available—if you cannot buy it anywhere else, then it is more available if there is no other aluminum you can buy. I am just asking you—

Mr. WIBBELMAN. What I am saying is there are a lot of actors in the system, and they have big stockpiles of metal, and they are not selling.

Mr. GABILLON. I think Mr. Wibbelman refers to all the other warehouses in the LME system that are not flowing at all, not even with a queue with no flows.

Senator LEVIN. Fine. If you cannot buy aluminum anywhere else, that is fine. I am just asking whether aluminum with a 600-day wait is freely available. That is all I am asking. And the answer is no, that aluminum is not. It is a 2-year wait. That is the answer. It is the obvious answer. That is OK. I am not going to get even obvious answers. I understand that.

Here is what we have, and I am going to wind up here. Goldman acquires a business, and everything changes, and that is Metro's business we are talking about. Metro had not ever paid enormous freight incentives before. They had paid some, but they went up in a huge way, the amount of freight incentives, subsidies. Metro had never entered a merry-go-round deal before. These were unique. It had never had enormous queues before. A couple of Metro salespeople who had been in the company for a decade quit after raising concerns about these practices.

Now, here is where Goldman sits in all this. Goldman is in the catbird seat. It controlled or had a say over every variable about Metro and through Metro. It impacted aluminum prices, current and future. It impacted the premium. It impacted the LME price by Goldman's argument. Other people will argue—and we will hear from them—that it directly also had an impact on the all-in price, but even by Goldman's argument, again, it impacted the LME price. And I think it is clear that I am not a statistician—every statistician says there is a huge correlation between the length of that queue and the premium.

Goldman employees had a say over how much incentives Metro would pay to attract aluminum, and they approved previously unprecedented levels of incentives. They had a say and agreed to the merry-go-round deals. They approved them to keep aluminum in the warehouses, block the exits, and that resulted in longer queues and higher premiums.

Goldman itself—and this one is now undisputed, by the way, undisputed, even with these witnesses. Goldman canceled warrants and lengthened the queue. Goldman could have shortened the queue that it helped create by directing Metro to load out more metal, but it did not. All the while Goldman is engaging in its own trading of financial instruments related to aluminum, including trading in futures contracts.

We thank you. We thank you for your cooperation with the Subcommittee, by the way. Both of your companies have been cooperative with the Subcommittee in terms of providing information to us, and we appreciate that, and we will now move to our second panel.

Mr. GABILLON. Thank you.

Senator LEVIN. We will now call our second panel of witnesses for today's hearing: Jorge Vazquez, Founder and Managing Director, Harbor Aluminum Intelligence Unit LLC, Austin, Texas; and Nick Madden, Senior Vice President and Chief Supply Chain Officer, Novelis Inc., Atlanta, Georgia. We very much appreciate both of you being with us today. We look forward to your testimony.

According to our rules, everyone who testifies in front of us is sworn in, so we would ask you both to please stand and raise your

right hand. Do you swear that the testimony you will provide to this Subcommittee will be the truth, the whole truth, and nothing but the truth, so help you, God?

Mr. VAZQUEZ. I do.

Mr. MADDEN. I do.

Senator LEVIN. Your written testimony will be made part of the record in its entirety. The red light will come on in front of you about 5 minutes from now. We would ask that you try to limit your oral testimony to 5 minutes, if you could, and before that red light comes on, there would be a light change from green to yellow about a minute before the end of the 5 minutes.

So, Mr. Vazquez, why don't you go first, and then Mr. Madden.

TESTIMONY OF JORGE VAZQUEZ,¹ FOUNDER AND MANAGING DIRECTOR, HARBOR ALUMINUM INTELLIGENCE LLC, AUSTIN, TEXAS

Mr. VAZQUEZ. Thank you. Good afternoon, Chairman Levin, Senator McCain, and other Members of the Subcommittee. Thank you for your invitation to provide my views on areas related to aluminum warehousing and market premiums.

I would like to summarize my opinions in the following four points:

Since 2010, the North American aluminum consumer has lacked an efficient market of last resort to go to. Harbor estimates that North America will end 2014 with an aluminum production deficit of 2.4 million tons of aluminum. Although 1 million tons of metal is stored in LME Detroit, an aluminum consumer who would like to source metal from these warehouses faces a load-out waiting time of 665 days. As a reference, prior to 2010, waiting times averaged less than 2 weeks. This long waiting time of 665 days and the capital requirements to source the metal out from these warehouses makes it prohibited for the consumer to effectively use the LME as a backup. This is taking place as North America is experiencing a growing aluminum deficit.

A critical mass of metal was allowed to be formed in Detroit Metro. This has created unprecedented effects. By January 2009, as a result of the aluminum market surplus generated by the economic crisis, LME Detroit had accumulated 342,000 tons of aluminum in its warehouses. Baltimore had also the same volume, but diluted among survival warehousing companies.

This concentration of metal in one warehousing company gave Metro the ability to offer more warehouse incentives than any other company, the ability to outbid the aluminum consumer, and the start of a self-feeding cycle that allowed the company to permanently increase the metal stored in its warehouses in spite of a growing market deficit.

One month after Detroit's critical mass and dominance position was established, Goldman Sachs acquired Metro. When Goldman acquired Metro, LME Detroit had an equivalent of less than 44 days of a load-out queue. Five months later, LME Detroit started to experience ongoing massive and unprecedented cancellations

¹ The prepared statement of Mr. Vazquez appears in the Appendix on page 148.

which lengthened the queue to an unprecedented waiting time of 702 days by May of this year.

In my view, the lengthening of Detroit's queue to unprecedented waiting times has impacted market premiums, the all-in price of aluminum, and the aluminum consumer. While the logistical cost to source metal from Russia and the Middle East, North America's main aluminum suppliers, has remained stable since 2009, the cost of sourcing metal from LME Detroit has increased more than ten-fold.

As the cost of sourcing metal from LME Detroit increased, so did the reference point for consumers, traders, and producers to negotiate with. As a result, the Midwest Premium is today ten times higher than what it was in 2009.

Harbor estimates that the lengthening queue in Detroit has cost the North American aluminum manufacturer at least \$3.5 billion since 2011. There are warehouse practices that may pose a conflict of interest.

Paying warehouse incentives to attract metal is a standard and historical practice. What is certainly not a common practice, however, is when LME warehouse operators offer and pay an incentive to warehouse customers to cancel metal and wait in the queue. That practice poses serious conflicts of interest because incentivizing the lengthening of load-out queues can materially impact market premiums.

Thank you.

Senator LEVIN. Thank you. And, by the way, if you would just spend a minute telling us what Harbor Aluminum does, what is your role and goal?

Mr. VAZQUEZ. I am the Founder and Managing Director of Harbor Aluminum, which is an independent, privately owned consulting firm that specializes in analyzing the aluminum industry and its various markets, and in providing market intelligence to our customers. We serve over 300 clients along the entire supply chain in every region of the world.

Senator LEVIN. Thank you.

Mr. Madden, we will hear from you next..

TESTIMONY OF NICK MADDEN,¹ SENIOR VICE PRESIDENT AND CHIEF SUPPLY CHAIN OFFICER, NOVELIS INC., ATLANTA, GEORGIA

Mr. MADDEN. Chairman Levin, and Ranking Member McCain, I very much appreciate this opportunity to speak to you today and to answer your questions.

My name is Nick Madden, and I am the Senior Vice President and Chief Supply Chain Officer of Novelis. Our company is headquartered in Atlanta. We are the world's leader in aluminum rolling and recycling, and we are also the largest buyer of aluminum in the world, with a buy of about 3 million tons. I am responsible for that, and I have been in the industry for 36 years.

For the last 3½ years, Novelis has been very public in our advocacy to restore normal functioning to the market, specifically around the London Metal Exchange warehouse practices. The

¹ The prepared statement of Mr. Madden appears in the Appendix on page 164.

warehouse issue is having a profoundly negative impact on our customers' businesses, and our customers include some of the most famous brands in the world, with beverage companies like Coca-Cola and Anheuser-Busch, automakers like Ford, General Motors, Chrysler, and BMW, and consumer electronics manufacturers like Samsung and LG.

As an aluminum roller, we seek to keep ourselves neutral to movements in the London Metal Exchange price. But last year, our Asian operations took a \$40 million hit as a result of this issue.

The consequences are equally serious for consumers in the United States. Supply and demand in the aluminum market has been completely upended in recent years, and since 2010, when the banks and trading companies bought into the warehouses, aluminum premiums have tripled. Now premiums are at the highest levels ever in history, and last year this was coincident with inventories being at the highest level ever in history. It is an unprecedented situation in the history of the global aluminum market.

So for companies like us—we are an aluminum converter—we have three key issues:

First, inflated premiums. We estimate that consumers around the world—and this is a conservative estimate—are paying at least \$6 billion a year more than they should be.

The second is supply chain risk. If I buy metal from Detroit today, I have to wait until September 2016 to pick it up.

And then, finally, price exposure. With the premium now at 20 percent not 5 percent of the all-in price, we can no longer manage price risk effectively.

But the most serious issue is the inflated cost. Whether it is for a truck or a smartphone or a beverage can, the American consumer ultimately will pay the price, and we liken this to a hidden tax on the price of today's aluminum products.

All this is happening at a time when the aluminum industry is in actually a very healthy situation. We see strong growth around the world, but the most exciting growth is in the automotive sector, specifically in North America. And my company has invested \$400 million to meet that growth and added 375 highly skilled jobs in our plant in Oswego, New York.

So you can imagine our frustration when we see threats to the supply chain and to the competitiveness of aluminum as a result of what appears to us to be an engineered squeeze in our market. While the LME has finally begun to act, progress is slow, and the situation on the ground gets worse every day.

So what is the fix? Because I know everything cannot be fixed today, but if I had a magic wand and could make things improve, there are three things that we would like to see happen which we think would benefit our company, our industry, and the American consumer.

The first of those is banks and trading companies should not be allowed to own warehouses.

Second, we need to clarify the scope of the CFTC to ensure that there is no vagueness over its coverage of the warehousing attachment to the LME market.

And, third, warehouses should not be allowed to charge rent once a warrant has been canceled, and we believe if you implement that, the incentive for this whole problem would disappear overnight.

So, again, as the world's largest buyer of aluminum and on behalf of Novelis, I thank you for this opportunity and would be very happy to answer questions.

Senator LEVIN. Well, thank you both for coming and for your testimony. It is very powerful testimony.

Mr. Madden, I think you perhaps have already answered this, but I am going to ask a question in a way that perhaps you could expand a bit on what your testimony is. I think as a result of our investigation and Report probably you have learned for the first time about the participants and circumstances behind some of the warrant cancellations at the Metro warehouses in Detroit since 2010 that contributed to the hugely longer queue, including some of those merry-go-round trades, the large cancellations by Goldman and JPMorgan as well as Metro's premium-sharing arrangements. And on a practical level, you have given us some of the impact already on your customers and on you.

Were you surprised when you heard about these practices?

Mr. MADDEN. I was kind of surprised, but not entirely. I would say it equated with our worst fears of what could be happening, because this behavior of massive cancellations is unprecedented. And you asked that question earlier. I know of no occurrence in history at the aluminum—since the LME started trading in 1978, which is when I started working in the industry, I know of no precedent. So, yes, this surprised—the actual activity surprised us. But am I completely—something strange was going on, but it was very opaque to us because all these transactions happened in a non-reported way.

Senator LEVIN. Well, were you horrified by what you saw?

Mr. MADDEN. Well, it makes us look naive; being the biggest buyer in the world, we did not know this was going on. But we do believe that the activity was definitely prolonging the queue, and we do believe absolutely that there is a direct linkage between the premium and the queue, and, therefore, we think this issue—and this is what we have been kind of talking publicly about for the last 3½ years, that the issue around Detroit—and now it has moved to Vlissingen in Europe as well—is pushing up premiums to levels never seen in history.

Senator LEVIN. Now, Mr. Vazquez, if you can tell us in your judgment the relationship—two relationships: First, between the length of the queue in a warehouse and the premium, what is the relationship between the premium and the so-called all-in price? Those two things, first between the queue and the premium, and then between the length of the queue and the overall all-in price. Sometimes I call it “market price.” I guess it is somewhat different from market price, but for most intents and purposes, market price.

Mr. VAZQUEZ. Our work, our mathematical work, our empirical tests are really clear to indicate that queue length determines or impacts greatly the premium. And not only there is a strong correlation between the length of the queue and the premium, but there is causation, meaning mathematically, econometrically, the queue causes the premium. And the reason for that is that—

Senator LEVIN. When you say “causes”——

Mr. VAZQUEZ. Yes, causes.

Senator LEVIN. It is a part of the premium.

Mr. VAZQUEZ. Yes.

Senator LEVIN. Or has a direct relationship to the length?

Mr. VAZQUEZ. Yes. It is both, yes. Not only there is a correlation, because sometimes there are two variables that may be correlated, but they are not really—one does not cause the other. But in the case of the queue and in the case of the premium, not only there is correlation but there is causation, meaning——

Senator LEVIN. Why is that?

Mr. VAZQUEZ. Because the premium is the full logistical cost of sourcing metal. When a consumer or a buyer looks to buy metal, they have three options: They can go to the trader, they can go to the smelter, or they can go to the LME. How much it costs to move the metal all the way from the smelter to the consumer plant is an important factor behind the premium.

The full logistical cost of moving metal from the trader’s warehouse to the consumer’s warehouse also impacts the premium. And the full cost of buying a warrant, canceling the warrant, paying storage fees, paying the FOT charge, which means how much you pay to load out the metal and put it in a truck, and then from there to your own warehouse, to the consumer warehouse, is another important logistical cost.

So the combination of these logistical costs determine the premium. So the backup that the consumer has is the LME. That is the market of last resort. If the trader or the producer is charging too much in terms of premium, the consumer can go to the LME and source the metal himself, paying storage. But if the backup has a prohibitive cost, if the queue is so long that you have to pay, like today, 665 days of rent, then the trader and the producer know that your option is not really an option, and it is too expensive. So the point of reference, the point of negotiation goes up.

In the past, when queues were less than 2 weeks or were less than 30 days, the consumer, whenever they were negotiating with the trader and the producer, said, “You want to charge me so much for premium? Forget it. I can go to the warehouse and source it myself. And the equivalent cost is such that it is cheaper than what you are charging me.”

So the consumer has always used the LME as a leverage, as a point of reference when negotiating with the producer and the trader. But if you take that away, then the trader and the producer can charge at least what is the cost for the consumer to load out the metal from the LME warehouse into his plant. So that is the backup that the consumer has.

Senator LEVIN. Goldman is arguing that when the premium goes up, the LME price goes down because the all-in price will always be about the same. That is their argument. If you buy it——

Mr. VAZQUEZ. Senator, evidence tells us the opposite. Why the opposite? There is no clear, robust empirical data that tells us that the LME moves inversely to the premium. They move in tandem. There is no—the LME price impacts the all-in price. The premium impacts the all-in price. There is no objective data, analysis, that

tells us that the LME falls when the premium goes up. Quite the opposite.

Senator LEVIN. Before I turn it over to Senator McCain, do you agree with that, Mr. Madden?

Mr. MADDEN. I do.

Senator LEVIN. That the argument of Goldman that when the premium goes up, the LME price goes down because the all-in price always stays about the same—you just do not buy that?

Mr. MADDEN. No, I do not. I can think of a parallel in history, so the last time we saw stocks at the levels we have today was in the early 1990's after the collapse of the Soviet Union, and lots of metal flooded out of Russia into the United States, and so on. At that point the LME price was down at \$1,070 a ton at the low point. And the Midwest Premium was between 0 and half a cent. So when the demand is very weak or there is so much oversupply, you would expect both the premium and the underlying price to be weak. What we have today is, as I said, the highest stocks in history, and, therefore, one would expect the fundamentals are not great. But we have the highest premiums ever in history. There is no parallel, there is no time ever in the history of this market that we have seen a Midwest Premium of 23 cents, and historically it ranged from 0 to 7 cents a pound. So this is a whole new phenomenon that we are trying to get to grips with.

Senator LEVIN. Thank you. Senator McCain.

Senator MCCAIN. So as a followup, it probably would not be possible, could it, unless one company or corporation had 85—as Goldman Sachs does, controlled 85 percent of the LME aluminum in the United States. I do not see how you can draw any other conclusion. Is that yours?

Mr. VAZQUEZ. Yes, it is. See, it is really difficult to move the LME price, to manipulate the LME. But the volumes that move the premium, 100,000 tons under current conditions can move the premium. It is much easier to move the premium than to move the LME price. And if you have 85 percent of the volume that is in North America within LME warehouses, well, that is an interesting data point to observe.

Senator MCCAIN. Something that really is startling about this to me that has really made an impression during the course of this hearing: Why would anyone that is interested in service to the customer and a product at the lowest price, why would that organization, in this case Metro, pay its clients to move metal from one Metro warehouse into another warehouse, which sometimes is a mile away? What could possibly logically, if you are trying to do any—impose any efficiencies, why would you want to pay people so that you can move it from one warehouse to another? Please, maybe for the record, you can explain that practice, which I think is called “merry-go-round deals.” Maybe you, Mr. Madden?

Mr. MADDEN. Yes, I mean, I read about this first in David Kocieniewski's article in the *New York Times*, and I honestly did not really understand what he was saying at that point. And now I see it in black and white, I understand. And I can only assume that if it was my business, I want to keep hold of that metal in any way I can because it is generating rent. But I also have to satisfy the LME obligation.

Now, this is my theory because I do not actually know exactly what the driver is, but my theory would be if I make metal move out at the LME rate but it does not really move out, it just goes somewhere else, and then ultimately gets re-warranted, I have retained control of that pool of metal and, therefore, I can continue to count on rent provided there is a queue. And so if I can then—

Senator MCCAIN. So you are going to make—even though you are paying your client to move their product from one warehouse to another, you are still going to make more money that would be more than the amount you are paying your client. And so ultimately all that cost is borne by the consumer sooner or later.

Do you want to add to that, Mr. Vazquez?

Mr. VAZQUEZ. Yes, the reason why there is an incentive for a warehousing company to make sure that the metal comes back to the LME warehouse that they operate is because they can make more money off of it. And, of course, they want to keep the critical mass of metal because having the critical mass of metal keeps this business model going on.

Senator MCCAIN. That is why you want 85 percent of the supply. If that was not the case, then obviously this practice would be non-productive.

Now, again for the record—and let us assume that there are some complexities here—there is now a 670-day waiting time from the time that a consumer orders the product, the aluminum, to the time that it would get to that consumer. Is that correct?

Mr. VAZQUEZ. Correct.

Senator MCCAIN. One more time, explain how that has ballooned from—what was it, 30 days? I think something like that. Explain to me how that happens for the record, again. I apologize if it is repetitious, but it is staggering to think that 600 days would elapse between the time you order something that is in a warehouse in the United States of America and it gets to the consumer or the user.

Mr. VAZQUEZ. Well, the size of the cancellations are completely unprecedented. And, the size of the exit door is too small compared to the size of the volume of the metal in the warehouse. That is the second reason. And the third reason, in my opinion, is that the system was not designed to make sure that no critical mass of metal could be concentrated in one warehousing company without having the proper exit door if the time for need for that metal came. So that is my reflection. That is my opinion. The exit door was not appropriate, the system was not appropriate to make sure this did not happen.

Senator MCCAIN. And, obviously, the LME does not seem to feel it necessary to take some action, apparently.

Mr. Madden, do you want to add anything to that?

Mr. MADDEN. Yes, I would be happy to. So we have talked to the LME a lot. I am a member of the LME Aluminum Committee, and the Physical Market Committee which was introduced very recently when they changed the rules, and I see, too, a shift change in the LME leadership. So the business was acquired at the end of 2013—2012, excuse me, by the Hong Kong Exchange. Prior to that, it was owned by—and I think it was mentioned earlier. It was owned by the members. So, for instance, some of the investment

banks that are talking here today and tomorrow were actually significant shareholders of the LME with shareholdings of around 10 percent each.

So the company was kind of regulating, managing itself, so a major change in a policy—like we were pressing for them to move the load-out rate to 9,000 or 10,000 tons a day for a warehouse like Detroit. They were very reluctant to move it. In the end, they conducted an inquiry by European Economics. They got recommendations, and they chose to take what I would say is one of the softer options. We then became—complained about it in the press and so on. So they were extremely slow to react.

Since the changeover, I see a complete change of mind-set for them because the new investors have paid a lot of money for that exchange, and its reputation is being dragged through the mud. It is losing credibility all the time because of this loss of convergence in the market in the physical delivery points like Vlissingen and Detroit.

So I see a kind of energy now developing in the LME to change rules, but when they do try and make a move, they get sued. So they tried to introduce a new load-out rate which would more equalize the inputs and outputs, which today would not make any difference, in all honesty, but in the future we would be less likely to see this recur. But Rusal, an aluminum company—because what a lot of people do not realize is that one of the major beneficiaries of this are the aluminum producers themselves as well as the banks and the trading companies. Rusal sued them because they tried to block the change. And I think the LME's mind-set now is it is really difficult for us to introduce new rules because whatever we do, there is going to be a stakeholder with some vested interest who is going to take action against us.

Senator MCCAIN. So what is your recommendation? I think this problem has been pretty graphically demonstrated, Mr. Chairman. What is your fix? We will start with you, Mr. Vazquez.

Mr. VAZQUEZ. I think the exchange needs help, needs a higher authority to help the exchange make sure—

Senator MCCAIN. What about the SEC getting involved?

Mr. VAZQUEZ. I just think that we need a higher authority. It could be the solution, because I do see a change in attitude from the exchange, a clear change of attitude, a positive change of attitude. But it seems to me that they lack the authority to move as fast and as decisively and effectively as I think they should.

Senator MCCAIN. Well, is one of the answers that no one entity should control 85 percent of the supply? For the record.

Mr. VAZQUEZ. Yes.

Senator MCCAIN. Mr. Madden.

Mr. MADDEN. Yes, I agree with Jorge. I think the LME needs help. It needs regulatory help to help it implement what I know it believes to be healthy changes in the market and probably the most—the one I mentioned which I think is the most helpful is to ban the charging of rents once a warrant is canceled, or at least within some reasonable period, 30 days.

Senator MCCAIN. Don't you think there is a regulation that if someone is moving a commodity from one warehouse to another

and paying the owner of that commodity in order to do so, doesn't this border on manipulation of the market?

Mr. MADDEN. It is difficult to comment because it is kind of new information. I think it is a day old. But it is an extremely imaginative approach to maintaining a profitable warehouse company, is to not allow stuff to leave. I think they are able to take advantage of the LME rules. They are able to use the minimum rate as a maximum.

Senator MCCAIN. And it eventually drives the price of aluminum up.

Mr. MADDEN. Absolutely.

Senator MCCAIN. Which then drives up the cost of anything in an aluminum container.

Mr. MADDEN. Absolutely.

Senator MCCAIN. So we are really talking about who really pays the price here is the consumer.

Mr. MADDEN. Ultimately.

Senator MCCAIN. Well, I want to thank you for your testimony. I think it has been extremely helpful, Mr. Chairman, and it made this situation, I think, a lot more clear for the record. And I thank the witnesses.

Thank you, Mr. Chairman.

Senator LEVIN. Thank you.

Now, in addition to the warehouse company, with these merry-go-rounds, maintaining and increasing the amount of metal in the warehouse company, getting rent, storage fees, that is the warehouse company's interest. Of course, it is owned by Goldman, so if the warehouse company does better, Goldman does better in that regard. But I am at least equally interested in what the cancellation does in terms of increasing the queue, which affects the premium, while Goldman is trading in transactions relating to aluminum. That gives them a huge opportunity, does it not, Mr. Vazquez?

Mr. VAZQUEZ. Yes, if you really know the market, you know that if you cancel massive amounts of metal, the queue is going to lengthen, and you know that premiums are going to go up. So if premiums go up and you have metal outside the exchange, inside the exchange, or trading derivatives, or just simply having a long position, your mark-to-market value of your overall position goes up when premiums go up.

Senator LEVIN. And is there not something even more potent than that, as potent as that is? If you have advance information that queues are going to go up and you are engaged in trading in derivatives, which are impacted by premiums, if you have that advance information and these huge traders like Goldman thrive on information, and if they can get advance information that queues are going up longer, doesn't that give them a huge advantage in terms of their financial transactions in the market?

Mr. VAZQUEZ. Definitely, knowing that there is going to be not only a big cancellation but a set of cancellations of important volumes, if you know that ahead of time, definitely that has a benefit.

Senator LEVIN. And when Goldman employees on that board, that warehouse board, are involved in decisions on cancellations and know there are contracts, which are not public, that require

cancellations, from the warehouse perspective that maintains the amount of metal in the warehouse; but from a trader perspective, to know in advance that agreements are being entered into, which, if lived up to, require cancellations, and that means longer queues, and that means greater premiums, is that information not of huge benefit to a trading company that deals in derivatives and in futures?

Mr. VAZQUEZ. I believe so.

Senator LEVIN. Do you agree with that, Mr. Madden?

Mr. MADDEN. Yes, and it is kind of ironic if you think about the theory that they profess, that the all-in price does not really change, and, therefore, then you would know to short the LME if you are going to increase the queue because the higher Midwest Premium would mean the LME had to go down. So you are absolutely right. Whatever you believe, if you are aware that the queue is going to lengthen, you know the premium is going to strengthen.

But I think the real benefit is, of course, on all the other aluminum they own. So there is a rent, but then when they crystallize the value of the metal that they own, however, the \$3 billion worth of metal, because that is where all that value is being created, because the value of it is going up all the time, because the LME component would be hedged, except the only opportunity for price appreciation and value creation will be the—it is the mark-to-market of the premium increase.

Senator LEVIN. So there is a huge advantage here for Goldman. They own a warehouse that is putting in more and more aluminum, now what, 75 percent of whatever the LME, total aluminum in this country is in Goldman-owned warehouses. Then they have advance information about the length of the queue because they are approving contracts, working on contracts, which will require warrant cancellations, and, therefore, the length of the queue will be increased. And they have advance information on that.

And now what you have added, Mr. Madden, is something which is pretty potent, too. They own a lot of aluminum. Goldman owns a lot of aluminum. And if the price of aluminum is positively impacted through all of this, if the price of aluminum itself is going to go up through those activities, then they benefit, as you call it, mark-to-market, but the value of what they own physically is also going up, so they have an advantage in their trading world, because they are dealing in derivatives and futures and have advance information on things which will happen which will affect the price of those derivatives.

Mr. MADDEN. That is what I believe.

Mr. VAZQUEZ. Plus any physical position they may have.

Senator LEVIN. There is some evidence here that this warehouse company shared premium payments with a metal owner when the metal is delivered to the physical market, so that the premium payments themselves are shared with the metal owner. Is that permitted by the LME, do you know?

Mr. MADDEN. I do not know.

Senator LEVIN. OK.

This is Exhibit 32.¹ This was a page, and I will read it to you. If you were here earlier—and I think you were—you would have heard me read from this. It is the management brief which was supplied to Metro board members, all of whom are Goldman employees. And if you look at that management brief that was presented, it said the following: “Extraordinary income from counterparties sharing physical premium with Metro”—in other words, they were making additional income from the counterparties sharing that physical premium, but this is something that 13 agreements in the United States Metro shared in a fee that was tied to the premium—which would give Metro another incentive to lengthen the queue, by the way, if that is the case, which it was.

You have given us, I think, a number of suggestions as to how to end this situation. Mr. Madden, I believe you gave us three. One was that the CFTC should be able to cover this market, I believe. Are you going to weigh in on that with the CFTC?

Mr. MADDEN. We have already.

Senator LEVIN. OK.

Mr. MADDEN. And I was pleased that they did take action—I cannot remember precisely when—and requested the warehousing companies and the producers who have been supplying the trading company to freeze correspondence and make it available. So they did actually assert themselves.

Senator LEVIN. But they have not acted yet except to tell people to freeze your correspondence. Is that right?

Mr. MADDEN. I do not know what they did subsequently. That was not public, yes.

Senator LEVIN. OK. I want to ask just a few questions about the so-called information barrier requirements. These are not law. They are policy, and that means they are left up to the companies to implement, and these companies have a financial interest which runs the opposite direction from preventing themselves from getting information.

Mr. Vazquez, could a trading company like Goldman that is in a position to approve a warehouse company’s budget for freight incentives or rent discounts use that to improve its trading position in transactions relating to aluminum?

Mr. VAZQUEZ. I believe so.

Senator LEVIN. And do you have an opinion on that, Mr. Madden?

Mr. MADDEN. I mean, it is not where we operate, but I have to believe it creates an opportunity.

Senator LEVIN. I will not ask you to look at it because I will quote from it. I think there has been enough said about it already. Exhibit 36d² is a March 2013 packet which was given to the Metro board of directors, and here is what it provides. It provides projected freight incentives and real discounts. So the Metro board of directors is given projections of incentives, subsidies, and rent discounts. Is that information commercially valuable? Would a trader want to know if you are trading in metals?

¹ See Exhibit No. 32, which appears in the Appendix on page 1063.

² See Exhibit No. 36d, which appears in the Appendix on page 1157.

Mr. VAZQUEZ. Yes, definitely. The more information you have, the better for your trading strategy.

Senator LEVIN. And the amount of metal coming in or out of a warehouse, would that be valuable to a trader?

Mr. VAZQUEZ. It definitely is something you would like to know in terms of trading spreads, and also in terms of trading warrants. See, there are different types of metal coming in in terms of the purity, the quality of the metal. Knowing from what smelter the metal is coming and what trader is bringing the metal, it is also information that is valuable to know.

Senator LEVIN. Would you agree with that, Mr. Madden?

Mr. MADDEN. Yes.

Senator LEVIN. Well, we thank you both very much for your testimony. It has been very powerful testimony. And where we are, we are going to adjourn here for 45 minutes or until after the votes are finished in the Senate. We hope it would be no later than an hour from now. But where we are at this point in the hearing is that what we have seen very clearly is, after Goldman bought Metro, the freight incentives tripled; merry-go-round deals were done for the first time; queues went from 40 days to 665 days; the premium tripled; Metro profited, Goldman profited; and consumers lost out.

That is where we are at. We will pick this up with our third panel at—it is 1:30 now. The votes are now starting at 2 o'clock. We are going to shoot for 2:45. We are going to adjourn until 2:45. I hope everybody will let their Senators know and let the public know and all of our witnesses who are on the third panel know.

We thank all of our witnesses. It has been a very useful morning and early afternoon. We thank you two specifically for coming in to help us.

Mr. VAZQUEZ. Thank you, Chairman.

Mr. MADDEN. Thank you, Chairman.

[Whereupon, at 1:31 p.m., the Subcommittee adjourned, to reconvene at 2:45 p.m., this same day.]

Senator LEVIN. We will come back to order, and I would now like to call our third panel of witnesses for today's hearing: Simon Greenshields, Co-Head of Global Commodities at Morgan Stanley, New York; Gregory Agran, Co-Head of Global Commodities Group at Goldman Sachs, New York; and John Anderson, Co-Head of Global Commodities at JPMorgan Chase, New York.

We very much appreciate your being with us today and the cooperation with this Subcommittee in terms of providing information.

Pursuant to Rule 6, all witnesses who testify before us are required to be sworn. So I would ask all of you to please stand and raise your right hand.

Do you swear that the testimony you're about to give will be the truth and nothing but the truth; so help you, God?

Mr. GREENSHIELDS. I do.

Mr. AGRAN. I do.

Mr. ANDERSON. I do.

Senator LEVIN. Under our timing system, before the red light comes on, you will be seeing a shift from the green light to a yellow

light, and that will give you an opportunity to conclude your remarks.

Your written testimony will be printed in the record in its entirety.

Please try to limit your oral testimony to 5 minutes.

Mr. Greenshields, I think we will have you go first.

TESTIMONY OF SIMON GREENSHIELDS,¹ GLOBAL CO-HEAD OF COMMODITIES, MORGAN STANLEY, NEW YORK, NEW YORK

Mr. GREENSHIELDS. Thank you, Senator. Chairman Levin and Members of the Subcommittee, my name is Simon Greenshields. Thank you for this opportunity to be here today.

I am Co-Head of the Commodities Division at Morgan Stanley. I am proud to work with an extraordinary group of professionals whose experience and expertise has helped to develop an industry-leading enterprise.

Morgan Stanley has been in the commodities market for more than 30 years. We are committed to being responsible market participants, providing price risk management solutions and physical supply services to our clients and counterparties.

We also believe in a strong regulatory framework and the sound management of the full spectrum of risks associated with the business.

At Morgan Stanley, we put safety first, and we are dedicated to operating our business in a sound manner.

I had a brief opportunity to review the Subcommittee's Report, and I look forward to studying it at length in the coming days.

We already know that we can learn a lot from the work of Congress and the perspectives of our peers and regulators.

At Morgan Stanley, we are focused on our core strengths—providing intermediation, risk management and supply services—where we believe that we can provide the most value to our clients.

We are in the process of exiting some parts of our commodities business, particularly the ownership of physical assets. We believe that this approach will work best for Morgan Stanley and positions us where we think we should be in light of the evolving market conditions and regulatory expectations.

We would also agree with you that regulatory guidance should be clear and that oversight should be robust, to ensure the risks undertaken in these markets are prudent and appropriately mitigated. More reporting and clarification through notice and comment rulemaking could also be helpful to promote confidence in the overall market.

At Morgan Stanley, we will not take on the risk of engaging in activity unless we fully understand it and we can manage it effectively.

We appreciate and want to be responsive to the feedback we receive from our regulators and other key stakeholders, and we understand the critical importance of transparency.

We are in the business because we believe we are adding value responsibly. Our clients and counterparties are cooperatives, cities

¹ The prepared statement of Mr. Greenshields appears in the Appendix on page 268.

and corporations, ranging in size from small businesses to global enterprises. We want to help them succeed.

We appreciate the hard work of your staff and look forward to responding to your questions.

Senator LEVIN. Thank you very much, Mr. Greenshields.

Mr. Agran.

TESTIMONY OF GREGORY AGRAN,¹ CO-HEAD, GLOBAL COMMODITIES GROUP, GOLDMAN SACHS & CO., NEW YORK, NEW YORK

Mr. AGRAN. Thank you, Senator. Chairman Levin, Ranking Member McCain, and Members of the Subcommittee, my name is Gregory Agran, and I am Co-head of the Goldman Sachs commodities trading, where I have overall responsibility for the firm's trading activities. Commodity trading activities, excuse me.

As you know, for much of modern financial history, a close connection has existed between capital markets and commodities. The interplay between financial and physical commodity markets is crucial to determining the returns that thousands of companies earn for their products as well as the risk they bear in producing them. By one measure, almost 40 percent of the equity capitalization of the S&P 500 index has meaningful exposure to commodities.

A core function for Goldman Sachs is to act as an intermediary or market maker for a range of clients. We perform this role across markets for interest rate, currency, equity, credit and commodity products, each of which we refer to as an asset class.

Many of these transactions are settled financially, in which the parties make payment based on the terms of the transaction. A certain portion of these transactions are settled physically, where one party delivers an asset to the other in exchange for a payment.

Depending on the asset class, the asset that is delivered may be a bond, a number of shares, or a specified volume or currency or commodity.

We have been an active market maker in commodities and commodity derivatives since 1981. Though these activities involve physical commodities, they otherwise mirror our market-making and purely financial instruments. And it is in this role that we serve as a bridge between producers on the one hand, and consumers and investors on the other, whose interests and exposures offset each other but do not perfectly match.

Our clients in the commodities business include many of the largest companies in the world across virtually every sector. Many of these companies, as well as several municipal and trade organizations, more than 100 in total, have been outspoken about the importance to them of having financial institutions participate in the commodity markets, including with respect to physical markets.

Apart from helping clients finance their inventories or manage their risk, the Subcommittee staff has focused on specific instances in which the firm makes an investment in commodity-related areas.

While this is a relatively small part of our commodities business, we do undertake extensive due diligence and risk analysis beyond

¹ The prepared statement of Mr. Agran appears in the Appendix on page 274.

just an analysis of the economic risks. This includes examining environmental impacts, legal liability, insurance considerations and even whether the business we are considering has operated under high standards of compliance.

I want to briefly address three issues on which the Subcommittee staff has focused. While the significance and role of these issues are minor in the context of our overall commodities activities, I believe it is important to correct any misimpressions.

First, our sales and trading in aluminum are unrelated to the firm's ownership of Metro. Metro was never integrated into our market-making business, and we maintain a strict information barrier between the two.

Confidential information relating to Metro is not shared with Goldman Sachs metal sales and trading personnel. As the information we have provided to the Subcommittee confirms, there has not been a single instance where confidential information went to our metals trading personnel.

Second, we have provided to you information involving uranium trading, a very small part of our business. In 2009, to provide a broader array of products to our mining company and public utility clients, we acquired Nufcor, a company that had acted as a market-maker in uranium and related financial derivatives.

After extensive due diligence, we believed then and remain confident now that this activity does not present environmental risk to an entity acting in the limited capacity in which we act. In this business, our activities are limited to buying and selling unenriched uranium and entering into related financial derivatives.

Of course, unenriched uranium is not a harmful radioactive substance. Moreover, we do not take physical possession of uranium; let alone transport, deliver, or process it.

Finally, our ownership interest is merely reflected as book entries at highly secured depositories that are subject to substantial government oversight.

Notwithstanding these various considerations, given the misconceptions about this business, we have decided to manage down Nufcor's assets to zero.

Finally, I would like to address our stand-alone investment in CNR, a coal mining investment in Colombia. The acquisition of CNR arose from a pre-existing contract to purchase coal over a period of time.

Notwithstanding the Subcommittee's statement regarding CNR, since Goldman Sachs made the investment, CNR has achieved the highest international standards for environmental and safety management and is the only company in the region to have done so.

I would also note that the limited liability protection of the investment's corporate structure, together with the company's capable management team, ensure that our risk in relation to this investment is limited to our invested capital.

We hope our extensive engagement with the Subcommittee staff over these many months has contributed to a greater understanding of the role that financial intermediation plays in the commodity markets in addition to these areas in which you have expressed an interest.

I look forward to answering your questions today with that goal in mind.

Senator LEVIN. Thank you very much, Mr. Agran.
Mr. Anderson.

TESTIMONY OF JOHN ANDERSON,¹ CO-HEAD, GLOBAL COMMODITIES GROUP, JPMORGAN CHASE & CO., NEW YORK, NEW YORK

Mr. ANDERSON. Thank you, Senator. I am John Anderson, and I serve as Co-Head of the Global Commodities Group within JPMorgan Chase.

I am here to discuss the history of JPMorgan's involvement in physical commodities and the status of our ongoing divestiture of much of that business.

While some of the topics identified by the Subcommittee may not be in my particular area of responsibility or expertise, I have attempted to gather the relevant information from others at the firm so that my statements today may not reflect my personal knowledge but, rather, my attempt to help the Subcommittee understand the issues.

As we sit here today, much of JPMorgan's physical commodities assets and business has been sold. Last month, we closed on the sale of a large portion of the business to Mercuria Energy Group. In addition, the firm has sold and continues to sell other portions of the business to different buyers.

Going forward, JPMorgan's commodities business will remain focused on a financial derivatives business; its associated physical activities will be limited to an exchange warrants business in base metals, traditional bank activities involving precious metals, and a commodities finance business that may involve taking title to physical commodities as the underlying collateral to that financing.

At the outset, I think it would be helpful to explain how physical commodities fit into JPMorgan's overall customer business.

The firm manages a customer-driven commodity derivatives business. JPMorgan is not a user of, or a speculative investor in, physical commodities. But, rather, as a market-maker, JPMorgan provides risk management and financing solutions to its customers.

For example, an airline that needs to obtain jet fuel on a regular basis and wants to hedge its exposure to fluctuations in the price of the fuel. By offering a financial derivative to the airline, JPMorgan's commodities business delivers not only a hedge against future price fluctuations but also a predictability that allows the airline to focus on the safe operation of its business. The firm then hedges this exposure.

JPMorgan's physical commodities business involving energy-related commodities expanded substantially when, at the behest of the government during the height of the financial crisis, the firm acquired a varied collection of assets from Bear Stearns. With the sudden acquisition of Bear Stearns and the later acquisition of RBS Semptra, JPMorgan received ownership interests in a small number of power plants and tolling agreements.

¹ The prepared statement of Mr. Anderson appears in the Appendix on page 277.

Today, JPMorgan has divested or re-tolled all but three of these power assets. All three of these remaining power plants are passive investments and are being managed by third parties, and all three are either currently in the process of being sold or marketed for sale.

I would now like to address in detail two specific issues raised by the Subcommittee.

The first is JPMorgan's compliance with regulatory limits.

At JPMorgan we operate our commodities business in conformity with the applicable rules, and we are in regular and ongoing dialog with our regulators about our physical commodities business.

The business is supervised by two primary regulating entities—the OCC and the Federal Reserve.

The OCC oversees the physical commodities activities done within the bank. The OCC requires that physical activities be only a nominal percentage, 5 percent, of the bank's overall commodities activity. These restrictions are designed to ensure that the bank only engages in physical commodities activity as hedges to its financial customer business and that only a small amount of overall activity in the bank is in the physical markets.

The Federal Reserve regulates JPMorgan's physical commodities activities in bank holding company subsidiaries, outside the bank, and imposes a different 5 percent limit of its own. Whereas, the OCC imposes an activity limit, the Federal Reserve is focused on limiting the overall market risk of the company's physical inventory.

JPMorgan has never reached the Federal Reserve's limit.

With regard to the OCC's, and as a result of a large client-initiated trade, JPMorgan exceeded this limit in December 2011. This was and is the only time that this has happened in the roughly 20 years that that limit has been in place. JPMorgan immediately took steps to address this and was in regular communication with both the OCC and the Federal Reserve during this time.

JPMorgan is and has always been committed to candor and transparency with its regulators. At no time has it been JPMorgan's intent to misrepresent the relevant facts or circumstances or to circumvent the applicable Federal Reserve or OCC limits.

Finally, the Subcommittee has asked about JPMorgan's involvement with copper, including the firm's prior plans to launch an exchange-traded fund.

The consideration of issuing a copper ETF was separate and apart from JPMorgan's customer-driven physical commodities business. JPMorgan did not amass a copper inventory in anticipation of the previously proposed ETF nor did it ever attempt to do so.

In no uncertain terms, all of JPMorgan's copper trading is related to its customer-driven business, and it does not engage in proprietary trading in copper or any other commodity.

JPMorgan considered, but never launched, a copper ETF, and there are no current plans to move forward with this product.

The safety and soundness of the firm is JPMorgan's No. 1 priority. We are very proud of the various risk management practices we have in place and our capital strength and fortress-like balance sheet.

I am happy to respond to any questions you may have. Thank you.

Senator LEVIN. Thank you very much, Mr. Anderson.

Mr. Agran, please turn, if you would, to Exhibit 3.¹

Exhibit 3 is a Goldman Sachs submission to the Federal Reserve that compares Goldman's physical commodities trading to its financial commodities trading.

The document shows that in terms of total commodities activity Goldman's physical trading commodity is significantly smaller than its financial trading. For example, Goldman's crude oil trading is about 0.3 percent physical and 99.7 percent financial.

Am I reading that correctly?

Mr. AGRAN. Now which page are you on, Senator?

Senator LEVIN. Page 2.

Mr. AGRAN. Yes, that is correct.

Senator LEVIN. So your financial trades relating to commodities represent a far greater percentage of your commodity activities than the trades of the physical commodities themselves.

Mr. AGRAN. Both by volume and by revenue, Senator.

Senator LEVIN. Now, Mr. Greenshields, would you say that Morgan Stanley's breakdown between physical and financial trading is similar; it does a lot more financial trading than physical trading?

Mr. GREENSHIELDS. Yes, Senator, I would say that is accurate.

Senator LEVIN. And, Mr. Anderson, what about JPMorgan's?

Mr. ANDERSON. Yes, I would agree with that as well.

Senator LEVIN. OK.

Mr. Anderson, take a look at Exhibit 1h² in your book.

This chart was prepared by JPMorgan in 2011, when it owned tolling agreements with 31 power plants across the country and it also owned or leased gas storage facilities for about 78 billion cubic feet of natural gas since it was supplying natural gas to a number of those plants.

Now U.S. banking law is supposed to encourage banks to concentrate on the business of banking—taking deposits, moving funds, and providing credit.

And when I look at that network of power plants and natural gas storage facilities, however, it strikes me as a vast commercial industrial venture, not a banking activity.

Now I am also struck by the risks involved—multiple sites where natural gas leaks, explosions or fires could occur.

An analysis performed by the Federal Reserve Commodities Team in 2012 concluded that JPMorgan, as well as three other similar institutions, had insufficient capital and insurance allocated to cover potential losses from a catastrophic event. It determined that JPMorgan, as well as other financial holding companies, were from \$1 billion to \$15 billion short of what was needed to cover losses from a catastrophic event.

I understand the Federal Reserve contacted JPMorgan to discuss how it was calculating the size of the potential losses from a catastrophic event and disagreed with assumptions that were being used by JPMorgan to a reduced projected total loss of \$497 million

¹ See Exhibit No. 3, which appears in the Appendix on page 833.

² See Exhibit No. 1h, which appears in the Appendix on page 823.

from an oil spill down to a total of \$50 million. That is a 90 percent loss in your estimate compared to theirs.

Has JPMorgan since changed its loss calculation methodology, since that report, and allocated more capital and more insurance to cover potential losses from a catastrophic event?

Mr. ANDERSON. Yes, there are lots of questions behind that, but I think you are primarily focused on the insurance and capital coverage. Is that correct?

Senator LEVIN. Yes.

Mr. ANDERSON. Yes, so at the time of that Fed report, I believe they did feel that the overall institution was not carrying enough operational capital against its operational risks.

In terms of specific to commodities, your example of the \$400 million being diversified down to \$50 million for an oil spill is correct in how the calculation worked.

The overall calculation recognized a potential of 4 to 5 percent—I think it was \$490 million you quoted—loss from an oil spill liability, which would have been the loss if it had been a stand-alone company and actually ended up realizing that liability.

When you then diversified it within the commodities business as a whole, and then further within the investment bank as a whole, it diversified down to \$50 million.

And I know that sounds like a small number, but this model that calculated it is driven by correlation assumptions and make sure that there is enough capital held against the largest possible event, as well as incremental capital.

And the largest possible event across the investment bank was not in commodities, and I do not have the knowledge specifically as to what it was.

But you followed that up by asking if we had put in additional capital since that dialog with the Federal Reserve. I know that our operational capital has almost quadrupled since that time.

Senator LEVIN. Did the Federal examiners tell JPMorgan personnel that the methodology should change relative to an oil spill?

Mr. ANDERSON. Yes, they specifically—most of the operational capital was calculated on a historic look-back method. So, if you had a loss in a mortgage business, it would be taken into account, for example.

The oil business, because it was new to us, we had no historic losses. So we used a forward-looking model and an add-on approach to add incremental capital to our operational capital.

And the Federal Reserve preferred that we not have a forward-looking model, that we use only the historic model.

Senator LEVIN. And did you change your methodology relative to oil spills after the Federal Reserve asked you to do that?

Mr. ANDERSON. Yes, we did.

Senator LEVIN. Now take a look, if you would, Mr. Anderson, at Exhibit 70b.¹

This is a 2009 application filed by JPMorgan with the Federal Reserve, seeking what is called complementary authority to enter into tolling agreements with power plants.

Now pages 7 and 8 is what I will be asking you about.

¹ See Exhibit No. 70b, which appears in the Appendix on page 1555.

Tolling agreements typically involve one party supplying fuel to run the power plant, paying its costs, and getting in exchange all of the power plant's electricity output, which that party would then try to sell for a profit.

The 2009 application from JPMorgan indicates that its subsidiary, JPMorgan Ventures Energy Corporation—and I think the acronym for that is JPMVEC. Is that the way you guys pronounce it?

Mr. ANDERSON. That is correct.

Senator LEVIN. JPMVEC booked its electricity in natural gases.

So this is from your own application, and this is what JPMorgan wrote:

“The complementary activities will further complement the existing business by providing JPMVEC with important market information.

“The ability to be involved in the supply end of the commodities markets through tolling agreements provides”—and these are key words—“access to information regarding the full array of actual producer and end user activity in those markets.

“The information gathered through this increased participation will help improve JPMVEC's understanding of market conditions and trends while supplying vital price and risk management information that JPMVEC can use to”—and here are some more key words—“improve its financial commodities derivative offerings.”

So this application indicates that one of the reasons that JPMorgan wanted to get into the power plant business was to increase its access to important market information in the electricity markets, including information about market conditions and trends, and vital price and risk management information.

So far, would you agree with me?

Mr. ANDERSON. Yes.

Senator LEVIN. And then one of its stated purposes for JPMorgan's getting into the power plant business was to obtain information that it could use with respect to electricity-related financial instruments, which are traded in the financial markets.

Is that true? Did I read that correctly?

Mr. ANDERSON. I do not know what you are reading now, but I would agree with what you said.

Senator LEVIN. That was the same line. It was the second half of the same line.

Mr. ANDERSON. Yes, I agree.

Senator LEVIN. OK.

Now this application is not about getting information on JPMorgan's own business, which is usually what is allowed in this kind of a situation—to get information from your own business, get information on your business.

This is about getting information about all those power plants spread out across the country, as shown in that chart, commercially valuable information about electricity production, congestion areas and price trends—what you call in that application, important market information, information about market conditions and trends, and vital price and risk management information—that you would then be able to obtain commercially valuable, nonpublic information.

Is that correct?

Mr. ANDERSON. I do not know whether that information would have been public or not.

But the point of this application was, yes, to enable us to see with more transparency what was happening in energy markets so that we could make better prices to our market-making business and clients and provide them with incremental solutions.

Senator LEVIN. And not just better prices but also getting that commercially valuable, nonpublic information—and it is nonpublic information in those plants before it is made public; it is something that you would have if you were managing those plants—your traders of financial instruments, could use it, that information, to trade electricity-related financial instruments like futures, swaps and options in the financial markets.

Is that right?

Mr. ANDERSON. This approval was primarily so that we could do tolling activities, which is a financial contract on, as you said, the output of power from a power plant, which would then be the firm's contract and the firm's information, and it could then use that flow and that insight into the most accurate price to provide the best prices to our market-making client franchise.

Senator LEVIN. So not just the most accurate price, but it would give you an advantage, would it not, being in that business, too, in your dealings in financial commodities, the derivative offerings that you were involved in?

You would have nonpublic information to help you in the financial commodities derivative offering world that you were engaged in. Is that a fair statement?

Mr. ANDERSON. Via the tolls we would have private information that we could use to provide better services to our clients.

Senator LEVIN. Not just the tolls but in those deals involving tolls, you would gain information which would help you to trade electricity-related financial instruments—futures, swaps, options.

Mr. ANDERSON. That is right, just in those tolls.

If there was any plant ownership associated, that would not be shared with traders. It would be held as an independent passive investment.

Senator LEVIN. What do you mean you would not share it with traders? Is there a Chinese wall there?

Mr. ANDERSON. Yes, there is a barrier that—

Senator LEVIN. Is that in law?

Mr. ANDERSON. I believe it is, as part of the merchant banking laws, that if you own an investment as a merchant banking investment you cannot operate it; you cannot pass information between the two organizations.

Senator LEVIN. Well, most of these facilities were not owned as part of a merchant banking deal. Twenty-four of 27 were under complementary authority, first of all.

Mr. ANDERSON. As tolls, right. Yes.

Senator LEVIN. Second, as far as I can tell, there is no prohibition on the sharing of information, even for the merchant banking operation.

Mr. ANDERSON. OK.

Senator LEVIN. Should there be?

Mr. ANDERSON. Between merchant banking and——

Senator LEVIN. And your people were engaged in trading.

Mr. ANDERSON. Yes.

Senator LEVIN. Should there be a Chinese wall?

Mr. ANDERSON. There are Chinese walls. So we have lots of internal——

Senator LEVIN. No, but in this area, should there be?

You said there is, and we disagree with you.

Mr. ANDERSON. Well, there are internal Chinese walls for certain—I thought there were also legal obligations between a merchant banking investment and a trading organization.

Senator LEVIN. I do not think there is.

But my question is, in any event, should there be a legal prohibition, not just a voluntary policy adopted by a company whose economic interest runs in the opposite direction of the Chinese wall?

In other words, the Chinese wall is supposed to be a detriment to the use of information. And the use of that information is very valuable to the company.

So, if the Chinese wall is abided by, if there were one, it is still voluntary; it is still policy. It is not regulation, and it is not law.

My question is since you thought there was such a wall, in any event, and should be such a wall—maybe I am reading too much into your words, but I sure believe there ought to be.

My question to you is should it be legally prohibited to share information that is of market relevance between the operation of a company and the trading people in your company; should there be?

Mr. ANDERSON. I, honestly, do not have an opinion.

I am not a lawyer or a legal expert. So I cannot give you——

Senator LEVIN. Well, no, but you——

Mr. ANDERSON [continuing]. All the facts.

Senator LEVIN. You have ethical guides, don't you?

Mr. ANDERSON. Absolutely, yes.

Senator LEVIN. Should you be able to use that information in the trading world? That is the question. That is an ethical question.

Mr. ANDERSON. No, we should not, and that is why we have these internal walls and barriers, to protect from that.

Senator LEVIN. And since you should not use it, is there any reason why we should not prohibit from being used?

Mr. ANDERSON. Again, I cannot comment without having all the facts and being an expert in the area.

Senator LEVIN. OK.

Now the same people who get information about the physical power plant operations and place bids to supply electricity in California, for example, also trade electricity-related financial instruments in the futures and swaps financial markets.

In 2013, JPMVEC was named in the FERC settlement agreement, charging JPMorgan with engaging in manipulative bidding strategies. JPMVEC traders were the ones that designed and used the manipulative strategies that produced \$124 million in excessive electricity payments in California and Michigan that JPMorgan then paid back, with penalties and interest, totaling \$410 million.

Is that correct?

Mr. ANDERSON. That is correct.

Senator LEVIN. Now JPMorgan has told us it will take until 2018, another 4 years, for it to completely exit the power plant business.

Why should it take 3 years?

Why is it going so slow?

Mr. ANDERSON. That is a good question.

So we remain owners of three power plants today, of the 31 that were acquired from the Bear Stearns acquisition.

Since that acquisition, we have been in steady disposition mode, and in fact, if you look at a graph of our business, it is in a steady decline ever since 2018.

The three remaining power plans we do have are all in a sale process. One is actually contracted to sell today, another one should be under contract within the next quarter, and the third one, we are hoping next year.

In terms of beyond next year, you said, we will still be in the business through 2008.

We are out of the business as of last month. We do not own—we do not operate or control any of these. We do not have a financial interest in any of them.

They are run—other than these three power plants that are still owned and we are trying to sell, but we do not operate those. They are run by third parties.

In terms of the tolls in California that run through 2018, it is strictly a financial contract at this point. We have a toll that we are long from the original Bear Stearns acquisition and offsetting mirror tolls that make us short. So we are a credit intermediary in those transactions with no financial upside or downside from it other than if there were to be a credit default on one side.

Now we would ideally like those two counterparties to face each other and JPMorgan to be able to step out from the middle, but they have asked us to stay in the middle as a credit sponsor intermediary.

Senator LEVIN. Now I believe you told the Federal Reserve in 2011 that those three power plants, the ones you owned outright, that you would sell those three power plants and that they would be sold, I believe if I am reading this correctly, by now, essentially.

Did you have an extension of time from the Federal Reserve to sell those three power plants?

Did they give you an extension of time? Do you remember that?

Mr. ANDERSON. So at the time of the Bear Stearns acquisition, we had a 2-year timeframe given to us by the Federal Reserve to hold all of these activities that were new to us at the time.

We then had three possible 1-year extensions.

Senator LEVIN. So they did give you extensions.

Mr. ANDERSON. So they gave us extensions, yes.

Senator LEVIN. Now as we set out in our Report, JPMorgan and its bank are subject to limits on the size of their physical commodity holdings. These are limits set by their two primary regulators—the Federal Reserve and the Office of the Comptroller of the Currency, the OCC. And that is a way to limit the risks associated with physical commodity activities.

But by exploiting certain loopholes and using aggressive interpretations, often without telling regulators beforehand, JPMorgan

and its bank have been able to accumulate physical commodity holdings far in excess of the limits while claiming to stay under the limits.

To date, the regulators have closed some of the loopholes but not others.

And so take a look, if you would, Mr. Anderson, at Exhibit 56a.¹

This is an application filed in 2005, asking for complementary authority again to engage in physical commodity activities, page 22 of that Exhibit 56a.

And this is what JPMorgan wrote:

If they were granted complementary authority that it was seeking, it “commits to the board that it will limit the amount of physical commodities that it holds at any one time to 5 percent” . . . 5 percent . . . “of its consolidated Tier 1 capital.”

No caveats. No loopholes. Just a commitment to limit the amount of physical commodities that it holds at any one time.

Do you see that line?

Mr. ANDERSON. Yes, I do.

Senator LEVIN. Now take a look, if you would, at Exhibit 90.²

And Exhibit 90 is an excerpt from a document that JPMorgan prepared for its quarterly meeting with the Fed. I guess the FDIC and the OCC were involved as well.

So, if you look at page 2 of Exhibit 90, the page is entitled Physical Inventory Limits from the Fed and the OCC. It then lists various components of JPMorgan’s physical commodity holdings as of certain dates.

And in the first column under the date 9/28/12, it shows that as of that date JPMorgan had oil holdings worth \$3.2 billion; tolls, which is a reference to the power plants that you have been talking about, worth \$2 billion; and then some other items in a total for JPMVEC—that is your leading commodities subsidiary again—a total of \$6.6 billion.

Underneath that, it says its physical inventory as a percentage of Tier 1 capital is 4.5 percent.

Do you see that?

Mr. ANDERSON. Yes.

Senator LEVIN. So that is what JPMorgan reported to the Federal Reserve as its total physical commodity holdings as of 9/28/2012.

But that total excluded another number on this chart a bit further down, where it says Base Metals Held in Bank and shows \$8.1 billion. That \$8.1 billion of metals in the bank was bigger than all of the physical commodities held in other parts of the financial holding company, put together, because they had totaled \$6.6 billion.

Is that correct?

Mr. ANDERSON. You said that we reported \$6.6 billion as the total of the whole organization’s physical commodities. That is slightly inaccurate.

That is what we reported, as it says at the top here, of JPMVEC and non-bank subs.

¹ See Exhibit No. 56a, which appears in the Appendix on page 1417.

² See Exhibit No. 90, which appears in the Appendix on page 1691.

Senator LEVIN. OK.

Mr. ANDERSON. And then separately, below it, it does report base metals in the bank, yes. Correct.

Senator LEVIN. Oh, I am going to get to the base metals in a minute.

In the meantime, the \$6.6 billion was correct, right?

Mr. ANDERSON. Yes.

Senator LEVIN. OK.

Now those numbers, both those numbers, both the \$8.1 billion and \$6.6 billion, excluded all copper, platinum, palladium, gold, silver and any merchant banking holdings held by either the bank or the holding company, which by the way were significant in size.

So to simplify things, we asked your legal counsel for the amount of just the copper, platinum and palladium held by JPMorgan on September 28, 2012, and we were told that those holdings on that date totaled \$2.7 billion.

And when we add up all the three numbers—\$6.6 billion, \$8.1 billion, and \$2.7 billion—the total is \$17.4 billion, and that represents 12 percent of JPMorgan's Tier 1 capital at the time.

So when JPMorgan was holding at least \$17.4 billion in physical commodities, equal to nearly 12 percent of its Tier 1 capital, how could JPMorgan claim that it met its commitment to keep “the amount of physical commodities that it holds at any one time to 5 percent of its consolidated Tier 1 capital”?

Mr. ANDERSON. I think this report is very clear that, yes, we reported exactly what was in the VEC and non-bank chain as \$6.6 billion. That represented 4.5 percent against the limit for those entities of 5 percent.

You know, you are adding \$8.1 billion—

Senator LEVIN. Well, for those entities, the limit was a total limit of physical commodities, wasn't it?

Mr. ANDERSON. No, that is not correct.

Senator LEVIN. The one I read, didn't I read that correctly?

I asked you if I had read that correctly before—the commitment which was made.

Mr. ANDERSON. That letter was referring to the non-bank chain. So that limit is applicable to the non-bank chain, which the Federal Reserve agrees with.

The OCC has a separate limit that applies to the bank chain, and it is a different type of limit entirely. It is an activity limit, not an amount of metal you can hold or physical inventory you can hold, that might pose a risk to the bank.

The only way you can hold physical commodities in the bank is as a hedge. It cannot be unhedged. You cannot have outright positions in it. So it does not pose financial risk to the bank.

It is a separate limit to make sure the bank does not migrate beyond a low, minimal level of activity in commodities.

Senator LEVIN. In the representation that you made, however, in your application here, that I read to you before, JPM Chase commits to the board that it will limit the amount of physical commodities that it holds at any one time.

It did not limit it the way you just limited it.

Mr. ANDERSON. But the rule is specifically applicable to non-bank chain.

Also, in preparing for today, we talked about the Federal Reserve's knowledge of our base metals business and the inventory throughout the whole organization. And I know at the time, in 2005, they discussed—and they are probably our attorneys and maybe business people at the time—with the Fed that we had a base metals business in the bank.

Senator LEVIN. So you are saying that prior to 2012 the Federal examiners knew that JPMorgan Chase was excluding the bank from the 5 percent limit. That is what you are representing here today?

Mr. ANDERSON. I do not know what they knew or not.

I know we had conversations about it. So I think they should have known, yes.

Senator LEVIN. Well, I think we will hear tomorrow what we have heard already in our investigation; the Fed did not know that JPMorgan was excluding its bank's metals until December 2011, and then it found it out by accident.

So you have some discussions to hold with the Fed.

Mr. ANDERSON. Yes, that is surprising to me.

As I said, we have open, transparent dialogs with our regulators on an ongoing basis and a regular basis.

I, personally, have participated in quarterly meetings with both regulators in the same room for many years now, certainly prior to 2012.

Senator LEVIN. Well, I think that is an issue which——

Mr. ANDERSON. OK.

Senator LEVIN [continuing]. They are going to take up with you, I hope——

Mr. ANDERSON. Yes.

Senator LEVIN [continuing]. Because that is not what we have been told and it is not what your commitment said.

Your commitment did not exclude that.

So you can say they knew it was excluded, but that is not what you represented in your commitment.

And so a number of loopholes here are kind of taking over, and they need to be closed if the limit and JPMorgan's commitment is going to be an effective safeguard and limit size and amount of risk from physical commodity activities.

Mr. ANDERSON. OK.

Senator LEVIN. Let me ask Mr. Greenshields a few questions here.

This is about Morgan Stanley's effort to construct a plant in Texas, designed to produce compressed natural gas that would be placed in large containers for export.

In 2013 and 2014, Morgan Stanley formed three shell corporations, all with the name of Wentworth, as is shown in that chart that we are putting up here, if we can get the chart up.

But it is also Exhibit 1g¹ in your book. So you can see what chart I am referring to.

This is the Wentworth ownership structure. The idea was to have Wentworth Companies in charge of the plant-building effort.

¹ See Exhibit No. 1g, which appears in the Appendix on page 822.

Now if you look at Exhibit 45a,¹ “Application of Wentworth Gas Marketing, LLC for long-term authorization to export compressed natural gas.”

That application was filed by one of the Wentworth Companies with the Department of Energy in May 2014. That is just 6 months ago or so.

It was made public by the Department of Energy and became the basis of a media report in August, which is when many people, including some at the Federal Reserve, learned about the venture.

The application indicates on page 1 that Wentworth Gas Marketing is seeking authority to export 60 billion cubic feet of compressed natural gas, known as CNG, over a 20-year period.

Wentworth Gas Marketing, LLC is one of three Wentworth Companies formed by Morgan Stanley back in October 2013 and April 2014.

And then on page 3 of that same exhibit, Wentworth’s “principal place of business” is listed as Purchase, New York. So it is using the same address as the building that houses Morgan Stanley’s Commodities Division.

Am I correct so far?

Mr. GREENSHIELDS. You are, Senator. Thank you.

Senator LEVIN. Now please look now at Exhibit 47.²

This is a letter dated 9/19/2014, provided by Morgan Stanley’s legal counsel, and this is responding to the Subcommittee’s questions about Wentworth.

And on page 5 of that exhibit, there is a list of board members for the Wentworth entities. And what that shows is that all three Wentworth Companies have the same board members, and those members are exclusively senior employees from Morgan Stanley’s Commodities Group.

Is that correct?

Mr. GREENSHIELDS. That is correct, Senator, yes.

Senator LEVIN. Under the column entitled Wentworth Entity Position, what is the position a person holds in Wentworth?

You are listed as the Manager and President of the Wentworth entities, and it shows that you are also employed by MSCG, which is Morgan Stanley Capital Group, and that your MSCG title is Chairman, President and Chief Executive Officer.

Is that right?

Mr. GREENSHIELDS. That is correct, Senator. Yes.

Senator LEVIN. The other board members listed here are the Vice President/Chief Operating Officer of Morgan Stanley’s North American Power and Gas, the Vice President/Global Head of Morgan Stanley’s Oil Liquids, and the Vice President/Head of Morgan Stanley’s North American Power and Gas.

In other words, the senior executives listed as running the Wentworth Companies are senior executives in Morgan Stanley’s Commodities Division.

Is that correct?

Mr. GREENSHIELDS. That is correct.

¹ See Exhibit No. 45a, which appears in the Appendix on page 1307.

² See Exhibit No. 47, which appears in the Appendix on page 1364.

Senator LEVIN. Now if you will look again at page 5 and at page 8 of that same exhibit, it states that none of the three Wentworth Companies had employees and that all three rely upon the expertise and day-to-day involvement of employees of Morgan Stanley. This includes the breadth of the firm, including support in legal, tax, risk management and many other areas, to carry out the activities.

Is that correct?

Mr. GREENSHIELDS. That is correct.

Senator LEVIN. OK.

So as of September at least of this year, a couple months ago—and maybe things have changed in the last couple months:

The Wentworth Companies had no employees of their own. All of their employees were Morgan Stanley employees. Morgan Stanley employees were relied on to carry out Wentworth's day-to-day activities.

In addition, Wentworth had no offices of its own. Its only offices were the Morgan Stanley Commodities Division's offices in Purchase, New York.

Wentworth's senior executives were the senior executives in Morgan Stanley's own Commodities Division.

And so I hope you would agree that the Wentworth Corporations functioned as shell entities and that you and your staff were actually overseeing this project and managing the business.

Mr. GREENSHIELDS. You are correct, Senator. It is a shell subsidiary corporation.

Senator LEVIN. So there is no doubt, since Wentworth is a shell, that if anything goes wrong it is Morgan Stanley that is on the hook.

Mr. GREENSHIELDS. It is correct that if anything went wrong.

I will point out that we are selling this business, and I think we have reported that several times.

In addition, this is not an operational company, Senator. Construction has not even begun. The reason it does not have any employees is that it really would be very little for these employees to do at this point.

Senator LEVIN. But, as this, the intention was that you were going to sell this at some point.

In the meantime—the question is whatever liability was incurred in the meantime, if and when you sell it—I know that is your stated intent now. But nonetheless, if anything goes wrong before that happens, if it happens, it is your company, Morgan Stanley, that would be on the hook in terms of liability.

Is that correct?

Mr. GREENSHIELDS. Ultimately, we accept full responsibility, Senator.

Senator LEVIN. OK.

I would like to talk for a moment, Mr. Greenshields, about Southern Star.

Southern Star, founded in 1904, headquartered in Kentucky, it is the primary gas transmission and natural gas storage facility provider in certain areas of the Midwest, with approximately 6,000 miles of pipeline serving Colorado, Kansas, Missouri, Oklahoma, Texas, and Wyoming.

Its pipeline system has a delivery capacity of approximately 2.4 billion cubic feet of natural gas per day, and its primary function is delivering gas to local natural gas distributors in its service areas.

I understand that Southern Star is not part of the Commodities Division that you head; instead, it is a merchant banking investment held through an investment fund called Morgan Stanley Infrastructure Partners, or MSIP, located within a separate Morgan Stanley business segment called Merchant Banking and Real Estate Investing Group.

Infrastructure funds have become very popular at financial holding companies. They are being used to purchase commodity-related businesses all over the country and the world. They include power plants, natural gas facilities, hydroelectric dams, wind farms, and more.

And Southern Star is a classic example.

Morgan Stanley told the Subcommittee that Southern Star is 100 percent owned by its Infrastructure Fund in which Morgan Stanley has only about a 10 percent ownership interest.

Morgan Stanley presents itself as having only a relatively small indirect ownership interest in Southern Star, but in fact, the relationship is far closer than that.

Morgan Stanley gave us a chart showing, "the complete ownership structure chart for MSIP." It was a bowl of spaghetti showing about 40 boxes and triangles in every direction. We are told that virtually all of them were shell entities with no employees or offices, just legal structures showing who owned what.

The most important real entity, real in terms of having actual employees and offices, is Morgan Stanley Infrastructure, Inc., or MSI, which actually manages the investment fund.

MSI is also a business unit within Morgan Stanley's Merchant Banking and Real Estate Investing Group.

MSI currently has about 37 employees, all of whom are Morgan Stanley employees. All of them work exclusively on the Morgan Stanley Infrastructure Fund's projects.

So MSI, Morgan Stanley Infrastructure, is run by Morgan Stanley employees, sits in Morgan Stanley offices, decides on what the Morgan Stanley Infrastructure Fund is going to invest in.

Morgan Stanley is also the largest single investor in the Infrastructure Fund, which owns 100 percent of Southern Star, which is its largest current investment.

Now, Mr. Greenshields, when Morgan Stanley says it has only a 10 percent indirect interest in Southern Star, that is not really the whole story, is it?

Mr. GREENSHIELDS. Senator, as you identified earlier, this is on the other side of the wall. I really know very little about this investment.

Senator LEVIN. All right.

Morgan Stanley's use of an Infrastructure Fund to raise money for and invest in commodity-related businesses like Southern Star is not unique. It is too common an approach to not take note of.

But when folks are looking at what financial holding companies are doing relative to physical commodities, they too often ignore what is going on through an infrastructure or other investment

fund as if those funds' activities are somehow outside of, or apart from, the financial holding company.

But here, the Morgan Stanley Infrastructure Fund is located in Morgan Stanley's offices.

Do you know if that is true or not?

Do you know whether or not the Infrastructure Fund is located in Morgan Stanley offices?

Mr. GREENSHIELDS. I believe it is, Senator, yes, in 1585.

Senator LEVIN. Do you know whether it uses Morgan Stanley employees?

Mr. GREENSHIELDS. I believe that there are directors that sit on the board, yes.

Senator LEVIN. And do you know whether its decisions are made by Morgan Stanley employees?

Mr. GREENSHIELDS. I do not know.

Senator LEVIN. OK.

Morgan Stanley has been an active trader in the natural gas market for decades. It trades natural gas at the same time it has ownership interest in Southern Star, and nonpublic information from Southern Star is provided on a regular basis to employees in the Merchant Banking and Real Estate Investing Group.

In your prepared statement, Mr. Greenshields, you said that you were "not privy to MSIM's investment in Southern Star" because MSIM is separate from the Commodities Division and is handled out of a business unit again called Merchant Banking.

You also said in your prepared statement that Morgan Stanley has "information barriers in place to prevent the transfer" of material nonpublic information between the Commodities Division about MSIM's investment.

Why isn't that information shared?

Why do you have barriers to prevent the transfer of that material nonpublic information?

Mr. GREENSHIELDS. There is no good reason for the Commodities Division to have that information, and if there is no good reason, we see no need to share it.

Senator LEVIN. Well, as I said in my opening statement, the opportunity for that information to be shared and used is a real one, and banks such as yours are in the position to make full use of that information. The only barrier is a self-imposed barrier, as far as I know.

Is that true?

Is that just a self-imposed barrier, or is that imposed by law?

Mr. GREENSHIELDS. You are correct, Senator. It is self-imposed.

Senator LEVIN. And so that barrier can be ignored at any time, circumvented at any time, pulled down at any time.

And I just think it is wrong for the public to have to rely on a voluntary policy such as that, which is not enforceable and which does not have the weight of law behind it because, obviously, the use of material nonpublic information by a commodities division from information that it got from physical commodities operations is simply unacceptable.

I think you agreed that information should not be used. Is that correct?

Mr. GREENSHIELDS. That is correct, Senator. We do not believe it should be.

Senator LEVIN. And is there any reason why we should not put the weight of a regulation or a law behind that?

Mr. GREENSHIELDS. I certainly would not object.

I think it is something we do anyway, as we stated. So, if it were a legal requirement, I do not think Morgan Stanley would object.

Senator LEVIN. You have no problem with our making sure that it becomes a legal requirement?

Mr. GREENSHIELDS. I, personally, do not. I would have to check with my lawyers and my managers, but that will be my view.

Senator LEVIN. Senator McCain.

Senator MCCAIN. Thank you, Mr. Chairman.

Mr. Anderson, in 2012, JPMorgan paid Federal regulators \$410 million to settle charges that it manipulated electricity markets in both California and the Midwest.

And so recently, JPMorgan purchased large stockpiles of copper.

So should we be concerned that you are going to manipulate the market the same way that you did with electricity markets in both California and the Midwest and paid \$410 million to settle?

Mr. ANDERSON. First, let me say that that whole situation was regrettable. And in hindsight, we hold our employees to the highest standards both legally and morally, and we believed we were operating within the rules.

That said—or, these employees did—in hindsight, had they been in open communication with the FERC and local regulators, as we are with the OCC and Fed, we may have been able to avoid that whole situation to begin with. So it is clearly regrettable.

In terms of copper, we have not amassed a large position in copper. First of all, we do not proprietarily trade copper. We have a customer-driven business that we make markets for in copper.

I think the situation you are referring to was in 2010, where we built up, via our client franchise, about \$1.5 billion worth of copper in the December time period, December 2010, which was fully hedged.

So we were very agnostic as to the direction of prices. We did not have a financial interest in whether prices went up or down at the time.

Senator MCCAIN. Mr. Agran, Goldman's subsidiary owns and operates two coal mines in Colombia.

Last year, the wives and children of mine workers led strikes that completely halted all coal mining operation for 9 months. It was reported that Goldman's subsidiary requested that the Colombian police and military remove the protesting women and children.

And then there is an allegation that in the 9-month labor strike that your subsidiary paid protestors \$10,000 each.

Is that true?

Mr. AGRAN. Our subsidiary paid former employees of the contractor, which was at the heart of the dispute, a settlement in order to—so that we could resume work, Senator.

And we cross-referenced those employees to company payrolls, as well to either union or administrative labor membership.

Senator MCCAIN. I guess I have a question for all three of you.

You know most Americans believe that you are financial houses that have made a lot of money.

Clearly, in my view and probably that of most people, you are still too big to fail, but that is beside the point.

And yet, why do you get into businesses like coal mines and electricity markets—that, at least in one case, has been manipulated—and copper, and all that.

What is the point, I guess?

And maybe you can help me out here, beginning with you, Mr. Greenshields.

Mr. GREENSHIELDS. Thank you, Senator. That is a very good question.

Morgan Stanley does not invest in coal mines.

We do participate in the electricity market, both in the United States, and also in Europe. We provide market-making services in both financial products and physical products. And that is our primary business.

Our primary business is market-making and the provision of liquidity, and we are improving—as a result of that, we are improving price transparency. So all these things we think are good things for our customer base.

There have been certain circumstances where we have owned assets. We are downsizing that, however. We sold TMG, which is our storage business, and we are looking to sell other parts of our business, including the CNG business.

But there are times when owning assets allows an entity such as Morgan Stanley to provide physical product to its customers, and that is the primary reason.

Senator McCAIN. Mr. Agran.

Mr. AGRAN. Well, similarly, we see the core market-making function that we provide in commodities analogous to the function we provide in interest rate products, foreign currencies or equities. So the basic product of risk intermediation is consistent across the asset classes, Senator.

Senator McCAIN. So you get into situations such as happened at the two Colombian coal mines which I really do not think enhanced your image.

Mr. AGRAN. I agree. The operational challenges at CNR are significant, Senator. That is not an investment that has been easy for us to oversee.

But I think that it is important to recognize that banks provide capital. We lend. We underwrite stock and bond offerings. And in this situation, we made an investment, but ultimately, that is all it is. It is an investment in a coal mining company, Senator.

We are not a coal miner.

Senator McCAIN. Mr. Anderson.

Mr. ANDERSON. Yes, Senator, market-making in commodities is an important service to the market as a whole.

JPMorgan Chase has literally millions of customers, most of which touch or need commodities in some way, shape, or form.

So to be able to provide them with hedging services, risk management services, and risk management advice, makes their financial expected outcome more solid. They can count on running the business that they are running and not have to worry about fluc-

tuations in interest rates or foreign exchange or commodities or whatever the asset class happens to be.

We have highlighted today some very regrettable activities. Our business is a people business, and people, unfortunately, make mistakes.

It is important for us to fix those mistakes, to continue to emphasize a strong culture and, most importantly probably, to be open and transparent, to raise our own mistakes, to talk about them and work with our regulators to remediate them.

Senator MCCAIN. I guess you are the wrong person to ask, but it seems to me if you control between 50 and 80 percent of all the copper available on the world's leading metal exchange, I am not sure that is a good thing—that one corporation, be it maybe through a subsidiary, controls somewhere between half and four-fifths of the copper that is on the leading metal exchange.

Maybe that is just a comment, but it seems to me if you have control of that much of a vital commodity—and copper certainly is that—that at least lends itself to a possible manipulation of prices.

I think history shows that when one individual or company or corporation owns an overwhelming amount of whatever that is, that it does not leave it open to competition or to prevent manipulation. I think that is pretty well historically true.

Mr. ANDERSON. I would be happy to address that if you want me to.

Senator MCCAIN. Please, go ahead.

Mr. ANDERSON. That is a good point.

I think you are referring to December 2010—the stocks in the LME system were quite low relative to global supply.

So at the time, we did go through the 50 percent threshold, which at the time was less than 10 percent of global stocks.

But it is important to note it was not our position. We were neutral in terms of our outright position.

And it was part of our market-making business, where clients were buying a derivative, and the best hedge for the firm and the safest hedge for the firm was to buy the inventory as a hedge to that derivative.

And they were only a couple weeks apart.

So you can see if you go through the timeframe, within 2 weeks, we delivered against all those short derivatives contracts. We delivered our inventory, and we dropped down to, I think, around 15 percent.

But that market is specifically set up to avoid the exact situation you described. The LME has lending guidance, and their lowest band is any individual that holds more than 50 to 80 percent of the LME supplies, they are then forced to lend into that market and make that copper available.

The next band is 80 to 90 percent, and then the third band is 90 to 100 percent.

And the lending guidance becomes more punitive the larger your position.

So you are effectively forced to put the metal back into the market to make sure that the situation you are concerned about will not happen.

Senator MCCAIN. I thank you. Thank you, Mr. Chairman.

Mr. ANDERSON. Thank you.

Senator LEVIN. Well, we also saw an additional reason this morning, when we saw how the manipulation of a warehouse and warehouses holding aluminum, that those activities affect the value of the financial commodities that Goldman is trading.

So, in addition to the holding of 50 percent or 80 percent of the copper market, and all that can lead to in terms of copper itself, where the action relative to the storage of that entity—in this morning's case, aluminum—can directly affect the premium paid for that aluminum and where there is trading that directly relates to that premium and to that LME price, you have a situation now where those two worlds are linked, even if that information does not cross that Chinese wall, by the way.

And I am not going to rely on that. I happen to believe we have got to have regulations that make that Chinese wall real, in law. So it is not a piece of tissue paper that can be easily ignored and where it is difficult to prove that it has been violated.

We have to have, I believe, regulations and law.

And I am glad, Mr. Greenshields, at least speaking for yourself, that you would support these Chinese walls, these separations, being put into regulation or law.

And I wonder, Mr. Anderson, whether you would agree with Mr. Greenshields on that.

Mr. ANDERSON. I certainly believe information barriers are critical.

Senator LEVIN. Do you think we have to put some law behind it or just leave it up to the voluntary policy of companies whose financial interests run exactly in the opposite direction of the wall?

Mr. ANDERSON. I do not think they run in opposite directions.

Senator LEVIN. Well, sure they do.

Mr. ANDERSON. If you violate those—

Senator LEVIN. No, not violate, but isn't it clear that information is valuable and if you have information about shipments of whatever and if your traders have that information and, in the case of aluminum if you can directly, by your order, by your decision, that you are going to cancel warrants, that you effect directly in that case, directly, what the premium is going to be, what the line is going to be, which in turn is correlated to the premium?

I mean, that is not a matter of information going through a wall. That is a matter of a decision made by a major holder of aluminum.

Don't we have to put some force behind those walls?

Mr. ANDERSON. Again, without having all the facts in how it would impact the overall organization or the U.S. financial system, I do not know that I am qualified to answer.

I am happy to say the same thing that my colleague did—

Senator LEVIN. OK.

Mr. ANDERSON [continuing]. That from my perspective and for my commodities business that I co-run, I would see no issue with that because we abide by the self-imposed ones anyway.

So if they are legal, that would be fine as well.

Senator LEVIN. All right.

Now, Mr. Agran, let's talk about Goldman's involvement with uranium.

I will not replot anymore than I already have at this morning's hearing, but let's talk about uranium.

In 2009, Goldman purchased a company called Nufcor, which bought uranium from mining companies, stored it and sold it to nuclear power plants. Nufcor also traded uranium in the physical and financial markets. Nufcor was a longstanding, well-known company in the field.

The internal Goldman memorandum that presented the case for buying Nufcor—and this is Exhibit 9,¹ page 2—said that Nufcor had six employees and that Goldman would likely reduce it to two or three employees.

None of the employees who worked for Nufcor stayed with the company when Goldman bought it. So the company directed its own employees to run the business.

Essentially, Nufcor became a shell operation under the complete control of Goldman employees who purchased and traded the uranium, entered into new contracts with nuclear power plants and dealt directly with the storage facilities.

Now, by making Nufcor a shell company and using Goldman employees to carry out its business activities, did that not clearly increase Goldman's potential liability should a catastrophic event occur?

Mr. AGRAN. Senator, I do not think that is the case.

Nufcor is a limited liability company, Senator, and our market-making entity in uranium. And that affords the shareholders of the LLC, as all LLC structures do, certain shareholder protections.

Senator LEVIN. Well, do you think Goldman is going to be liable for—

Mr. AGRAN. No, ultimately, I do not, Senator.

Senator LEVIN. Do you think when Goldman runs a company the way it did—buys the company. Its people—everyone quits at the company. Goldman then puts the people in to run the company, and then it directs its own employees to run the business of the company.

You think that that limited liability corporation called Nufcor is going to protect Goldman from liability of a catastrophic incident?

Mr. AGRAN. One is on the employee issue. My understanding is having no employees does not compromise its status as an independent entity and that it is not unusual for LLCs to not have employees.

But if I could, could I give you one example, Senator, of how I even think the market sees Nufcor and understands its LLC status?

When we transact with utilities, Senator, it is not infrequent that they would ask Goldman Sachs to provide limited financial guarantees.

Senator LEVIN. I am sure of that.

Mr. AGRAN. Well, but what—so what that is showing is that the utilities understand that Nufcor—that Goldman is not liable to Nufcor.

¹ See Exhibit No. 9, which appears in the Appendix on page 914.

So, in some selective cases, we have granted guarantees for performance, financial performance on contracts. But we have not offered anyone a comprehensive guarantee on Nufcor's liabilities.

Senator LEVIN. So there are certain circumstances at least that you would then accept Nufcor's liabilities. There are certain circumstances.

Mr. AGRAN. The ones where we financially guaranteed them, yes.

Senator LEVIN. Mr. Agran, would you please look at Exhibit 6¹?

And on page 6 of that exhibit, Goldman explains to the Federal Reserve "While there is no explicit scenario for environmental/catastrophic damage for any business line or corporate area, exposure related to participation in commodity markets primarily resides in the damage to physical assets risk category in Global Commodities."

Now here is what you continue to say: "Global Commodities' operation risk loss during storage and transportation of its physical commodity assets is limited to the value of those assets as catastrophic/environmental risk resides with the facility operators."

So as recently as July of last year, Goldman had no capital allocated for a catastrophic event.

Is that correct?

Mr. AGRAN. That is incomplete.

If you would like me to elaborate, I can.

Senator LEVIN. Yes. I am just saying, do you have capital allocated?

I am not talking about insurance.

I am talking about capital allocated for a catastrophic event. That is my question.

Mr. AGRAN. We have capital. Yes, we have operational risk capital at the firm, Senator.

Senator LEVIN. For catastrophic events?

Mr. AGRAN. Would you like me to explain our methodology because I think that is the easiest way?

Senator LEVIN. Well, if the answer is yes, sure, or no. Either way, please explain.

Mr. AGRAN. I will explain.

Senator LEVIN. Without answering yes or no.

Mr. AGRAN. No, we do not have any specific capital. So let me explain our methodology and how we arrived at that.

Senator LEVIN. All right.

Mr. AGRAN. We do a detailed analysis, Senator, including scenario analysis around environmental risk.

And after that analysis, we concluded that the limited nature in the way that we engage in these markets and our comprehensive insurance program; we were not required to hold any additional capital to the \$8 billion of operational risk capital that we already hold.

Senator LEVIN. OK, let's take a look.

Are you familiar with the concept of negligent entrustment?

Mr. AGRAN. Vaguely, yes.

¹ See Exhibit No. 6, which appears in the Appendix on page 866.

Senator LEVIN. Well, can, as far as you know, Goldman be found liable if it negligently hires an incompetent operator, such as a mining company?

Mr. AGRAN. Yes, if we negligently entrust commodity or operations, we could be held liable.

Senator LEVIN. Or, a nuclear storage facility?

Mr. AGRAN. Potentially.

But, Senator, can I address the nuclear storage facility?

Senator LEVIN. Sure.

Mr. AGRAN. We are only transactional at six facilities. They are all highly regulated for trading unenriched uranium, which in your own letter you acknowledge is a nontoxic.

And we trade it in book entry form.

We do not take physical possession. We do not transport it. We do not process it. We are—our license does not even allow us to remove it from the facility if we wanted to.

Senator LEVIN. That is OK. You have answered the point about negligent entrustment, and that is where the liability can come in, even with those limitations.

Mr. AGRAN. Well, can I say one more thing on negligent entrustment?

Senator LEVIN. Sure.

Mr. AGRAN. We do have a vendor vetting process, where we are sensitive to the fact that negligent entrustment is a potential liability to us.

We have a physical commodity review committee as well as a vendor vetting policy, and that allows us to become comfortable that we will not fall into that situation.

Senator LEVIN. So I know you have vetting processes. That is always the case, but sometimes those vetting processes, when they fail, then the doctrine of negligent entrustment comes into effect.

So you can be held liable if you negligently entrust someone.

And believe me; if there are catastrophic accidents here, cases are going to be made. And then you have got to be in a position where you can survive those catastrophic events, and you are not in that position.

But I want to go back to something which Senator McCain raised, and that is the coal mines in Colombia, owned by Goldman, operated by third parties hired by Goldman's wholly operated subsidiaries.

Goldman's commodities trading arm is an exclusive marketing and sales agent for the coal produced by those mines and arranges for the sale of 100 percent of the coal. It takes about 20 percent for itself and then arranges for the sale of the other 80 percent to third parties.

The mining is done pursuant to operations and plans that had to be approved by Goldman's wholly owned subsidiary.

And are you saying that despite those facts, no jurisdiction, not even Colombia, or even a subdivision of such jurisdiction or any other country, could find that Goldman's wholly owned affiliate has any liability at all in the circumstances?

Is that what you are saying?

Mr. AGRAN. My understanding is, yes, the shareholder protections that are in place would insulate us from that liability.

Senator LEVIN. Going back then to one final question and then I will end with a comment and then turn it over to Senator McCain if he has additional questions.

Mr. Agran, take a look at Exhibit 4,¹ if you would, please.

Now this is a presentation by the Goldman Commodities Division to the Goldman Board of Directors on October 28, 2011.

At the last page, it says, "Global Commodities Threat from Non-Traditional Competitors" and then discusses some of Goldman's competitors including Glencore.

And then last bullet point says something very important: Goldman Sachs may command valuation multiples for Goldman Sachs commodities similar to Glencore if—and here is the comment—the business was able to grow physical activities unconstrained by regulation and integrated with the financial activities.

And that is one of my major concerns here is the integration with financial activities of these commodities operations.

In a formal presentation, it appears to state that its object is to integrate physical trading with financial trading.

Am I reading that wrong?

Mr. AGRAN. You are not reading it wrong.

Senator LEVIN. I am going to save my closing comment.

Senator MCCAIN. No.

Senator LEVIN. OK.

When we began this investigation 2 years ago, all three of your financial holding companies were heavily involved with a wide range of commodity activities from coal mines to power plants to natural gas facilities.

Now each one of you is pulling back somewhat.

And I am glad that at least two of the three of you are pulling back significantly even though we have comments from the leadership of Goldman Sachs that these physical commodities are important strategic parts of Goldman Sachs' operation. So that is a very different kind of an approach than we have heard today and earlier than today from Morgan Stanley and from JPMorgan Chase.

This is what the CEO of Goldman, Lloyd Blankfein, was quoted in the media as saying: The commodities—he is talking about physical commodities—is a "core, strategic business" for Goldman. A core, strategic business.

Your other two companies here seem to be pulling back from those commodities, and I am glad to hear that.

In an October 2013, earnings conference call, in response to questions from analysts, Goldman's Chief Financial Officer, Harvey Schwartz, described commodities as "an essential business for our clients" and said, "We have no intention of selling our (commodities) business."

Again, I am referring to physical commodities.

At the same time, Goldman has recently sold many of its power plants, and it has put up its uranium, coal, and warehouse businesses for sale.

And what are the plans, Mr. Agran, for the physical commodity activities?

Why don't you give us that answer for the record, if you would?

¹ See Exhibit No. 4, which appears in the Appendix on page 835.

Mr. AGRAN. Well, I echo the statements of our executives for the core market-making activities, Senator. We see those as analogous to the other market-making activities we are engaged in at the firm.

As far as purchase of physical assets within the commodities business, we have no plans to do that in the future.

Senator LEVIN. Well, at least two of the three of these banks apparently are planning to exit the field, although somewhat gradually, that has caused so much concern, which has grown so vast, which has created such risk and which creates such potential for the manipulation of the financial markets.

At the same time, we have a lot of questions about Federal regulation, as to how it has worked or not worked, relative to physical commodities and their relationship to financial commodities.

We are going to hear tomorrow from those regulators to see what their reaction is to the current state of the world and how they are going to try to make this financial world of ours more safe and more fair and less free of the potential of manipulation. So we look forward.

We thank you, our witnesses, all of our witnesses.

We thank you again for the cooperation of your companies with our investigation in terms of providing materials.

And I just want to ask my colleague, Senator McCain, if he has a closing question, and if not, we will stand adjourned until tomorrow, with thanks to all of you.

[Whereupon, at 4:31 p.m., the Subcommittee was adjourned.]

WALL STREET BANK INVOLVEMENT WITH PHYSICAL COMMODITIES

FRIDAY, NOVEMBER 21, 2014

U.S. SENATE,
PERMANENT SUBCOMMITTEE ON INVESTIGATIONS,
OF THE COMMITTEE ON HOMELAND SECURITY
AND GOVERNMENTAL AFFAIRS,
Washington, DC.

The subcommittee met, pursuant to notice, at 9:36 a.m., in room SD-106, Dirksen Senate Office Building, Hon. Carl Levin, Chairman of the Subcommittee, presiding.

Present: Senators Levin and McCain.

Staff present: Elise J. Bean, Staff Director and Chief Counsel; Mary D. Robertson, Chief Clerk; Tyler Gellasch, Senior Counsel; Adam Henderson, Professional Staff Member; Angela Messenger, Detailee (GAO); Joel Churches, Detailee (IRS); Ahmad Sarsour, Detailee (FDIC); Tom McDonald, Law Clerk; Tiffany Eisenbise, Law Clerk; Tiffany Greaves, Law Clerk; Henry J. Kerner, Staff Director and Chief Counsel to the Minority; Michael Lueptow, Counsel to the Minority; Elise Mullen, Research Assistant to the Minority; Kyle Brosnan, Law Clerk to the Minority; Christina Bortz, Law Clerk to the Minority; and Chapin Gregor, Law Clerk to the Minority.

OPENING STATEMENT OF SENATOR LEVIN

Senator LEVIN. Good morning, everybody. This is the second day of our hearings on Wall Street bank involvement in physical commodities. Yesterday, we explored the physical commodity activities of three banks—Goldman Sachs, JPMorgan Chase, and Morgan Stanley—and heard from bank executives and also from experts who helped put those activities in context. Today we are going to explore the implications of our findings and how to get stronger protections against the abuses, real and potential, that could damage the banking industry, commodity markets, and in a worst-case scenario, the U.S. economy and U.S. taxpayers. We will also focus on how to build stronger protections against market manipulation and unfair trading by financial institutions with easy access to capital provided by the Federal Reserve, that is, by the American taxpayer.

Yesterday's hearing showed that, in recent years, Goldman, JPMorgan, and Morgan Stanley have been heavily involved in a wide range of physical commodity activities and businesses, including building multi-billion-dollar stockpiles of aluminum, copper, oil, and natural gas, and running businesses like power plants, oil and

gas storage and pipeline companies, and commodity warehouses. Now, when I say “banks,” by the way, it is shorthand to cover both federally insured banks and their holding companies.

The evidence presented yesterday showed those Wall Street banks engaging in vast, complex commercial enterprises that are eroding the longstanding U.S. principle of separating banking from commerce.

Yesterday’s hearing also showed that at the same time the Wall Street banks were stockpiling commodities and running commodity-related businesses, they were engaging in massive transactions to buy and sell those same physical commodities, and were also trading commodity-related financial instruments like futures and swaps.

The simultaneous trading of commodities in the physical and financial markets raises concerns related to market manipulation and unfair trading. In 2013, the Federal Energy Regulatory Commission fined JPMorgan \$410 million after finding that JPMorgan commodity traders used power plants to execute manipulative bidding strategies that produced profits for the bank at the expense of electricity customers. We will hear more about that and other electricity manipulation cases today.

Yesterday, we also heard about a warehouse company, purchased by Goldman Sachs and overseen by a board consisting entirely of Goldman employees, that manipulated its warehouse operations in a way that impacted the price of aluminum for consumers, while at the same time Goldman was trading aluminum-related financial products. The Goldman-controlled board of directors approved the merry-go-round transactions that have done much harm to consumers and aluminum markets.

Yesterday’s hearing also disclosed that Goldman employees were given access to valuable non-public information from the warehouse company related to aluminum, information that could have been used to benefit Goldman’s aluminum trading. Both the warehouse company and Goldman had information barrier policies in place at the time, but given the recent history of banks improperly sharing information to manipulate electricity, LIBOR, and foreign exchange rates, reliance on voluntary policies at banks that have an economic interest in ignoring those policies is simply not enough protection for consumers.

Finally, yesterday’s hearing disclosed the extent to which physical commodity activities like uranium trading, coal mining, and oil and gas activities exposed Wall Street banks to wide-ranging and unpredictable risks, from natural disasters to mechanical malfunctions to labor unrest to volatile commodity prices.

The Subcommittee’s investigation and Report are not the first to expose the problems associated with Wall Street bank involvement with physical commodities. In 2010, the Federal Reserve formed its own Commodities Team to conduct a multi-year special review of the physical commodity activities of ten large banks. That special review found that the ten banks were heavily involved in a wide-ranging and expanding set of physical commodity activities and generally had insufficient capital reserves and insurance coverage. In fact, the review determined that four of the banks with the largest physical commodity activities, including the three examined by

the Subcommittee, had shortfalls ranging from \$1 billion to \$15 billion to cover potential losses from a catastrophic event. Should even one of those banks, embedded in every corner of our economy, experience a catastrophic event for which it is unprepared, the U.S. banking system could be effected and U.S. taxpayers be forced to face another bailout.

All this activity was occurring despite, as I have mentioned, a longstanding separation of banking and commercial activities and despite the potential threats to the safety and soundness of bank holding companies. The legal arguments advanced by the banks to minimize their liability risk are questionable and likely to be of little comfort in the event of a natural disaster or a catastrophic accident. The Federal Reserve should approach those arguments with skepticism and make sure that its responsibility to protect the financial system from 2008-style shocks remains paramount. Beyond the issue of risk, it is urgent that the Federal Reserve also consider the implications of these activities for the integrity of U.S. commodity markets and the prevention of market manipulation and unfair trading by Wall Street banks.

Today, to address these problems, we are going to hear that the Federal Reserve has made a commitment to issue a new proposed rule in the first quarter of 2015. That is good news, although the 2012 findings of the Federal Reserve's own special review, together with our findings, make that rulemaking long overdue.

The Federal Reserve is considering arguments that Wall Street banks provide hard-to-replace services in some of these areas. But the separation between banking and commerce has served markets and our economy quite well for decades. And the erosion of that barrier is clearly doing harm today. Any discussion of these physical commodities activities must begin and end with the need to protect our economy from risk, our markets from abuse, and our consumers from the effects of both. Wall Street banks with near-zero borrowing costs, thanks to easy access to Fed-provided capital, have used that advantage to elbow their way into commodities markets. Bad enough that this competitive advantage hurts traditional commercial businesses; worse that it opens the door to price and market manipulation and abusive trading based on non-public information.

Today's hearing will receive testimony from Governor Daniel Tarullo, a member of the Board of Governors of the Federal Reserve. We will also hear from Larry Gasteiger, the Acting Director of Enforcement at the Federal Energy Regulatory Commission, who has had to deal directly with bank manipulation of the electricity market.

On our first panel, we will hear from Professor Saule Omarova of Cornell University, one of the first legal experts to chronicle the rapid and largely underappreciated breakdown of the barrier between commercial activity and banking; and we will hear from Chiara Trabucchi of Industrial Economics, Inc., an expert in the area of financial responsibility and liability risk.

The Subcommittee, based on 2 years of investigation, has recommended a series of actions to rein in excessive risk and conflicts of interest stemming from Wall Street bank involvement in physical commodities. Those recommendations include the issuance of a

single, comprehensive limit on bank holding companies' exposure to physical commodities, no matter what authority is used to accumulate those holdings. They also include our recommendations narrowing the scope of the Gramm-Leach-Bliley authorities that allowed the explosion of Wall Street involvement in these activities to begin with. And they include instituting new safeguards to prevent Wall Street banks from using commercially valuable, non-public information obtained from their physical commodity activities to manipulate markets or to gain unfair trading advantages. The Subcommittee's Report and these 2 days of hearings will help provide a factual foundation for those and other reforms as the Federal Reserve, FERC, and other regulators consider new rules to protect businesses, consumers, and the economy.

On a personal note, it has been a privilege for me to work with a staff that not only consistently displays knowledge, tenacity, and dedication, but that represents a true example of bipartisan cooperation. The staff of this Subcommittee, Majority and Minority, have done important and lasting work on behalf of the American people, and I am grateful for all that they have done.

I can think of no better partner than Senator John McCain. His dedication to energetic, effective oversight is just one of his major contributions to the Senate and to our country that make working with him so rewarding.

Senator McCain.

OPENING STATEMENT OF SENATOR MCCAIN

Senator MCCAIN. Thank you very much, Mr. Chairman. Thank you for your kind words.

Yesterday, we heard about how large financial institutions are engaging in manipulative practices in physical commodities markets. Over 6 years after the financial crisis, these banks still think they are too big to fail. And, indeed, they probably are. And they have been taking on new risk that could lead to more bailouts by the American taxpayer through shady merry-go-round transactions and large purchases in commodities markets. These financial institutions have driven up costs for end users of materials like aluminum and ultimately hurt ordinary consumers.

The banks could not have engaged in these activities without the permission of regulators. The Federal Reserve in particular has the power and the responsibility to make important changes that would prevent the sorts of abuses that have been illustrated in this hearing.

While the Federal Reserve claims in its written statements that it has monitored this situation and explored possible actions, it has clearly not done enough to prevent harmful commodity activities by the banks. And the persons who ultimately are harmed by all of this, of course, is the average consumer, the average citizen, who has no knowledge, unless it paid attention to this hearing, of the extent of the manipulations that have been carried out by the largest financial institutions in America and, indeed, probably the world.

I look forward to hearing from the witnesses why the Federal Reserve has allowed the problems identified by the Subcommittee to

fester in our financial system and how it intends to fix them going forward.

I thank you, Mr. Chairman.

Senator LEVIN. Thank you very much, Senator McCain.

And I now would like to call our first panel of witnesses for this morning's hearing: Ms. Saule Omarova, a Professor of Law at Cornell University, Ithaca, New York; and Ms. Chiara Trabucchi, a Principal at Industrial Economics, Incorporated, Cambridge, Massachusetts.

We appreciate both of you being with us today. We look forward to your testimony, and pursuant to our rules, all witnesses who testify before the Subcommittee are required to be sworn, and at this time I would ask both of you please to stand and to raise your right hand. Do you swear that the testimony you are about to give to this Subcommittee will be the truth, the whole truth, and nothing but the truth, so help you, God?

Ms. OMAROVA. I do.

Ms. TRABUCCHI. I do.

Senator LEVIN. We will use a timing system today. About a minute before the red light comes on, the light will change from green to yellow. That will give you an opportunity to conclude your remarks. Your written testimony will be printed in the record in its entirety. We would appreciate it if you could try to limit your oral testimony to 5 minutes.

Ms. Omarova, we will have you go first.

**TESTIMONY OF SAULE T. OMAROVA,¹ PROFESSOR OF LAW,
CORNELL UNIVERSITY, ITHACA, NEW YORK**

Ms. OMAROVA. Chairman Levin and Senator McCain, thank you very much for an opportunity to testify here today. My written statement and prior writings lay out in sufficient detail my views on this subject, so I will keep my remarks to a few key points.

I will recap briefly why, from the perspective of U.S. banking history, policy, and law, such involvement raises potentially significant concerns and, therefore, demands serious legislative and regulatory attention.

I will also briefly address some of the main arguments against restricting banks' physical commodity activities typically advanced by banks themselves, their agents, and clients.

Those advocating the regulatory status quo often claim that there is nothing new or special and, therefore, nothing problematic about allowing banks to run physical commodity operations. These industry advocates tend to sample episodes from ancient or medieval European or Asian history to prove that banks in general have always been natural commodity traders.

This cherry-picking from foreign countries' distant past, however, is irrelevant for purposes of interpreting U.S. banking laws and regulations, which are based on the longstanding American tradition of keeping banks out of any non-banking commercial businesses.

The principle of separation of banking from commerce has always been and continues to be the cornerstone of the U.S. banking finan-

¹ The prepared statement of Ms. Omarova appears in the Appendix on page 282.

cial system. This structural separation has been traditionally viewed as necessary in order to preserve the safety and soundness of the U.S. banking system by shielding banks from the risks of commercial activities, to ensure a fair and efficient flow of credit in the economy by preventing unfair competition, market manipulation, and banks' conflicts of interest, and to prevent excessive concentrations of financial and economic power.

Early American bank charters were granted by State legislatures and typically prohibited chartered banks from dealing in merchandise. In 1825, New York became the first State to restrict banks' activities by statute. The National Bank Act of 1863 limited federally chartered banks' activities to those in the narrow band of "the business of banking" alone.

The Bank Holding Company Act of 1956 extended the same principle to banks' parent companies, or bank holding companies, or BHCs, by generally limiting their activities to those closely related to banking.

The passage of the Bank Holding Company Act marks the beginning of the truly relevant history for banks in commodities. Since 1956, for any U.S. banking organization, the decision to participate in the production, processing, transporting, or trading physical commodities, all purely commercial activities, has never been just a matter of their own or their clients' profitability or convenience. It is first and foremost a matter of their legal authority. In order to enter the physical commodity supply chain at any point and in any capacity, a bank or any bank affiliate has to find a specific legal or regulatory authorization to do so. And what this means is, that under U.S. law, these types of business decisions are deemed too important to be left purely to individual banks' managers and owners, and instead are fundamentally linked to broad considerations of public policy.

The Gramm-Leach-Bliley Act of 1999 amended the Bank Holding Company Act to allow a subset of bank holding companies, financial holding companies, or FHCs, to expand their commercial activities subject to certain limits. As we know now, since the early 2000's, several large U.S. FHCs have availed themselves of these newly created statutory powers to grow extensive physical commodity operations.

As I argued before, this trend undermines the fundamental principle of separation of banking from commerce and raises a wide range of potentially significant policy concerns with safety and soundness of financial institutions, systemic risk, potential public subsidy leakage, market integrity, consumer protection, the sheer governability of financial institutions, regulatory capacity to oversee them, and excessive concentrations of financial and economic powers.

The banking industry, of course, dismisses all of these policy concerns as irrelevant. The industry's claims, however, are generally familiar. Banks make them every time they object to any attempt to regulate their activities. These arguments are typically either nonresponsive, nonsensical, or patently false.

For example, the typical nonresponsive argument is that banks' commodities trading benefits their clients. Even if it were true, that argument completely ignores the fundamental question: To

what extent those private benefits to individual clients stem from banks' access to public subsidy.

An example of a nonsensical argument is the industry's claim that, because nothing bad has happened yet, there is no reason to worry that it might happen in the future. And, of course, this claim could have been made about the Deepwater Horizon accident up until the day it actually happened.

An example of a patently false claim is an assertion that oil drilling is no different from making mortgage loans and that banks manage all of these risks perfectly well. In fact, oil is different from money, and traditional credit intermediation is different from trade intermediation. And claims of perfect risk management are questionable without specific proof, even with respect to banks' core financial activities, let alone things far outside the realm of their traditional expertise.

So these are just a few examples of the banking industry's arguments, all of which essentially distract attention from the real questions and, in effect, deny the American public the answers we deserve. I urge lawmakers and regulators not to lose sight of what is really at stake in this important public policy debate.

Thank you very much.

Senator LEVIN. Thank you very much, Ms. Omarova.

Ms. Trabucchi.

TESTIMONY OF CHIARA TRABUCCHI,¹ PRINCIPAL, INDUSTRIAL ECONOMICS, INCORPORATED, CAMBRIDGE, MASSACHUSETTS

Ms. TRABUCCHI. Chairman Levin and Ranking Member McCain, thank you for the invitation to testify in today's hearing. My name is Chiara Trabucchi, and I am a Principal with Industrial Economics, Incorporated, in Cambridge, Massachusetts. My expertise relevant to this matter is in environmental risk management and financial assurance frameworks.

My testimony focuses on the environmental and catastrophic event risks that confront businesses involved with physical commodity activities as well as mitigating strategies adopted by financial holding companies to manage these risks.

My remarks today address the consequences of these companies engaging in commodity-related activities, including investments in industrial facilities such as power plants, pipelines, natural gas facilities, and refineries.

Businesses involved with these types of activities face specialty or non-standard risks. Incidents documented in the public record evidence that activities involving the extraction, storage, transport, or refining of natural resources can cause several types of injury including, for example, human health effects, fatalities, ecological damage, property damage, business interruption, or surface/sub-surface trespass. The means by which injury occurs often vary by commodity type; common pathways include pipeline rupture or explosion, impoundment failure, mine collapse, contaminant release, industrial accident, mechanical failure, or transport accident.

¹ The prepared statement of Ms. Trabucchi appears in the Appendix on page 302.

History has shown that catastrophic events involving environmentally sensitive commodities can result in incident response costs and compensatory damages that exceed the market value of the commodity involved; a single environmental or catastrophic event can result in billions of dollars in incident-related expenditures. In some cases, financial impacts can exceed the available capital and financial assurances of the businesses involved, resulting in bankruptcy.

Prudent risk management dictates that firms operating in these sectors establish risk mitigation strategies to mitigate and minimize the likelihood of an environmental event and, if an event should occur, have the financial resources to remain financially responsible for their actions.

By doing so, the firm is better able to assure shareholders, whether public or private, that the value of their investment will not erode and, with time, will gain value. Traditional environmental financial assurance models require that risks be mitigated either directly as an expense or indirectly through third-party financial instruments, including, for example, insurance.

In an effort to avoid the need for, or minimize the amount of, third-party financial assurances or committed capital, firms with business ventures in physical commodity markets may choose to employ other risk-mitigating strategies.

One strategy involves reliance on the corporate veil as a legal shield. In the context of environmental risk management, this strategy involves establishing a series of holding companies whereby the facility engaged in activities directly related to the physical commodity is separated from the top-tier parent company by a series of corporate layers. It also may involve spinning off the liabilities of a physical commodity business into a shell corporation to shield the assets of the top-tier parent company. In either case, the financial holding company believes itself shielded from legacy environmental liabilities or catastrophic events occurring at the lower-level subsidiary or affiliate.

A second mitigating strategy is to engage in physical commodity activities in foreign markets with less sophisticated environmental regimes than those present in the United States. In so doing, the financial holding company believes that it, and the U.S. taxpayer, is insulated from environmental risks at the foreign subsidiary.

A third mitigating strategy is to undervalue expected loss scenarios. One approach, for example, is to assume that ownership of the asset or physical system will transfer to another entity prior to an environmental or catastrophic event occurring. Merchant banking investments can be held only for a limited amount of time. Thus, financial holding companies may underestimate the environmental risk exposure because the physical asset forms part of its portfolio only on a short-term or transitory basis.

All of these risk-mitigating strategies can contribute to moral hazard where the financial holding company believes itself insulated from risk and, therefore, may act imprudently with respect to the nature and scope of its involvement with physical commodity-related activities. The consequential impacts of these strategies vary, but may include assigning an artificially low risk premium to environmentally risky ventures, limiting disclosure of con-

tingent liabilities associated with environmental or catastrophic events, and delaying or avoiding needed infrastructure improvements. Any reluctance to make capital improvements can place the financial holding company at potentially greater risk of environmental and financial consequences when compared to peers that upgrade their infrastructure. It also may yield a short-term competitive advantage over market participants who do undertake long-term capital investments.

Further, when the time comes to divest its merchant banking investment, the financial holding company may find it challenging to find a buyer who is willing to absorb the risk profile of potentially long-tailed legacy liabilities.

To the extent the financial holding company does record a probable loss, it may assure only the lost market value of the commodities involved and not the expected value of incident response costs. Further, the company may argue that even if deemed liable for an environmental event, the amount of liability is negligible when measured against its overall capital structure.

The failure to recognize the breadth of potential exposure arising from its involvement in physical commodity activities, coupled with the failure to maintain sufficient financial assurances, could compromise the stability of the financial holding company and its subsidiary depository institutions. This could lead to an inappropriate risk transfer to the public in the event the holding company and its non-banking subsidiary are unable to meet their financial obligations. To the degree the affected company is a global systemically important bank, a risk transfer of this sort may send a potentially destabilizing shock through the financial markets.

The financial crisis of 2008 highlighted the speed with which a global market contagion can take effect when a large corporation undervalues its long-tailed risks.

Notwithstanding the varying degrees of supervisory standards and capital ratios imposed on financial holding companies engaged in physical commodity activities, the ability of these companies to meet prescribed ratios may be immaterial if they have undervalued the long-tailed environmental risk exposure of their investments, either because they believe they will be legally insulated from liability or because they believe they are too big to fail.

In the event the strength of the capital ratio is diluted and risky investments proceed because the potential financial consequences of prospective environmental liabilities are undervalued, then some or all of an unfunded liability may be left for the U.S. taxpayers to bear in the event of an environmental or catastrophic event. My written testimony further elaborates on these areas.

I would be pleased to answer any questions. Thank you.

Senator LEVIN. Thank you very much, Ms. Trabucchi.

Professor Omarova, please take a look at a chart, which is Exhibit 1h,¹ and we are going to put the chart, our larger version of it, up for everybody to see. This was a chart that was prepared by JPMorgan in 2011 when it owned or had tolling agreements with 31 power plants across the country, and also owned or leased gas

¹ See Exhibit No. 1h, which appears in the Appendix on page 823.

storage facilities for about 78 billion cubic feet of natural gas since it was supplying natural gas to a number of those plants.

Now, when I look at this network of power plants and natural gas storage facilities, it strikes me as a vast commercial, industrial venture, not a banking activity. How does it strike you?

Ms. OMAROVA. Well, it strikes me as actually a terrifying picture of what is going on here. As a former banking attorney, to me this is precisely what the law did not mean to happen at all. This is a financial-industrial conglomerate, and it is not just the law itself that seems to be offended by this type of a picture. But there is a general expectation among American citizens and taxpayers that our banks are doing banking business.

I talk a lot to various people, my friends, who are not necessarily banking lawyers; they have no idea about this stuff going on. They are nurses, cab drivers, and engineers. And when I tell them the research I have been conducting in the past 2 years, they are invariably shocked. And no matter what JPMorgan says about why this type of expansive network of power and other commercial activities is absolutely necessary to them in order to provide financial services to the people, I think they are missing something very important in that core, shared intuition that we all have: banks should not be doing this stuff.

Senator LEVIN. And what about the risks, Ms. Trabucchi?

Ms. TRABUCCHI. Well, I think when you have an organization that is this diversified where the span of it is across so much of the United States, and you are involved in physical commodity activities that are highly sophisticated in nature, and that result in highly sophisticated degrees of risk, I think it is a very dangerous proposition to have that consolidated in a portfolio where you have different actors who are not necessarily as sophisticated about how to manage those risks as they are in their inherent industry, which is finance.

The environmental risk profile and the financial risk profile are inherently different, and so the tools and techniques that are used to manage environmental risks are not the same as those used to manage financial risk.

Personally I think that this is a very troubling trend, and it is a recent trend. And so to the degree it continues or expands, I think the environmental risk profile will grow.

Senator MCCAIN. Mr. Chairman, could I interrupt a second?

Senator LEVIN. Please.

Senator MCCAIN. As follow-up to that in general, as we see this expansion—in one case at one time one of these institutions owned 80 percent of the entire supply of copper that is traded on the exchanges—am I exaggerating too much when I say this is reminiscent of the days of the robber barons when the railroads were controlled by one individual? And, again, when you corner the world that traded supplies of a vital commodity, in that case copper, I was astounded by that. Maybe you could respond to that. Am I too alarmed?

Ms. OMAROVA. Absolutely not. I am really glad you said that. That is precisely that back almost 100 years ago, this country was up in arms against: This kind of seamless wedding of money and control over raw materials and transportation and pure commerce.

Right? Because we were worried about the fact that people who control money and control raw materials can control too much of our society in general. And it does not matter that today, in 2014, we appear more sophisticated, we have greater technology, and we can say, well, there are all these mathematical models that somehow make this picture less alarming. Ultimately at its core, it is just as dangerous as it was 100 years ago.

Ms. TRABUCCHI. From my perspective, again, my background is environmental risk management and financial indemnity models. I think what is troubling is you have actors who are inherently—that the public inherently believe are there to provide financial credit and to provide—or assist in financial assurance. And often those are the actors to whom your commodity actors go in order to help assure their risks.

Now what you have is a combination of—or a concentration of activities in one sector, and so they are self-regulating. And, in my view, whenever you have self-regulation, it torques your risk profile, and you do not have the checks and balances necessary to make sure that the financial assurances map to the probable risk profile and map to the loss ratios, because the sectors are too interconnected.

So when you are calculating a probable loss ratio and you are the one who is going to incur the loss, there is a moral hazard that arises. You do not have the incentive to appropriately manage your risks because you are also banking your own—

Senator MCCAIN. Because you are not taking the risk.

Ms. TRABUCCHI. Well, they would argue they are not taking a risk. I think that you are talking to somebody who believes—

Senator MCCAIN. But that is what I mean. I mean there is no risk to them under this—

Ms. TRABUCCHI. It is a risk to the U.S. taxpayers.

Senator MCCAIN. Right.

Ms. TRABUCCHI. The presumption is that there is a de facto public-private risk-sharing arrangement where the public has not necessarily been privy to that the arrangement. And I think that is the danger here; the inherent model of environmental law, environmental regimes, is to place environmental risk with the actor who incurs that risk and ensure that they remain financially accountable and financially responsible, not the—

Senator MCCAIN. Which in this case, under their structure, they are not responsible.

Ms. TRABUCCHI. Well, I think it is a matter for the courts. I think if there is an event—

Senator MCCAIN. Should it be a matter for the courts, or should it be unequivocal, the responsibility? And I apologize, Mr. Chairman—

Senator LEVIN. No. Please.

Senator MCCAIN. But it raises up just one more question for both of you. After the terrible financial collapse of 2008, one of the commitments we all made—Republican, Democrat, administration, all of us—was that none of these institutions would ever again be too big to fail. I would like to ask your opinion. Given a lot of the information that we have just seen, have we achieved that goal or come to close to it, anywhere near it?

Ms. OMAROVA. Well, not only did they not become smaller and less likely to fail, or come to the brink of failure, and much easier to resolve without any public bailouts, but to the contrary, particularly in this physical commodities area, they have grown much bigger. Not only are they bigger in terms of their size, but they have actually made themselves, according to them, their own advocates, indispensable not only as providers of finance but as providers of coal, jet fuel, oil, natural gas, aluminum, copper, and so on and so forth, or at least actors in the supply chain that have a lot of control over the availability of those raw materials.

So, in effect, they are acquiring businesses that potentially can make them even more important to be bailed out or at least to claim they need to be bailed out, should anything happen. And it also creates new and unfamiliar, unstudied to this day, channels of transmitting risk, systemic risk, from finance into these non-financial areas and vice versa.

So now, for example, if it is true that JPMorgan and Goldman Sachs are so uniquely indispensable to all of those end users out there in the real economy who need jet fuel or electricity, and suddenly something bad happens in their financial businesses—which usually seems to happen periodically—and somehow they are on the brink of a failure and there is a question, “Should we let them fail?” And suddenly policymakers will have to deal with the potential impact of letting them fail on those various utilities and airlines, and whoever they are.

And so that to me is another factor to start doubting that the problem of “too big to fail” is being resolved. I think it is being exacerbated.

Ms. TRABUCCHI. I think the precept here is they should not be allowed to be too big to fail, that when you are talking about environmental risk management and financial assurance, every actor in every industry in every function that they provide, they should remain financially accountable. And there are numerous—

Senator MCCAIN. Do you believe that they are—

Ms. TRABUCCHI. Presently too big to fail? As I sit here right now, not having done a review of their specific financial holdings, I am not prepared to say with certainty one way or the other. What I will say is, again, they should not be allowed to be too big to fail. They should not be engaged in activities that are beyond their risk profile or beyond their ability to manage their risk profile. Some of the information that I read in the Subcommittee Report suggests that they do not know how to analyze or quantify probable loss scenarios, it is actually not true. There are industries specifically designed to measure and monetize risk. They are choosing not to do so. And so to the degree, I think, regulators allow them not to, then they are enabling too big to fail, and they do not need to do so.

Senator MCCAIN. Sorry for the interruption, Mr. Chairman, but I thought your line of questioning begged these additional questions. I thank you, Mr. Chairman.

Senator LEVIN. That was very on target.

As a followup of that, one of the issues here, the differences between a regular oil and gas company and the financial holding company is their capital ratio. So an oil and gas company has a

capital ratio on average of 42 percent. Financial holding companies have an average capital ratio of 8 to 10 percent.

Professor Omarova, tell us, what does that mean? And what is the difference? What is the significance of those numbers?

Ms. OMAROVA. Well, when we speak of capital ratios, what we are really talking about is the amount of financing that a particular company raises from its own private owners, from its shareholders, as opposed to from creditors. So we are talking about leverage.

So, for a regular oil company or a commodity company that you refer to, that ratio, that 42 percent is not necessarily dictated by law. It is the market, the free market that determines that in order for the creditors to really be willing to deal with that company, they want to see more of the financing coming from the owners as opposed to other lenders. And banks and financial institutions are very different in that respect. They can operate, and they are expected frequently to operate in their financial businesses, with a lot higher amount of leverage. That is why they are regulated.

But that privilege, what it means is that financial institutions, especially banking organizations, get the public backup in case something goes wrong, and the creditors are still willing to deal with this company with low capital, right? Because they know that somehow the U.S. Government will back up those liabilities ultimately. And that is a tremendous advantage because what it means is that—

Senator LEVIN. The advantage to the banks.

Ms. OMAROVA. To the bankers, of course. That is why all of the banks' clients, for example, are currently, crying that, oh, my goodness, if you kick banks out of this business, then we will have to deal with less "creditworthy counterparties." What that really means is that those counterparties out there in the market do not have that kind of public subsidy, because banks should not be more creditworthy by market standards. Look at their capital levels, 8 percent versus 40 percent, right? There is no reason to think that this is a better counterparty to deal with but for the public backing that banks enjoy, and that is a tremendous advantage over other non-subsidized private companies in the market.

Senator LEVIN. You made reference to concentration of power, and we heard yesterday about a severe concentration of power in the aluminum storage market. And here is what has happened, and I do not know if you have read the Report, but let me try to summarize it.

Goldman Sachs acquired a large warehouse business in 2010 called Metro, and after Goldman acquired Metro, Metro tripled the incentives that it paid to attract aluminum to its many warehouses in the Detroit area. It paid millions of dollars in incentives to existing warehouse clients to engage in what we call "merry-go-round deals," and here is the way it worked. The warehouse clients agreed to cancel what are called "warrants." These are warrants of the London Metal Exchange. This lengthened the queue to get out because if the warrant is canceled, you have to then get in line to get your aluminum out of the warehouse.

And then what they did was they canceled their warrants—they were paid to do this—lengthened the queue to get aluminum out

of these warehouses, and the result was the following: That the line, the queue, to remove metal from these warehouses went from 40 days to 665 days, forcing metal owners to wait nearly 2 years to get their metal out of storage.

Now, what happened is that Metro built a virtual monopoly on the U.S. London Metal Exchange aluminum storage market. They captured 85 percent of the market share by 2014. The longer lines which resulted requiring that these warrants be canceled in order to get the subsidy resulted in and were correlated to the tripling of a premium for aluminum. To buy aluminum, you have to pay a premium plus a London Metal Exchange cost, but the premium is a big part of the price, and a big growing part of the price for aluminum.

So Goldman owns warehouses and is directly involved in a decision to increase the line from, again, usually a few days to 600 days, which is correlated with a dramatic increase in the premium that people pay for aluminum. And at the same time, Goldman, through its financial transactions, is involved in the price of aluminum, futures for aluminum, swaps for aluminum, and they have this information because they are involved in the decision and the payment to people to effectively lengthen the line by going into queues. And there is a direct correlation between a longer line and the premium that is paid for aluminum.

Now, that may sound kind of complicated, and it is. But that is the kind of concentration of power that involves market manipulation through the use of these warehouse operations. And it is information which Goldman not only is privy to, unlike anybody else, except the people running the warehouses for them, they are creating the situation themselves. It is not just knowing of information which affects the value of aluminum futures in which they are dealing. They are actually creating the situation as well as learning of the situation. And so they are involved in these merry-go-round deals, and I guess the question—they have obvious informational advantages in their derivatives trading operations.

Now, did you read the Report or is this familiar enough to you now that you can give us a reaction to this?

Ms. OMAROVA. Well, this is familiar to me enough. Of course, no one can ever claim that what Goldman Sachs is actually doing within its operations is fully well known to them, unless you are part of their operation. And I did not see yesterday's Goldman Sachs executives' testimony. I have read some reports that indicate that it was an act worth seeing.

However, this is a very interesting situation that exemplifies precisely the dangers from the market integrity perspective of allowing large financial institutions that are active in creating and trading financial instruments linked to prices of commodities, on the one hand, to enter businesses in the actual physical commodity supply chain, so that they cannot only get some information from these operations but actually be able to physically move the prices.

And, of course, they will tell us—and they probably did tell you yesterday—that none of that is happening, everything is absolutely cleanly separated, and they are really only doing it for the best of the society. But the reality of it is that, why would a financial institution, for example, even try to become a warehousing company?

Until very recently, metals warehousing did not look like the kind of hot business that all the banks were really getting into, right? There must be a reason for them to extend themselves so that they actually own warehouses. And the reason is precisely their ability to devise and implement much more complex strategies for profiting from these prices, not only by extracting rental income from the warehousing or even by raising certain aluminum prices in certain markets, but also by perhaps engaging in very complex financial games around that stuff.

And once that kind of a game starts determining what is happening in the market for aluminum, for example, that really distorts the dynamics that have been present for decades and centuries. And so everything becomes a lot more difficult to understand: Why things are happening the way they are happening. And perhaps that is part of the reason why it is so difficult for us to argue with Goldman Sachs executives on the specifics—"have you manipulated, have you not manipulated?" But if you kind of step away from the specifics and look at what exactly is happening, it is quite clear that this is an extremely troubling trend, and it should NOT be allowed to continue.

And, for example, the very fact that those "merry-go-round" clients are primarily financial institutions, those clients are the clients of Goldman Sachs in its capacity as a financial institution. So perhaps if it were not Goldman Sachs but some bona fide metals warehousing company that was running Metro's warehouses, that company might not have been able to create such incentives and to pay that much money to producers of aluminum to store aluminum in its warehouses, on the one hand, but also to find those types of convenient clients to engage in this merry-go-round that they can find because they deal with these hedge funds and private equity funds and whoever they are.

And this is a very important factor to keep in mind when we think about the concentrations of power and the new forms of manipulation that may be taking place there.

Senator LEVIN. Thank you.

Senator McCain.

Senator MCCAIN. I think I have asked my question, Mr. Chairman, but Ms. Omarova raised this: Why would Goldman Sachs want to get in the warehouse business? That is a very interesting question, and I wonder if they have ever been in the warehouse business anywhere else in America.

I thank you, Mr. Chairman.

Senator LEVIN. Thank you. I just have one additional question, I guess, of Professor Omarova. Banks have been found to have engaged in serious manipulative conduct involving things like electricity prices and LIBOR and foreign exchange rates and more. Those same banks have access to near-zero interest rates to borrow money and lower capital requirements that almost any private sector company conducting physical commodity activities which do not have that kind of huge advantage. So cheaper credit and lower capital requirements translate into clear competitive advantages when banks start getting into commercial businesses, as you have pointed out, like power plants, oil storage facilities, coal mining, and so forth.

Now, since the Federal Reserve is the source of those competitive advantages, does it have a responsibility to ensure that banks do not use those competitive advantages to engage in market manipulation or unfair trading?

Ms. OMAROVA. The short answer is yes. The Federal Reserve absolutely has the responsibility to ensure that financial holding companies through their many commercial subsidiaries or otherwise do not conduct activities that are essentially taking unfair advantage of their access to a public subsidy system. And it is disheartening to me that the Federal Reserve has not done so, and even when the Federal Reserve actually was forced to publicly state its intent to look into this issue last year, in 2013, after some hearings in the Senate, even then their focus seems to be mostly on the safety and soundness of the financial institutions themselves.

It is a very important issue, no question about that. But it is by no means the sole issue at stake here. The Bank Holding Company Act historically was adopted as an anti-monopoly, antitrust kind of an act, and that spirit of the Bank Holding Company Act needs to be upheld today in the face of these kinds of activities, these kinds of charts being shown to us here. And it is the Federal Reserve's primary responsibility to make sure that whenever a financial holding company gets into any non-financial business, that the financial company produces specific ongoing proof to the Federal Reserve, as our agent and a watchdog on behalf of the American taxpayer, that the extraordinary step of extending public backup for private companies' liabilities, stuff that we do with banking institutions, is not extended throughout the economy without the American taxpayers knowing about it. That is absolutely an important point, and that is precisely the point that to this day we have not seen addressed by the regulators or the industry.

Senator LEVIN. Ms. Trabucchi, the three financial holding companies have all told us that they have been careful to set up their affairs so that they do not directly own or operate a physical commodity facility, and so they cannot be held liable for losses. I think Senator McCain asked a question like this yesterday about if BP were a bank, I think was the question he asked, so let me ask—it is really his question. If BP were a bank, what would be the impact on that bank of that oil spill?

Ms. TRABUCCHI. Well, thankfully, BP is not a bank. If you look at BP's recent Fiscal Year end 2013 annual report, you will see that they have recorded losses or anticipated losses of approximately \$43 billion with incident-related expenses to date in the realm of approximately \$25 billion.

I think that the challenge you have are these financial holding companies believe that the legal shield they have instituted through a series of corporate veils, whether that corporate veil involves holding companies or shell companies or investing in subsidiaries and affiliates in foreign countries, that the legal shield is a de facto shield from financial responsibility. And I think what the Deepwater Horizon spill has shown, as well as several other incidents in the public record, is that parent companies do end up becoming financially responsible for the activities of their subsidiaries and affiliates, not simply because they are liable or not liable, but there are many other reasons why they might choose to do so.

So, from a financial perspective, I think it is dangerous for financial holding companies to engage in a multiplicity of physical commodity-related activities with the presumption that there is no risk, and if there is a risk, the legal shield will protect them, and if the legal shield does not protect them, the amount is negligible and, therefore, not worthy of recording on their financials, I think that is a very dangerous prospect for the banks, and I think it is a dangerous prospect for the U.S. taxpayer. There are numerous other incidents. I think Deepwater Horizon is one with which the public is familiar. But there are many other environmental and catastrophic incidents that are billion-dollar incidents.

Senator LEVIN. Now, during our investigation, Ms. Trabucchi, we came across some fact patterns which were unusual, to put it mildly. We found, for instance, that Morgan Stanley had used three shell companies, known as "Wentworth," to build a compressed natural gas facility. Those companies had no employees or offices of their own. They were managed and run by Morgan Stanley employees. They were located in Morgan Stanley's Commodities Division's offices in Purchase, New York.

Does that type of shell arrangement increase the chances that Morgan Stanley would be held liable if that plant were struck by a disaster?

Ms. TRABUCCHI. In my opinion, yes.

Senator LEVIN. Now, how about the situation at Goldman where it bought a uranium trading company, Nufcor, and the employees that ran the business left, Goldman employees took over running the business? Does that fact pattern increase Goldman's potential liability?

Ms. TRABUCCHI. Assuming those employees were involved in the direct operation of the facility, then yes.

Senator LEVIN. And what about a situation involving JPMorgan which directly owns three power plants but in each case it contracted with a third party to run the plant? Now, as a direct owner—what is your reaction to that?

Ms. TRABUCCHI. Under various legal case precedents, if you are a direct owner or operator of a facility that has an environmental incident, you could be held directly liable for the actions of that subsidiary. I think when you are talking about contracting the activities, then it becomes a little bit more nuanced. And I think that the notion of contracting, really again it gets down to direct operations. Was one party directing the other party to operate a facility or operate activities in a certain fashion that resulted in an environmental incident?

Senator LEVIN. Ms. Trabucchi, the financial holding companies that we have looked at have hundreds of billions, sometimes trillions of dollars in assets, and some have claimed that even a catastrophic event would not have a significant impact on their finances or their stability. But isn't it correct that most of those trillions of dollars belong to their clients and that almost all banks have capital ratios, again, of less than 10 percent, meaning that if disaster strikes, they do not have sufficient funds to deal with the fallout?

Ms. TRABUCCHI. Yes, I think this is an interesting point and an interesting question, because I think that this is an area where you

can see the most difference between financial holding companies operating in physical commodities and actual industrial actors who are familiar with the sophisticated nature of their commodity and their industry.

Generally speaking, those actors who are in the physical commodity business must comply with very sophisticated environmental laws and environmental regimes that require financial assurance. And those financial assurance instruments—for example, insurance, surety bonds, potentially putting in place a trust fund—also allow for self-insurance where you can benchmark the strength of your financial statements against the facility's risk profile.

What you need to do is evidence solvency and liquidity, which are often multiples of the prospective monetized risk. It is not just a measure of the size of the entity.

So I think the short answer to your question is just presuming a capital ratio is sufficient to benchmark financial assurance for environmental risk is short-sighted.

Senator LEVIN. Exhibit 6,¹ in that document this is what Goldman said to the Federal Reserve—

Ms. TRABUCCHI. I am sorry. Did you say—

Senator LEVIN. It is on page 6 of Exhibit 6, and I will read it, which may or may not obviate the need to find it in that huge book of exhibits.

Ms. TRABUCCHI. OK.

Senator LEVIN. Here is what Goldman said to the Federal Reserve: “While there is no explicit scenario for environmental [or] catastrophic damage for any business line or corporate area, exposure related to participation in commodity markets primarily resides in the damage to physical assets risk category in Global Commodities.”

Now, then Goldman continued as follows: “Global Commodities’ operational risk loss during storage and transportation of its physical commodity assets is limited to the value of those assets as catastrophic [or] environmental risk resides with the facility operators.”

So as recently as July of last year, in other words, Goldman had no capital allocated for a catastrophic event, which is what a Goldman executive confirmed in his testimony yesterday.

Do you have a reaction to that?

Ms. TRABUCCHI. Well, I think, again, this gets back to this concept that they presume the legal shield is strong enough that it obviates them from any financial accountability or financial responsibility. And as I said, I think incidents, recent incidents in the public record evidence that a legal shield perhaps is not the best risk management strategy when you are working in the physical commodities sector. And I also think it is not a reasonable risk management strategy to presume no risk or to presume that if there were risk and it were monetized, that you are simply too big to fail and, therefore, that risk does not need to be assured.

Senator LEVIN. Ms. Trabucchi, in your prepared testimony you talk about financial holding companies making transitory investments in commodity businesses like power plants, natural gas fa-

¹ See Exhibit No. 6, which appears in the Appendix on page 866.

cilities, and oil and gas pipelines, and you also commented on that in your oral testimony. You point out that they plan to hold the investments for only a few years and are essentially betting that a catastrophic event will not take place while they own or lease the facility. How important, again, is that transitory factor?

Ms. TRABUCCHI. Well, I actually think it is quite important because what we are talking about is forecasting probable loss scenarios. And if you are aggressively underestimating the length of time over which the loss scenario could arise because you believe you will not own the asset or you are only going to own the asset for a limited or short period of time, then I think what you effectively are doing is undervaluing your risk profile and undervaluing the dollar-denominated value that you could be required to pay in the event of an incident or to offset compensatory damages.

And so I think the short answer here is that, notwithstanding the fact that these are merchant banking investments that are for a limited time period, what you really need to make sure you do is assess the forecasted probable loss scenario over the life of that physical commodity, not just the length of time you plan to own it.

Senator LEVIN. And if they are making the bet that we just described that a catastrophic event will not take place during the time that they own or lease a facility, does it mean that it is more likely that they will not allocate sufficient capital and insurance to cover potential losses?

Ms. TRABUCCHI. Yes.

Senator LEVIN. And does making that bet also mean that they are less willing to dedicate the time, resources, and expertise to comply with regulatory requirements and to make expensive infrastructure investments that are needed?

Ms. TRABUCCHI. I think those sorts of decisions are generally made based on cash-flows, and I think to the degree they are forecasting cash-flows and they are looking to maximize short-term profit targets and maximize investment returns—and, again, they do not plan to hold these assets for very long—then they are not going to want to make a long-lived investment. From their perspective it does not make economic sense.

Senator LEVIN. And could the failure to make those infrastructure and resource investments increase the potential for a catastrophic event?

Ms. TRABUCCHI. Yes.

Senator LEVIN. And could the failure to make those infrastructure and resource investments also put pressure on its peers to skimp on them as well to the detriment of the public?

Ms. TRABUCCHI. I do not know that I would say it quite in that fashion. I think what happens is their decisions to not make those investments put them at a price advantage or a competitive advantage over their peers, because, remember, their peers are working in highly regulated, highly sophisticated regimes where sometimes they have no choice; they must make the infrastructure improvement. And so if their peers are over here making those improvements, it is imputed in the cost of doing business, which influences their price targets, and you have another series of actors over here who are not operating within the regulatory regime because they believe in their legal shield or whatever their risk-mitigating strat-

egies are, and they choose not to make those improvements, arguably, they are at a competitive advantage. They can work with their pricing differently than their peers.

Senator LEVIN. All right. And if the peers are not required by regulation to make the improvements——

Ms. TRABUCCHI. Then, I think you are potentially fostering a moral hazard where it is a race to the bottom.

Senator LEVIN. And then that would have a negative effect on the public.

Ms. TRABUCCHI. It would increase the potential likelihood of an environmental incident and a catastrophic event, and it would also, arguably, increase the potential that there are insufficient financial assurances and, therefore, yes, the U.S. taxpayer may be left——

Senator LEVIN. And in an environmental situation, the public would be also worse off in that situation.

Ms. TRABUCCHI. Correct. There is also the injury that arises that goes beyond simply the financial consequences.

Senator LEVIN. OK.

Senator LEVIN. Again, this goes, I guess, to Professor Omarova. The Gramm-Leach-Bliley Act contains a special grandfather clause that Goldman and Morgan Stanley have used to greatly expand their physical commodity activities. Section 4(o) of the act authorizes any company that becomes a financial holding company to continue conducting “activities related to the trading, sale, or investment in commodities and underlying physical properties” subject to certain conditions. A broad interpretation of this language suggests that if a financial holding company were engaged in physical commodities activities in a very limited way prior to a certain date in 1997, this section would allow them to broaden their activities into all aspects of physical commodities. That is a broad interpretation.

The 1999 Senate Banking Committee Chairman offered the amendment that formed the basis for Section 4(o) and entitled it “The amendment on grandfathering existing commodities activities.” And the amendment also contained this short explanation: “The above amendment assures that a securities firm currently engaged in a broad range of commodities activities as part of its traditional investment banking activities is not required to divest certain aspects of its business in order to participate in the new authorities granted under the Financial Services Modernization Act.” This provision grandfathers existing commodities activities.

Now, a grandfather clause usually protects existing conditions from a new rule. Have you ever heard of a grandfather clause used to justify completely new activities?

Ms. OMAROVA. You are absolutely correct. Grandfathering provisions typically are enacted in order to avoid certain unnecessary hardships or disruptions of certain existing operations—so, mainly in the interest of fairness to the new company that suddenly becomes subject to a new regime—and to prevent the need for some kind of fire sale of assets. But no grandfather provision is usually conceived as a completely independent grant of some open-ended, absolutely new privilege for a financial institution that becomes now a bank holding company to engage in the future in any kind of physical commodity activity that is absolutely not allowed under the existing law. And that is precisely what a broad and very me-

chanical interpretation of just the language of the statute seems to say.

And I also agree with you that the legislative history of this provision clearly shows that it was never meant to be something to allow Goldman Sachs and Morgan Stanley to essentially move into any physical commodities markets they want at any point in the future without any limitations.

Senator LEVIN. Professor Omarova, in 2010 the Federal Reserve Commodities Team undertook a 2-year in-depth review of the physical commodity activities being conducted under the grandfather clause at Goldman Sachs and Morgan Stanley, and they at that time were the only financial holding companies that were using that clause.

Among other measures, the review compared their activities prior to the 1997 trigger date and in 2010, and during that review a detailed status report was prepared indicating that Goldman Sachs and Morgan Stanley had used the grandfather clause to greatly expand their commodity activities and incur numerous new risks. And here is part of what the Federal Reserve's Commodity Team found. These are long findings, so bear with me.

"The scope and size of commodity-based industrial activities and trading in physical and financial commodity markets at Morgan Stanley and Goldman Sachs has increased substantially since 1997. There are a large number of new commodities traded by these firms today which they did not trade in 1997. The new commodities traded today by Morgan Stanley number 37 and Goldman Sachs, 35.

"Much of the new business conducted by Morgan Stanley and Goldman Sachs is in the form of industrial processes involving commodities. The expansion of these firms into power generation, shipping, storage, pipelines, mining, and other industrial activities has created new and increased potential liability due to the catastrophic and environmental risks associated with the broader set of industrial activities.

"And," the report went on, "below are examples of industrial processes which are new or greatly expanded today from 1997: leasing of ships and ownership of shipping companies at Morgan Stanley and Goldman Sachs; new ownership and expanded leasing of oil storage facilities at Morgan Stanley; ownership of companies owning oil refineries at Morgan Stanley; ownership of coal mines and distribution at Goldman Sachs; new ownership of power plants at Goldman Sachs and expanded ownership at Morgan Stanley; leasing of power generation at Morgan Stanley and Goldman Sachs; ownership of retail gasoline outlets at Morgan Stanley; ownership of royalty interests from gold mining at Morgan Stanley; ownership and development of solar panels at Morgan Stanley.

"Furthermore," it went on, "the scale of bank involvement in industrial commodity processes is not widely understood, even within the bank regulatory community. As a result, it is possible that losses within the banking sector arising from these activities will be surprising."

Now, what is your view regarding the extent of grandfathered activities continuing, going on, after a report like that?

Ms. OMAROVA. Well, in my view, this Section 4(o), the grandfathering of commodities activities for certain new bank holding companies, in practice, of course, the two relevant institutions to speak of are Goldman Sachs and Morgan Stanley that became subject to these laws in 2008—this section creates an enormous loophole, especially if allowed to be interpreted so broadly as to permit such an incredible expansion of activities beyond what was conceivably contemplated by Congress back in 1999 even.

And so it does not surprise me at all that both Goldman Sachs and Morgan Stanley assert that there is absolutely no ambiguity in their ability to use this grandfather clause, not just to continue what was properly grandfathered but to just do anything and everything in that field.

But it is the Federal Reserve's job to give some clarity on this issue, because if we just allow Goldman Sachs and Morgan Stanley to be the ultimate judges of what is permitted by this language, then, of course, we are going to see their commodity empires expand, and that creates also a competitive advantage for them vis-a-vis even other financial institutions playing in the field.

Senator LEVIN. Would you agree that this clause should not be given a broad reading?

Ms. OMAROVA. Absolutely, I agree with that. It should not.

Senator LEVIN. And then if it were challenged in court against a narrow reading, which is the one you recommend, Congress could then have an opportunity to amend the language. Is that correct?

Ms. OMAROVA. Well, I think Congress has the opportunity to amend the language anytime it wants to, and perhaps it should.

Senator LEVIN. Without waiting for the Federal—

Ms. OMAROVA. Exactly.

Senator LEVIN. Well, let us hope we do not have to do that, because we are not so adept at getting things done these days either. But the Federal Reserve is in a position where they have an obligation—

Ms. OMAROVA. Absolutely.

Senator LEVIN [continuing]. To give an interpretation to this.

Ms. OMAROVA. Absolutely.

Senator LEVIN. By the way, do you have a view, Ms. Trabucchi, on the grandfather clause?

Ms. TRABUCCHI. I do not. I actually think Professor Omarova captured it well.

Senator LEVIN. Professor, as you saw in our Report, one of the key findings in our investigation is that there is no overall size limit on the amount of physical commodity assets that can be held by banks and their holding companies. We also uncovered actions taken by JPMorgan to use loopholes, exclusions, and valuation techniques to stay under the Fed's 5-percent limit, even while its physical commodity holdings were growing.

As a result, as of September 28, 2012, JPMorgan had physical commodity holdings of at least \$17.4 billion, equal to nearly 12 percent of its Tier 1 capital. At the same time, it was using loopholes and exclusions to report to the Federal Reserve that it had \$6.6 billion, or 4.5 percent of its Tier 1 capital. It shows, that discrepancy, just how ineffective the current limits are.

Now, physical commodities may be held under complementary authority, in which case they are subject to the 5-percent Tier 1 capital limit. They are authorized to be held under grandfather authority, in which case they are subject to a limit of 5 percent of total consolidated assets or under merchant banking authority, in which case they are not subject to a limit if they comply with the restrictions in that authority.

None of what I have just said counts anything that is held in the bank under the authority of the OCC. So copper held as bullion is also exempt from any size limits. This seems like a patchwork of rules and limits that is subject to manipulation and leaves physical commodity activities with no effective overall limit.

Should the Federal Reserve have a single, overarching limit to protect the safety and soundness of the banks and their holding companies? And do you think that the Federal Reserve has the legal authority to do that?

Ms. OMAROVA. The findings in the report about the ongoing sort of manipulation of all of these limits in different provisions of the law are very alarming because they illustrate precisely the potential weaknesses of relying exclusively on a particular size limit and then creating additional opportunities for the financial institution to claim that a completely different size limit would apply to the same activity, for example. So that way, of course, they could take their assets, commodity assets, and put them in different little baskets, and then say, well, overall we are OK; but in reality it is not OK.

So I do think that if the Federal Reserve decides to clean up its regulatory approach to limit these activities based on some kind of size or concentration, for example, then they absolutely have to seriously consider imposing one overall size limit on all of the assets, no matter under what authority they are held.

Do they have authority to do so? I believe that they do because they are—especially after the adoption of the Dodd-Frank Act in 2010, the Federal Reserve is an important systemic risk regulator, and they have enormous powers and a lot of flexibility as a regulator to do what needs to be done in order to prevent the financial system from the next crisis. And this is perhaps one of those instances where such an authority should be used in order to strengthen this particular aspect of regulation.

Of course, any size limit, no matter how strictly you set it, is only as good as it is complied with, as compliance with it, right? So what really is important is that the Federal Reserve elevates the level and intensity of its supervisory efforts with respect to controlling and monitoring how those financial institutions have complied.

Senator LEVIN. So you need size limits. You need them that do not have a whole bunch of loopholes in them. You need them to be enforced. And just, I guess, for you, Ms. Trabucchi, I assume that you would agree that size limits are useful to reduce risk.

Ms. TRABUCCHI. Yes, but I would go one step further, and I would say that it cannot just simply be a percentage of the total consolidated assets of a financial holding company. It needs to be benchmarked against the probable loss scenario and the monetized estimate of incident-related expenditures and compensatory damages that could arise. And I think it should be a multiple, and I

also think it should be benchmarked against tangible assets—assets that can be actually leveraged to pay for the payment—for the expenditures of an event.

Senator LEVIN. I just have one final question before we turn to our next panel.

In 2009, in response to the financial crisis, the Federal Reserve revamped its organizational structure and created the Large Institution Supervision Coordinating Committee, whose operating committee created in turn a “Risk Secretariat.” The Risk Secretariat’s mission is to identify key risks affecting systemically important financial institutions and provide the resources needed to conduct in-depth risk investigations. And in one of its first actions, it identified bank involvement with physical commodities as an emerging area of risk that required review.

I would assume that you would both agree with that assessment. Is that accurate?

Ms. TRABUCCHI. I would.

Ms. OMAROVA. Yes, absolutely.

Senator LEVIN. And that is what your testimony is all about, and that is what we are all about in these hearings, is to find out what has been going on at the Fed since 2009 when they revamped their structure, created that committee, made that finding, and what are we going to do as a people and as a government to reduce these risks and to take away these opportunities for financial manipulation?

Professor, Ms. Trabucchi, thank you both very much. Thank you for the work you do in the private world. Thank you for coming here today.

Ms. TRABUCCHI. Thank you.

Ms. OMAROVA. Thank you.

Senator LEVIN. I will now call our second panel: Hon. Daniel Tarullo, a Governor on the Board of Governors of the Federal Reserve System; and Larry Gasteiger, Acting Director of the Office of Enforcement at the Federal Energy Regulatory Commission, FERC. We appreciate both of you being with us today. We look forward to your testimony. And as you are aware of our rules, we ask all of our witnesses to be sworn, and we would ask you now to please stand and raise your right hand.

Do you swear that the testimony you are about to give to the Subcommittee will be the truth, the whole truth, and nothing but the truth, so help you, God?

Mr. TARULLO. I do.

Mr. GASTEIGER. I do.

Senator LEVIN. We have a timing system, and I think you are both aware of it. A minute before the time is up, the red light will change from green to yellow and then it will be red. We would ask that you try to limit your oral testimony to no more than 10 minutes. And, Mr. Tarullo, we are going to ask that you go first. And thank you again for being here. We know the kind of schedule both of you have, including on the Hill, by the way, so thanks so much for being here. Mr. Tarullo, please proceed.

**TESTIMONY OF HON. DANIEL K. TARULLO,¹ MEMBER, BOARD
OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM, WASH-
INGTON, DC**

Mr. TARULLO. Well, thank you, Mr. Chairman. Before beginning my testimony, I want to offer a bit of a testimonial on what I believe is one of the last occasions on which the Chairman will wield the gavel at a Senate hearing.

I first became aware of your energy and commitment in the 1970's, reading about you in the Detroit papers, when you were president of the Detroit City Council and I was a law student living in Ann Arbor. I have watched that energy continue unabated during your six terms in the Senate right up through this set of hearings that includes today's panel. So as you retire, let me congratulate you for all your accomplishments during those 36 years.

Senator LEVIN. Well, thank you so much. You do not look old enough to go back to my City Council days, but I am afraid I am. Thank you so much.

Mr. TARULLO. So turning now to the subject of this hearing, commodities activities in bank holding companies were not, of course, the story of the recent financial crisis. But that does not mean that they pose no risks to the safety and soundness of bank holding companies. Actually, to a considerable extent, the issues surrounding such activities are a product of the crisis insofar as large, formerly freestanding investment banks with substantial commodities activities were either acquired by or converted to bank holding companies in 2008. So even as we continue to put in place regulations directed at preventing the kinds of solvency and funding troubles that gave rise to the crisis, we need also to be forward-looking and address post-crisis developments that could give rise to future problems.

I might note in passing that some of these post-crisis regulatory changes that we are already in the process of enacting—notably, the increases in risk weighting for certain activities under new capital requirements—will themselves have an effect on commodities activities.

Supervisory experience with these commodity activities in bank holding companies since the disappearance of the five larger formerly freestanding investment banks, along with our observation of the impact of catastrophic events involving certain commodities, led us to begin a broad review of relevant regulatory and supervisory policies.

As is appropriate given our overall mandate for prudential supervision, we have focused particularly on the implications of various commodities activities for the safety and soundness of bank holding companies. We have also revisited the factors relevant to determinations made beginning more than a decade ago that certain commodities activities should be regarded as complementary to financial activities under Section 4(k)(1)(B) of the Bank Holding Company Act.

The Advanced Notice of Proposed Rulemaking that we issued early this year sought public comment on these and a range of other issues, including activities conducted by bank holding compa-

¹ The prepared statement of Mr. Tarullo appears in the Appendix on page 313.

nies under the merchant banking authority and Section 4(o) grandfathering provision, both of which were added in the Gramm-Leach-Bliley Act.

As you might expect, the ANPR has elicited a considerable number of responses from a range of perspectives. We are nearing the end of the analysis of these comments and other information relevant to the issues raised in the ANPR. So while we do not yet have a Board proposal for specific changes in regulatory and supervisory policies, I anticipate that we will be issuing a Notice of Proposed Rulemaking in the first quarter of 2015.

In closing, I would note that the Report issued by this Subcommittee on Wednesday will be an important additional input into the final stages of staff analysis and eventual Board consideration of policy changes.

Thank you very much, and after my colleague gets done, I would be pleased to answer any questions you might have.

Senator LEVIN. Thank you, Governor Tarullo.

Mr. Gasteiger.

TESTIMONY OF LARRY D. GASTEIGER,¹ ACTING DIRECTOR, OFFICE OF ENFORCEMENT, FEDERAL ENERGY REGULATORY COMMISSION, WASHINGTON, DC

Mr. GASTEIGER. Mr. Chairman, thank you for inviting me to testify today. My name is Larry Gasteiger, and I am the Acting Director of the Office of Enforcement of the Federal Energy Regulatory Commission. I am pleased to testify regarding the Commission's enforcement program and some of its recent enforcement actions involving financial institutions.

The Commission's statutory authority and responsibility to investigate market manipulation in FERC-jurisdictional energy markets is rooted in the Energy Policy Act of 2005, which I will also refer to as "EPAAct 2005."

In the aftermath of the Western energy crisis and the 2003 Northeast blackout, Congress passed EPAAct 2005, which broadly prohibited market manipulation in FERC-regulated wholesale physical natural gas and electric markets, and provided new authority to enforce mandatory reliability standards. Congress also significantly enhanced the Commission's civil penalty authority for violations of FERC rules by increasing maximum civil penalties to \$1 million per violation per day.

Since receiving its expanded enforcement authority, the Commission has worked hard to buildup its enforcement capabilities. Around the time of the Western power crisis, FERC had about 20 enforcement staff. Today we have nearly 200 attorneys, auditors, economists, analysts, and former traders working in the Office of Enforcement.

In the last few years, FERC has enhanced its ability to identify price manipulation in both physical and financial markets by adding surveillance tools, expert staff, and new analytical capabilities. And in 2012, the Commission established a dedicated unit for market surveillance and analysis in the Office of Enforcement.

¹ The prepared statement of Mr. Gasteiger appears in the Appendix on page 325.

Also in the past year, FERC surveillance and enforcement efforts have been enhanced by a new Memorandum of Understanding with the Commodity Futures Trading Commission that provides us with access to additional highly useful financial data on a regular and continuing basis. We have worked hard to effectively and efficiently put these resources to good use. Since receiving its EPCA 2005 authority, the Commission has imposed and collected approximately \$902 million in civil penalties and disgorgement.

Some of these enforcement actions have involved financial institutions, including JPMorgan, Deutsche Bank, and Barclays. I have provided a more detailed description of these cases in my written testimony, but, briefly, the JPMorgan case involved market manipulation in the California and Midwest energy markets and resulted in a settlement requiring JPMorgan to pay a combined \$410 million in civil penalties and disgorgement in July 2013. The settlement resolved the Office of Enforcement's investigation into 12 manipulative bidding strategies that gamed the markets by creating artificial conditions that would cause the system to pay the company inflated rates.

Enforcement staff also determined that JPMorgan knew that the two regional markets where these schemes played out received no benefit from making these inflated payments, and thus, the company defrauded those market operators by obtaining payments for benefits that they did not deliver.

In our settlement with Deutsche Bank in January 2013, the Office of Enforcement determined that Deutsche Bank used physical energy transactions to affect congestion levels and corresponding energy prices within the California market. It carried out this conduct to increase the value of its financial contracts in violation of EPCA 2005 and the Commission's anti-manipulation rule. The disgorgement in that case was \$172,000 with a penalty of \$1.5 million.

Then the Commission's July 2013 order assessing a civil penalty in the Barclays case addressed similar conduct to that in Deutsche Bank. The Commission found that Barclays engaged in manipulative physical trades to benefit corresponding financial positions. Though Barclays' physical trading often lost money, it nonetheless profited the company overall because its trades helped move the index price that set the value of its larger financial swaps benefiting position. The Commission imposed penalties of \$435 million and disgorgement of nearly \$35 million. The Commission's Barclays order is currently under review in Federal district court, so that matter is still ongoing.

Another topic the Subcommittee has asked about is whether a financial holding company investment with physical energy production has affected how those financial institutions approach the power plant business. The Commission has not taken any view on the participation in its regulated markets by financial holding companies versus more traditional energy companies like generators or utilities. However, that said, the Commission expects financial institutions, like all other participants in FERC-regulated markets, to have good compliance programs, to transact in a manner that follows market rules in letter and spirit, to work cooperatively with

grid operators and the Commission when there are concerns, and to self-report potential violations.

Everyone has to play by the rules, and encouraging a culture of compliance is the goal of our Office of Enforcement. It is my hope that the description of the work of the Office of Enforcement I have provided demonstrates that the Commission takes very seriously its duty to police the energy markets and protect consumers. To the extent we have succeeded in our mission, it is due to the many talented, dedicated, and hardworking staff at the Commission, and it is my honor and privilege to work with them, particularly the staff in the Office of Enforcement.

In conclusion, I want to thank the Subcommittee for the invitation to testify today, and I look forward to answering your questions.

Senator LEVIN. Thank you very much, Mr. Gasteiger.

Mr. Tarullo, let me start with you with a general question at the heart of the issue that we have been going at here during this 2-year investigation and this 2-day hearing. The heart of it is an American tradition, the separation of banking from commerce. Not every country takes the approach, but it has been central to U.S. banking law and practice since our country got started.

What is your view of the principle? Do you think it is important? And why?

Mr. TARULLO. Well, Senator, as you say, separation of banking and commerce certainly since the New Deal reforms has been a centerpiece of U.S. financial regulation and prudential regulation. And I think traditionally it is thought to have served three purposes:

First is trying to protect the depository institutions and, thus, the Deposit Insurance Fund and more generally our payment systems from the risks that can be associated with non-financial activities, with commercial activities, which for obvious reasons will not be in the wheelhouse of people whose business is making loans and taking deposits.

The second reason for the separation of banking and commerce traditionally has been a concern that, to the degree certainly that insured depository institutions were to be involved directly or indirectly, there will be some form of subsidization of those activities because of the fact that the Federal Government provides an insurance service that is not available in the private sector.

A third and closely related reason is a sense that it would be unfair to those operating in the commercial sphere, the non-financial sphere, to have to compete with institutions that did have some form of subsidized funding. And so, as you know, Mr. Chairman, there is a long line of cases, both under Section 24-7 of Title XII of the National Banking Act and also under the Bank Holding Company Act, trying to draw the line between finance and commerce, banking and commerce more generally.

But I would say that nothing that I have observed in my time teaching in this area, writing in this area, and in the almost 6 years on the Fed has changed my view that fundamentally this has been a sound principle and there is no particular reason to digress from it.

Now, having said that, as you well know, and as many have pointed out, in 1999 the Gramm-Leach-Bliley Act poked some fairly big holes in that traditional separation, and so part of the ongoing issue, which I think is probably raised in your Report, is how in the absence of additional legislation one can, in a manner consistent with the statute, confine the risks of all three sorts that I was just mentioning a moment ago.

Senator LEVIN. In 2009, in response to the financial crisis, the Fed revamped its organizational structure, created the Large Institution Supervision Coordinating Committee, whose operating committee created, in turn, a Risk Secretariat, and the mission of that Risk Secretariat was to identify key risks affecting systemically important financial institutions and also to provide the resources needed to conduct in-depth risk investigations. And in one of its first actions, it identified bank involvement with physical commodities as an emerging area of risk that required review, and it set up and funded a multiyear review effort by a Federal Reserve Bank of New York Commodities Team that dug deep into the facts, producing multiple examination reports. And then in October 2012, 2 years ago now, it issued a summary report with a number of recommendations.

Can you summarize the risks that were uncovered by that special review?

Mr. TARULLO. Well, I am going to mediate that somewhat, Senator, because I am going to summarize what was told to me in going through that review. And I might say that I cannot remember exactly when the date is, but it was on one of the trips I made to New York when I was using the New York Fed as a base to do some meetings that some of the people on the New York Fed Examination Team asked to meet with me because they wanted to present some of the concerns that they had. A lot of those concerns revolved around the potential for catastrophic risk, which we mentioned in the ANPR and to which I alluded in my prepared remarks.

I think there is a sense—usually when you think about an investment or a loan, any sort of asset, whether it is a loan or a tradable security or even a piece of property, you tend to think in terms of the potential for loss being at maximum 100 percent of the value of that asset. So if it is a loan, your counterparty defaults, you do not get anything back. If it is a security, a company goes bankrupt, you do not get anything back.

But in the case of some forms of commodity activities, because of the potential for very large tort exposure, the potential—or tort-like exposure, the potential losses to a firm could far exceed the value of that asset. And I think that was at the core of a lot of what the concerns of the people who are looking at the potential risks were.

Again, as I mentioned in my introductory remarks, the big changes in 2008 whereby a lot of activities were imported into bank holding companies, either by the conversion of the IB into a bank holding company or by the acquisition of the investment bank, brought in a lot of things that were not traditionally in bank holding companies for the reasons that you were mentioning in your first question. I came with that as the core of concerns, and it is

not the only thing that we are concerned with, but it has animated our concerns ever since.

Senator LEVIN. Now, what our research indicates is that overall, with few exceptions over the years, and setting aside the issue of gold and silver, banks and their holding companies were not very involved with commodities until the 1970's when commodity markets for the first time started to get into non-agricultural commodities. When it was grain and pork bellies, the banks were not very interested.

When the commodities markets got into crude oil and natural gas futures, that is when the banks became interested and active in physical commodities markets. Is that generally in keeping with your understanding?

Mr. TARULLO. That is in keeping with my understanding. The oil crisis and its aftermath did seem to work a big change in how people generally thought about commodities trading.

Senator LEVIN. And you have made reference to the enactment in 1999 of Gramm-Leach-Bliley. Would you agree that what it did in creating a category of financial holding companies and authorizing them to get into a wider array of activities led to a surge in financial holding company involvement with physical activities—physical commodities?

Mr. TARULLO. Sure. So I think it proceeded in a couple of steps, Senator. One was just the authorization. Then, of course, there was the bankruptcy of Enron, which left a void, which some of the institutions thought they could begin to fill. And so you did then begin to see more movement into trading activities with those complementary determinations that I referred to in my prepared remarks.

But I think the next piece of what cumulatively was a surge was the change from the status of the freestanding investment banks, which brought a lot of non-trading activities under the umbrella of bank holding companies.

So I would say cumulatively it was a surge. It proceeded in a few somewhat distinguishable steps.

Senator LEVIN. One of the key issues that has been raised in the physical commodities area involves unfair trading and market manipulation. In 2005, when JPMorgan filed an application with the Federal Reserve requesting complementary authority, JPMorgan explained that engaging in physical commodity activities would do the following, and these are their words: It would position JPMorgan Chase in the supply end of the commodities market, which in turn will provide access to information regarding the full array of actual producer and end-user activity in those markets. The information gathered through this increased market participation will help improve projections of forward and financial activity, and these are the words that strike me as being so prescient, important, and disturbing—it will supply vital price and risk management information that JPM Chase can use to improve its financial commodities derivative offerings.

So they are going to gain information here that is not public information. They are going to gain information that they can use to improve its financial commodities derivative offering. Access to in-

formation will help its trading operations, and, again, that is not public information.

And here is how a 2005 article described Morgan Stanley's physical commodity activities in comments by one of its leaders, a man named John Shapiro: "Having access to barges and storage tanks and pipelines gives the bank additional options to move or store commodities that most energy traders do not pursue. And by having its finger on the pulse of the business, it hopes to get a more subtle feel for the market, a crucial asset to a trader. Being in the physical business tells us when markets are oversupplied or under-supplied."

"We are right there, seeing terminals filling up and emptying."

So, again, it is the trading value. It is a crucial asset to the trader if they are in these businesses at the same time.

And here is what some Federal Reserve examiners noted when they were analyzing physical commodity activities by Morgan Stanley and Goldman: "The relationship of the firms"—Morgan Stanley and Goldman—"with the wholly and partially owned companies is not that of a passive investor. In addition to the financial return, these direct investments provide the firms with important asymmetrical information on conditions in the physical markets such as production and supply demand information, etc., which a market participant without physical global infrastructure would not necessarily be privy to."

Interesting word, "asymmetrical" information. I am the Chairman of the Armed Services Committee, and we hear that word "asymmetrical" all the time. In a way there are some similarities, by the way.

Finally, we have an excerpt from an October 28, 2011, presentation by the Goldman Commodities Division to the Goldman Board of Directors, and this is what it says: "Goldman Sachs may command valuation multiples for Goldman Sachs commodities similar to Glencore if the business were able to grow physical activities"—and here are the key words—"unconstrained by regulation and integrated with the financial activities."

That is Goldman Sachs' words, which they repeated yesterday. I asked about that.

Do you believe that physical activities and financial activities should be integrated? What happened to that Chinese wall you guys claim between information that you gain in the commodities world and your work in the financial world?

Now, my concern with all of these statements is that financial holding companies want access to physical commodity activities primarily so that they obtain access to commercially valuable non-public information that they can use when trading financial instruments relating to the same commodities—non-public information relating to those commodities gained by these financial firms, which they can then use in the trading of financial instruments that are related to those commodities.

Now, that to me introduces unfair trading advantages, market manipulation issues into our commodity markets.

Yesterday we explored how Goldman's wholly owned warehouse company, Metro, contracted with metal owners in its warehouse system to artificially inflate a queue, a line of people, who are wait-

ing to leave its warehouse and inflate prices of aluminum and aluminum-related financial products. That is what happens. The premium for aluminum is directly connected to a long line to get out of a London Metal Exchange-approved warehouse. The longer the line, the greater the rent is paid in that warehouse. That rent is part of a premium, and so the portion of a cost of aluminum now that is reflected in the premium is now up to over 20 percent. It was 5 percent a few years ago.

And so you have a major financial institution, Goldman, that directly is involved in a decision to lengthen a line, which in turn increases the premium, which is a growing and growing part of an aluminum price, and their decision to lengthen those lines with that effect is not public, the decision, and they are trading in commodities, including futures, which are obviously impacted by that non-public information, which they can then apparently use.

Now, the Fed provides certain attractions to financial institutions. There are certain advantages that they have. When banks are involved in commercial institutions, like power plants, storage facilities, coal mining, and aluminum warehouses, the Federal Reserve is the source of competitive advantages. You provide advantages. Doesn't the Fed have some responsibility to ensure that banks do not use those competitive advantages to engage in market manipulation? I know other regulatory agencies have responsibilities here. Doesn't the Fed that provides these advantages to companies have some responsibility to make sure that those companies, which have these unique advantages, are not engaged in manipulative activities?

Mr. TARULLO. So I would say first, Senator, that a lot of the Dodd-Frank Act and associated reforms that we are doing, along with other regulatory agencies, are actually designed to make sure that holding companies do not have an advantage and that the costs of the risks that they may impose on the financial system are fully internalized in their own costs of doing business.

I have not had a chance to read the entire Report, but I did take the summary and recommendations on the train with me the other day, and I was struck by the fact that so many of the case studies which you and your staff have investigated so thoroughly seem to revolve around the co-activities of trading and what I think you usefully described as "infrastructure," owning extraction facilities, transportation facilities, and the like.

That seems to create the biggest potential for the kinds of activities that you have been referring to, and there I would say, first, the interpretation of complementary authority, which, as you know, we are revisiting in any case, but even under the existing determinations, they explicitly exclude what you would describe as the infrastructure. So under that authority, there should be no possibility of doing that.

Under merchant banking authority, it would be my premise that the notions of separation of the portfolio investments by merchant banking operations from the operations of the bank should also in turn mean that there is no commingling of managerial and other kinds of information. So that basically leaves us with subsection (o), the grandfathered authority, and any residual transitional au-

thority that firms may have to maintain noncompliant activities during a divestiture period.

So with divestiture periods running, with the Fed's complementary authority excluding such possibility, and with some of the other changes that I have been mentioning, I think it does come back to this issue of whether 4(o) continues to permit exactly the kind of structural circumstance that you are concerned with.

In terms of our oversight, I think I spoke to this in a speech rather than testimony not too long ago. The accumulation of violations—investigations and in many cases, I think, acknowledgment of violations in a variety of non-prudential regulatory areas, whether it is LIBOR or forex price fixing or mortgages, and some of the things you have raised in commodities, the work that FERC did on JPMorgan, suggests that, in general, the compliance procedures, mechanisms, expectations within firms for abiding by laws, which may not be prudential from us, but they are nonetheless from our sibling regulatory agencies, are not adequate in many cases.

And so one of the things that we have been thinking about in general, although now specifically in the commodities context as well, is how to assure that there are robust enforcement and compliance mechanisms within firms to make sure that you do not have this kind of transgression of other regulatory areas.

The final thing I would say on this is, I am not an expert in commodities law, but, again, as I read the summary of what you had produced, I began to wonder whether there is a gap in regulation more generally, whether there are some things, such as some of the things you describe in some of these case studies, that at present no U.S. Government regulatory agency has jurisdiction over. I do not know if that is true, but it felt to me as though it may be true in a couple of cases where there is something that neither the CFTC—it is not energy; it is not going to be FERC—nor the SEC is actually able to regulate because something is not a future, for example.

So it could be that you have also uncovered a third agenda, which is addressing some of those gaps, whether or not it is bank holding companies.

Senator LEVIN. Well, one of our recommendations I think fits very closely to what you have just been talking about. This is a bipartisan recommendation, No. 8 of our Report: Financial regulators should ensure that large traders, including financial holding companies, are legally precluded from using material non-public information gained from physical commodities activities to benefit their trading activities in financial markets.

Now, I think that fits very closely with what you just said.

Mr. TARULLO. I think it does, Senator.

Senator LEVIN. And Recommendation No. 11 would be or is that the Office of Financial Research should study and produce recommendations on the broader issue of how to detect, prevent, and take enforcement action against all entities that use physical commodities or related businesses to manipulate commodity prices in the physical and financial markets.

Will you take a look also at that recommendation and give us a reaction to that, if you would?

Mr. TARULLO. Sure, absolutely.

Senator LEVIN. Because as you have just pointed out, it just seems like every day there is another example of market manipulation, and you mentioned, I believe, interest rates and foreign exchange rates and energy prices. Now you can add aluminum. And these too-big-to-fail banks that have access to the Fed's discount window and near-zero borrowing costs are engaging in the manipulation of numerous markets, and each one of these falls under the oversight of a different regulator, technically. But you are the only constant regulator we have, the Federal Reserve, and your willingness to get in to make sure that regulations are abided by, even if those regulations are regulations of your, as you put it, sibling agencies, could be a very important step, because if banks do not do that, then their safety and their soundness could be impacted if either there is no regulation, which may be the case, as you have just referred to, or if the regulations of other agencies either have gaps or are not lived up to. So that commitment on your part to look at this and to think about that possibility is very important.

We have a situation which is totally unacceptable to me, and that is that in the area of commodities, which do not have the same regulation as stock, and are not subject to the same rules about inside information, for instance, as is true in the stock market, with the SEC looking at misuse of inside information, that does not exist in the same way, at least, in the commodities area. The information used in the commodities area was not regulated because that information started a hundred years ago with a farmer trying to calculate how big a crop he was going to have. That world is totally upside down now. Now 70 percent of the transactions are speculative. They are not by the end users. It used to be 70 percent of the transactions and future contracts were by people who actually were going to use something. Now it is 30 percent. So the speculators have taken over, which is their right, but it is also our right as a government to make sure that information which they gain is not misused, just the way we take steps to make sure inside information is not misused. And it is very important that the Fed become much more aggressive and interested in making sure that the possibilities here do not become real and that the real abuses are not accepted so that the safety and soundness of our banks, for instance, is not ultimately at risk, nor is the consumer taken advantage of.

Mr. TARULLO. Senator, do you want a quick reaction to that?

Senator LEVIN. Sure.

Mr. TARULLO. One of the things that Congress did in the Dodd-Frank Act was to substantially both change and give a message to agencies for further change on interagency cooperation and interagency coordination. The systemic risk and financial stability mandates of the Dodd-Frank Act are already occasioning the kinds of discussions between the market regulators on the one hand and the banking regulators on the other that did not take place very often prior to the financial crisis. We now have a formal interagency group of regulators that can look at gaps in the regulatory structure.

So my immediate reaction is that it would be a good idea for the relevant agencies, including the Fed and OCC because of our involvement with banks, but also the market regulators, to take a

look at exactly this issue of how regulations are expected to be complied with throughout an organization and whether there are any lacunae in the regulatory structure that might bear a recommendation for action.

Senator LEVIN. I think it was your study which pointed out some numbers as follows, the Fed study: That financial holding companies typically have a capital ratio of 8 to 10 percent, where oil and gas companies, for instance, have capital ratios exceeding 40 percent. The end result of that is that due to cheaper financing costs and lower capital ratios, which I have just mentioned, financial holding companies can nearly always undercut any non-bank competitor.

Now, we saw examples of that type of unfair competition in our investigation. Morgan Stanley used shell companies called Wentworth to construct a compressed natural gas plant in direct competition with a company called Emera; and where Emera had proposed building a compressed natural gas plant to export 9,000 billion cubic feet of gas per year, Morgan Stanley proposed a plant to export 60 billion.

Senator LEVIN. I misspoke there. The private company had proposed building a plant to export 9,000 cubic feet of gas; Morgan Stanley proposed a plant to export 60 billion cubic feet.

Now, I am guessing that Morgan Stanley had a whole lot more money than Emera to invest and could do it with less capital and less financing costs, and Emera just simply could not compete with that, and I am wondering if that is a concern of yours, Governor Tarullo.

Mr. TARULLO. Well, I think what may lie behind some of those capital numbers you cite is, again, the concern about catastrophic risk and potential risks associated with some of these activities.

A centerpiece of the analytic work that the Fed staff has been doing over the past year and a half or so has been on precisely that point. And, of course, what that translates into is questions about the appropriate risk weights that should be assigned to certain kinds of activities. So as you know, in Basel III and some of the other changes we have made in capital requirements, part of it has just been upping the ratio; part of it has been saying, wait a second, there are a lot of asset classes that were riskier than existing risk weights would have suggested.

So a key part of our review has been precisely around this issue of are risk weights appropriate, reflecting in particular the potential for catastrophic loss. And I expect that that is the kind of work which will come to fruition in the not too distant future.

Senator LEVIN. Mr. Gasteiger, let me turn to you for a few moments, and then we will have a few more questions as well, for Governor Tarullo.

You have described in your testimony electricity manipulation cases involving three financial holding companies: Barclays, Deutsche Bank, and JPMorgan. And in each of these cases, very different types of manipulative schemes were employed.

Now, one of the messages, I would think, from those cases is that there are lots of ways to abuse the system, and regulators have to police a lot of different aspects of the electricity markets to catch wrongdoing. Would you agree with that?

Mr. GASTEIGER. Yes, I would, Mr. Chairman.

Senator LEVIN. And where does the manipulation case that FERC brought against JPMorgan stack up in terms of significance and size of manipulation compared to other cases that FERC has brought?

Mr. GASTEIGER. Mr. Chairman, the JPMorgan case would be the largest settlement to date that the Commission has gotten under its EPAct authority.

Senator LEVIN. And it is my understanding that independent system operators in California and Michigan had never before witnessed the degree of blatant manipulation and gaming strategies that JPMorgan used to try to profit from its power plants. Is that correct?

Mr. GASTEIGER. I think it is safe to say that the schemes particularly in California were more numerous than anything that I am aware of having seen before.

Senator LEVIN. Is it also true that because of JPMorgan's manipulative bidding strategies, the independent system operators in California and Michigan had to revise the way they allow companies to bid on electricity in California and Michigan?

Mr. GASTEIGER. Yes, it is true; several tariff filings had to be made to make changes to the markets.

Senator LEVIN. And with regard to the JPMorgan manipulations that resulted in a \$410 million settlement, it began with the hiring of one new employee, is that correct, a man named John Bartholomew, who advertised in his resume that he had identified a "flaw" in the market mechanism, make-whole payments, that is causing CAISO to—is that the way it is pronounced, CAISO?

Mr. GASTEIGER. We say CAISO.

Senator LEVIN [continuing]. To misallocate millions of dollars. In other words, he in essence believed that you could profit by gaming the system rather than from selling electricity at market rates, and in a matter of hours of sending in his resume, the head of JPMorgan's Houston office, Mr. Dunleavy, instructed others to get him in ASAP. Is that what your investigation found?

Mr. GASTEIGER. Yes, Mr. Chairman, that is correct.

Senator LEVIN. And there are two things that I find incredible about this: The first is that anyone would advertise in a resume that they know about a flaw in the system, signaling that they are ready and willing to exploit that flaw; and, second, that somebody would hire the person sending that signal. The enforcement staff of FERC found that between 2010 and 2012, JPMorgan engaged in 12 types of improper bidding strategies. Is that correct?

Mr. GASTEIGER. That is correct, Mr. Chairman.

Senator LEVIN. Is it also true that the FERC staff discovered some of these schemes during its investigation and brought them to the attention of JPMorgan and that JPMorgan did not stop the manipulative activity but instead developed new schemes?

Mr. GASTEIGER. That is correct.

Senator LEVIN. And in one of these manipulative schemes, JPMorgan traders submitted bids that offered to sell electricity at rates well below JPMorgan's cost to generate electricity, which meant that the offers usually lost money when accepted, and JPMorgan was willing to make those artificially low offers, sort of

like a loss leader, so that it could then participate in certain “make-whole” payment mechanisms that could end up generating payments well in excess of the expected losses. Do I have that right so far?

Mr. GASTEIGER. Yes, Mr. Chairman.

Senator LEVIN. And those make-whole payments allowed generators to be compensated at above-market electricity prices to provide an incentive for plant owners to participate in the bidding auctions and ensure grid reliability. Is that correct?

Mr. GASTEIGER. Yes.

Senator LEVIN. And so JPMorgan used its bidding strategies to more than make up for the money it lost at market rates, frequently receiving in the end more than twice its costs because of the make-whole mechanism.

Mr. GASTEIGER. That is correct.

Senator LEVIN. And in the end, JPMorgan’s bidding schemes caused California and Michigan electricity authorities to pay approximately \$124 million in excessive payments to JPMorgan.

Mr. GASTEIGER. That is correct.

Senator LEVIN. Now, we have an exhibit, which is a copy of an email—and we will get you the number of that exhibit in a minute. It is a copy of an email that JPMorgan sent to several colleagues in the midst of abusive bidding schemes. It contains an image of Oliver Twist extending a bowl, and the subject line: “Please, sir, more BCR.” Now, the BCR refers to the make-whole payments that JPMorgan was using to unfairly profit from the system. And I got to tell you, it is mighty offensive to me that JPMorgan portrays its actions as a joke, comparing itself to a poor orphan needing charity when it was ripping off consumers. Did that email offend you?

Mr. GASTEIGER. I agree it is a striking image.

Senator LEVIN. Is it an offensive use?

Mr. GASTEIGER. I would agree with that characterization.

Senator LEVIN. Now, I understand that in connection with the CAISO and FERC investigations into JPMorgan’s manipulative bidding schemes, JPMorgan refused to hand over a number of documents, claiming attorney-client privilege, but it later turned out they were not privileged at all. Can you describe what happened in that regard? And what was the penalty that FERC imposed in a response?

Mr. GASTEIGER. There were disagreements between us and JPMorgan throughout the course of the investigation over access to documents. Ultimately there was a proceeding—this really actually dealt more with disagreements that JPMorgan was having with the California ISO market monitor with respect to access to information as part of its investigation. In a separate proceeding that was not directly part of the enforcement investigation, the Commission ultimately suspended JPMorgan’s market-based rate authority for a period of 6 months.

Senator LEVIN. Now, all three of the financial holding companies that we looked at—JPMorgan, Goldman, and Morgan Stanley—were active in power plant activities, using the Fed’s complementary merchant banking or grandfather authority. Did you get a sense, Mr. Gasteiger, that these financial holding companies really want to own or operate electric power plants, or is it more likely

that they are in the business for financial gains, for the financial trades end of their business, to get non-public information that can assist them in their trading operations?

Mr. GASTEIGER. In the limited number of cases that we worked on, particularly JPMorgan, clearly they were using the ownership in order to engage in the type of market activities that we were investigating. And in that particular instance, because the units were not themselves profitable, they were looking for ways to try and do that, that is what led them to develop the schemes that they wound up implementing in CAISO.

Senator LEVIN. And what would be the relationship then to the financial trading end of their businesses?

Mr. GASTEIGER. Well, because of the ownership of the plants, that led them to engage in those financial trading activities within those markets.

Senator LEVIN. From what you have seen in enforcement cases brought by FERC, the financial holding companies have the same commitment to understanding and following electricity-related regulatory regimes as, say, utility companies that are focused on the electricity business, or are they more prone to try to game the rules?

Mr. GASTEIGER. Well, Mr. Chairman, we have not undertaken any type of a real study, but on the limited sampling that we have, certainly as you indicated earlier, as my testimony indicates, financial institutions have, in fact, been involved in the most significant cases that the Commission has brought through its enforcement authority.

Senator LEVIN. And would that seem then to fairly imply that they do not have the same commitment from that experience to following the regulatory regimes that are supposed to govern electric utilities as those electric utility companies that are focused on the electricity business have? From that limited experience, is that a fair statement?

Mr. GASTEIGER. I think one could perhaps draw that conclusion.

Senator LEVIN. Now, FERC has been active in going after manipulation in the electricity markets, and we have not seen the same level of activity in other markets, such as for crude oil, aluminum, or copper. Now, part of that is that no Federal regulatory agency has been assigned explicitly the responsibility to prevent price manipulation in the same way as FERC, especially in the purely physical markets. But it seems to me that FERC's experience in uncovering manipulative schemes as well as other enforcement cases that we have seen suggests that too many Wall Street financial holding companies are ready and willing to engage in market manipulations and will do so until they are caught.

Governor, does the Federal Reserve have authority to bring a market manipulation case? Or is that basically for other agencies?

Mr. TARULLO. Market manipulation as such would not be within our ambit, Senator, although when one of the other regulators with authority is able to bring an enforcement action, we are often able to cooperate with them to require certain remediation measures in compliance within the firm and, where appropriate, to impose penalties on the firm for violation of safety and soundness and other compliance activities.

Senator LEVIN. And if other agencies do not bring enforcement action where there is clear evidence that enforcement action is appropriate, are you in a position, as someone having overall responsibility, to talk to other agencies about why enforcement actions against manipulation are not taken?

Mr. TARULLO. Yes, that is right. There are two distinct issues. One is if we uncover activity which is arguably—it does not even have to be definitely, but arguably a violation of law or the regulations of a sibling agency, we absolutely will initiate contacts with them. If it is a circumstance in which nobody has—people conclude that nobody has authority, then it is a somewhat different situation and one that I was alluding to earlier where it may be that there need to be some recommendations to Congress as to how to fill in some of those gaps.

Senator LEVIN. We would ask you, Governor, to take a look at our recommendations. I do not think we want banks that are under your authority and have advantages because of their connection to the Fed to engage in manipulative activities. I do not think that you want it. I do not think anybody should want it. And if there are gaps—and there are—in the way manipulative activities are taken out or stopped because there is an absence of regulation or a failure of regulation, we believe it is essential that those gaps be filled. We cannot tolerate what we saw with the Goldman warehouses in Detroit, for instance. It is totally intolerable.

And so if you would take a look at our recommendations in the Report and tell us—not now but for the record—in addition to what you have just told us, what the Fed might do to help go after the manipulation in these banks that have advantages from the Fed, we would appreciate it.

Mr. TARULLO. Of course.

Senator LEVIN. Now, one of the most significant things that we saw, Governor, in our Report and investigation is that there is no overall size limit on the amount of physical commodity activities for banks and their holding companies. For instance, JPMorgan used loopholes, exclusions, and valuation techniques to stay under the Fed's limit. And as a result, in September 2012, JPMorgan had physical commodity holdings of \$17.4 billion, which was equal to 12 percent of its Tier 1 capital, at the same time it told the Fed that it had \$6.6 billion, or 4.5 percent of its Tier 1 capital. The discrepancy between those two numbers is stark, and it shows just how ineffective the current limits are.

Physical commodities, as you know by heart, may be held under complementary authority, in which case they are subject to the 5-percent Tier 1 capital limit; under grandfather authority, in which case they are subject to a limit of 5 percent of total consolidated assets; and under merchant banking authority, they have no limit at all, but they are governed by the other criteria in that authority. None of this counts anything against what is held by the banks under the authority of the OCC.

Now, this would look to me like a problem that seems ready for rulemaking. In Section 5(b) of the Bank Holding Company Act, the Federal Reserve has broad authority “to issue such regulations and orders as may be necessary to enable it to administer and carry out the purposes of this chapter and to prevent evasions thereof.” And

the Federal Reserve has used its broad powers in the past. It previously had a limit on merchant banking activities, which it removed via a rulemaking in 2002. It also imposed the 5-percent complementary authority limit without statutory direction. So the authority would see to be there for the Fed to impose an overarching limit pursuant to its broad authority under the Bank Holding Company Act.

Given the significant differences in the risks posed by a 4.5-percent interest in commodities versus a 12-percent interest, do you believe that the Bank Holding Company Act gives the Fed sufficient legal authority should it choose to enact it or use it, do you have the authority, should you choose to enact an overarching limit on the physical commodity holdings of a financial holding company?

Mr. TARULLO. Let me put aside subsection (o) for a second, authority under subsection (o). I think with respect to—and I want to give my own current understanding, not having consulted with our Legal Division on this, but I would suspect that we do have authority to put an overall limit, certainly as we already have on complementary, and quite possibly on merchant banking activities as well.

With respect to the broader issue, when you have a Section 4(o), my initial reaction would be that we probably would not have authority to bring down below the congressional 5-percent level the amount of activity—and that is 5 percent of assets, too—the amount of activity in a Section 4(o)-eligible firm. But we could certainly say that we would not allow any more than that.

So, once again the Section 4(o) provision creates a different circumstance for those two firms really than for anybody else, but more broadly, I think we do have pretty good authority.

Senator LEVIN. Can you get back to us on the question of whether or not you have the authority to put an overall limit that would then be the combination of those sub-limits and those sub-authorities?

Mr. TARULLO. Right.

Senator LEVIN. Can you check with your Legal Division and get back to us?

Mr. TARULLO. I would be happy to. And as you know, and I think it was in the Report. You probably know it even if it is not in the Report. The difference between 5 percent of capital and 5 percent of assets is huge.

Senator LEVIN. And would you also let us know for the record whether or not the Fed believes that the Bank Holding Company Act provides sufficient authority to place a reasonable size limit on a financial holding company's physical commodity activities overall to limit the commingling of banking and commerce?

Mr. TARULLO. Sure, we can do that, too.

Senator LEVIN. In 1997, the Federal Reserve issued a regulation which said in part that bank holding companies can treat copper as bullion, treating it the same way as gold and silver. But for more than 100 years, commodity markets throughout the world have treated copper as a base metal, not a precious metal, valued for its uses in industry rather than as a medium of exchange like gold or silver. The only thing that changed was its regulatory sta-

tus. Designating copper as bullion has made it exempt from size limits that would otherwise apply and from reports that are required of financial holding companies to be made to the Federal Reserve about the dollar value of their physical commodity holdings.

At the same time, our investigation has shown that JPMorgan and Goldman engage in massive copper transactions and actively build and reduce their massive copper inventories, which at JPMorgan peaked at \$2.7 billion and at Goldman reached \$2.3 billion. Now, what is the rationale for exempting copper from size limits and commodity holding reporting requirements? How is it risk-free?

Mr. TARULLO. Well, Senator, that was an interesting decision, and my understanding—because I asked about it, because that was long before I got to the Fed, and what I was basically told was it followed on an OCC decision that made a similar determination for holdings of copper within national banks, and so what it appears to me as is the Fed proceeded to say, if they are going to be doing this stuff, we do not want to force it into the banks, so permit it in the holding company more generally.

Having said that, I think I cannot offer, again, a Board position on this, but I just would observe that I think a pretty good case could be made for the proposition that copper is different from palladium and copper does seem to be basically an industrial metal. And so it is something that would bear revisiting, I think.

Senator LEVIN. Will you talk to the OCC about the possibilities of making a change in that regard?

Mr. TARULLO. I will.

Senator LEVIN. Really, there is huge risk with this kind of ownership and inventory at billions and billions of dollars, particularly since it has no business in that category. So if you will talk to the OCC, we would appreciate it. Will you do that?

Mr. TARULLO. Sure.

Senator LEVIN. Now, in 1997, that is covered. A question about merchant banking. Gramm-Leach-Bliley indicated that it intended to allow merchant banking investments only if they were financial in nature. That is where the bank acts as a passive investor, does not try to run the company it buys, and holds it for resale to make money off the equity investment. And I think you have talked about that this morning. That is its purpose.

From what we have seen, it looks like some of these big banks are not always following the rules. First, there is a lack of information. The merchant banking reports that the Fed gets now and makes public has such high level aggregate data that they are ineffective as an oversight tool. They do not even contain a list of the merchant banking investments at a bank, so it is nearly impossible to tell if all the merchant banking investments are included.

So I have two questions. How can a regulator police an activity without that kind of basic information? Let me start with that one.

Mr. TARULLO. You cannot do it as it should be done, and I think, Senator, that is one of the reasons why the reporting issue, again, has been another principal topic of internal discussion about the kind of changes we may make.

Senator LEVIN. And it is not enough that the additional information about these activities just be required. It has got to also be made public.

Mr. TARULLO. As with all reporting, in any changes we make, we will look to see what the maximum transparency we can provide without encroaching on genuinely business proprietary information.

Senator LEVIN. That would be helpful. Another issue is the issue of whether financial holding companies are getting involved in the routine management of the companies that they buy. We saw Goldman designate its commodities arm, J. Aron & Company, as the exclusive marketing agent for its coal mines, selling 100 percent of the coal on a day-to-day basis. It also appears Goldman was approving coal mining plans and key infrastructure investments. Goldman's ownership of its warehouse company, Metro, raises similar concerns.

So they are exercising a whole lot of management control over Metro, as we saw yesterday, and Metro's board is composed exclusively of Goldman's employees, and they were approving freight incentives and this merry-go-round shenanigans and policies related to queue length. So that is a second set of issues.

How do you get at that issue as to whether or not they are getting too deeply involved in the day-to-day management of the companies that they buy, which is inconsistent with the rules of merchant banking?

Mr. TARULLO. So I think probably two things, Senator. One is compliance with current rules and guidance, which is part of this overall issue I was referring to earlier. And second is the question as to whether we should revisit the actual rules and guidance that have been put out. I do not want to get too biographical here or autobiographical here, but as you know, I was teaching law, teaching banking regulation after Gramm-Leach-Bliley came out. And as you know from law school, the way you teach these things is you give the kids a hypothetical and you say, "OK, where is the line here? And how do you draw the line?" And, not surprisingly, good law students can make the arguments on both sides, which suggested to me at the time, and I think I have been reminded of this by some of the work that your Subcommittee has done, that it may be worthwhile taking a look at those merchant banking guidelines, not just for commodities but for all activities, actually.

Senator LEVIN. We are going to ask you and the Fed to take a look at the activities of Goldman and the others that we have in our Report, in this merchant banking area. And I cannot speak for Senator McCain yet because I have not talked to him about this, but I will ask him if he would like to join in a letter to you specifically on this issue, which is on top of the recommendations which are in our Report.

Mr. TARULLO. OK.

Senator LEVIN. The third set of concerns involves enforcement. JPMorgan claims to be holding three power plants as merchant banking investments, but only after striking out efforts to hold them as complementary activities. So first it was supposed to be a complementary activity. Then they shifted over to merchant banking as the justification and the rationalization for the authority.

Documents from the Fed indicate that JPMorgan promised in 2011 to sell all three power plants. Three years later, JPMorgan still has all three.

So, first question, what is your view of how banks have been using the merchant banking authority with respect to physical commodities?

Second, what plans, if any, does the Fed have with respect to the problems of inadequate information, bank involvement with routine management, bank failure to sell merchant banking assets, after promising to do so?

Mr. TARULLO. That, I think, gets at two of the issues that you have raised. It sort of combines two things you have already raised, Senator. One is the information and reporting, and second is the set of expectations around merchant banking and the understanding and compliance with the understanding of what it means to have a passive investment.

As you know, there can be legitimate questions with what is a passive investment when one is talking about a major action that affects the whole value of the investment. But when you are talking about information flows back and forth on a routine basis, that does not seem to go to the heart of the protection of an investment for its own sake, which is supposed to be held as sort of a profit-making proposition over time.

Senator LEVIN. Finally, Goldman has not allocated any capital to cover potential losses from a catastrophic event. Their argument is that it does not have capital allocated to these physical commodity activities of theirs because it cannot be held liable. Goldman says its policies and procedures are adequate and that it will always follow them and that no court anywhere in the world would find otherwise. Earlier today, we had a catastrophic loss expert express grave concerns over their assumptions. Should Goldman be allocating capital to cover potential losses from a catastrophic event?

Mr. TARULLO. Actually, Senator, we will look with interest at that testimony that you heard this morning, but, again, as I mentioned earlier, that issue of the potential exposure is really quite central to what we are doing now. And to be honest, that is one of the things that has occasioned the most analysis and continues to occasion the analysis. And I know the Board of Governors, will want some good answers on that as we proceed to think about exactly what is going to be in the Notice of Proposed Rulemaking next spring.

Senator LEVIN. Will you take a look then at the testimony of Goldman in that regard in this hearing yesterday?

Mr. TARULLO. Sure.

Senator LEVIN. Because it goes right to what you call a central issue.

Gentlemen, we thank you for your service, for your regulatory work, for your appearance here today. We have some idea as to what your schedules are, and your appearance, your cooperation with the Subcommittee is very much appreciated. So go get them.

Mr. TARULLO. Thank you, Mr. Chairman. And, again, congratulations.

Senator LEVIN. Thank you.

[Whereupon, at 12:21 p.m., the Subcommittee was adjourned.]

A P P E N D I X

**Statement of Chris Wibbelman Before
the U.S. Senate Permanent Subcommittee on Investigations
Hearing on “Wall Street Bank Involvement with Physical Commodities”
November 20, 2014**

Chairman Levin, Ranking Member McCain, other Members of the Subcommittee:

My name is Chris Wibbelman and I am CEO of Metro International Trade Services. I have been with Metro since it was founded in 1991 and have served as its CEO since 2006.

I was born and raised in Detroit, attended public schools in Detroit, and graduated from Michigan State University. I have worked my entire life in the greater Detroit area, managing and running several businesses. I also have served as Manager of Small Business Development for the Greater Detroit Chamber of Commerce.

Metro has operated London Metal Exchange (LME) warehouses since 1992 when we brought the LME to Detroit and secured approval for the city to serve as an eligible LME delivery location. Much of Metro’s growth occurred following the global financial crisis, when worldwide consumption of aluminum declined and the demand for storage of metal increased. We grew at a time when Detroit was starved for economic growth and had 20 million square feet of industrial buildings slated for demolition. Starting in 2008, Metro purchased or leased 5.1 million square feet of warehouse space, much of which was unused industrial buildings. The process of renovating this industrial space and installing railway sidings created good jobs when many Detroit residents were out of work or being laid off.

The first thing to understand about aluminum warehousing is that the business is driven by broader economic forces. Given the cyclical nature of this business, Metro, during much of 1994 to 2001, had no material amount of aluminum in storage in its Detroit warehouses. During that period, we managed the business efficiently and remained committed to Detroit. And, when

aluminum consumption fell beginning in 2008, Metro was in a position to respond to the needs of aluminum producers.

In so doing, I believe we helped keep U.S. aluminum smelters operating that very well might have shut down because of falling demand.

Metro is licensed by and subject to LME rules. These rules govern the way in which all LME warehouses are operated and they are established by the LME, not the warehouse companies. One such rule is the amount of metal to be loaded out of LME warehouses each day. When the new LME rule increasing the load-out rate was suspended by a court in the United Kingdom, Metro announced that it would comply with the rule voluntarily, even though it was not required to do so. As a result, more aluminum has been loaded out of Metro's Detroit warehouses than from any other warehouse company in the United States. In 2014 alone, we expect to load out 600,000 metric tons of primary aluminum more than we accept for storage.

The Subcommittee staff report makes repeated references to "queues" at aluminum warehouses. It is important to know, however, that of the Metro and other metal currently stored both in and out of the LME system, approximately 80% is *not* subject to any queue and may be purchased by a customer through negotiations with the metal owner. There simply is no lack of availability for aluminum. Consumers can purchase aluminum from LME or off-warrant warehouses without queues, owners of metal in queues, or aluminum producers directly. Millions of tons of aluminum are readily available from such sources.

It is also important to understand two other aspects of queues. First, they are not the result of actions by Metro, but rather of the independent decisions by owners of metal to realize relative value compared to other metal. In order to realize this value, owners must remove their metal from Metro's LME warehouse.

Second, Metro does not benefit from queues. To the contrary, we benefit when metal owners choose to keep their metal in our warehouse, not when they choose to remove it. And metal owners pay rent for all metal stored in the warehouse, whether it is in a queue or not.

The Subcommittee staff report also refers to a July 2013 *New York Times* article, which described supposed “merry-go-round transactions” involving the movement of metal off-warrant from one Metro warehouse to another. As the article itself acknowledged, “there is no suggestion that these activities [described in the article] violate any laws or regulations.”

I appreciate the opportunity to describe the off-warrant movement of metal, which has been characterized incorrectly. Metro offered customers that were removing or considering to remove metal from its Detroit warehouse the opportunity to store the metal off warrant in a different Metro warehouse. Such customers had various other options, including storing their metal with competing companies, many of which have warehouses near to Metro’s. Metro offered these off-warrant transactions to compete for the continued storage of this metal, but it is always up to the owner, not Metro, to decide what to do with its metal.

The metal at issue in these relatively few transactions was loaded out by Metro at the owner’s instructions onto a truck, issued a bill of lading, and moved to another location at the owner’s direction. Once the owner made this choice, the LME rules required that Metro follow the owner’s instructions regarding the disposition of its metal, including treating this metal as loaded out and reducing its LME inventory stocks accordingly. The fact that the owner moves the metal between two Metro warehouses in the Detroit area is no different under the LME rules than if the owner moves the metal to an equally close non-Metro warehouse.

I have made these and many other points to Subcommittee staff through multiple interviews and the production of a substantial amount of information. I hope that the manner in which we have interacted with the Subcommittee and the opportunity to explain Metro and metals warehousing has helped the Subcommittee understand our business practices and the rules of supply and demand that drive them.

Thank you.

**Statement of Jacques Gabillon Before
the U.S. Senate Permanent Subcommittee on Investigations
Hearing on “Wall Street Bank Involvement with Physical Commodities”
November 20, 2014**

Chairman Levin, Ranking Member McCain, and Members of the Subcommittee:

My name is Jacques Gabillon. I lead Goldman Sachs’ Global Commodities Principal Investment Group, or GCPI, and I also serve as chairman of the board of directors of MITS Holding LLC, the company that owns Metro International Trade Services LLC.

I have spent my entire career in commodities-related areas, first in commodities sales, and most recently in GCPI. I have been at Goldman Sachs for more than 13 years.

GCPI is the part of our commodities business that has been primarily responsible for making investments in commodity infrastructure assets, including the investment in Metro in early 2010. We believed that a metals warehouse was a sound investment because the global recession had reduced worldwide demand for aluminum, and aluminum producers have historically delayed cutting production for as long as possible. At the same time, we knew from our market experience that when a commodity such as aluminum is in surplus, near term prices fall relative to future prices. This dynamic encourages market participants to acquire aluminum as part of trades that present limited financial risks but require storage that are commonly referred to as “cash and carry” transactions.

At the time we were considering the investment, customers had already deposited over 800,000 tonnes of aluminum at Metro’s facilities. In making the investment we believed that the surplus conditions would persist. Metro was well positioned to continue to realize the demand for storage because of its location near centers of North American production and its access to transportation and less expensive industrial real estate in Detroit.

Metro's board of directors is the body that sets the general strategy of the company and conducts oversight of the company and its management's performance in keeping with standards of good corporate governance and the requirements of the Bank Holding Company Act's merchant banking rules. In addition to myself, the board of Metro includes representatives not only of GCPI, but also of several of the Firm's control functions, including the Compliance Department.

As you know, Metro is subject to the rules of the London Metal Exchange ("LME"). Such rules, including the minimum amount of metal required to be loaded out of LME warehouses each day, are set by the LME — not by the warehouse companies.

The operations and dynamics around the LME system are often mistaken for the broader aluminum market. Recognizing this distinction, particularly as it relates to the availability of metal and the prices consumers pay, is essential to understanding many of the issues this Subcommittee has raised.

The price negotiated between many sellers and buyers of aluminum in the United States (as determined by a daily survey of the different prices negotiated by individual sellers and buyers) is commonly referred to as the "Midwest Transaction Price." This price is prominently quoted as an "all-in" price for aluminum. The difference between the Midwest Transaction Price and the price for an LME warrant is referred to as the "Midwest Physical Premium." The Midwest Transaction Price fell substantially since 2008.

Any suggestion that end users are paying more for aluminum because of a higher premium is simply not supported by the facts. A reduction in the LME spot price may result in a greater differential between the "all-in" price paid by consumers and the LME spot price but does not change the "all-in-price" itself. The fact that the differential between these prices for

two different products is referred to as a “premium” has contributed to confusion about this in the media.

Like every other market, the price of aluminum is established through supply and demand fundamentals. And, those trends have been unmistakable. There has been a consistent surplus of aluminum since 2008, resulting in a large volume that has been placed in storage. Each year, approximately 49-50 million tons of aluminum are produced. Since 2008, production has exceeded consumption by one to two million tons a year, resulting in an increasing surplus that has gone into storage. That’s why there has never been a shortage of aluminum.

Let me address a related issue to the Midwest Premium – queues. There are currently approximately 4.4 million tons of LME warranted aluminum and there is estimated to be almost 8 million tons being stored off-warrant. Of the LME warranted aluminum, more than half is held at “non-queue” locations.

As a result, of the aluminum currently held in storage, approximately 9.6 million tons — or close to 80% — is not subject to any queue. Again, any suggestion that there is a shortage of aluminum is not rooted in the facts. This 9.6 million tons is theoretically available to be sold by its owners on immediate delivery terms, but the owners find it more profitable to continue to store their metal and choose not to sell it until the market dynamics change.

The length of the queue to remove metal from Metro’s Detroit warehouse is not the result of action by either Goldman Sachs or Metro. Queues really started to build up in 2012 — two years after Goldman Sachs’ purchase of Metro. During that time, the near term prices for aluminum remained lower than the future price. At the same time, general economic confidence and availability of credit improved, making the lower cost but less liquid off-warrant storage a more attractive alternative for the hedge funds and trading houses that were implementing cash

and carry trades. This occurred not only in Detroit, but also in another major city for metals warehousing, Vlissingen, The Netherlands.

Interestingly, coinciding with more customers removing their metal out of LME warehouses into off-warrant storage were new rules from the LME that doubled the minimum load-out requirement from 1,500 tons per day to 3,000 tons per day. With lower off-warrant storage costs, it became more valuable to cancel warrants. In other words, when the LME doubled the minimum load-out requirement, the result was longer, not shorter, queues. In fact, based on the reports we have provided to the Subcommittee, these queues do not drive the overall price of aluminum that consumers pay.

On a related issue, we have provided a significant amount of information to the Subcommittee on incentives. I will discuss this issue in the context of the oversight we provide Metro as the Board. In order to compete, warehouse operators typically offer one of two types of incentives to potential customers. Operators may offer an up-front payment on future rent collections to customers who place metal on warrant in its warehouses. In other instances, operators offer discounted rent to customers who agreed to store their metal for specific durations. These incentives are similar to those offered by landlords, such as offering one-month's free rent to attract a tenant, or reducing rent for a tenant who signs a long-term lease.

Metro has offered both of these types of incentives, consistent with both LME rules and industry practice. In all such instances, the inducements that Metro has offered have been the product of arm's-length negotiations with the customer.

Finally, I'll briefly conclude with a description of the information barriers that exist between Goldman Sachs and Metro. The LME rules require that an information barrier be established between a warehouse company and affiliated trading entities. Goldman Sachs has

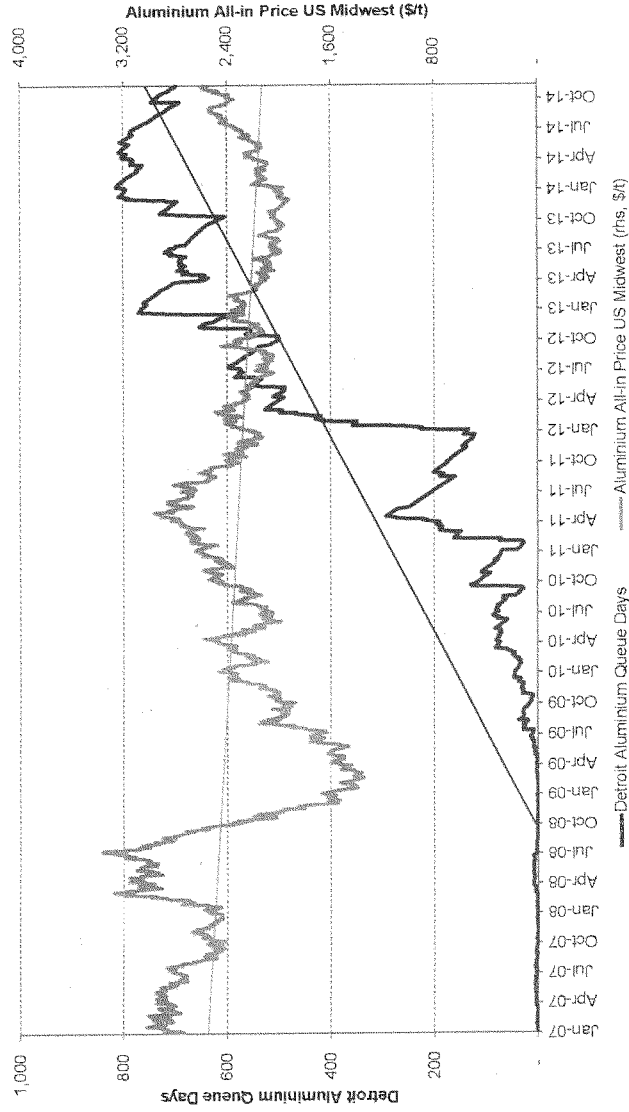
such a barrier in place which not only meets, but exceeds, the LME's requirements. We take this issue very seriously.

For example, much of the material that Metro generates and distributes to the Metro board and me is not actionable for a trader and, in any event, is dated and sanitized to remove the names of counterparties. Regular reviews by Goldman Sachs personnel have not found a single instance where confidential Metro information went to the metals trading personnel of Goldman Sachs. And an outside auditor has reviewed Metro's information barrier policy finding no issues.

The investment in Metro was never part of Goldman Sachs' core franchise and has not been integrated into our commodities market making activities. In fact, because the investment was made under the merchant banking authority, we are required to sell it within ten years. And now more than four years into this period, we are actively involved in a sales process for Metro.

In the many hours we have spent with the Subcommittee's staff, we have reinforced the importance of understanding the market fundamentals that dictate price and availability as well as the transactions and dynamics surrounding them. I look forward to continuing that discussion today, Mr. Chairman.

Queue Length Does Not Drive the All-In Price



Source: LME data as of Nov/2014, Metal Bulletin Aluminium US Midwest Premium Indicator.

Written Statement of Jorge Vazquez
Founder and Managing Director of HARBOR Aluminum Intelligence LLC
to
The Permanent Subcommittee on Investigations
Hearing on
“Wall Street Bank Involvement With Physical Commodities”
November 18, 2014

Chairman Mr. Levin, Ranking Member Mr. McCain and other members of the Subcommittee:

Thank you for your letter dated November 4, 2014 and for your invitation to provide my comments on seven specific areas related to aluminum warehousing in the United States and aluminum physical premiums.

About HARBOR Aluminum Intelligence

HARBOR Aluminum Intelligence Unit LLC (HARBOR) is an independent, privately-owned research firm based in Austin, Texas, that specializes in the global aluminum industry and its various markets. We compile and develop aluminum industry intelligence and market insight, and provide consulting and expert advice to over 300 aluminum industry clients across the globe. We support a majority of the world's most important market players in the bauxite mining, alumina refining, aluminum smelting, metal trading, aluminum processing and end-user segments. Our clients include Alcoa, Rio Tinto Alcan, Emirates Global Aluminum, Constellium, Aleris, Mitsubishi, Sumitomo, Sapa, Coca-Cola, Tetra Pak, Hyundai and GE.

Please find below my comments on each of the seven points you kindly invited me to address.

1. The role and function of the London Metal Exchange (LME) and LME-approved warehouses in the aluminum market

The LME has served as the world's premier metal trading exchange since it was formally created in 1877. The Exchange started its aluminum contract in 1978 and today provides the official aluminum base price for virtually all of the transactions taking place in the Western World. Within the LME, one can buy or sell aluminum contracts to be delivered on any specific day in the next three months, for every week in the next six months, and for every month in the next ten-plus years. All future contracts can be settled financially, or physically, using an LME warrant.

The LME provides the structure that allows all market participants to hedge (consumers, producers, traders, banks), speculate (CTAs, Hedge funds, Macro funds, Index funds), and discover price.

With its network of warehouses (today more than 700 around the world), the LME has historically functioned as a "market of last resort"—it can be tapped as a source of physical aluminum during times of shortage, or to deliver/store aluminum during times of over-supply. Today, the LME has primary aluminum inventories of 4.4 million metric tons (mton= 2,204.6 pounds), which represents over 16 percent of the world's annual consumption, excluding China.

In my view, since 2010 the LME has partially failed as an effective "market of last resort" for the aluminum consumer (the manufacturers of aluminum semi-finished products). For example, HARBOR estimates that North America (US, Canada and Mexico) will end 2014 with a primary aluminum production shortfall of 2.4 million mton (about 39 percent of its annual consumption). Although today, LME warehouses in Detroit hold over 1 million mton of aluminum—which equates to 80 percent of the total LME metal stored in North America and 17 percent of annual consumption in the region—a consumer of aluminum who would like to turn to the LME as a market of last resort faces a load-out waiting time of 665 calendar days. This long waiting time and the capital requirements to source the metal out from the warehouse make it prohibitive for the consumer to use the LME as a viable source of last-resort supply. I can confirm this, based on my interaction with HARBOR's aluminum semi-finished manufacturer customers. This situation has prevailed since 2010. Prior to that year waiting times averaged less than 2 weeks and consumers occasionally used the LME as a source of supply (more on this further below).

The LME attempted to address this problem on April 1, 2012, by implementing recommendations that doubled the minimum delivery-out rate from 1,500 mton to 3,000 mton per day. These changes affected LME warehouse companies all over the world if they were holding more than 900,000 tons of metal per location, as was the case in Detroit (which at the time stored over 1.4 million mton). However, raising the load-out minimum rate failed to stop the on-going concentration of metal in Detroit, and the ever-longer load-out queue. On July 1, 2013, the LME addressed the issue again and opened a consultation period on their proposal to make sure unprecedented load-out queues at the affected locations (Detroit included) were reverted to reasonable waiting times. This led to a new rule, announced November 7, 2013, that linked the load-in rate and load-out rate in such a way as to gradually reduce these historic waiting times to 50 days. LME has not yet been able to implement this rule, though they are on track to do so by February 2015. Currently, the load-out queue in LME Detroit stands at around 665 days.

2. The evolution of freight incentives offered by LME-approved warehouses in the United States since 2008, and the impact of those incentives on the aluminum market

What are Warehouse Incentives

As a matter of brief introduction, I would like to describe what a warehouse incentive is and why it is offered.

LME warehouses derive two main sources of income: (i) rental storage income, and (ii) Free On Truck charges ("FOT"). Warehouses charge metal owners daily storage rental fees. FOT is a charge to the metal owner when the metal is loaded out of the warehouse into the truck/vessel/rail car of the holder of the metal. Each year these charges are set by each individual warehouse company per location, notified to the LME, and implemented the first day of April. Today, the published daily rent in Detroit for *Metra International Trade Services LLC (Metra)* warehouses (where 80 percent of the LME aluminum metal in North America is stored) is 51 cent/ton per day (vs. what HARBOR estimates is the cost of storage: less than 7 cent/ton). The FOT charge is \$39.95 per mton (vs. what HARBOR estimates is the cost of operation: less than \$16 per mton).

Historically, it has been a standard practice for LME-approved warehouses to attract metal to their warehouses by offering financial incentives to producers and traders, known as "freight allowances" or "warehousing incentives" or "warehousing premiums."

In principle, the higher the revenue a warehouse expects (from rental and FOT fees), the greater the incentive that warehouse can offer. Still, warehouses prefer to pay the smallest incentive possible to attract metal and thus maximize their profit.

Every LME-approved warehouse should follow the Exchange rules; probably chief among them is the minimum load-out rate. This is that every warehousing company must load-out at least a minimum amount of metal per location per day when there are requests from those holding warrants in the warehouse (known as warrant cancellations). In practice, LME warehouse companies usually treat the minimum load-out daily rate as a maximum daily load-out rate.

The load-out rate rule applies to all warehousing companies, regardless of how many warehouses they own in a location. For example, currently the minimum load-out rate for warehouses holding over 900,000 mton of metal is 3,000 mton/day. Consider this example: warehouse company A owns 10 warehouses in city X, while warehouse company B owns one warehouse in that same city; both are required to load-out the same total amount of metal in a day (3,000 mton). This means that company A (with ten warehouses) is required to load-out only 300 mton from each, while company B (with a single warehouse in this location/city) must load out the full rate (3,000 mton) from that one warehouse. You can see that this rule incentivizes warehousing companies to attract as much metal as possible in one location in order to reduce the required load-out amount as percentage of the total metal stored.

2007-2008: The Emergence of a Market Surplus

In order to understand the evolution of warehouse incentives in the United States since 2008, it is important to keep in mind the state of the aluminum industry back then.

Demand for primary aluminum in North America and in the World collapsed in 2008 and 2009. Annual primary aluminum demand in the World excepting-China fell by 5 million mton or 20 percent between 2007 and 2009. Monthly aluminum demand in the US and Canada as measured by domestic mill shipments fell more than 36 percent between February 2007 and February 2009. As a result, domestic aluminum producers were suddenly left with no destination to sell a significant portion of their units. Smelters in the Northeast of Canada and the US took a material financial hit: they needed to make sales, move their inventory and generate revenue. They turned to the LME as a market of last resort. Smelters also sold to traders who in turn sold units to the LME and in some cases stored them in off-LME warehouses for financing purposes. Back in those years of financial crisis, the LME's role of market of last resort served smelters well and – faced with the lack of consumer demand at that time – prevented them from shutting down considerable operating capacity.

Detroit has railroad lines, is near a water port, and has become a logistical hub where 30 percent of the trade between Canada and the US takes place. Detroit is also one of the two LME warehouse locations close to the Northeast Canadian aluminum smelters. *Metro* was by far the largest and only dominant LME warehousing company in Detroit. Baltimore is the other LME location in proximity not only to the Northeast Canadian aluminum smelters but also to the US Northeast aluminum smelters. As contrasted to Detroit, Baltimore's LME warehouse market share was split among several warehousing companies.

With unprecedented weakness in demand, primary aluminum inventories soared. LME Detroit went from 15,000 mton in early 2007 to 342,925 mton by the end of April of 2009. In the same period, LME Baltimore which had several warehouse companies, saw inventories climb from 58,000 mton to 350,000 mton. HARBOR estimates that traders/banks stored another 1,000,000 mton in off-LME warehouses during the same period.

There is no public data on warehouse incentives, which are negotiated privately between LME warehouse operators and producers/traders. However, HARBOR's field intelligence allows us to estimate that warehouse incentives in both Detroit and Baltimore fluctuated in the 2007-2008 period between 0.5 and 2.0 cent/lb. This

equated to 1.0-1.5 cent/lb less than the market premium in the Midwest consuming areas (Midwest premium). Warehouses didn't need to pay much incentive to attract the metal because producers had no home for a large volume of their units, and also because warehouses were paying cash and smelters were saving on freight by shipping to warehouses (I will explain this in more detail below).

2009-2013: A Critical Mass of Metal and Effects

As a result of the aluminum market surplus generated, by January 2009, LME Detroit (*Metro*) had accumulated 342,000 mton of primary aluminum in its warehouses. LME Baltimore had similar volumes, but the aluminum was spread among several warehouse companies, which meant each warehouse company held a fraction of what *Metro* had. Given the minimum load-out rate of 1,500 mton per business day that was in force at the time and the 342,000 mton of metal stored in its warehouses, *Metro* had at least 570 calendar days of guaranteed rent/revenue for each additional mton unit it managed to attract. This was dramatically more revenue and capacity to pay warehouse incentives than any other warehouse company in North America. This disparity gave *Metro* three things: the ability to offer more attractive warehouse incentives than its competitors in other locations, b) the ability to pay above-market premiums that consumers were paying (Midwest premium), and c) the start of a self-feeding cycle that allowed the company to permanently increase the metal stored in its warehouses.

In other words, by January 2009, LME Detroit had amassed a critical mass of metal. The unprecedented market surplus was one important factor contributing to this critical mass, but so was the minimum load-out rate which was small relative to the volume and concentration of the metal, as well as the dominance of one warehousing company in this location (*Metro*).

Sitting on this critical mass of aluminum and able to outbid warehousing competitors and consumers, in December 2009 LME Detroit became the world's largest LME location of stored aluminum, with more than 800,000 mton of metal. Aluminum stocks stored in LME Detroit continued to increase for the next 3 years eventually reaching a peak of 1.56 million mton in December 2013. In the meantime, North America experienced a strong bounce in aluminum demand and a growing annual deficit of primary aluminum, which eventually reached 1.5 million tons in 2013 (about half this deficit was commodity ingot).

LME Detroit's critical mass gave smelters additional benefits that incentivized smelters to continue shipping their metal to Detroit despite the growing consumer demand and regional production shortfall. These were:

(a) Cheaper railroad rates. The big volumes traveling *Metro* warehouses in Detroit gave smelters/traders a favored position (economies of scale) in negotiating rail rates that saved them 1-2 cent/lb off the prevailing standard rate vs. diluting those volumes among several plant locations in the Midwest consumer area; b) Cash payments. Warehouses pay cash while selling to consumers typically involves a 30-day wait for payment; c) No credit risk. Selling cash to warehouses shielded the smelter from the risk of default, which smelters faced when selling to consumers; d) Reliable demand. The warehouse provided a steady demand flow, compared to the irregular demand from consumers; e) Flexibility on delivery deadlines. Consumers have tight schedules, whereas the warehouses don't require strict delivery deadlines, which smelters/traders usually leverage into contango profits; and f) Flexibility on metal purity. Smelters were able to ship metal with trace elements such as Lithium (used to increase purity) that some aluminum consumers wouldn't accept.

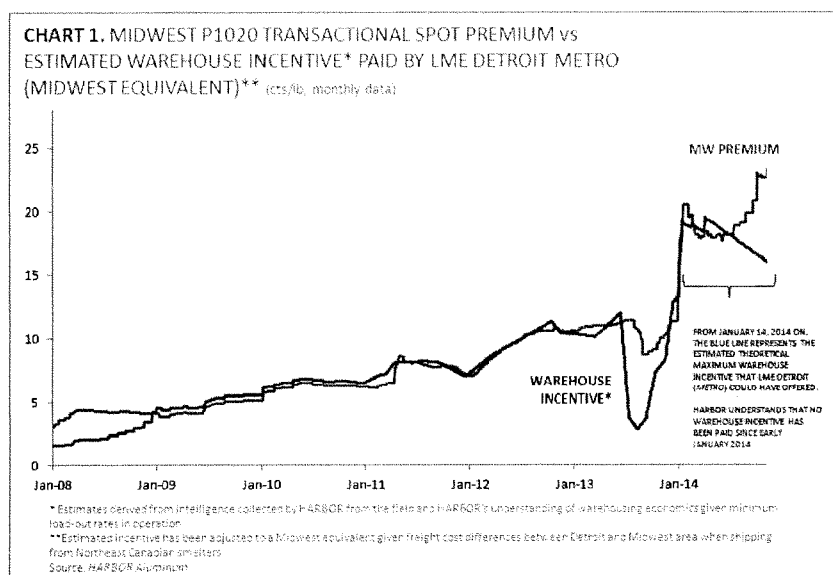
As a result of the above – LME Detroit's leverage benefits and the growing regional deficit of aluminum -- LME stocks in Detroit increased while other LME locations in the region declined.

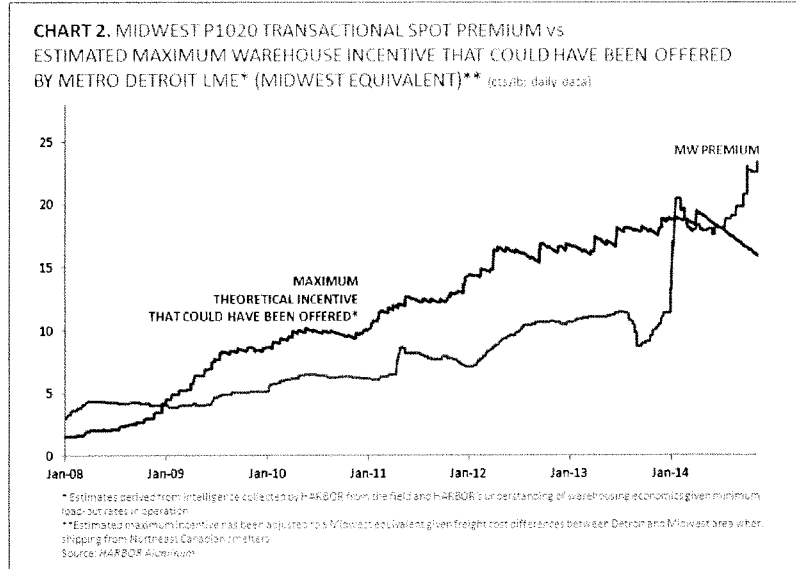
In February 2010, after LME Detroit's critical mass and dominance position was well established, *Goldman Sachs* (GS) acquired *Metro*. This purchase made sense, in my view, not only because of the unprecedented benefits of the unique business model that *Metro* possessed, but also because ownership gave GS the ability to potentially realize a considerable profit on any off-warrant aluminum position that the company decided to ship to *Metro*.

This worked because *Metro* had to comply with a relatively limited load-out rate as described earlier. Any off-warrant metal that GS had then or could potentially obtain could be converted to warrants and these in turn could be sold to another market participant, who would then be required to pay rental fees and income for at least more than 70 days (queue length back then). In February 2010, this overall benefit (warehouse incentive and/or internalization of storage/FOT profit) came to at least 3 cent/lb above the market premiums rates at that time. In other words, moving metal stored in an off-LME warehouse to *Metro*, gave GS an automatic theoretical 3 cent/lb minimum profit (that was reasonably expected to increase with any additional lengthening of the queue).

In this context, **Chart 1** shows HARBOR's estimates of the warehouse incentives paid in LME Detroit, compared to the Midwest premium from 2008 to 2014. **Chart 2** shows what HARBOR estimates was the maximum warehouse incentive that LME Detroit had the capacity to pay (without losing money) for each additional deal. These estimates are based on field intelligence and HARBOR's research on warehousing economics.

As I will explain further below, I do not believe that warehouse incentives *per se* have been the main driver of the notorious increase in market premiums that has taken place in North America, particularly since early 2011. Instead, these higher market premiums have been mainly a function of the lengthening of queue at this location that resulted from *Metro's* critical mass and the limited mandatory minimum load-out rate. As shown below, warehouse incentives moved up from about 1 cent/lb (\$22 per mton) in early 2008 to over 18.0 cent/lb (\$395 per mton) by early 2014.





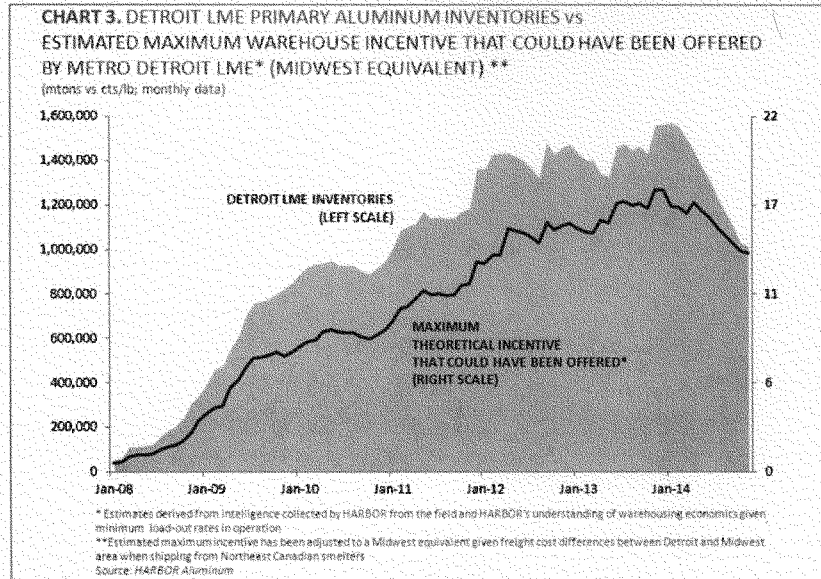
2014: No Longer Capturing Metal and Offering Warehouse Incentives

From June 2009 to early January 2014, *Metro* warehouses managed to capture metal units in spite of the growing market deficit in the region, thanks to its critical mass position and its ability to outbid competing warehouses and consumers of the metal. However, by January 20, 2014, LME Detroit had lost this critical mass condition, and the benefits associated with it. The reasons for this were: a) Production of commodity ingot in the Northeast portions of Canada and the US declined materially. A portion of production was curtailed in favor of Value Added Products (VAP's) such as billet, slab or PFA, while another portion was exported to Europe and Brazil; b) Off-LME stocks kept falling in North America because of the regional market deficit and the volumes previously channeled to LME Detroit; and c) After the LME implemented the new minimum load-out rate in April 2012, LME Detroit was required to load-out at least 3,000 mton per business day.

In other words, the metal units generated by the Northeast Canadian and US smelters fell from an equivalent of 2,780 mton per business day in 2009 to fewer than 2,000 mton in 2014. This meant a drain for *Metro* considering that the load-out rate increased to 3,000 mton.

Indeed, as shown in **Chart 3**, it wasn't until January 2014 that the volumes LME Detroit was capturing finally fell short of what LME Detroit (*Metro*) needed in order to be able to offer a competitive warehouse incentive. From that point on, LME stocks in Detroit started to decline non-stop. Now LME Detroit found itself in a self-feeding cycle, where declining stocks meant an on-going reduction in the maximum warehouse incentive it could offer to attract metal, which in turn fell increasingly short of market premiums. From January's inventory peak to date,

aluminum stocks in LME Detroit have fallen over 500,000 mton to 1.0 million tons. This is a 3.5-year low. I expect inventories of aluminum in LME Detroit to continue to fall further as this cycle feeds on itself.



Please note that while LME Detroit (*Metro*) basically stopped offering warehouse incentives in January 2014, market premiums have continued to rise. This further supports the assertion that warehouse incentives *per se* were not the main driver behind the unprecedented increase in market premiums.

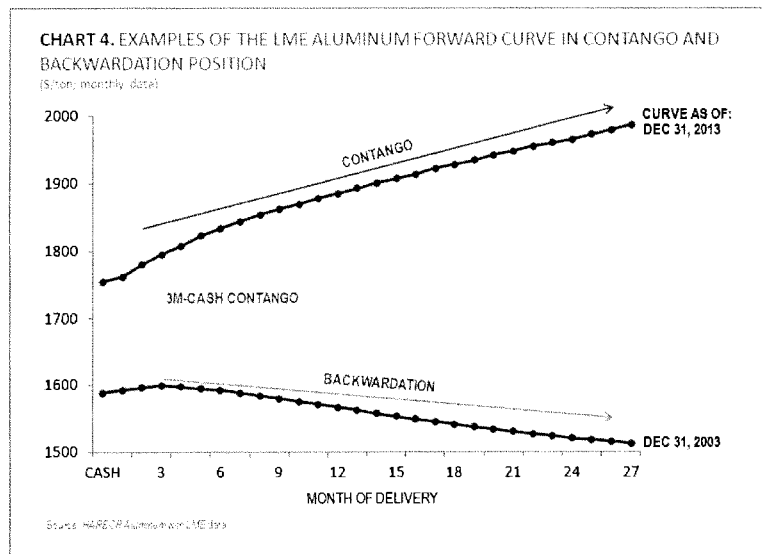
3. The growth of the queue at the Detroit warehouses owned by *Metro International Trade Services*, including the role of large cancellations of LME warrants for aluminum

Before I address cancellations and queue developments in LME Detroit (*Metro*), I would like to explain some essential terms and concepts: contango/backwardation, a financing deal, and load-out queue.

"Contango" and "Financing Deal" Concepts

The market is said to be in *contango* when the price of aluminum that is scheduled for future delivery trades above the spot price. Conversely, the market is said to be in *backwardation* when the spot price trades above the future price. Historically, the LME aluminum market's natural state is to be in contango. The 3M-cash price spread (that is,

the difference between the price for delivery of a warrant in 3 months' time and the spot price of a warrant) is one of the most common reference points in the market, where backwardations arise only occasionally. Only once in every 40 weeks (on average) do backwardations emerge in the 3M-cash spread, and even then they usually last less than a week. Backwardations occur when the demand for a particular contract (spot or future contract) outpaces supply, forcing the buyer to pay a premium (relative to other contracts in the forward curve) in order to get it. **Chart 4** below shows what a contango and backwardation look like.



Cash and carry is the cost of holding aluminum stocks. This is the sum of storage, finance and insurance costs that a market participant incurs in the storing of aluminum.

Market participants can profit from a contango when it is wide enough to cover (or exceed) the cost of carry. This means that a market participant can profit from the contango if he buys physical aluminum (from a producer/trader or a warrant on the LME) and simultaneously sells it in the futures market at a price that is high enough above the spot price to cover the full cost of carry (storage, cost of capital and insurance).

Profiting from the contango is also known as "profiting from borrowing," "cash and carry trading," or doing a "financial deal".

Finance deals can last anywhere from one day to a period of years. The bulk of financing deals today are done for three months or for 1-2 years. Financing deals can be (and often are) rolled over when the deal is scheduled to expire but the contango is wide enough for the financier to do another financing deal and still make a profit.

What and Why a Load-out Queue

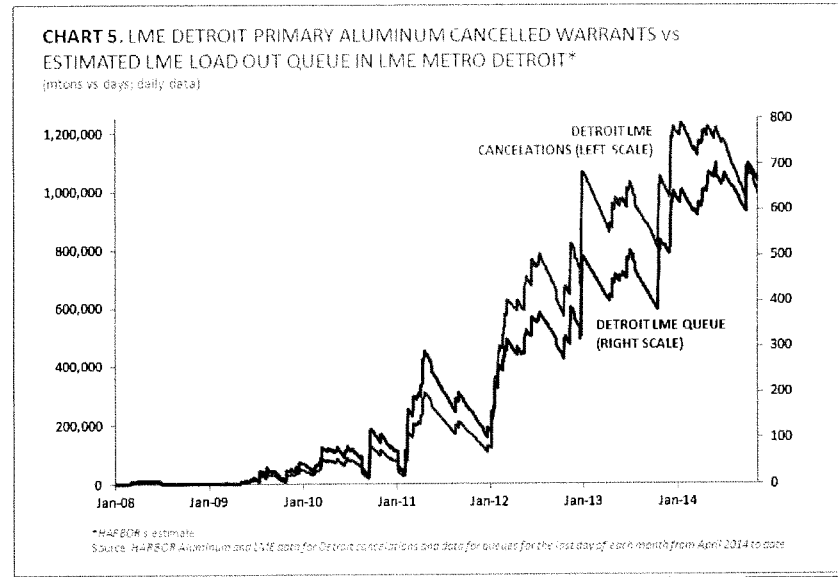
A load-out queue in an LME location begins when the amount of metal held by one warehousing company (at that location) for which warrants have been cancelled (ear-marked to leave the warehouse) exceeds the LME-mandated minimum daily load-out rate. For example, if warehousing company A is holding over 900,000 mton in one location and 60,000 mton of metal is cancelled, a queue of 20 business days (28 calendar days) will be formed because of the 3,000 mton daily load-out rate. The more metal that is cancelled, the lengthier the queue will be. This assumes that the warehouse treats the minimum load-out rate as a maximum and doesn't load out a greater volume of metal each day.

Evolution of the Load-out Queue

As mentioned above, by June 2009 *Metro* had a critical mass of metal stored in its warehouses. There were at that time cancelled warrants for only 11,275 mton, less than 2% of the 600,000 tons that LME Detroit actually had on hand, and equivalent to only 11 days of queue... When *GS* acquired *Metro* in March 2010, LME Detroit had 45,000 mton in cancelled warrants, 4.9% of total stocks at that time and the equivalent of 44 days of queue (still considered an acceptable waiting time).

Five months later after *GS* acquired *Metro* (LME Detroit), in September 2010, the company started to experience on-going massive cancellations of metal, which stretched the load-out queue to unprecedented waiting times.

Here is the count of these massive cancellations and their impact on the load-out queue in Detroit: Between September 17-20, 2010 (2 business days), over 102,000 mton of metal were cancelled, lengthening the load-out queue from 24 to 116 days. Between February 11 and 14, 2011 (also two business days) another 97,925 mton were cancelled, which drove waiting time to 162 days. Additional cancellations in April 2011 (102,000 mton) drove the queue to 289 days. Cancellations in the January-July 2012 period (826,000 mton) lengthened the queue to 368 days. Cancellations between December 24 and 28, 2012 of 378,875 mton further lengthened the queue to 498 days. Cancellations during December 2013 of 251,400 mton lengthened the queue to 641 days. Cancellations during May 2014 of 33,025 mton lengthened the queue to a new high of 702 days. Today, 98 percent of the 992,900 mton of metal stored in LME Detroit remains in a queue with a waiting time of 665 days. Please see **Chart 5** below.



Drivers behind Cancellations and the Resulting Waiting Times

As explained above, after GS acquired *Metro*, there were unprecedented cancellations of metal resulting in an ongoing lengthening of the load-out queue.

HARBOR's intelligence indicates that most of these cancellations were made by a handful of large financial institutions and at least one trading company (backed by financial institution) that: a) had access to ample and cheap credit (at about a fourth of the cost that a typical aluminum manufacturer must bear), b) probably held aluminum stocks outside the LME system, c) are savvy and sophisticated in trading the LME market, and d) own or have access to low cost non-LME warehouses.

It is my view that these players bought, and then cancelled LME warrants (probably paying a very small premium fee, if any, to the previous warrant holder) because:

- a) They believed that *Metro's* critical mass of metal (ability to capture units away from the market when demand and regional tightness was growing) had established a firm floor (safety net) in market premiums and warehousing incentives, and a cycle of metal attraction to reinforce it.
- b) By cancelling warrants and consequently lengthening the queue, the marginal cost of sourcing any additional metal out of the LME would increase automatically (and pressure market premiums upward as I will discuss below), compared to the average cost they would incur by cancelling the metal. This guaranteed a nearly automatic profit.

For example, consider September 20, 2010. On that day 98,500 mton of metal were cancelled and the queue lengthened from 24 to 116 days. Assuming the cancellation was made by a financial institution, the average cost of sourcing that metal (at full retail storage rates and FOT cost + the cost of financing, less the contango credit) was about 3.1 cent/lb. Sourcing the next mton of metal out of LME Detroit (given the then-116 day queue) implied a minimum cost of 6.8 cent/lb if another player wanted to do the sourcing. This virtually ensured an automatic profit for the party cancelling the metal of at least 3.7 cent/lb.

c) By cancelling warrants, these players could expect to amplify the cash-and-carry profit that the existing contango offered, if once the metal out of the LME warehouse, the company stored it in a non-LME warehouse (where retail storage costs are a tenth the cost of LME warehouses).

d) These cancellations would increase the market premium and benefit the mark-to-market valuation (a.k.a. the premium value) of any metal position that was stored in the LME but not cancelled, stored in a non-LME warehouse, and any metal in transit. The increase in the market premium could also boost the value of any metal produced at a smelter (primary aluminum producing company) in which the player who did the cancelling might have shares in.

In other words, with access to ample credit and very low interest rates, these large financial institutions/traders could cancel the metal and, because of the critical mass of metal and the limited load-out rate, ensure themselves of a profit with very little risk.

4. The relationship between warehouse queues and the LME and Midwest Premium prices for aluminum

What is the Midwest Premium?

A physical premium is the additional price paid by a buyer of primary aluminum on top of the LME price. This premium is paid to cover the costs of delivering metal to a buyer's plant/warehouse. The physical premium thus reflects the full logistical cost of delivering metal. This includes freight, insurance, storage, loading/unloading, duty, and cost of financing.

Throughout the world, every major region in the aluminum market has a benchmark premium that reflects the logistical cost applicable to that region. The most important benchmark regional premium in North America is the Midwest premium. Buyers and sellers in North America use this reference premium when negotiating the actual premium to be paid for the supply of physical aluminum. The higher the logistical cost associated with delivering metal (comprising distance, diesel price, ocean rate, finance cost, time, storage rate), the higher the premium.

Again, physical premiums are negotiated bilaterally between buyers and sellers independently of the LME price, and the parties are under no obligation to reveal the agreed-upon premiums to the public. Nonetheless, data providers (such as *Platts*, *Metal Bulletin*, and *HARBOR*) gather this information through voluntary reporting.

It is important to note that in North America, around 75 percent of the negotiated premiums are done on an annual contract basis, and the remainder on the spot market. Premium negotiations can be based on a formula that is referenced to a reported spot premium assessment like the one done by *Platts* or negotiated on a fixed number (i.e. 7 cent/lb). Since premium data providers only consider spot premium transactions based on a fixed number, the spot premiums that these companies publish are based on a small amount of metal, relative to the size of market.

The delivered price paid in North America by end-users for a supply of primary aluminum from smelters and/or traders, is thus typically the LME price plus a physical premium (Midwest premium) paid to deliver the metal to the buyer's plant/warehouse.

What in Reality Determines Market Premiums

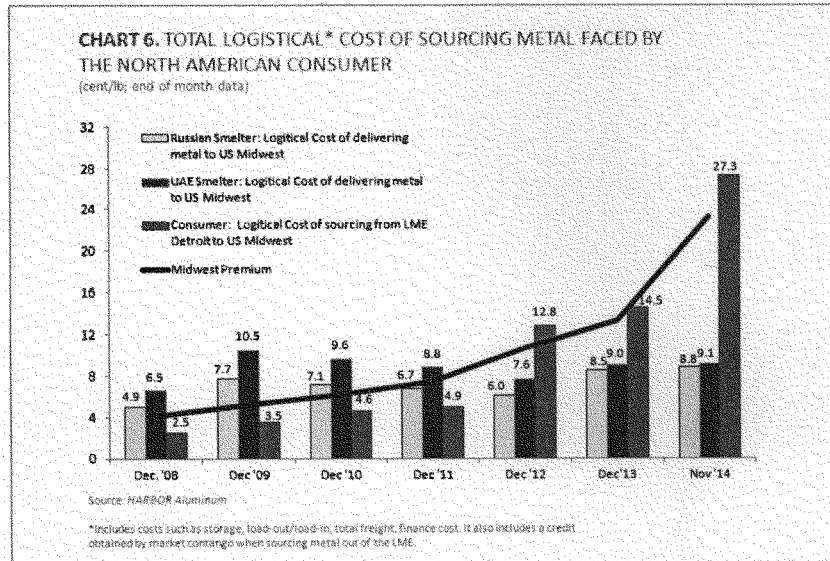
Historical evidence demonstrates that primary aluminum premiums ultimately reflect the full logistical cost of obtaining metal. Regional supply-and-demand factors can temporarily affect the regional premium. An example of this was January and February of this year, when the harsh winter materially reduced the supply of aluminum scrap (thus increasing the demand for prompt primary aluminum), which in turn drove market premiums temporarily above the marginal logistical cost of moving the metal. Permanent changes to the premium occur only when regional supply-and-demand factors change the logistical cost of obtaining metal.

For example, consider the typical consumer of primary aluminum. These are aluminum extruders, rollers, castings and wire and cable producers with casthouse capabilities. These consumers have basically three options when sourcing aluminum. They can:

- a) Source the metal from a smelter (local or foreign),
- b) Source the metal from a trader (local or foreign), or
- c) Source the metal from the LME (established as a market of last resort).

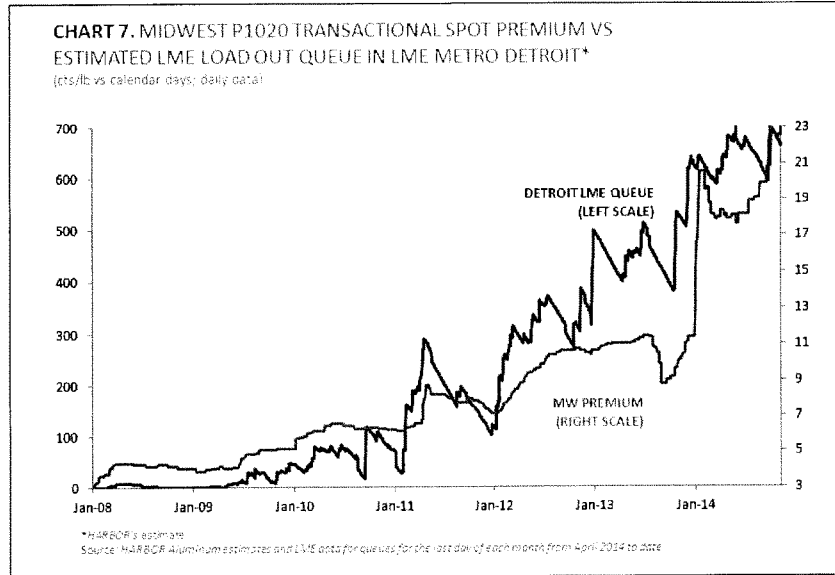
In reality, the cost of sourcing metal from the LME (after considering rent, queue length, FOT, finance cost and freight from warehouse to plant) has always operated as a backup for the consumer. It is economically irrational for a consumer to pay a smelter and/or trader a physical premium greater than the cost to that consumer of sourcing the metal itself from an LME warehouse (except when the consumer has an urgent and unexpected need for metal and must source from the nearest supplier, irrespective of cost). The cost of sourcing metal directly from the LME warehouse provides an important point of reference and leverage when negotiating with the smelter and trader. As a result, the consumer almost always gets a better deal from the smelter or trader than they would get directly from the LME. That is why consumers are not found in the queue. It is financial institutions and large trading companies that populate the queue because their cost of capital is a fraction of the cost of the consumer. Thus, the lower the cost associated with sourcing metal out from the LME warehouse, the lower the reference point consumers have to negotiate premiums with smelters and traders, the lower the market premium. The higher the cost associated with sourcing metal from the LME warehouse, ultimately the higher the market premium. In this respect, the longer the queue to load out metal from a dominant warehouse like LME Detroit, the higher the associated cost to source the metal and, inevitably, the higher the premium.

Chart 6 below shows the logistical cost trend of sourcing metal from Russian smelters, Middle East smelters and LME Detroit (which together are the main suppliers of metal to North America). As can be seen, since 2009 the logistical costs of sourcing metal from Russia or the Middle East has remained stable between 6.0-10.5 cent/lb, while the cost of sourcing metal from LME Detroit has risen more than 1,000 percent from 2.5 cent/lb in 2007 to 27.3 cent/lb today. As the cost of sourcing metal from LME Detroit skyrocketed, so did the reference point for consumers to negotiate with and so did market premiums. As a result, the Midwest premium has increased from 2.5 cent/lb in December 2008 to more than 23 cent/lb today.



Indeed, HARBOR's mathematical studies confirm that the lengthening of the queue in LME Detroit (*Metro*) has been the main driver behind the unprecedented increase in Midwest premiums. Our work also shows that movements in cancelations/queues in LME Detroit can take as long as 5-7 months before their full impact is felt on market premiums.

Chart 7 below shows how the lengthening of the queue in Detroit from zero to 702 days has impacted market premiums.



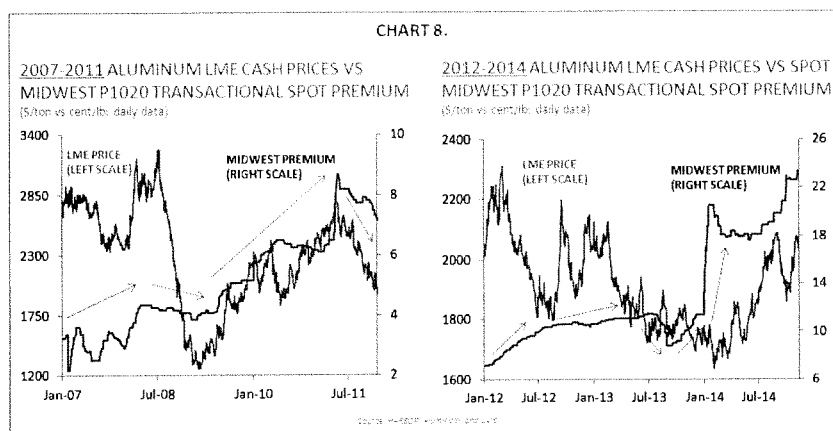
The All-In Price Theory

I am aware of the "all-in price" theory that circulates in the market today. The theory states that the price of an LME warrant is derived from the all-in physical metal price that is established outside the Exchange, such that any artificial rise in market premiums is offset by a discount in the price of an LME warrant (LME price).

I have not seen any serious analyses or empirical evidence that supports this theory. In my view, this notion has a logical conceptual explanation, but does not reflect how the physical aluminum market actually works. On the contrary, evidence that I have analyzed at HARBOR indicates that LME price and market premiums (Midwest premium included) have historically moved together in the same direction most of the time (reflecting demand trends and the economic cycle), not in opposite directions.

LME prices are determined day-to-day by the interplay of financial and physical demand that takes place in the Exchange. The physical market first references its base price from the LME price and then adds the physical premium that buyers and sellers negotiate outside the Exchange.

Chart 8 below shows the day-to-day relationship between LME prices and Midwest premiums.



5. The impact of warehouse queues on the aluminum market generally and on consumer prices, the ability of consumers to hedge aluminum-related price risks, and the role of the LME as a market of last resort

As explained, HARBOR's empirical work and experience is consistent with the idea that there is causality that links load-out queue length (cost of sourcing metal from the LME which is the ultimate "backup" of the buyer) and premiums. In the case of North America, this means a link between the load-out queue in Detroit (*Metro*) and the Midwest premium. It is thus my conclusion that cancelled warrants and the lengthening of queues in Detroit are the main drivers behind today's unprecedented Midwest premiums.

Higher premiums negatively impact end-users financially. Considering the evolution of the full logistical cost of sourcing metal from Russia and the Middle East to the US Midwest region, HARBOR estimates that the effect of lengthening queues in market premiums has cost the US consumer an accumulated sum of at least \$3.5 Billion USD since 2011. This estimate considers primary and scrap aluminum consumption volumes in the US, and assumes scrap prices have 50 percent elasticity to changes in the Midwest premium.

End-users cannot effectively hedge against Midwest premium variations because the derivative market is neither liquid nor transparent enough for them to hedge properly. Historically, hedging was not a problem because the premium had (compared with the LME price) either remained static or was subject to very marginal increases and/or decreases. Through the end of 2010, Midwest premiums traded mainly between 2-7 cent/lb and averaged between 2-8 percent of the all-in price (LME+ Midwest premium). Today, the Midwest premium stands between 23.0-24.0 cent/lb, which represents slightly more than 20 percent of the all-in price of aluminum. Consumers have been complaining in public about the increased prices they are paying. Their complaints explicitly target queues and the effect of those queues on market premiums.

Talking with numerous aluminum end-users that are HARBOR's clients, I estimate that more than 80 percent of them don't or can't hedge market premiums. The other 20 percent who do hedge do so for only a portion of their metal needs, and usually for only one or two quarters out (a result of illiquidity, lack of transparency, and the prevailing uncertainty of where premiums are headed). Market liquidity is improving somewhat with the emergence of derivative products such as those offered by the *Chicago Mercantile Exchange (Aluminum MW US Transaction Premium and North American Aluminum Futures Contract)*. However, it remains to be seen how successful these new contracts will be in providing the much needed liquidity to the market.

6. Warehouse transactions where an incentive is paid to a warehouse customer to wait in the queue and ship large amounts of aluminum out of one warehouse and into another warehouse owned by the same company in the same city

As explained above, paying warehouse incentives to attract metal is a standard and historical practice in the LME warehousing business. What is certainly not a common practice, however, is when LME warehouse operators offer and pay an incentive to warehouse customers to cancel metal and wait in the queue. That practice poses a serious conflict of interest because incentivizing the lengthening of load-out queues can materially impact market prices (Midwest premium).

7. Warehouse transactions that link warehouse revenues to the market price for aluminum

To my knowledge, it has never been a standard practice in the LME warehousing business to link warehouse revenues (rent, FOT, penalties for breaking a warehouse deal, etc.) to a market price of aluminum such as physical market premium. Again, this could pose a conflict of interest for the warehouse, especially when the link has the effect of indirectly trading market premiums.

Written Statement of Novelis Inc. to The Permanent Subcommittee on Investigations hearing on “Wall Street Bank Involvement With Physical Commodities”

To supplement Mr. Nick Madden’s testimony, within this written statement, Novelis is providing background and explanatory comments to address the six specific areas that we were requested to be prepared to discuss in the invitation from Senators McCain and Levin to the hearings.

Introduction

The Contango Opportunity

At the start of the Great Recession from late 2007 through 2009, the global aluminum market excluding China was oversupplied as annual consumer demand weakened by approximately 20% or 5 million tonnes.¹ Despite the weakening consumer demand, annual global primary aluminum production (excluding China) only declined by approximately 2 million tonnes in 2009 because a new type of buyer of aluminum had emerged in the market.²

In a low interest rate environment, the forward aluminum curve offered an opportunity to generate an annual yield of between 3% to 7% to cover the costs of storage and provide a profit.³ This could be achieved by entering into transactions in which a purchaser would buy aluminum on a spot basis, place it in storage and sell it forward for months or years. When delivery on the forward sale became due on the future date, the aluminum could be delivered physically to satisfy the sale or rolled forward into another forward sale if the forward aluminum curve remained in an attractive contango. Contango describes the forward curve when future prices are higher than near term prices. These transactions offered a predictable, low risk return and were being undertaken by new types of buyers - banks, hedge funds and traders.

The Warehousing Opportunity

Two types of transactions emerged: “on-exchange”, where the metal is placed on warrant and stored in LME licensed warehouses; and “off-exchange” where the metal is stored outside the LME system and for which there are no publicly reported volume statistics. We believe that the owners of aluminum were able to negotiate attractive rents with off-exchange warehouses and commit metal to storage deals for periods of a year or more at the same time that stocks were building in LME warehouses.

In 2008, LME warehouses, and specifically those in Detroit (such as Metro), saw the opportunity to earn rent from storing surplus aluminum and began offering incentives to primary producers to channel aluminum stocks to their warehouse system, away from consumers, traders and other financing arrangements. An LME warehouse such as Metro in Detroit would be able to

¹ Source - Harbor Research (Appendix 1)

² Source - Harbor Research (Appendix 1)

³ Source - Harbor Research (Appendix 2) & Barclays Capital (Appendix 3) Aluminium – The impact of finance deals on premiums and supply

predict the minimum length of time that aluminum would remain in its system because the rules of its licensing arrangement with the LME allowed it to release metal to warrant holders at a minimum load-out rate, which before April 2012 was 1500 tonnes per day. The rent that the LME warehouses could charge for the storage of aluminum more than offset any incentives paid to primary producers and allowed the warehouses to compete with consumers, traders and other financing deals. In fact, the LME warehouses were able to raise their offers to primary producers as the stockpiles grew since the stockpiles caused the queues (and thus the rental revenues) to increase as well.

Impact of LME Warehouse Incentives

The impact of the payment of warehouse incentives to primary producers was to provide a new, competing buyer that drove up the Midwest US Transaction Premium (the Midwest premium) on aluminum to the highest levels in history at a time when inventory levels were also at the highest levels in history. It was 20 years ago following the collapse of the Soviet Union that the aluminum market suffered a massive overhang of inventory but this period was accompanied by low LME prices and extremely low local market premiums. The situation that began to develop in 2009 and endures today is unique in the history of the aluminum market. We believe that the current situation is the result of the combination of opportunistic financing transactions and the behavior of certain LME warehouses to drive premiums up by offering incentives to primary producers.

The LME's Role

Despite an increasing number of complaints and lobbying from market users, the LME was slow to react. In April 2012, the LME finally increased the load-out rates, but by a modest 1500 tonnes per day for the warehouses with the largest stocks (greater than 900,000 tonnes) and by lesser amounts for others.⁴ At the time, the LME was owned by a broad group of LME members, with Goldman Sachs and JP Morgan being two of the largest shareholders with close to 10% ownership stakes each. We believe the largest LME members were influential in setting LME policy at the time, which helps explain some of the reluctance by the LME to act more quickly and decisively. Near the end of 2012, the LME was acquired by the Hong Kong Exchange. Since then, we have started to see far greater disposition to make proactive changes to support the functioning of the free market.

The Beneficiaries

The beneficiaries of the warehousing activity are the LME licensed warehouses, the owners of metal who are managing stock financing transactions in LME and "off exchange" warehouses, such as banks and trading companies, and the producers of primary aluminum.

The LME warehouses benefit from charging rent. The rent rates have reportedly been rising over recent years and those companies that own the metal that is stored in the LME warehouses are obliged to pay the prevailing rent. Even when a warrant is cancelled and a buyer joins the queue to await release of the metal, the buyer must continue to pay full rent. When the metal is finally loaded onto a truck, the buyer also pays a "load-out" charge. In January 2012, Novelis estimated that if Detroit ceased receiving aluminum on January 30, 2012 and proceeded to ship out all of the metal stored at the warehouse at the minimum load-out rate,

⁴ Source – London Metal Exchange

it would have taken two and a half years for Detroit to empty and the rent revenue would have equated to approximately \$230 million.⁵ This gives an indication of the potential revenues available to the LME licensed warehouses. The graph in Appendix 12 illustrates the reduction in stock levels and the estimated rental income under this scenario.

The banks and trading companies that own aluminum involved in transactions in LME and off-exchange warehouses benefit in two ways. First, they benefit from the contango yield compared with the low cost of borrowing to finance the stocks. The degree of benefit depends upon the contango hedging strategy, their cost of money and the cost of storage and insurance. We have no information on the actual profits of any specific financial institution but as we mentioned above the gross yield from the LME contango has ranged between 3% and 7%. Second, they benefit from the premium appreciation between the premium cost when they acquired the aluminum originally and the premium that can be earned when they finally sell the aluminum. For example, if aluminum has been stored since 2008 when the Midwest premium was five cents per pound and is sold today at twenty three cents per pound, the benefit from premium appreciation could be eighteen cents per pound or \$396 per tonne.

Finally, primary aluminum producers also benefit from the higher premiums because they are able to charge and pass through the higher Midwest premium on all of their production in North America. Similarly, they benefit from higher local market premiums in other regions where local market premiums are similarly inflated. The degree to which primary producers benefit was explored in *The Wall Street Journal* on October 24, 2013 in an article titled "Metals Logjam Benefits Producers" (Appendix 5).⁶ The benefit to producers of the higher premiums was evidenced by Rusal's lawsuit against the LME, which sought to block the LME from introducing further rule changes to relieve the situation. Although overturned on appeal, the lawsuit initially succeeded to prevent LME rule changes that sought to bring more balance between a warehouse's inputs and its obligation to load out metal. It remains valid today that the primary aluminum producers are among the beneficiaries of the wildly inflated premiums in the market, and consequently they have a lot to lose if the queues go away and premiums decline.

Activism

Novelis has been consistent in its criticism of the LME since 2011 when we realized how serious the warehousing issue could become.⁷ We have consulted with our customer base, which covers many of the end users of rolled aluminum, and we have their support in pressing for change. Since 2012, we have collaborated with other consumers, mainly from the beverage and packaging markets in the Aluminum User Group (AUG). Together with other members of the AUG, we have had discussions with government and regulatory bodies in the United States and Europe to seek their help to intervene and improve regulation in this area. We are confident that we represent the views of consumers in the United States as well as the rest of the world.

⁵ Source – Novelis analysis – (Appendix 4) assessment of Detroit rent potential

⁶ Source – *Wall Street Journal* (Appendix 5) The benefit to producers of higher premiums

⁷ Source – Various news reports (Appendix 6) Examples of Novelis' advocacy to tackle the LME warehouse issue

(1) The nature of Novelis' business including the acquisition of aluminum; how its customers use aluminum; and the impact of aluminum prices on its revenues and customers.

About Novelis

Novelis Inc. is the world's largest producer of flat rolled aluminum with revenues of \$10 billion in its 2014 fiscal year and shipments of 3 million tonnes, representing 14% of the global market. We are also the world's largest recycler of aluminum. Novelis is a global company, headquartered in Atlanta, GA, with operations in United States, South America, Europe and Asia. We are the world's leading supplier of beverage can sheet and automotive sheet. Since its acquisition in 2007, Novelis has been a wholly owned subsidiary of Hindalco, part of the Aditya Birla Group, a multi-national conglomerate based in Mumbai, India.

Novelis employs approximately 11,200 employees in 26 operations in 11 countries across four continents. Novelis is the only industry player with the capability to produce high-end rolled products in all four major, industrialized market regions of the world. Here are some key statistics by region:

- In North America, we have just over 3,000 employees, \$3.1 billion in revenue and nearly 958 kilotonnes of shipments.
- In South America, we have around 1,800 employees, \$1.6 billion in revenue and 447 kilotonnes of shipments.
- In Europe, we have around 4,500 employees, \$3.3 billion in revenue and 911 kilotonnes of shipments.
- In Asia, we have approximately 1,900 employees, \$1.9 billion in revenue and 640 kilotonnes of shipments.

Our market focus is divided into 3 major sectors:

- Beverage can, where we supply major beverage companies such as Coca Cola and Anheuser Busch, and can manufacturers such as Rexam, Ball Corporation and Crown;
- Automotive, where we supply most of the OEMs around the world including Ford, GM, Chrysler, BMW, Audi, Jaguar, Land Rover and Mercedes Benz; and the
- High-end specialties market, which includes architecture, electronics and transportation. Customers include electronics majors like LG and Samsung, packaging customers like Pactiv Corporation, and windows and blinds company, VELUX. We also produce aluminum that has been used in the facades on such renowned buildings such as several of the Olympic Stadium buildings in China, the Titanic Belfast museum, Masdar City in Abu Dhabi and Europe's largest children's hospital in Moscow.

The market for flat rolled aluminum products is growing at a healthy 6% per annum. Automotive sheet is the fastest growing market in our sector, with a growth rate of 30% per annum as evidenced by Ford's revolutionary aluminum bodied F-150, which is now being manufactured in Dearborn, Michigan with Novelis being one of the lead suppliers of body sheet. In the last four years, Novelis has invested more than \$2 billion to grow our rolling, recycling and automotive finishing capacity to capture the growth in demand, particularly in the automotive sector. We are in the midst of an investment program in the United States to support the rapid growth in

aluminum automotive body sheet and have invested an additional \$400 million in facilities in Oswego, NY.

Procurement of Aluminum at Novelis

Novelis is the world's largest buyer of aluminum. In Fiscal Year 2014, which ended March 31, 2014, we purchased 869 kilotonnes of P1020 (LME grade), 1,372 kilotonnes of scrap and 775 kilotonnes of sheet ingot, all of which are inputs to our manufacturing process. We also produced internally 3,246 kilotonnes of sheet ingot from our internal process scrap and the purchased scrap and P1020 mentioned above. This sheet ingot is processed through hot and cold rolling mills and finishing processes.

Primary Aluminum

All purchases of primary aluminum (P1020 and sheet ingot) are priced on a similar basis. The base price includes the LME official price for high grade aluminum ("the LME price") plus a local market premium ("LMP"), which are published in metal journals. In the United States, the LMP is known as the Midwest premium and is published in Platts' Metals Week. In Europe, the LMP is defined by Metal Bulletins EC Duty Paid and Duty Unpaid indicators. In Asia, the LMP is defined by the Main Japanese Port Premium. In addition, there are often additional costs to cover logistics, payment terms and form. The term of most purchase contracts is at least one year and the prices are normally based on the monthly averages for the shipment month or the month prior to shipment. As a consequence, the purchase prices move almost exactly with changes in the LME price and the LMP.

The Midwest premium is established by Platts through price surveys whereby traders, producers and consumers from time to time report spot transaction premiums to Platts. Platts analyzes the information received from telephone surveys and publishes the Midwest premium.

Primary aluminum sheet ingot is purchased from primary aluminum producers such as Rio Tinto, Rusal, Emirates Global Aluminium, Hydro Aluminium, and Alcoa on long term contracts ranging from one to five years. P1020 is normally purchased on annual contracts from primary producers, trading companies such as Glencore, Trafigura, Mitsubishi Nobel and financial institutions such as Goldman Sachs.

As LME price and LMPs fluctuate, the changes directly impact Novelis' cost of purchased metal because of the "floating price" formula in our contracts. For example, when LME and LMP increases or decreases in total by \$100 per tonne, our purchase cost also increases or decreases by \$100 per tonne in the same direction. The reason our prices are perfectly coordinated with such movements is the pricing behavior known as "pass through". Suppliers pass through the entire LME price and LMP to mills like Novelis. Since aluminum represents approximately 70% of our operating costs, our cost base is volatile and highly dependent on market prices for aluminum.

Scrap

Scrap prices tend to follow movements in the market price for primary aluminum but not exactly. Scrap is normally priced at a discount to the primary aluminum price to reflect the additional cost of processing and is also influenced by factors specific to the market for scrap. Scrap purchases can be annual contracts but can also be short term in nature, sometimes referred to as spot purchases. Scrap is purchased from scrap merchants, national recycling systems, trading

companies and scrap collectors. For the purposes of this discussion, our focus is on primary aluminum.

Sales to our Customers and the Pass Through Business Model

Our sales contracts are structured similarly to our primary aluminum purchase contracts. Typically, they comprise a base price (LME price + LMP) plus a conversion premium that reflects our costs to convert aluminum ingot and scrap into coils plus our margin. There may also be additional charges, including for logistics, alloy, treatment, size and form. This type of pricing formula exists in virtually all of our sales contracts in all parts of the world, especially those of a longer term nature (*i.e.*, 6 months or more). Generally, sales prices are calculated on a monthly average basis, as they are for primary aluminum purchases. We also sell on a spot basis where the pricing has a similar structure but is based on the LME price and LMP at a point in time rather than on the average of a month.

The alignment between purchases and sales contracts is intended to shield Novelis from the movements in aluminum market price (LME price + LMP). In this regard, we attempt to always "pass through" these costs to our customers, the movements of which are expected to be set by market forces. Any aluminum converter like Novelis has the goal of achieving "perfect pass through" of metal prices.

However, there are timing differences due to the process lead time in our operations and timing differences between the pricing of purchases and the pricing of sales. These timing mismatches are managed through our offset hedging program, where we place hedges on the LME price to protect the LME value of purchased metal on our books until a sale is priced at a later point in time. At any time, our offset hedging position could be up to 500 kilotonnes. From time to time our customers request that we fix forward prices (rather than allowing them to float) for periods of months or years. In such instances, we hedge the LME price component of such forward price commitments to minimize price fluctuations.

Although the LME price is easily hedged, the pass through model becomes difficult to execute perfectly because the LMP cannot be hedged due to a lack of liquidity amongst market makers. For Novelis, this creates some positive and negative effects on financial performance that tend to offset one another. For example, metal in process that is priced but has not yet been sold is exposed to fluctuations in LMP. As LMP rises, there is an accounting gain related to inventory accounting which we call metal price lag. This is reversed when the LMP falls. As LMPs have been rising for several years, this has created a positive accounting gain recently. We also see some benefit from higher scrap discounts. However, these gains are offset by losses on fixed price sales where Novelis has committed to a fixed premium to a customer that is lower than the prevailing market premium. Also negative for us, is that working capital that is tied up in inventory increases due to the higher metal prices. Currently, we estimate Novelis' working capital to be over \$200 million higher than it would be in a normal premium environment. When considering the additional financing costs of the higher working capital along with other effects described above, Novelis' overall profitability is largely neutral to the higher premiums with one very important exception in our Asian business, which is explained below (Where pass through fails).

Where pass through fails

In some cases, Novelis is not able to pass through its prices to its customers. In Asia, we sell aluminum products into China and we compete with Chinese suppliers in other Asian countries.

As the Asian market premium (MJP) has increased, it has become increasingly difficult to pass this through in some markets. China is the world's largest primary producer of aluminum but exports little or no primary metal. Market pricing in China is established through the Shanghai Futures Exchange and has little correlation to the LME price. Imports into China are competing with an flat SHFE price with no Asia LMP. However, when exporting semi-finished products, such as flat rolled aluminum Chinese rollers benefit from VAT rebates which have the effect today of lowering their base price (SHFE) to the equivalent of LME without LMP. Consequently in Asia and increasingly in the global market, non-Chinese converters are losing competitiveness as the premiums continue to grow for U.S. companies, for example. In our case, in order to sell coil in China or in competition with Chinese rolling companies in broader Asia, Novelis has been obliged to forego part or all of the Main Japanese Port premium in its selling prices to certain market segments. The impact of this in FY14 was approximately \$42 million negative impact on EBITDA.

Pass Through by our Customers

In a perfect world, Novelis would seek to be neutral to changes in LME price and LMP, and our customers would likely seek to achieve the same state of price neutrality since their businesses would be impacted in the same way. We do not have specific information on how our customers manage their price exposure but we can give an overview of the value chain based on our understanding from conversations with customers and from market intelligence. Somewhere between Novelis and the consumer, it may be that the price fluctuations can no longer be passed through. For example, in the case of aluminum automotive body sheet, when Novelis supplies the automotive manufacturer at floating prices with perfect pass through, the automotive manufacturer must either pass these costs through to the end consumer or absorb the price fluctuations into its own profit and loss. In many cases, we believe that our customers hedge the LME exposure. However, with the market in LMP hedging being illiquid, the LMP cannot be hedged and we believe that increases in the LMP must be absorbed by the automotive manufacturer, at least temporarily, and ultimately the end consumer.

As another example, when Novelis supplies another processor prior to the end consumer, such as supply of beverage can sheet to a can manufacturer like Rexam, and the processor in turn supplies the beverage company with cans, the pass-through may stop at the beverage company or the can manufacturer. It depends on the nature of the contract between the two parties (either fixed pricing or floating pricing). After experiencing the losses and/or volatility associated with absorbing metal price movements, one could expect that the can maker will ultimately seek to negotiate a pass through clause in the next contract. As a consequence, the increased LMP will eventually be borne by consumers as the beverage company is forced to raise its own prices. Our estimation of the overall cost impact on consumers is further discussed and quantified in section (4) below.

(2) The role and function of the London Metal Exchange (LME) and LME-approved warehouses in the aluminum market.

The Role of the LME

The LME was founded in 1872 and has served as the world's premier metal trading exchange ever since. Aluminum was first traded on the exchange in October 1978. Over the last 36 years, the LME pricing mechanism has penetrated all geographical and business sectors. As the focal point for aluminum hedging and trading, the LME price has become the global price for

aluminum and for the other metals traded on the exchange. The LME price is a component in all of our purchases and sales contracts, globally. Through our purchase and sales contract negotiations, we know that most other aluminum semi products manufacturers use similar pricing mechanisms.

The exchange is used by many market participants for hedging, physical delivery (sales and purchases), investment and speculation. Industry users like Novelis derive three primary benefits from the LME: first, a globally accepted price discovery mechanism; second a vehicle for hedging aluminum price exposure; and third, a supplier or customer of last resort. This third benefit is accomplished through the LME's approved warehouse system. The LME operates committees that oversee activities in each of the metals traded on the LME. Aluminum is overseen by the LME Aluminium Committee, of which Novelis is a member. However, whilst the committees may discuss issues and approve the registration or deregistration of brands, the LME Board is the ultimate decision making authority.

The Role of the LME approved warehouses

The LME approved warehouses were concentrated in Europe until the early 1990s, after which they spread to the United States and Asia. This had the effect of harmonizing pricing globally because arbitrage between the LME and the physical market could be accomplished by physical delivery into or out of warehouses anywhere in the world. Historically warehouses were approved in locations which were "ports of entry" to consuming regions. Examples include Liverpool, Rotterdam, Antwerp, Trieste, Hamburg, Baltimore, Singapore, Bussan and more recently inner points of distribution such as New Orleans and Detroit for the Midwest United States.

To become a licensed LME warehouse, the warehousing company must agree to abide by LME rules, which are available from the LME. Warehousing activities are overseen by the LME Warehouse Committee, which meets quarterly.

The LME is a terminal market, which means that sale and purchase obligations can be satisfied through physical delivery. A seller can physically ship metal to an approved warehouse to satisfy an LME sales contract and a buyer can take delivery of warrants to satisfy an LME purchase contract. The warrants can be cancelled and metal withdrawn from the LME warehouse. It is this role that has been undermined in recent years.

Impact on Novelis

In the past, Novelis has looked to sellers on the LME as a potential supplier, comparing the cost to buy from a trader or producer with the cost of purchasing an LME warrant, withdrawing the metal from the LME warehouse and shipping it to one of our facilities. If the LME cost option is lower than the alternatives, we would seriously consider sourcing metal through that route. However, such costs are effectively the baseline from which other suppliers prepare their offers and, normally, it is slightly more cost effective to buy directly from the producers or traders. Consequently, it has been rare for Novelis to source from the LME but it was an important option in negotiating purchases.

In September 2011, Novelis purchased four lots of aluminum in Detroit on the LME with the intention to test the validity of the reported queues at the time. We finally received the metal at our plant in Oswego, NY in February 2012. The 5 month delay in delivery was directly as a result of the queue in Detroit at the time. We concluded that the LME warehouse could not be

viewed as a viable sourcing option and, as a consequence, we have not used the LME aluminum purchasing and warehouse system since then. Today, the wait time to withdraw aluminum from Detroit is reported to be approximately 670 days.⁸

As a consequence of the wait time to withdraw metal, the LME has ceased being a supplier of last resort to companies like Novelis. Manufacturing businesses cannot afford the working capital and cost penalty of owning metal almost two years before it can be used. The cost penalty we refer to here is not simply the cost of owning metal whilst it remains in the queue, it also refers to the fact that the owner of the metal must pay rent for the entire period too. At 50 cents per tonne per day, for example, this could equate to \$335 per tonne with the current queue in Detroit, which helps make it clear why the premium is currently so high.

The wait time and inflated premiums have led to a divergence between the LME and physical aluminum market prices which has created major issues with price discovery and supply chain risk. Novelis believes that the warehouse issue has undermined the validity of the LME contract. No buyer of a commodity should be obliged to wait 670 days to get access to their property.

(3) The evolution of freight incentives offered by LME-approved warehouses in the United States since 2008, and the impact of those incentives on the aluminum market

Increasing Stockpiles

In 2008, the LME aluminum price fell by \$2,000 per tonne between July and December. Demand for aluminum fell by 5 million tonnes in 2009 and producers began to idle production. According to Novelis' estimates, production cutbacks of only 2 million tonnes left the market significantly oversupplied, and we saw a huge build-up in stocks in LME warehouses. The most significant build up in an LME location was in Detroit where aluminum inventory increased from 350,000 tonnes in January 2009 to over 1 million tonnes in January 2011 and a peak of close to 1.6 million tonnes in January 2014.⁹ In addition, there was a reported development of stockpiles in warehouses outside the LME system (stealth stocks). Since these stealth stocks were not captured in official reports, there is no way of knowing exactly how much was stored in these finance deals.

Banks start acquiring LME warehouses

During 2010, five LME licensed warehousing companies were acquired by banks and physical trading companies.¹⁰ In January, JP Morgan acquired Henry Bath. In February, Goldman Sachs bought Metro. In March, North East Maritime Services was acquired by Trafigura. Later that year, Glencore bought Pacorini. In October, Noble Resources acquired WWS. These actions followed a significant increase in global aluminum LME stocks from approximately 1 million tonnes in 2009 to close to 4.5 million tonnes in 2010. From 2011, the Midwest premium began several major moves upwards, as warrant cancellation increased and the load-out queues grew to beyond a year in Detroit. We believe that these companies saw the opportunity of captive metal generating handsome rent revenues due to the size of the stockpiles and the limited load-

⁸ Source - Harbor Intelligence

⁹ Source - Harbor Intelligence (Appendix 7)

¹⁰ Source - Aluminum User Group (Appendix 8)

out obligations required by the LME. In addition,, when combined with the other commodity activities of the firms, to generate even more rents by adding further to the stocks and lengthening the queues. An opportunity to artificially squeeze the physical aluminum market was clearly foreseeable at this time and new owners of LME warehouses seized that opportunity.

Incentives to Primary Producers

It is our belief that aluminum was being drawn to Detroit by the Metro warehouse offering incentives to primary producers. A Novelis employee visited the Metro facility in April 2011 and toured some of the warehouse. He reported that all of the metal that he saw was of North American origin (Alcoa and Rio Tinto Alcan). In conversations with our contacts within the primary producers and trading companies, we were also given examples of incentives being offered.

It is our view that when North American primary producers had surpluses due to the reduction in overall demand in connection with the recession, Metro offered incentives to encourage the producers to ship metal to LME warehouses instead of to a consumer or trader. In his way, the warehouse was competing with the consumer and trader, who would normally offer only the industry standard LMP, the Midwest premium. As the stock accumulated and being aware that there was only an obligation to ship out of 1500 tonnes of aluminum per day, the warehouse could predict the length of time metal would remain in storage and the rent that they might earn. Consumers, traders and banks began to compete with the warehouse for metal and it is our belief that the increase in the Midwest premium from 5 cents per pound in 2008 to 11 cents per pound in 2011 was entirely driven by the increasing bid from the warehouse, which was supported by the growing stockpile. Competing with the warehouses were consumers, traders who sought metal for resale to consumers or financing transactions, and banks who were interested in acquiring metal for financing transactions, investment instruments or resale to consumers and traders. Despite the weak demand at the time, there were many interested buyers of aluminum and the premium rose to the historic levels in 2011.

Banks have the tools and incentives to drive up prices

Novelis believes there is a direct link between the acquisition of LME licensed warehouse companies, the behavior of those warehouse companies, the queues and the rising Midwest premium. Particularly in the case of banks, where the firm has a physical metal trading business, an LME brokerage business, access to low cost finance and control of warehousing companies, the bank has four levers over the market. We believe that this gives them an unfair edge over other players in the market. Although the LME published rules in 1998 requiring "Chinese Walls" (appendix 6 – LME rule addition 98/213)¹¹ between the warehousing business and other bank activities, we cannot understand why a bank would choose to participate in the warehousing activity if it did not see synergies or opportunity relating to other activities of the bank. As a consequence we have long maintained that banks should not be allowed to participate in warehousing. Aluminium International Today magazine published an article that touched upon this topic and was written by Novelis.¹²

¹¹ Source - London Metal Exchange (Appendix 9) LME rule addition 98/213

¹² Source - Aluminium International Today (Appendix 10)

After initially writing to the LME in May 2011 to request tough action on the queues,¹³ Novelis wrote a second letter to the LME August 2011¹⁴ in which we specifically addressed this point, stating that banks and trading companies should not be allowed to own LME licensed warehouses.

(4) The impact of warehouse queues on Novelis Inc., its customers, and the aluminum market generally, including on consumer prices, the ability of consumers to hedge aluminum-related price risks, and the role of the LME as a market of last resort.

Increasing length of queues and increasing prices

The queue at Detroit began to develop noticeably in 2010. A number of complaints were recorded by the LME about delays in accessing metal in warehouses around the world in 2009 and 2010. This led to the commissioning of a study by the LME that was conducted by European Economics into warehousing and, specifically, the minimum load out rate. Novelis was one of over forty companies surveyed in the study, and an executive summary of the report was published in May 2011.¹⁵ In the executive summary of the report, it stated that "there was a general belief that the loading out obligation could and should be increased though this was resisted by warehousemen." Novelis wrote to the LME on May 17, 2011 requesting that it take strong action in response to the report.

On May 27, 2011, the LME announced a change in the minimum load out rate to take effect on April 1, 2012. The minimum load out rate would increase for all warehouses with stocks greater than 300,000 tonnes. The LME introduced a sliding scale that would require the warehouses with stocks greater than 900,000 tonnes to double the rate from 1500 tonnes per day to 3000 tonnes per day. Warehouses with 600,000 to 900,000 tonnes would increase to 2500 tonnes per day and those with between 300,000 and 600,000 tonnes would increase the load out rate to 2000 tonnes per day. We were disappointed with the weakness of the change that was made and commented on this publicly.¹⁶

According to third party market research, the queue at Detroit increased to approximately 10 months in April 2011 but started to reduce following the LME's announced rule change. As mentioned earlier, Novelis bought four lots of aluminum in Detroit in September 2011 and waited until February 2012 to secure the metal in our plant in Oswego, NY. In 2012, as increasing numbers of warrants were cancelled and the stockpile grew, the queue grew to 12 months. Since then it has continued to increase and was said to be about 670 days in early November 2014.¹⁷

The Midwest premium has trended up in line with the queue length. As mentioned earlier, the warehouses were competing for metal by offering incentives based on the length of time metal could be expected to remain in the warehouse generating rent. With a different business model

¹³ Source - Novelis (Appendix 11) First Novelis letter to LME

¹⁴ Source - Novelis (Appendix 12) Second Novelis letter to LME

¹⁵ Source - London Metal Exchange (Appendix 13) Executive Summary of European Economics Report

¹⁶ Source - News Outlets (Appendix 14)

¹⁷ Source - Harbor Research (Appendix 15)

from regular industry participants, the warehouses were able to raise their bids as queues grew, which drove the Midwest premium up to levels never seen before.

During 2013, the premium was fairly stable at around 12 cents/pound but in January 2014, it increased dramatically to over 20 cents per pound and remains above this level today. In the past the Midwest premium fluctuated between 4 and 7 cents/pound representing about 5% of the LME price. Today, it is approximately 25% of the LME price and 20% of the all-in price (LME+LMP). We believe that this phenomenal price increase is driven by a combination of the following factors:

1. Length of the queues and full cost of sourcing metal from the queue.
2. Inaccessible inventories (stealth stocks) that cannot be quantified and are held outside the LME system in financing deals.
3. Recent changes in market fundamentals that have left the free market short of P1020 because surpluses are not accessible.

Impact on Consumers - Hedging

There are several negative impacts for aluminum consumers. The Midwest premium is not hedgeable. Although the CME has recently introduced an aluminum contract with a composite price that includes the LMP, liquidity is still too low. Banks and trading companies from time to time offer "Over the Counter" premium hedges but it is normally at a time that suits the market maker and is not available in substantial volumes every day. Because it is an illiquid market, the bid ask spread on such deals is very wide and for many companies, unacceptably wide. The absence of a hedging instrument for LMP was tolerable when the Midwest premium was in a range between 4 and 7 cents per pound. But now, that LMP has risen to 25% of the LME and 20% of the all-in price, it creates enormous basis risk, in some cases greater than the margins of a converter or fabricator. This creates a significant, unpredictable risk in the profitability along the value chain.

Hedge accounting issues also arise. Hedge accounting is important to manufacturing businesses because it allows us to match the unrealized gains and losses on hedging instruments with the item being hedged by giving each a similar accounting treatment. This helps to reduce volatility in the income statement and thereby makes a company's quarterly earnings less complicated to understand. Hedge accounting requires a certain minimum correlation between the value of a hedging instrument and the value of the product that it is hedging. If the value strays outside a range of 80-120%, hedge accounting rules do not permit the hedge to be accepted under the rules. This can lead to volatility in earnings performance, which can detract from a company's market value. As such, it is a serious issue for all manufacturers like Novelis.

Impact on Consumers – Supply Chain Risk

Another negative impact that is very serious for large consumers of P1020 is supply chain risk. In a competitive market, fabricators cannot tolerate the working capital burden of carrying inventory in an LME warehouse for more than a year before it can receive and process the metal. Consequently, P1020 consumers are exposed to lack of metal availability in the short term. Novelis sources on longer term contracts based on forecasted requirements. However, if we underestimate the quantities of P1020 and we must go to the spot market for additional metal, we have limited options and the LME has proven that it is not one of them. Imagine the irony of Novelis running out of metal in our new \$400 million automotive production facility in

Oswego, NY and stopping Ford's F-150 production line in Dearborn, Michigan because we are unable to access metal stockpiled to generate rent in a warehouse in Detroit, Michigan. While we will take precautions to keep this from ever becoming an issue by planning carefully, it remains an unconscionable risk for the business.

Impact on Consumers – Increased Prices

The greatest impact felt by our customers, provided that we continue to manage the supply chain effectively, is the inflated premium. In the pass through model, primary producers of aluminum pass through the floating LME and LMP (Midwest premium) to Novelis. Novelis has a similar contract structure with its customers and passes the LME and LMP (Midwest premium) to them. Where Novelis is supplying end users such as automotive OEMs, the cost passes into the product and ultimately to the consumer. The same is true for all equipment manufacturers such as aircraft, architectural applications, and electronics to name a few. Ultimately, the consumer does or soon will pay the additional cost. .

As an illustration, we understand that there is approximately 1000 pounds of aluminum in the new F-150.¹⁸ If the increased premium is 15 cents per pound of aluminum, the impact on cost is \$150 per vehicle. Either in advance or to recoup what it has absorbed, at some point, Ford will likely pass that increased cost on to the consumer of its vehicles.

At a bank hearing in July 2013, Tim Weiner, Global Risk Manager, Commodities/Metals of Miller Coors stated that consumers were paying \$3 billion more than they should because of the artificially inflated metal premiums. Today, we think this excess cost has more than doubled. Novelis has estimated that the incremental cost borne at the consumption end of the aluminum value chain, caused by the artificial inflation is greater than \$6 billion per year. We calculate this as follows: Metal premiums are at least \$250 per tonne higher today than historical norms. World (excluding China) production of primary aluminum is approximately 25,000,000 tonnes. All new production earns the higher premiums and the cost is passed through the value chain. Thus, consumers are paying over \$6 billion more than they would if normal market forces prevailed. The math is simple but it is because the cause and effect is obvious to us. This does not even take into account higher premiums payable on metal in storage that was produced in previous years. We are taking steps to rely more and more on scrap rather than primary aluminum but the impact has carried through to scrap prices, which are higher than they would otherwise be because of the linkage to primary aluminum prices.

(5) Warehouse transactions in which an incentive is paid to a warehouse customer to wait in the queue and ship large amounts of aluminum out of one warehouse and into another warehouse owned by the same company in the same city.

Novelis is able to comment on areas where we have a clear view of activities. However, when we look at what is happening within the warehousing network, metal being moved from one warehouse to another or being re-warranted without leaving the warehouse is not visible to us and we are not able to comment on it.

¹⁸ Source - Drucker (Appendix 16)

(6) Warehouse transactions that link warehouse revenues to the market price for aluminum

Novelis is able to comment on areas where we have a clear view of activities. However, when we look at what is happening within the warehousing network, metal being moved from one warehouse to another or being re-warranted without leaving the warehouse is not visible to us and we are not able to comment on it.

Conclusion

Since the Great Recession in 2008 and 2009, primary producers of aluminum have been channeling excess production of LME deliverable P1020 into storage deals. Banks, hedge funds and trading companies have exploited low interest rates and the contango in the LME aluminum forward curve to generate revenues by simply storing metal and financing it with the forward curve. This has starved the market of aluminum units and forced up premiums globally. Here in the U.S., the Metro warehouse in Detroit has paid incentives to primary producers to divert metal from the market and store it in warehouses. With a minimum load out obligation in the LME warehouse rules, the warehouses are able to estimate the length of time metal would be stuck in the warehouses paying rent and use these projections to calculate incentives that could be paid to producers in competition with consumers and traders. This was the major factor in driving the Midwest premium to an unprecedented 12 cents per pound in 2012. The existence of long queues and increase in demand and careful management of flows by some traders and producers has since led the Midwest premium to almost double from these levels to an unprecedented 23 cents per pound today.

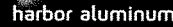
The wait time to draw metal from Detroit is around 670 days today. This means if a consumer tried to source aluminum today from a Detroit warehouse, it would have to wait until September 2016 to get the metal. This has led to a breakdown in the connection between the derivatives market and the physical market and the loss of price convergence through physical delivery has caused two serious risks for the aluminum world: Supply Chain Risk and Wildly Inflated Premiums. The cost being paid today by consumers of aluminum is at least \$6 billion higher than it would be in a normal premium environment. And with the premium now representing 20% of the all in price, instead of 4-5% historically, hedging has become ineffective and margins have eroded in the consumer end of the value chain.

We have collaborated with some customers and other consumers of aluminum in the Aluminum User Group which has lobbied in the U.S. and Europe to see rule changes in the LME to resolve the situation. While the LME has finally begun to act, progress is slow and the situation is worsening.

We at Novelis would welcome further inquiries and action into changing the rules that allow such market disruptions. In our eyes, there is a simple fix – cause the warehouses to load out enough metal to reduce the wait time to draw metal down to 0 days, and have rules in place that require the warehouses to keep these queues to no more than a few days. Soon thereafter, if not immediately, local market premiums will reduce to normal market rates and customers will stop paying the exorbitant premiums. All we seek to achieve is for prices of aluminum to be set by normal supply and demand forces involving primary producers, manufacturers and consumers, without the effects of warehouses and banks taking actions to push up prices and profits through opportunistic behavior that is allowed and encouraged by current rules.

APPENDIX 1

HARBOR's Aluminum Intelligence Report



ANNUAL FORECASTS BY REGION: PRIMARY ALUMINUM CONSUMPTION AND PRODUCTION (thousand tons)

GLOBAL ALUMINUM CONSUMPTION BY REGION													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013e	2014f	2015f	2016f
China	5,897	7,084	8,764	12,497	13,126	14,505	17,724	20,047	22,135	25,299	27,443	29,700	32,450
y/y	15.8%	20.3%	23.6%	42.6%	5.0%	10.9%	22.2%	13.1%	10.4%	14.3%	8.3%	8.2%	9.3%
World ex-China (ROW)	24,322	24,537	25,429	25,121	23,990	20,145	23,740	25,411	25,214	25,862	27,367	28,877	30,357
y/y	10.0%	0.9%	3.6%	-1.2%	-4.5%	-18.7%	17.8%	7.7%	-0.8%	2.6%	5.5%	5.1%	5.1%
North America	7,182	6,863	6,973	6,090	5,731	4,890	5,292	5,632	5,825	6,012	6,330	6,650	6,985
y/y	32.2%	-4.4%	1.6%	-13.7%	-5.9%	-14.8%	8.4%	6.4%	3.4%	3.2%	5.3%	5.1%	5.0%
of which USA	6,380	6,093	6,180	5,345	5,062	4,112	4,590	4,890	5,107	5,272	5,560	5,855	6,167
y/y	4.9%	-4.9%	1.4%	-15.0%	-5.6%	-22.8%	12.1%	6.7%	3.9%	3.1%	5.2%	5.0%	5.0%
West Europe	6,670	6,652	6,992	7,255	6,097	4,987	5,822	6,331	5,702	5,764	5,880	5,917	5,947
y/y	4.9%	-0.3%	5.1%	4.2%	-18.0%	-21.8%	14.3%	8.7%	-9.2%	1.1%	2.0%	0.6%	0.5%
East Europe	1,721	1,867	2,011	2,109	2,086	1,825	1,950	2,050	2,119	2,176	2,250	2,350	2,450
y/y	8.6%	8.5%	7.7%	4.9%	-1.1%	-12.5%	6.4%	5.1%	3.4%	2.7%	3.4%	4.4%	4.9%
Japan	2,427	2,390	2,419	2,270	2,203	1,807	2,095	2,035	1,984	1,939	1,988	1,993	1,993
y/y	0.1%	-1.5%	1.2%	-6.2%	-3.0%	-16.9%	15.0%	-3.0%	-2.5%	-2.8%	2.5%	0.2%	0.0%
Other Asia	3,720	3,982	4,190	4,413	4,668	4,475	5,190	5,802	5,979	6,192	6,650	7,300	8,025
y/y	8.6%	7.0%	5.2%	5.3%	5.8%	-4.1%	16.0%	11.8%	3.1%	3.6%	7.4%	9.0%	9.9%
of which India	868	930	1,020	1,125	1,227	1,428	1,653	1,860	1,882	1,995	2,188	2,400	2,600
y/y	30.7%	7.0%	9.7%	9.3%	8.2%	14.1%	13.3%	11.6%	1.2%	5.7%	8.8%	9.2%	9.2%
Middle East	648	659	700	760	785	780	817	890	910	990	1,314	1,524	1,619
y/y	28.0%	1.6%	6.2%	8.6%	3.2%	-0.6%	4.7%	8.9%	2.2%	8.8%	24.7%	16.0%	6.3%
Latin America	1,171	1,306	1,325	1,348	1,490	1,411	1,650	1,750	1,780	1,850	1,970	2,095	2,240
y/y	8.7%	11.5%	1.5%	1.7%	10.5%	-5.4%	14.8%	5.7%	1.7%	3.8%	6.1%	6.0%	7.0%
of which Brazil	636	743	758	762	939	820	1,040	1,069	1,070	1,110	1,150	1,190	1,240
y/y	16.7%	16.7%	2.0%	2.3%	15.5%	-11.5%	21.9%	2.7%	0.0%	3.5%	4.3%	4.2%	4.4%
Africa	380	410	449	486	530	495	524	541	545	569	612	675	725
y/y	16.7%	7.9%	9.5%	8.2%	6.4%	-6.6%	5.9%	3.2%	0.9%	4.0%	7.0%	10.3%	7.4%
Oceania	403	408	370	390	400	375	390	380	370	370	373	373	373
y/y	3.0%	1.2%	-8.8%	5.4%	2.5%	-6.5%	4.0%	-2.6%	-2.7%	0.0%	0.8%	0.0%	0.0%
Global Consumption	30,220	31,631	34,193	37,618	37,116	34,650	41,464	45,458	47,349	51,161	54,811	58,577	62,807
y/y	10.1%	4.7%	8.1%	10.0%	-1.3%	-6.6%	19.7%	9.6%	4.2%	8.0%	7.1%	6.9%	7.2%
GLOBAL ALUMINUM PRODUCTION BY REGION													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013e	2014f	2015f	2016f
China*	6,589	7,743	9,317	12,558	13,600	13,630	17,600	19,600	22,300	24,900	27,453	30,252	33,050
y/y	20.6%	17.9%	20.8%	35.2%	8.0%	0.2%	22.1%	10.6%	12.6%	10.7%	9.3%	9.3%	9.3%
World ex-China (ROW)	23,198	24,149	24,560	25,543	26,463	24,043	24,926	26,444	25,731	25,803	25,788	27,101	29,253
y/y	3.2%	4.1%	1.7%	4.0%	3.5%	-9.1%	3.7%	6.1%	-2.7%	0.3%	-0.1%	5.1%	7.9%
North America	5,110	5,379	5,333	5,643	5,783	4,759	4,689	4,970	4,841	4,918	4,570	4,726	4,894
y/y	17.0%	5.3%	-0.9%	5.6%	2.5%	-17.7%	-1.5%	6.0%	-2.6%	1.6%	-3.3%	3.3%	3.6%
of which USA	2,517	2,480	2,281	2,560	2,659	1,727	1,722	1,987	2,060	1,948	1,734	1,737	1,759
y/y	-7.0%	-1.5%	-8.0%	11.3%	3.7%	-20.0%	-0.3%	13.6%	3.5%	-6.2%	-12.5%	-0.2%	1.3%
West Europe	4,295	4,350	4,175	4,306	4,618	3,722	3,808	3,994	3,604	3,525	3,540	3,594	3,673
y/y	5.6%	1.3%	-4.0%	3.1%	7.2%	-18.4%	2.3%	4.9%	-10.8%	-2.2%	0.4%	1.5%	2.2%
East Europe	4,533	4,616	4,681	4,948	5,155	4,479	4,661	4,684	4,662	4,340	3,989	4,087	4,399
y/y	3.80%	1.8%	1.6%	5.7%	4.2%	-15.1%	4.1%	0.5%	-0.5%	-7.3%	-8.1%	2.5%	7.6%
of which Russia	3,809	3,855	3,893	4,103	4,284	3,782	3,947	3,992	4,021	3,724	3,395	3,491	3,802
y/y	20.1%	1.3%	1.0%	5.2%	4.2%	-13.1%	4.1%	0.5%	0.8%	-7.3%	-12.5%	3.0%	9.2%
Asia ex. China	1,568	1,623	1,873	2,006	2,181	2,217	2,512	2,682	2,735	2,901	3,112	3,120	3,628
y/y	11.0%	3.5%	15.4%	7.1%	8.7%	1.6%	13.3%	6.4%	2.0%	6.1%	7.0%	0.2%	16.0%
of which India	861	942	1,105	1,222	1,308	1,412	1,604	1,688	1,699	1,752	1,930	2,067	2,240
y/y	11.0%	9.4%	17.6%	10.5%	6.7%	7.7%	13.3%	4.9%	0.6%	3.0%	7.1%	6.1%	9.2%
Middle East	1,410	1,790	1,867	1,953	2,054	2,467	2,960	3,820	4,005	4,299	5,270	5,408	5,458
y/y	11.1%	27.0%	4.3%	4.6%	5.2%	16.5%	20.9%	23.1%	7.0%	6.7%	17.6%	2.4%	0.9%
Latin America	2,356	2,391	2,493	2,557	2,690	2,508	2,777	2,185	2,053	1,905	1,511	1,455	1,461
y/y	1.4%	1.5%	4.3%	2.4%	5.0%	-6.6%	9.7%	-30.3%	-6.3%	-7.8%	-39.1%	-3.9%	0.4%
of which Brazil	1,454	1,497	1,604	1,658	1,540	1,535	1,535	1,440	1,436	1,304	965	880	883
y/y	3.0%	3.0%	7.3%	3.2%	-7.7%	-0.3%	0.0%	-6.4%	-0.3%	-9.4%	-13.7%	-9.6%	-0.4%
Africa	1,710	1,748	1,864	1,815	1,715	1,681	1,742	1,803	1,637	1,810	1,763	1,741	1,760
y/y	19.3%	2.2%	6.6%	-2.8%	-5.8%	-2.0%	3.5%	3.3%	-9.2%	10.5%	-2.6%	-1.3%	1.1%
Oceania	2,216	2,252	2,274	2,315	2,297	2,211	2,277	2,306	2,195	2,105	2,032	1,950	1,960
y/y	2.3%	1.6%	1.0%	1.8%	-0.8%	-3.7%	3.0%	1.2%	-4.8%	-4.3%	-3.5%	-4.2%	0.5%
Total Global Output	29,787	31,892	33,877	38,141	40,063	37,673	42,526	46,044	48,031	50,703	53,240	57,334	62,284
y/y	6.8%	7.1%	6.2%	12.6%	5.0%	-6.0%	12.9%	8.3%	4.3%	5.6%	5.0%	7.7%	8.6%
ROW Market Balance	-1,124	-388	-869	-422	-2,473	-3,898	-1,186	-1,033	-517	-59	-1,580	-1,795	-1,123
China Market Balance	692	649	553	101	474	-875	-124	-447	-165	-399	10	552	600
Global Market Balance	-433	-261	-315	-523	-2,947	-3,023	-1,062	-586	-682	-458	-1,570	-1,243	-523

Source: HARBOR Aluminum

IMPORTANT NOTES:

*Production figures for China are official CHINA/IAI reported data up to 2009. From 2010 on, production data incorporates an estimate for non-reported production.

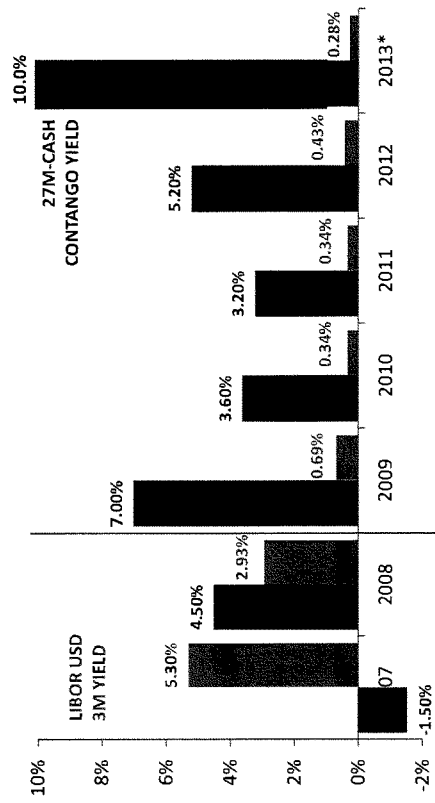
A) Aluminum production forecasts assume all confirmed brownfield / greenfield projects hit the market as planned (no delays).

B) Aluminum production forecasts assume no cuts in production beyond the ones that have been confirmed so far nor disruptions in operating capacity.

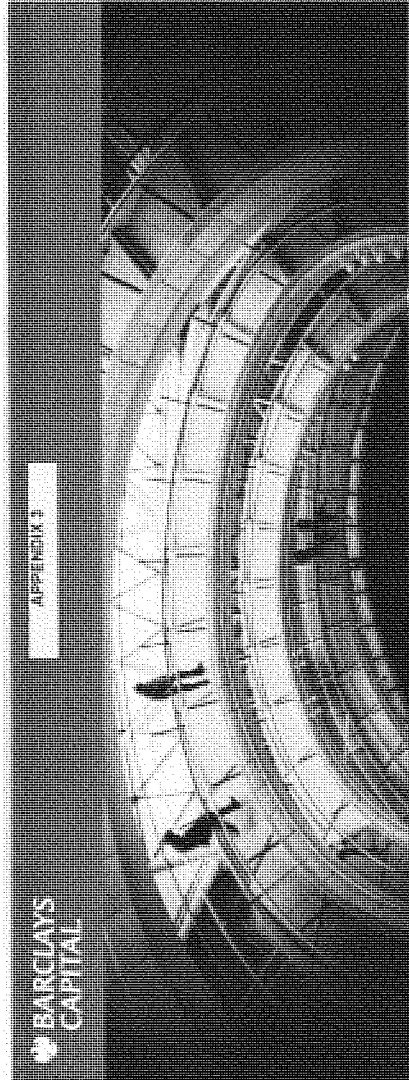
C) Aluminum production forecasts include annual capacity creep of 0.5% per year for all producers.

October 2014 / 8

LME 27M-CASH PRICE ANNUALIZED CONTANGO YIELD VS
 LIBOR USD 3M ANNUALIZED YIELD (average annual data)



Source: HARBOR Aluminum with LME data



**BARCLAYS
CAPITAL**

APPENDIX 1

Aluminium: The impact of financing deals on supply and premiums

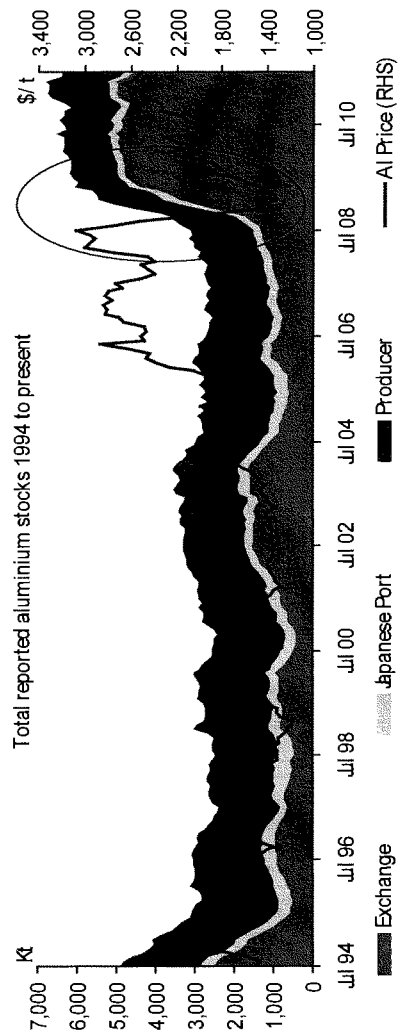
March 2012
Nicholas Snowdon
Base Metals Research

PLEASE SEE ANALYST CERTIFICATION(S) AND IMPORTANT DISCLOSURES STARTING AFTER PAGE 16

What are financing deals and why are they occurring?

Aluminium stock holders were faced with a critical management challenge in late 2008...

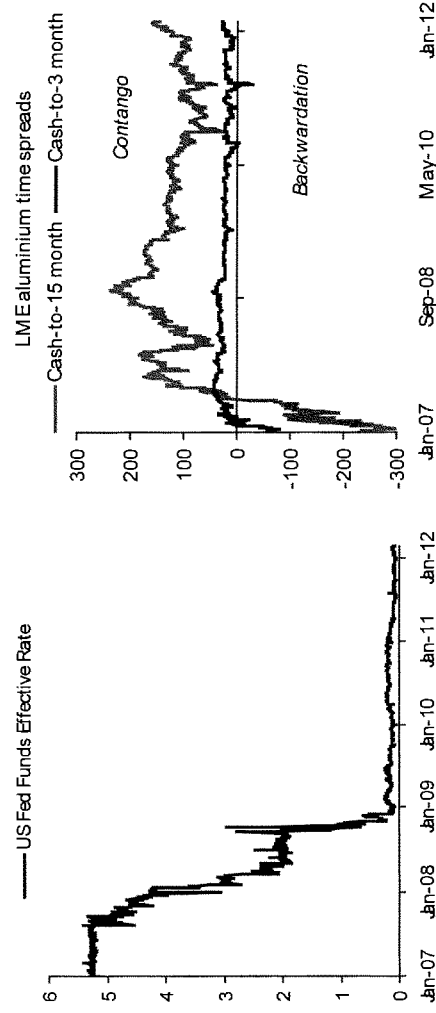
Collapse in aluminium prices and demand in late 2008 created a challenge for holders of aluminium looking to extract value from the material held on their balance sheet



Low interest rates and contango provided the basis for inventory financing as the solution to this problem

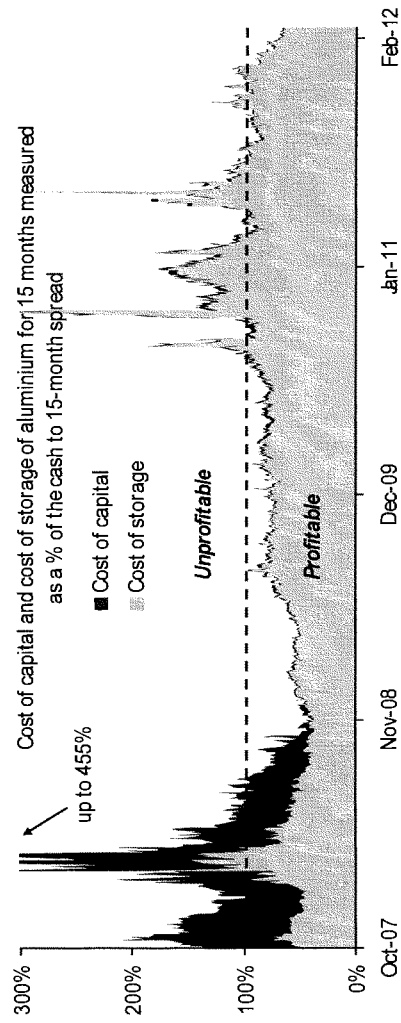
Slashing in interest rates from 2008 radically reduced the cost of capital

Contango has been supported by surplus market balances seen from 2008 to present



These two factors have periodically supported the profitability of inventory financing over past 4 years

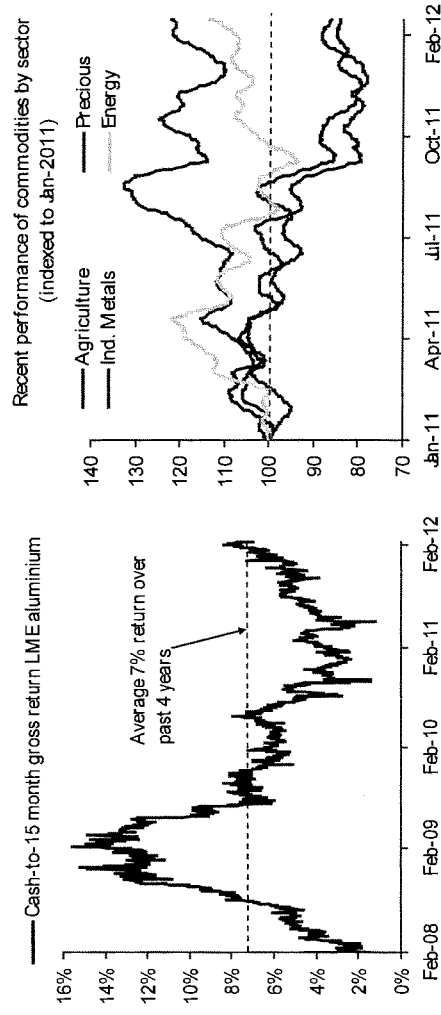
Interest rates remaining low combined with low cost of storage have supported the profitability of these financing trades, with strength of spreads the critical determinant. Up to 70% of LME and closer to 100% off-warrant material tied-up at points in time.



In an environment of constrained returns in other asset classes, financing has also attracted investment flows

Pre-storage and capital, gross return on 15 month trade has averaged 7% since 2008

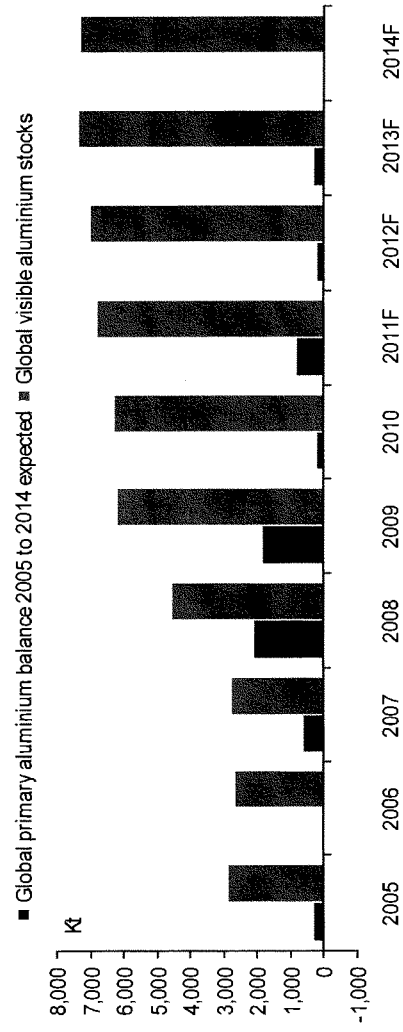
Such relatively low risk consistent returns compare favourably with commodities



What are the impact on aluminium market fundamentals?

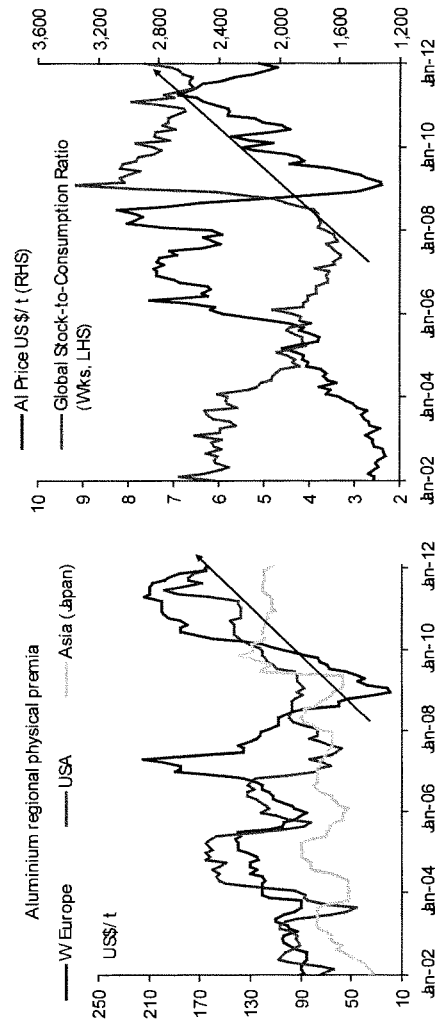
As a surplus market with substantive inventory, we do not believe flat price impact has been significant

The inventory financing mechanism is itself a reflection of surplus market conditions – if the aluminium market was tight and in deficit, as with the copper market, a sizeable contango would not exist to support the transactions. Record global visible inventory of close to 7Mt in 2012 combined with clear market surpluses for the past five years, as well as forecast for 2012, indicate financing deals are not to nature of balance



There is however clear evidence that physical premiums have been supported by the financing deals

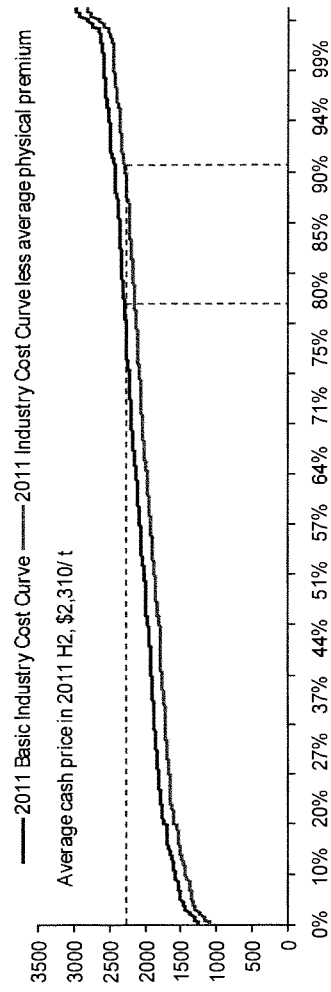
We would however argue that via the interference in the efficiency of the physical market-inventory fluidity has been impacted. It is clear that physical premia have risen despite a much higher global stocks-to-consumption ratio. This points to the impact of financing deals on physical market conditions from tightening supply of liquid inventory accessible to the market. Premiums would not have been as strong if financing deals had not occurred.



Have elevated physical premia have played a part in supporting margins at otherwise uneconomic smelters?

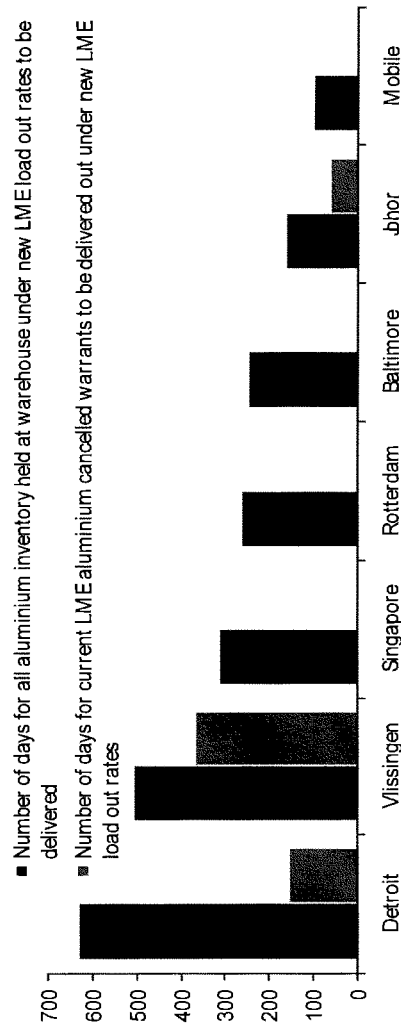
Another interesting question is whether the support from financing deals has promoted smelters operating when under other conditions would be closed. If we assume that the strength in physical market premia has been driven by the financing deals then certainly it has supported margins. Rather crudely in a 'worst case scenario' of premia supported 100% by financing, this would have increased profitability of 10% of industry in H2 2011 although fundamental factors have also likely directed premia.

CRU Aluminium Smelting Sector Cash Cost Curve



Another by-product has been load-out delays due to warehouse competition driving redistribution of material

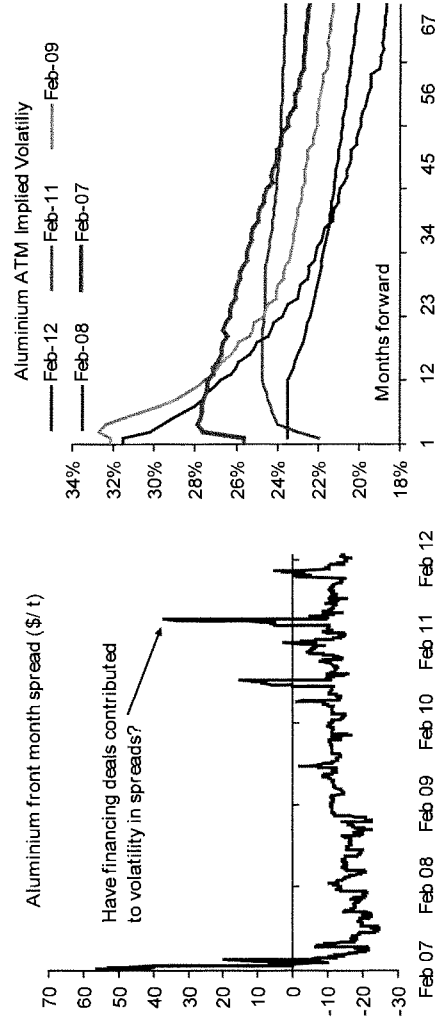
Another impact of the trend of inventory financing has been the competition between warehouses for material, offering different storage rates. Inevitably this has contributed to wholesale redistribution of material between warehouses, although due to limitations of load out rates this has led to significant delays between cancellations and actual delivery. Arguably some of the delayed material may also have been for actual consumption.



Source: Metal Bulletin

Have the financing deals and underlying transactions contributed to increased volatility in near-by spreads?

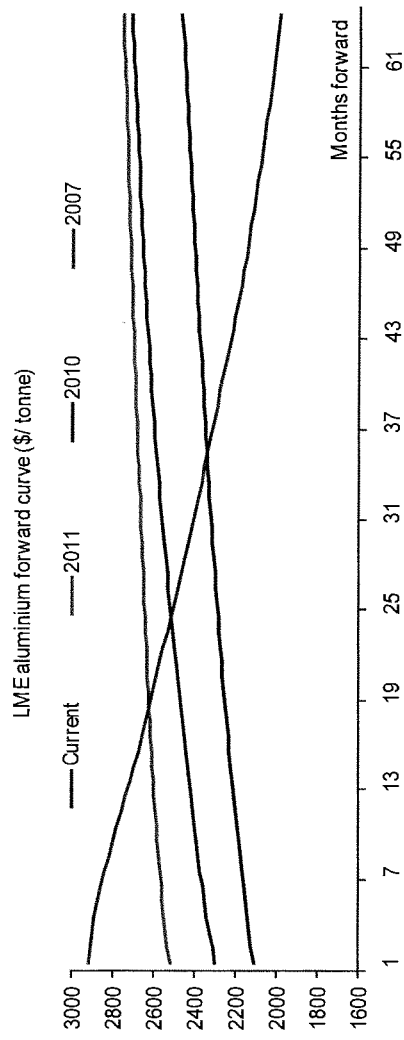
General perception has been that rolling forward of underlying positions related to financing deals has contributed to volatility in nearby spreads. Trend of near-by spreads tightening as short positions are closed in run-up to prompt date, has been common. However, the data for implied volatility does not suggest a consistent increase in vol from pre-2009 period



**What is the end-game for financing deals
or is there such a thing?**

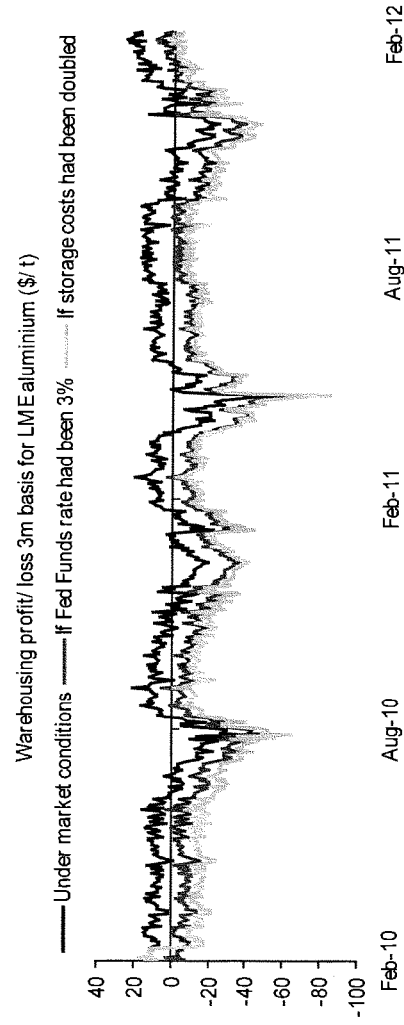
Fundamental outlook indicates it is unlikely contango will be eradicated in the near term...

While one need only return to pre the 2008/09 financial crisis to see an aluminium forward curve in backwardation, we do not consider fundamentals over the next 3 years supporting such a reversion. While the market will remain generally tightly balanced during that time frame, the backdrop of record visible inventories and excess capacity will likely prevent any sustained periods of deficit.



Certainly higher interest rates, tighter credit or higher storage costs will start to erode feasibility...

While the contango is the ultimate driver of the logic of financing deals, it is also clear that if interest rates start to rise (although Fed expectations do not point to this being likely in next 2-3 years) and storage costs increase, then the profitability of the transaction would be dentated as per the chart below. These cannot be ignored as risks but under current conditions do not appear likely to be near term game changers.



Conclusions: Impact of financing deals on aluminium physical market and supply mechanism

- The impact of financing deals on aluminium market fundamentals has certainly provided a key talking point, and the strength in time spreads early in 2012 has acted as a catalyst to support the profitability of such deals – they aren't going away!
- We do not believe the impact on flat price levels has been as significant as some believe – financing deals are the product of surplus market conditions driving a strong enough contango to support such transactions. This means there is an excess of material in the market – if there wasn't enough aluminium to meet demand then time spreads would weaken but that is clearly not the 'average' situation in the market place.
- There is however good evidence to suggest the constraints on inventory liquidity and fluidity have contributed to regional physical market tightness, supporting premia to some degree. In turn this has supported margins for some smelters and may have supported profitability for marginally longer than if the financing deals were not occurring.
- Another question posed by market participants is how and when might these financing deals come to an end? We do not believe any such 'flooding' effect is imminent. Certainly tightness in market fundamentals will be critical to any sustained weakening in time spreads. In addition, rising interest rates will also be a weight on profitability but will need to rise for some time before eradicating total potential profitability. For the next three years, while tighter fundamentals point to a reduced contango, warehouse competition combined with low expected interest rates mean financing deals will not go away.

Data Sources

Data in this presentation comes from the following sources: Ecwin, Reuters, Bloomberg, MTN-I, CFTC, CRU, Brook Hunt, ICSG, ILZSG, AA, IAI, INSG, LME, SHFE, SGE, BBA, ETP-Issuer websites, China Customs, Antaike, Wards, Antaike, Barclays Capital, IEA, Johnson Matthey, MTN-I, WGC, SGE, Company reports, ECB, Riksbank, SNB.

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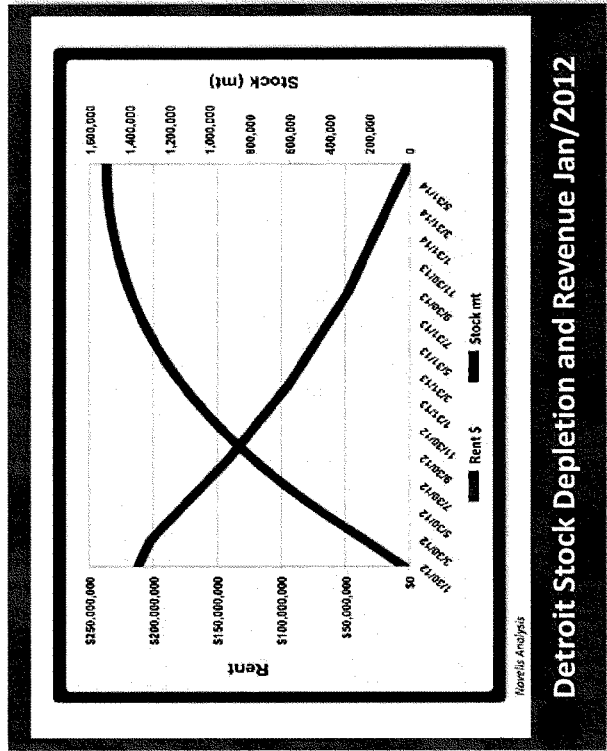
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APPENDIX 4

Novelis Analysis – Detroit rent potential



Novelis evaluated the potential rental income at Detroit. On January 31, 2012 Detroit stock level was 1,354,500 tonnes.

If no further metal was brought into the warehouse complex and from 1 February onwards, and the metal was shipped out at the minimum load out rate, it would have taken until July 2014 for the warehouse to empty. The rental income that could have been earned at published rent rates available in 2012 was approximately \$230 million.

These calculations take into account the impact of the load-out changes which took effect April 1, 2012.

MONEY & INVESTING

CAT Scratches Stocks

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Metals Logjam Benefits Producers

Alcoa, Boral Reaped Revenue From Higher Fees That Decommunized Aluminum - Warehouse Bottleneck

Part of the mystery, heaped upon the mystery, is that the two men, including the two who testified that they had been in the room, have been unable to produce any other witnesses who could corroborate their story. The two men, according to a newspaper account, are now being held at the Wall Street station.


The two complainants, Alvin Karpis and William G. Barker, have been charged with the murder of a number of the most prominent representatives of the law enforcement agencies, including the late U.S. Attorney General Cummings, and the late U.S. District Judge Nathan.

Many authorities say the two men are "productive" in talking to reporters, and likely to give away more of the story of the case. They say the two men are "productive" in talking to reporters, and likely to give away more of the story of the case.

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Logam at Metals Warehouses Benefits Producers Like Alcoa, Russia

Chattanooga from the prior page.

U.K. Financial Conduct Authority, calling the LME proposal a "voluntary" one that would change the market. Alcoa, which is based in Pittsburgh, said the LME should not have any plans to implement the changes.

Last month, Greg Bartolotta, chief executive of Russia's world's biggest aluminum producer, said in a letter to the LME that the LME proposal "is an unconsidered intervention and one that Russia strongly objects to."

The LME declined to comment. The LME didn't respond to a request for comment.

The redoubt of Alcoa and Russia, based in Russia, to the LME proposal underlines how any future, from changes to LME's warehouse system is likely to be a battle between the two. To date, big metals have accepted the LME's system for regular trading, because they own warehouses in the LME system. The

majority of the metal in the world. In early 2011, aluminum prices were higher than they were in 2009. The price of aluminum was about 10% higher than it was in 2009, according to the LME. The price of aluminum was about 10% higher than it was in 2009, according to the LME.

The LME's proposal to change the warehouse system is likely to be a battle between the two. To date, big metals have accepted the LME's system for regular trading, because they own warehouses in the LME system. The

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on 15 Great Wines

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on an average of market prices. The market analysis, which is done by Alcoa, shows that aluminum prices were higher than they were in 2009. The price of aluminum was about 10% higher than it was in 2009, according to the LME. The price of aluminum was about 10% higher than it was in 2009, according to the LME.

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Alcoa has been a critic of efforts to move supply bottlenecks from Russia, Japan and China to Brazil.

have been about \$750 million, according to the analysis. Alcoa, which is based in Pittsburgh, said the LME should not have any plans to implement the changes.

Last month, Greg Bartolotta, chief executive of Russia's world's biggest aluminum producer, said in a letter to the LME that the LME proposal "is an unconsidered intervention and one that Russia strongly objects to."

The LME declined to comment. The LME didn't respond to a request for comment.

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APPENDIX 6

Novelis CEO Lashes Out At LME Ruling
The Wall Street Journal
 March 28, 2014, 12:23 PM ET
 By Francesca Freeman

The chief executive of major aluminum consumer Novelis Inc. has hit out angrily at a U.K. High Court ruling that quashed, for now, key parts of the London Metal Exchange's proposed metals-warehousing overhaul.

On Thursday the U.K.'s High Court ruled that the LME's consultation process, on proposals designed to address delays in accessing metals held in its warehouse system, was unlawful.

Atlanta-based Novelis, which buys huge quantities of aluminum to make sheet metal for beverage cans, cars, buildings and electronics, had released a short response to the ruling on Thursday. But Friday its CEO Phil Martens weighed in, and he pulled no punches.

In a statement he said:

"It is indefensible that queues of more than a year exist at warehouses and unconscionable that players in the aluminum market are actively working to maintain the status quo to protect artificially inflated premiums."

He added:

"Primary aluminum producers, traders and banks have created an artificial global shortage and driven spot premiums to ridiculously high levels."

and:

"This recent legal action taken outside of the LME's consultation process is grievous—it sanctions the continuation of this destructive regime... This exploitation of an artificial market squeeze appears to us to be blatant, and the effects are being felt further down the supply chain and ultimately by the end consumer."

Rusal, which took the LME to court, responded to Mr. Martens's comments:

"Rusal's action was not based on any mission to derail reforms and changes to the warehousing and price discovery system which we do support. It was the consultation process that was flawed and led to proposals that did not solve the fundamental issues of transparency due to the movement of metal to off warrant warehouses, the divergence of the exchange price and the market price and the risk of the exchange price being increasingly linked to the trading strategies of speculators based on macroeconomic factors, rather than the fundamental market factors of supply and demand of metal."

The LME, which said it was "disappointed" with Thursday's ruling, is currently taking legal advice on whether to appeal or to undertake a fresh consultation.

Novelis Reacts to Verdict in Rusal Lawsuit Against LME President and CEO says Ruling will be Destructive to Market

ATLANTA, March 28, 2014 /PRNewswire/ -- Novelis Inc. President and Chief Executive Officer Phil Martens issued the following statement today in response to Thursday's ruling by the UK High Court regarding planned changes to aluminum warehousing rules by the London Metal Exchange (LME):

"We are very disappointed with the outcome of the legal process in the UK," said Martens. "We have worked closely with the LME and other stakeholders for two-and-a-half years to push for changes. Unfortunately, Rusal's unilateral action resulting in this court decision will stifle the LME's proposal to alleviate the unprecedented backlog at LME warehouses and will be very destructive to the market.

"It is indefensible that queues of more than a year exist at warehouses and unconscionable that players in the aluminum market are actively working to maintain the status quo to protect artificially inflated premiums. The divergence between the LME price and the physical market price is undermining the credibility of the industry's pricing discovery process and causing havoc in the fabricating and consuming end of the industry. This is a global issue.

"Primary aluminum producers, traders and banks have created an artificial global shortage and driven spot premiums to ridiculously high levels. The change in the LME load out rate was intended to restore equity in the LME system and remove the queues which are directly responsible for driving up the premiums in the first place.

"This recent legal action taken outside of the LME's consultation process is grievous -- it sanctions the continuation of this destructive regime. At the same time, the producers are continuing to make outsized windfall gains, which a year ago we estimated to be \$3 billion, but are now twice that level. This exploitation of an artificial market squeeze appears to us to be blatant, and the effects are being felt further down the supply chain and ultimately by the end consumer.

"Novelis had hoped that the LME changes together with possible regulatory actions would identify any wrong doing that may have taken place and dramatically improve the scrutiny of the market and market convergence. The court decision, unfortunately, throws yet another wrench in the works and does nothing to settle the ongoing supply chain risk to aluminum fabricators and beverage marketers and other customers where premiums are at the highest levels in history."

Novelis Blasts LME Warehousing Plan

<http://www.amm.com/Article/3324986/Novelis-blasts-LME-warehouse-plan-ruling.html>

American Metal Market

March 28, 2014

Novelis Inc. president and chief executive officer Philip Martens lashed out at a judgment by the United Kingdom's High Court of Justice that stopped proposed London Metal Exchange warehouse reforms from being implemented, saying the outcome would prove "destructive to the market."

The Atlanta-based secondary aluminum producer has worked closely with the LME and other interested parties for more than two years to push for changes to warehouse rules aimed at trimming queues at sheds with bloated inventories, Martens said in a statement March 28.

Those efforts have been stymied by the High Court's ruling in favor of Moscow-based primary aluminum producer United Co. Rusal's (UC Rusal's) "unilateral" lawsuit seeking to block the proposed changes, Martens said. The result is that waits of more than a year for metal at some LME-listed warehouses will continue, supporting "artificially inflated premiums" and calling into question the relevancy of LME pricing, he said.

Nearly 5.4 million tonnes of aluminum are held in LME-listed warehouses globally, with the bulk in Detroit-area sheds, which account for more than 1.5 million tonnes, and facilities in Vlissingen, the Netherlands, where more than 2 million tonnes of metal are stored, according to LME data. The big stocks and limited load-out rates have caused long waits for metal at those locations in particular, a subject that has sparked antitrust lawsuits, Senate hearings and scrutiny from U.S. regulators.

"The divergence between the LME price and the physical market price is undermining the credibility of the industry's pricing discovery process and causing havoc in the fabricating and consuming end of the industry," Martens said. He also accused primary aluminum producers, traders and banks of creating an "artificial" global shortage of aluminum in an effort to drive spot premiums to "ridiculously high levels."

"This exploitation of an artificial market squeeze appears to us to be blatant, and the effects are being felt further down the supply chain and ultimately by the end consumer," Martens said. "The court decision, unfortunately, throws yet another wrench in the works and does nothing to settle the ongoing supply chain risk to aluminum fabricators and beverage marketers and other customers where premiums are at the highest levels in history."

Novelis has "no plans at this time" to file an appeal, a company spokesman said March 28.

AMM's Midwest premium stands at 18.15 to 18.25 cents per pound, down from highs of more than 20 cents per pound earlier this year but well above historical norms.

The market had been expecting the proposed LME reforms to warehouse loading and unloading rates to go into effect April 1. But following the court's decision, it is no longer clear when or whether those changes might be made.

While some market sources have said the ruling should have little impact on premiums, others have argued that the lack of change could push up LME prices for aluminum and regional premiums, including Midwest premiums.

Novelis decries UK ruling, fears aluminum backlog, higher prices

The Atlanta Journal-Constitution

March 27, 2014

Atlanta-based **Novelis Inc.**, an aluminum products manufacturer and recycler, on Friday blasted a High Court ruling in the United Kingdom that the company said will lead to backlogs of aluminum for delivery and inflated prices, ultimately leading to higher costs for consumers.

Novelis is among major manufacturers, including soft drink producers like Coca-Cola, beer companies like MillerCoors and automakers, that rely on aluminum held in warehouses like those registered by the London Metal Exchange. The warehouses, owned by companies such as JP Morgan, Goldman Sachs and Glencore Xstrata, have been accused of purposely keeping large stockpiles with long delivery "queues" to keep prices paid by Novelis and others artificially high.

Critics say warehouses have an incentive to keep stockpiles high because of the rents they receive and metal owners profit since prices for future deliveries may exceed current prices.

Last year U.S. regulators, including the Justice Department, began investigating the backlogs at LME-registered warehouses. The exchange, which has also faced lawsuits, was set to impose a new rule that would ease the stockpiles and long queues, and that backlogs had already begun to decline, according to multiple media reports.

But the UK High Court on Thursday blocked the new LME rule after it was challenged by Rusal, a Russian company and the world's largest aluminum producer. Rusal, which feared more aluminum on the market would depress prices, argued LME violated the law over how consultations were carried out on changing its rules, and the court agreed.

Novelis is a major supplier of aluminum sheet and foil products to automotive, transportation, packaging, construction, industrial and consumer electronics markets around the world.

In a statement, Novelis President and Chief Executive Officer Phil Martens said the UK ruling will cause an "unprecedented backlog at LME warehouses."

"Primary aluminum producers, traders and banks have created an artificial global shortage and driven spot premiums to ridiculously high levels," Martens said. Buyers pay premiums above prices for spot supplies. "This exploitation of an artificial market squeeze appears to us to be blatant and the effects are being felt further down the supply chain and ultimately by the end consumer."

Martens did not say specifically how Novelis' costs would be affected.

Novelis gives up on LME, seeks other avenues in warehouse battle

Reuters

February 1, 2013

- * LME says can't resolve logjams, calls on industry
- * Logjams only at warehouses owned by banks, trade houses
- * Consumers pass complaints to EU watchdog

By Susan Thomas and Maytal Angel

LONDON, Feb 1 (Reuters) - The world's top maker of aluminium for beverage cans has lost patience with the London Metal Exchange's failure to tackle access problems at the warehouses the LME monitors and says it will seek a solution elsewhere.

Novelis has long criticised the warehouse system for contributing to record-high price premiums for aluminium, a metal in chronic surplus.

"The LME sees no need to do anything else, even though they sympathise with the aluminium consumers," Nick Madden, vice president and chief procurement officer at Novelis, a unit of Hindalco Industries, said in an interview.

Madden's words follow a speech by Chris Evans, LME head of business development, who told a recent conference in the United States that the solution to the problem would have to come from the market, rather than the LME.

"I can only conclude that now that we have tried the direct approach and failed, Novelis will have to work through other stakeholders," Madden said.

"We will continue to be active, we just have to find some other way to get attention, we have to try other avenues."

Madden, whose company has been speaking out about the current LME warehousing problems since 2011, declined further comment.

Europe's competition watchdog received a complaint late last year against owners of LME-registered warehouses for ramping up rental profits by letting long queues for metal grow at some locations.

NEW OWNERSHIP CREATES HOPE

Metal buyers also hope the exchange's new owner, Hong Kong Exchanges and Clearing, will tackle the problem forcefully. The big banks and trade houses that own the warehouses will now have less influence on exchange policy after they sold their LME shares during the takeover.

For those warehouses, backlogs are lucrative because metal waiting to be delivered out continues to earn storage fees. They also say the backlogs are due to the logistical difficulties of moving large amounts of metal.

LME rules stipulate a low minimum load-out rate for metals stored in the warehouse network that the exchange monitors.

Warehouses do not have to deliver out any more than the minimum. They are also free to set their own rents, and even if the LME raises the load-out rate, they can raise rents to compensate for any loss of income.

Novelis has proposed that the load-out rate for the warehouses carrying the largest stockpiles should be trebled.

The LME rejects this proposal.

"There is no solution that the LME could or should propose. This isn't a debate about delivery (out rates)," Evans told the U.S. conference.

"This is an aluminium industry problem, and it is the industry that must come up with a solution. If fabricators choose to sell at uneconomic levels, they will of course lose money."

Fabricators are crippled by high premiums because they are paid a percentage of the LME base price for converting a sheet of metal into a can for example. They are not able to pass on the costs of premiums, which in some cases might equal their sale price.

Premiums for duty-paid aluminium in Rotterdam are currently at record highs of around \$300 a tonne - about 15 percent of the LME base price. Benchmark U.S. Midwest spot aluminium premiums have also reached a record high.

They have been rising since the financial crisis pushed interest rates to near zero, making the financing deals both lucrative and safe.

The financing deals, which have locked up more than 70 percent of LME aluminium inventories, keep metal away from industrial users, while at the same time resulting in a concentration of metal in certain LME locations.

This exacerbates backlogs when material is booked for delivery by industrial or other users of the exchange, putting even more upward pressure on premiums.

Millions of Tons of Metals Stashed in Shadow Warehouses

Wall Street Journal

Dec. 26, 2013

The world's metal is slipping into the shadows.

Banks, hedge funds, commodity merchants and others are stashing tens of millions of tons of aluminum, copper, nickel and zinc in a hidden system of warehouses that span the globe.

These facilities are known to some in the industry as "shadow warehouses" because they are unregulated and don't disclose their holdings.

They operate outside the London Metal Exchange system of warehouses, the traditional home for these metals.

As of October, a record seven million to 10 million tons of aluminum were being housed in these facilities, in countries as far apart as Malaysia and the Netherlands, according to estimates from several analysts.

The amount dwarfs the 5.5 million tons of aluminum in the LME-licensed warehouses, based on LME figures as of Tuesday. Just 12 months ago, the figures were about equal.

A similar shift is taking place with other industrial metals, analysts say.

As a result, producers and consumers are bracing for potentially wild swings in metals prices as market participants have difficulty accurately gauging supplies of these metals. With no clear insight into how much metal is in the shadow system, setting prices will become increasingly difficult, they say.

Analysts and traders say the flow of metal into shadow warehouses already is making prices move in unpredictable ways—such as when a large amount of unaccounted-for metal suddenly makes its way onto the market.

"It's a real concern for anyone in the industry that metal can be sucked away into a nonreporting location with no expectation or date as to when it's going to be available again," said Nick Madden, senior vice president and chief supply-chain officer with Atlanta-based Novelis Inc., an aluminum-products maker that is among the world's biggest buyers of the metal.

"The risk here is that the metal gets controlled by fewer and fewer hands, whose interests and business model is probably conflicting with that of end users," he said.

Industrial metals end up in all sorts of everyday goods—from aluminum soda cans to copper wires inside refrigerators to zinc-plated steel in roofs. Turbulent raw-materials prices can make it more expensive to produce such goods when prices spike or limit output from mines and smelters when prices drop below their cost of production.

The lack of transparency is making this shadow system increasingly attractive to institutions seeking to profit from information that other buyers and sellers don't have. Some companies also are seeking a cheaper alternative to the LME warehouses, which can be 10 times as expensive as the unregulated storage, analysts and traders say.

However, metal owners can face higher interest rates from banks if they wish to use metal stored in shadow warehouses as collateral for loans, because banks see the LME system as less risky, analysts say.

Five companies operate 75% of the LME's 778 licensed warehouses. All own shadow facilities as well, people familiar with the companies said.

In some instances, a single firm runs licensed and unlicensed warehouses in the same building, with the metal counted by the LME separated from hidden stockpiles by a chain-link fence, said David Wilson, a commodities analyst with [Citigroup](#).

Until 2010, most warehouses were owned by logistics firms like Netherlands-based C. Steinweg Group. But as metal-financing trades became more popular, C. Steinweg was joined by units of [Goldman Sachs](#)

Group Inc. and J.P. Morgan Chase & Co. as well as commodity traders Glencore Xstrata PLC of the U.K. and Switzerland and Trafigura Beheer BV of the Netherlands.

All five companies declined to comment.

Metal consumers like Novelis say that prices could increase sharply if warehouse owners buy up large amounts of metal, creating a shortage.

Alcoa Inc., the largest U.S. aluminum maker, has the opposite worry. The company fears aluminum prices are vulnerable to a shock if a large amount of metal suddenly gets moved from shadow warehouses back to the LME's facilities, said Tim Reyes, president of materials management at Alcoa.

"If one day, 2 million tons of aluminum show up and it just went from one pocket to another pocket, it has an impact on price that it shouldn't, and that's a concern for us," Mr. Reyes said.

Such volatility makes it harder to make production plans, he said.

Many metal buyers and producers say they are worried that new rules approved by the LME in November will speed up the flow of metal into shadow warehouses.

Starting April 1, LME warehouses with wait times exceeding 50 days must deliver out more metal than they take in. The delays help boost income from rent and increase the fees paid for faster service, so warehouse owners are expected to increase LME rent charges to offset any reduction in profits.

The rules strike at a trade that has grown sharply since 2010, where investors buy the cheap physical metal and sell a futures contract on the LME at a higher price.

Meantime, the metal sits in an LME-licensed warehouse until the futures contract expires. Higher warehouse costs make this trade less profitable.

If applied today, the rules would flush aluminum out of LME-licensed warehouses holding 3.5 million tons of the metal, equal to 7% of annual global demand.

Warehouses holding copper and zinc also would be required to speed up the release of their stockpiles.

In a Nov. 7 report, the exchange said one potential negative side effect of the new regulations is that more metal could end up in shadow warehouses.

The LME in a statement said it has a duty to run a fair and orderly market and that the warehouse bottlenecks posed a range of issues in terms of price discovery.

The rule changes were made following a consultation process that included an examination of all concerns raised about the possible unintended consequences of any changes, it said.

"We believe that the package of measures contained in the proposal is, on balance, the best solution for all market users," the exchange said.

The Vampire Squid Strikes Again: The Mega Banks' Most Devious Scam Yet

Banks are no longer just financing heavy industry. They are actually buying it up and inventing bigger, bolder and scarier scams than ever

Rolling Stone Magazine
February 12, 2014

Aluminium warehousing - the price of queues

BBC Radio
November 8, 2013

The London Metals Exchange has announced new rules to cut unprecedented year-long queues at aluminium warehouses. That may sound esoteric, but those hold-ups affect the price of a metal used in everything from drinks cans to window frames to car chassis. We speak to one of those losing his patience, Nick Madden of the aluminium rolling firm Novelis, who says that the warehouse owners - who include investment banks Goldman Sachs and JP Morgan - are profiting from the delays by charging extra rents. We also speak to Garry Jones, the boss of the London Metals Exchange about what the new rules, unveiled on Thursday, will achieve.

Goldman Sachs Tinkering With Aluminum Prices?

Fox Business News
July 23, 2013
Novelis Senior V.P. Nick Madden on allegations Goldman Sachs is manipulating aluminum prices.

A Shuffle of Aluminum, but to Banks, Pure Gold
By DAVID KOCENIEWSKI
The New York Times
July 20, 2013

MOUNT CLEMENS, Mich. — Hundreds of millions of times a day, thirsty Americans open a can of soda, beer or juice. And every time they do it, they pay a fraction of a penny more because of a shrewd maneuver by Goldman Sachs and other financial players that ultimately costs consumers billions of dollars.

The story of how this works begins in 27 industrial warehouses in the Detroit area where a Goldman subsidiary stores customers' aluminum. Each day, a fleet of trucks shuffles 1,500-pound bars of the metal among the warehouses. Two or three times a day, sometimes more, the drivers make the same circuits. They load in one warehouse. They unload in another. And then they do it again.

This industrial dance has been choreographed by Goldman to exploit pricing regulations set up by an overseas commodities exchange, an investigation by The New York Times has found. The back-and-forth

lengthens the storage time. And that adds many millions a year to the coffers of Goldman, which owns the warehouses and charges rent to store the metal. It also increases prices paid by manufacturers and consumers across the country.

Tyler Clay, a forklift driver who worked at the Goldman warehouses until early this year, called the process "a merry-go-round of metal."

Only a tenth of a cent or so of an aluminum can's purchase price can be traced back to the strategy. But multiply that amount by the 90 billion aluminum cans consumed in the United States each year — and add the tons of aluminum used in things like cars, electronics and house siding — and the efforts by Goldman and other financial players has cost American consumers more than \$5 billion over the last three years, say former industry executives, analysts and consultants.

The inflated aluminum pricing is just one way that Wall Street is flexing its financial muscle and capitalizing on loosened federal regulations to sway a variety of commodities markets, according to financial records, regulatory documents and interviews with people involved in the activities.

The maneuvering in markets for oil, wheat, cotton, coffee and more have brought billions in profits to investment banks like Goldman, JPMorgan Chase and Morgan Stanley, while forcing consumers to pay more every time they fill up a gas tank, flick on a light switch, open a beer or buy a cellphone. In the last year, federal authorities have accused three banks, including JPMorgan, of rigging electricity prices, and last week JPMorgan was trying to reach a settlement that could cost it \$500 million.

Using special exemptions granted by the Federal Reserve Bank and relaxed regulations approved by Congress, the banks have bought huge swaths of infrastructure used to store commodities and deliver them to consumers — from pipelines and refineries in Oklahoma, Louisiana and Texas; to fleets of more than 100 double-hulled oil tankers at sea around the globe; to companies that control operations at major ports like Oakland, Calif., and Seattle.

In the case of aluminum, Goldman bought Metro International Trade Services, one of the country's biggest storers of the metal. More than a quarter of the supply of aluminum available on the market is kept in the company's Detroit-area warehouses.

Before Goldman bought Metro International three years ago, warehouse customers used to wait an average of six weeks for their purchases to be located, retrieved by forklift and delivered to factories. But now that Goldman owns the company, the wait has grown more than tenfold — to more than 16 months, according to industry records.

Longer waits might be written off as an aggravation, but they also make aluminum more expensive nearly everywhere in the country because of the arcane formula used to determine the cost of the metal on the spot market. The delays are so acute that Coca-Cola and many other manufacturers avoid buying aluminum stored here. Nonetheless, they still pay the higher price.

Goldman Sachs says it complies with all industry standards, which are set by the London Metal Exchange, and there is no suggestion that these activities violate any laws or regulations. Metro International, which declined to comment for this article, in the past has attributed the delays to logistical problems, including a shortage of trucks and forklift drivers, and the administrative complications of tracking so much metal. But interviews with several current and former Metro employees, as well as someone with direct knowledge of the company's business plan, suggest the longer waiting times are part of the company's strategy and help Goldman increase its profits from the warehouses.

Metro International holds nearly 1.5 million tons of aluminum in its Detroit facilities, but industry rules require that all that metal cannot simply sit in a warehouse forever. At least 3,000 tons of that metal must be moved out each day. But nearly all of the metal that Metro moves is not delivered to customers, according to the interviews. Instead, it is shuttled from one warehouse to another.

Because Metro International charges rent each day for the stored metal, the long queues caused by shifting aluminum among its facilities means larger profits for Goldman. And because storage cost is a major component of the "premium" added to the price of all aluminum sold on the spot market, the delays mean higher prices for nearly everyone, even though most of the metal never passes through one of Goldman's warehouses.

Aluminum industry analysts say that the lengthy delays at Metro International since Goldman took over are a major reason the premium on all aluminum sold in the spot market has doubled since 2010. The result is an additional cost of about \$2 for the 35 pounds of aluminum used to manufacture 1,000 beverage cans, investment analysts say, and about \$12 for the 200 pounds of aluminum in the average American-made car.

"It's a totally artificial cost," said one of them, Jorge Vazquez, managing director at Harbor Aluminum Intelligence, a commodities consulting firm. "It's a drag on the economy. Everyone pays for it."

Metro officials have said they are simply reacting to market forces, and on the company Web site describe their role as "bringing together metal producers, traders and end users," and helping the exchange "create and maintain stability."

But the London Metal Exchange, which oversees 719 warehouses around the globe, has not always been an impartial arbiter — it receives 1 percent of the rent collected by its warehouses worldwide. Until last year, it was owned by members, including Goldman, Barclays and Citigroup. Many of its regulations were drawn up by the exchange's warehouse committee, which is made up of executives of various banks, trading companies and storage companies — including the president of Goldman's Metro International — as well as representatives of powerful trading firms in Europe. The exchange was sold last year to a group of Hong Kong investors and this month it proposed regulations that would take effect in April 2014 intended to reduce the bottlenecks at Metro.

All of this could come to an end if the Federal Reserve Board declines to extend the exemptions that allowed Goldman and Morgan Stanley to make major investments in nonfinancial businesses — although there are indications in Washington that the Fed will let the arrangement stand. Wall Street banks, meanwhile, have focused their attention on another commodity. After a sustained lobbying effort, the Securities and Exchange Commission late last year approved a plan that will allow JPMorgan Chase, Goldman and BlackRock to buy up to 80 percent of the copper available on the market.

In filings with the S.E.C., Goldman has said it plans by early next year to store copper in the same Detroit-area warehouses where it now stockpiles aluminum. On Saturday, however, Michael DuVally, a Goldman spokesman, said the company had decided not to participate in the copper venture, though it had not disclosed that publicly. He declined to elaborate.

Banks as Traders

For much of the last century, Congress tried to keep a wall between banking and commerce. Banks were forbidden from owning nonfinancial businesses (and vice versa) to minimize the risks they take and, ultimately, to protect depositors. Congress strengthened those regulations in the 1950s, but by the 1980s, a wave of deregulation began to build and banks have in some cases been transformed into merchants, according to Saule T. Omarova, a law professor at the University of North Carolina and expert in regulation of financial institutions. Goldman and other firms won regulatory approval to buy companies that traded in oil and other commodities. Other restrictions were weakened or eliminated during the 1990s, when some banks were allowed to expand into storing and transporting commodities.

Over the past decade, a handful of bank holding companies have sought and received approval from the Federal Reserve to buy physical commodity trading assets.

According to public documents in an application filed by JPMorgan Chase, the Fed said such arrangements would be approved only if they posed no risk to the banking system and could "reasonably be expected to produce benefits to the public, such as greater convenience, increased competition, or

gains in efficiency, that outweigh possible adverse effects, such as undue concentration of resources, decreased or unfair competition, conflicts of interests, or unsound banking practices."

By controlling warehouses, pipelines and ports, banks gain valuable market intelligence, investment analysts say. That, in turn, can give them an edge when trading commodities. In the stock market, such an arrangement might be seen as a conflict of interest — or even insider trading. But in the commodities market, it is perfectly legal.

"Information is worth money in the trading world and in commodities, the only way you get it is by being in the physical market," said Jason Schenker, president and chief economist at Prestige Economics in Austin, Tex. "So financial institutions that engage in commodities trading have a huge advantage because their ownership of physical assets gives them insight in physical flows of commodities."

Some investors and analysts say that the banks have helped consumers by spurring investment and making markets more efficient. But even banks have, at times, acknowledged that Wall Street's activities in the commodities market during the last decade have contributed to some price increases.

In 2011, for instance, an internal Goldman memo suggested that speculation by investors accounted for about a third of the price of a barrel of oil. A commissioner at the Commodity Futures Trading Commission, the federal regulator, subsequently used that estimate to calculate that speculation added about \$10 per fill-up for the average American driver. Other experts have put the total, combined cost at \$200 billion a year.

High Premiums

The entrance to one of Metro International's main aluminum warehouses here in suburban Detroit is unmarked except for one toppling sign that displays two words: Mount Clemens, the town's name.

Most days, there are just a handful of cars in the parking lot during the day shift, and by 5 p.m., both the parking lot and guard station often appear empty, neighbors say. Yet inside the two cavernous blue warehouses are rows and rows of huge metal bars, weighing more than half a ton each, stacked 15 feet high.

After Goldman bought the company in 2010, Metro International began to attract a stockpile. It actually began paying a hefty incentive to traders who stored their aluminum in the warehouses. As the hoard of aluminum grew — from 50,000 tons in 2008 to 850,000 in 2010 to nearly 1.5 million currently — so did the wait times to retrieve metal and the premium added to the base price. By the summer of 2011, the

price spikes prompted Coca-Cola to complain to the industry overseer, the London Metal Exchange, that Metro's delays were to blame.

Martin Abbott, the head of the exchange, said at the time that he did not believe that the warehouse delays were causing the problem. But the group tried to quiet the furor by imposing new regulations that doubled the amount of metal that the warehouses are required to ship each day — from 1,500 tons to 3,000 tons. But few metal traders or manufacturers believed that the move would settle the issue.

"The move is too little and too late to have a material effect in the near-term on an already very tight physical market, particularly in the U.S.," Morgan Stanley analysts said in a note to investors that summer.

Still, the wait times at Metro have grown, causing the premium to rise further. Current and former employees at Metro say those delays are by design.

Industry analysts and company insiders say that the vast majority of the aluminum being moved around Metro's warehouses is owned not by manufacturers or wholesalers, but by banks, hedge funds and traders. They buy caches of aluminum in financing deals. Once those deals end and their metal makes it through the queue, the owners can choose to renew them, a process known as rewarehousing.

To encourage aluminum speculators to renew their leases, Metro offers some clients incentives of up to \$230 a ton, and usually moves their metal from one warehouse to another, according to industry analysts and current and former company employees.

To metal owners, the incentives mean cash upfront and the chance to make more profit if the premiums increase. To Metro, it keeps the delays long, allowing the company to continue charging a daily rent of 48 cents a ton. Goldman bought the company for \$550 million in 2010 and at current rates could collect about a quarter-billion dollars a year in rent.

Metro officials declined to discuss specifics about its lease renewals or incentive policies.

But metal analysts, like Mr. Vazquez at Harbor Aluminum Intelligence, estimate that 90 percent or more of the metal moved at Metro each day goes to another warehouse to play the same game. That figure was confirmed by current and former employees familiar with Metro's books, who spoke on condition of anonymity because of company policy.

Goldman Sachs declined to discuss details of its operations. Mr. DuVally, the Goldman spokesman, pointed out that the London Metal Exchange prohibits warehouse companies from owning metal, so all of the aluminum being loaded and unloaded by Metro was being stored and shipped for other owners.

"In fact," he said, "L.M.E. warehouses are actually prohibited from trading all L.M.E. products."

As the delays have grown, many manufacturers have turned elsewhere to buy their aluminum, often buying it directly from mining or refining companies and bypassing the warehouses completely. Even then, though, the warehouse delays add to manufacturers' costs, because they increase the premium that is added to the price of all aluminum sold on the open market.

The Warehouse Dance

On the warehouse floor, the arrangement makes for a peculiar workday, employees say.

Despite the persistent backlogs, many Metro warehouses operate only one shift and usually sit idle 12 or more hours a day. In a town like Detroit, where factories routinely operate round the clock when necessary, warehouse workers say that low-key pace is uncommon.

When they do work, forklift drivers say, there is much more urgency moving aluminum into, and among, the warehouses than shipping it out. Mr. Clay, the forklift driver, who worked at the Mount Clemens warehouse until February, said that while aluminum was delivered in huge loads by rail car, it left in a relative trickle by truck.

"They'd keep loading up the warehouses and every now and then, when one was totally full they'd shut it down and send the drivers over here to try and fill another one up," said Mr. Clay, 23.

Because much of the aluminum is simply moved from one Metro facility to another, warehouse workers said they routinely saw the same truck drivers making three or more round trips each day. Anthony Stuart, a forklift team leader at the Mount Clemens warehouse until 2012, said he and his nephew — who worked at a Metro warehouse about six miles away in Chesterfield Township — occasionally asked drivers to pass messages back and forth between them.

"Sometimes I'd talk to my nephew on the weekend, and we'd joke about it," Mr. Stuart said. "I'd ask him 'Did you get all that metal we sent you?' And he'd tell me 'Yep. Did you get all that stuff we sent you?' "

Mr. Stuart said he also scoffed at Metro's contention that a major cause for the monthslong delays is the difficulty in locating each customer's store of metal and moving the other huge bars of aluminum to get at it. When he arrived at work each day, Mr. Stuart's job was to locate and retrieve specific batches of aluminum from the vast stores in the warehouse and set them out to be loaded onto trucks.

"It's all in rows," he said. "You can find and get anything in a day if you want. And if you're in a hurry, a couple of hours at the very most."

When the London Metal Exchange was sold to a Hong Kong company for \$2.2 billion last year, its chief executive promised to take "a bazooka" to the problem of long wait times.

But the new owner of the exchange has balked at adopting a remedy raised by a consultant hired to study the problem in 2010: limit the rent warehouses can collect during the backlogs. The exchange receives 1 percent of the rent collected by the warehouses, so such a step would cost it millions in revenue.

Other aluminum users have pressed the exchange to prohibit warehouses from providing incentives to those that are simply stockpiling the metal, but the exchange has not done so.

Last month, however, after complaints by a consortium of beer brewers, the exchange proposed new rules that would require warehouses to ship more metal than they take in. But some financial firms have raised objections to those new regulations, which they contend may hurt traders and aluminum producers. The exchange board will vote on the proposal in October and, if approved, it would not take effect until April 2014.

Nick Madden, chief procurement officer for one of the nation's largest aluminum purchasers, Novelis, said the situation illustrated the perils of allowing industries to regulate themselves. Mr. Madden said that the exchange had for years tolerated delays and high premiums, so its new proposals, while encouraging, were still a long way from solving the problem. "We're relieved that the L.M.E. is finally taking an action that ultimately will help the market and normalize," he said. "However, we're going to take another year of inflated premiums and supply chain risk."

In the meantime, the Federal Reserve, which regulates Goldman Sachs, Morgan Stanley and other banks, is reviewing the exemptions that have let banks make major investments in commodities. Some of those exemptions are set to expire, but the Fed appears to have no plans to require the banks to sell their storage facilities and other commodity infrastructure assets, according to people briefed on the issue.

A Fed spokeswoman, Barbara Hagenbaugh, provided the following statement: "The Federal Reserve regularly monitors the commodity activities of supervised firms and is reviewing the 2003 determination that certain commodity activities are complementary to financial activities and thus permissible for bank holding companies."

Senator Sherrod Brown, who is sponsoring Congressional hearings on Tuesday on Wall Street's ownership of warehouses, pipelines and other commodity-related assets, says he hopes the Fed reins in the banks.

"Banks should be banks, not oil companies," said Mr. Brown, Democrat of Ohio. "They should make loans, not manipulate the markets to drive up prices for manufacturers and expose our entire financial system to undue risk."

Next Up: Copper

As Goldman has benefited from its wildly lucrative foray into the aluminum market, JPMorgan has been moving ahead with plans to establish its own profit center involving an even more crucial metal: copper, an industrial commodity that is so widely used in homes, electronics, cars and other products that many economists track it as a barometer for the global economy.

In 2010, JPMorgan quietly embarked on a huge buying spree in the copper market. Within weeks — by the time it had been identified as the mystery buyer — the bank had amassed \$1.5 billion in copper, more than half of the available amount held in all of the warehouses on the exchange. Copper prices spiked in response.

At the same time, JPMorgan, which also controls metal warehouses, began seeking approval of a plan that would ultimately allow it, Goldman Sachs and BlackRock, a large money management firm, to buy 80 percent of the copper available on the market on behalf of investors and hold it in warehouses. The firms have told regulators that these stockpiles, which would be used to back new copper exchange-traded funds, would not affect copper prices. But manufacturers and copper wholesalers warned that the arrangement would squeeze the market and send prices soaring. They asked the S.E.C. to reject the proposal.

After an intensive lobbying campaign by the banks, Mary L. Schapiro, the S.E.C.'s chairwoman, approved the new copper funds last December, during her final days in office. S.E.C. officials said they believed the funds would track the price of copper, not propel it, and concurred with the firms' contention — disputed by some economists — that reducing the amount of copper on the market would not drive up prices.

Others now fear that Wall Street banks will repeat or revise the tactics that have run up prices in the aluminum market. Such an outcome, they caution, would ripple through the economy. Consumers would end up paying more for goods as varied as home plumbing equipment, autos, cellphones and flat-screen televisions.

Robert Bernstein, a lawyer at Eaton & Van Winkle, who represents companies that use copper, said that his clients were fearful of "an investor-financed squeeze" of the copper market. "We think the S.E.C. missed the evidence," he said.

Goldman's new money machine: warehouses

Reuters

July 29, 2011

By Pratima Desai, Clare Baldwin, Susan Thomas and Melanie Burton

LONDON/DETROIT (Reuters) - In a rundown patch of Detroit, enclosed by a cyclone fence and barbed wire, stands an unremarkable warehouse that investment bank Goldman Sachs has transformed into a money-making machine.

The derelict neighborhood off Michigan Avenue is a sharp contrast to Goldman's bustling skyscraper headquarters near Wall Street, but the two operations share one important element: management by the bank's savvy financial professionals.

A string of warehouses in Detroit, most of them operated by Goldman, has stockpiled more than a million tonnes of the industrial metal aluminum, about a quarter of global reported inventories.

Simply storing all that metal generates tens of millions of dollars in rental revenues for Goldman every year.

There's just one problem: much less aluminum is leaving the depots than arriving, creating a supply pinch for manufacturers of everything from soft drink cans to aircraft.

The resulting spike in prices has sparked a clash between companies forced to pay more for their aluminum and wait months for it to be delivered, Goldman, which is keen to keep its cash machines humming and the London Metal Exchange (LME), the world's benchmark industrial metals market, which critics accuse of lax oversight.

Analysts question why London's metals market allows big financial players like Goldman to own the warehouses which store huge quantities of metal even as they trade the commodity. Robin Bhar, a veteran metals analyst at Credit Agricole in London says the conflict of interest is so acute he wants U.S. and European anti-trust regulators to weigh in.

"I think it makes a mockery of the market. It's a shame," Bhar said. "This is an anti-competitive situation. It puts (some) companies at an advantage, and clearly the rest of the market at a disadvantage. It's a real, genuine concern. And I think the regulators have to look at it."

Goldman said its warehouse subsidiary Metro International Trade Services has done nothing illegal, and abides by the LME's warehousing rules. "Producers have chosen to store metal in Detroit with Metro," a Goldman spokeswoman said. "We follow the LME requirements in terms of storing and releasing metals from our warehouses."

The London Metal Exchange defends its rules. "There is a perception that consumers have not been able to get to their metal when the reality is that it is big banks, financing companies and warehouses that are not able to get to their huge tonnages of metal fast enough," said LME business development manager Chris Evans.

BUSINESS MODEL

Goldman's warehouse business relies on a lucrative opportunity enabled by the LME regulations. Those rules allow warehouses to release only a fraction of their inventories per day, much less than the metal that is regularly taken in for storage.

In the year to June 30 Metro warehouses in Detroit took in 364,175 tonnes of aluminum and delivered out 171,350 tonnes. That represented 42 percent of inventory arrivals globally and 26 percent of the metal delivered out, according to the London Metal Exchange said.

The metal that sits in the warehouse generates lucrative rental income.

Little wonder that so many want in. Metro was acquired by Goldman in February 2010, while commodities trading firm Trafigura nabbed UK-based NEMS in March 2010, and Swiss-based group Glencore International acquired the metals warehousing unit of Italy's Pacorini last September.

Henry Bath, a warehousing firm and founding member of the London Metal Exchange in 1877, has been owned for about 40 years by traders or banks including Metallgesellschaft in the 1980s and failed U.S. energy trader Enron at the turn of the century. It now comes under the umbrella of JP Morgan, which bought the metals trading business of RBS Sempra Commodities in July last year.

Despite its rental income, Goldman's warehouse strategy apparently hasn't been enough to snap a slumping performance in commodity trading, with the company reporting a "significant" drop in revenues from a year ago in its latest quarter, the sixth time in the past 10 quarters that it has failed to expand.

CONSUMERS FUME

The long delays in metal delivery have buyers fuming. Some consumers are waiting up to a year to receive the aluminum they need and that has resulted in the perverse situation of higher prices at a time when the world is awash in the metal.

"It's driving up costs for the consumers in North America and it's not being driven up because there is a true shortage in the market. It's because of an issue of accessing metal ... in Detroit warehouses," said Nick Madden, chief procurement officer for Atlanta-based Novelis, which is owned by India's Hindalco Industries Ltd and is the world's biggest maker of rolled aluminum products. Novelis buys aluminum directly from producers but is still hit by the higher prices.

Madden estimates that the U.S. benchmark physical aluminum price is \$20 to \$40 a tonne higher because of the backlog at the Detroit warehouses. The physical price is currently around \$2,800 per tonne. That premium is forcing U.S. businesses to fork out millions of dollars more for the 6 million tonnes of aluminum they use annually.

It has also had a knock-on impact on the global market, which is forecast to consume about 45 million tonnes of the lightweight, durable metal this year.

Also pushing aluminum costs higher are bank financing deals, which are estimated to have locked up about 70 percent of the 4.4 million tonnes of the metal sitting in LME-registered warehouses around the world. ME inventories hit an all-time record above 4.7 million tonnes in May.

In a typical deal, a bank buys aluminum from a producer, agrees to sell it at some future point at a profit, and strikes a warehouse deal to store it cheaply for an extended time period.

The combination of the financing deals and the metal trapped in Detroit depots, means only a fraction of the inventories are available to the market. Premiums for physical aluminum -- the amount paid above the LME's cash contract currently trading at \$2,620 a tonne -- in the U.S. Midwest hit a record high of \$210 a tonne in May, up about 50 percent from late last year. In Europe, the premium is at records above \$200 a tonne, double the levels seen in January 2010.

The ripple effect into Asia has seen the premium paid in Japan increase 6 percent to \$120 a tonne in the third quarter from the previous quarter, the first rise in nearly six quarters.

COLLECTING THE RENT

You won't hear banks like Goldman complaining. Rental income continues to pour in at the 19 Detroit area warehouses run by Metro as of June.

From the outside one recent afternoon, a depot in the Detroit suburb of Mt Clemens appeared to be deserted. But neighbors say the place is a whirl of activity in the early hours of the morning when metal is usually delivered for storage.

The LME says the current maximum rent, set by warehouse operators, is 41 U.S. cents per day per tonne. At that rate, Goldman's warehouse operation in Detroit -- said to be holding more than 1.1 million tonnes -- could be generating as much as \$451,000 per day or about \$165 million a year in revenue.

An exact figure cannot be calculated because many clients negotiate lower rental rates and Goldman declined to detail its income from its warehouse business. But when Swiss-based trading company Glencore listed earlier this year it revealed that its metals warehousing unit generated \$31 million in profit on \$220 million in gross revenue in 2010.

LONG HISTORY Caught between consumers and warehouse operators is the 134-year old LME, one of the world's last exchanges with open-outcry trading. Sessions take place in a trading ring with red padded seats while visitors can watch from a gallery. Traders juggle multiple telephones and use archaic hand signals to fill orders from consumers, producers and hedge funds.

The ring is a perhaps more civilized version of the tumultuous trading pits made famous in Chicago. Each of six major industrial metals including copper and nickel are traded for five minute bursts in the morning and afternoon. Only 12 firms have access to the ring, arranged in fixed positions in a circle, with many others involved via the ring dealers and on the LME's electronic trading system.

Longer sessions in the late morning and afternoon allow trading of all metals simultaneously and are known as "the kerb" from the days when dealers continued to trade on the kerb, or sidewalk, after leaving the exchange.

The LME certifies and regulates the Detroit sheds as part of a global network of more than 640 warehouses. The network is meant to even out swings in volatile metals markets. During recessions, surplus metal can be stored until economies recover and demand picks up, when the metal can be released.

But that function is now being undermined by the backlog in Detroit.

LME rules stipulate that warehouses must deliver a certain amount of metal each day. However the rules apply not to each warehouse but to each city that a company has warehouses in. At the moment, a warehouse operator needs to deliver just 1,500 tonnes a day per city, whether it owns one warehouse there or dozens. That means each of Metro's Detroit warehouses need to release only 79 tonnes of aluminum a day. At that rate, it would take two years to clear the stocks held by Goldman's Detroit warehouses.

The backlog sparked outrage last year, prompting the LME to task London-based consultancy Europe Economics to look into its rules. Europe Economics recommended the exchange raise its minimum delivery rates and earlier this month the exchange announced a new regime for operators with stocks of over 900,000 tonnes in one city.

From April 2012 the minimum delivery rate will double to 3,000 tonnes a day.

Critics dismiss the move as too small to have any real effect, especially because of the delay until it comes in.

"The move is too little and too late to have a material effect in the near-term on an already very tight physical market, particularly in the U.S.," Morgan Stanley analysts said in a July note.

A senior executive at a metals brokerage told Reuters "the recommendations won't change anything. The problem will still be there six, nine months down the line." "If Detroit has 1.1 million tonnes at the moment, what's to say it won't have 2 million tonnes next year," he said.

MOVING MORE METAL

One obvious solution would be to impose minimum delivery requirements per warehouse or per square meter of warehouse space rather than per city. It's not as if the warehouses can't cope with delivering more stock: large operations can shift much more than 3,000 tonnes a day, warehousing sources say. An experienced forklift driver takes about 20 minutes to load one 20-tonne truck with aluminum in the United States. That means one warehouse in Detroit with two doors, two forklifts and an eight-hour working day could move out as much as 1,920 tonnes of metal every day.

"If you take Detroit in particular, those warehouses historically extracted metal at a faster rate ... the infrastructure is there," a senior analyst in the metals industry told Reuters.

Madden at Novelis said: "I don't know the specific details of every warehouse but our view is that they seem to be able to absorb metal coming in at almost an infinite rate and so we feel there's a lot more they can do on the output side to push up the (load out) rates."

The LME could also crack down in the same way it did in 1998 when it banned Metro from taking any more copper into its Long Beach and Los Angeles warehouses. Then the complaints were said to have come from copper consumers worried that 80 percent of total copper stocks in LME-approved warehouses were held in California. The exchange argues that any change right now might disrupt the market.

"Changes to the delivery out rate have required careful consideration because it will impact the cost structure for those holding metal, and were those costs to rise sharply it could affect the way that metal is stored and traded," said the LME's Evans.

The exchange could also rule that a warehouse cannot charge rent once aluminum has been purchased, no matter how long it takes to ship it. But a change like that would hit the LME itself as it receives about 1 percent of the rental income earned by the warehouses it approves.

LEGAL FEARS

Nobody at the LME will say whether the Europe Economics study -- industry sources said it talked to more than 40 companies -- advised more radical measures, arguing that such information is "proprietary." In any case, say metal markets sources, LME officials may be hesitant to make bigger changes because they fear legal action from the likes of Goldman, which could argue that Metro's business model has been based on existing LME warehouse rules.

The LME declined to comment on possible legal challenges, but its Chief Executive Martin Abbott said at a recent briefing that the warehouse delays were not causing market and price distortions.

"No, I don't believe it is," Abbott said, when asked if the situation was causing distortions in the market. Abbott said the exchange had received no official complaints from consumers about bottlenecks at warehouses. The LME also dismisses concerns about banks trading metal and owning the warehouses where it is stored.

While a British parliamentary committee raised the issue in May, Britain's Office of Fair Trading declined to open a probe. The U.S. Commodity Futures Trading Commission, which regulates the futures and options markets, said it would not comment. Britain's Financial Services Authority, which regulates exchanges where commodity futures are traded but not warehouses that store physical material, declined to comment.

WHAT NEXT?

The lack of real change has some in the industry questioning the very structure of the LME, which, unlike its publicly owned U.S.-based rival commodities exchanges, is owned by many of the financial institutions that trade there.

"The belief is that they are focused on serving their shareholders; most of them being the banks ... We see our clients and contacts trying to avoid the LME as much as possible now," said Jorge Vazquez, Managing Director of the Aluminum Intelligence Unit at HARBOR Commodity Research.

That concern is growing. Critics of the exchange point to a potential problem with zinc supply though New Orleans, where inventories now account for 61 percent of total LME-registered stocks. Most of the warehouses in New Orleans are owned by Goldman and Glencore.

Metal industry sources believe regulators should take a closer look at the possible conflict of interest that arises when trading houses also own the warehouses.

"If the whole thrust of regulation and regulatory reform is increased transparency and open and above board operations, letting banks own warehouses seems to run entirely counter to that," said Frances Hudson, global thematic strategist at Standard Life Investments said.

The LME says it enforces a strong separation between warehouses and the trading arms of their owners. Just this week it proposed that companies which own warehouses should engage an independent third-party to verify the robustness of Chinese walls.

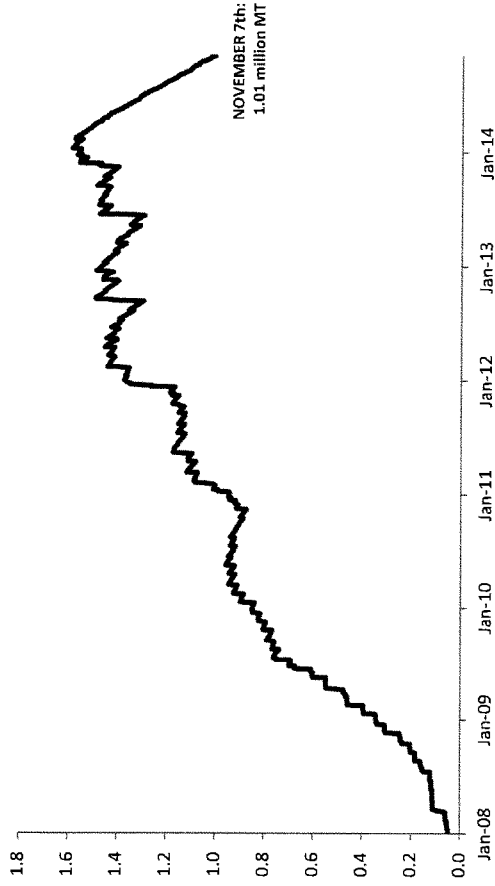
"We enforce it through regular audits of warehouses," said the LME's Evans. "If people say Chinese walls are leaking then they should bring us evidence and we'll investigate."



APPENDIX 7

* confidential

DETROIT LME PRIMARY ALUMINUM INVENTORIES
(million mtons)



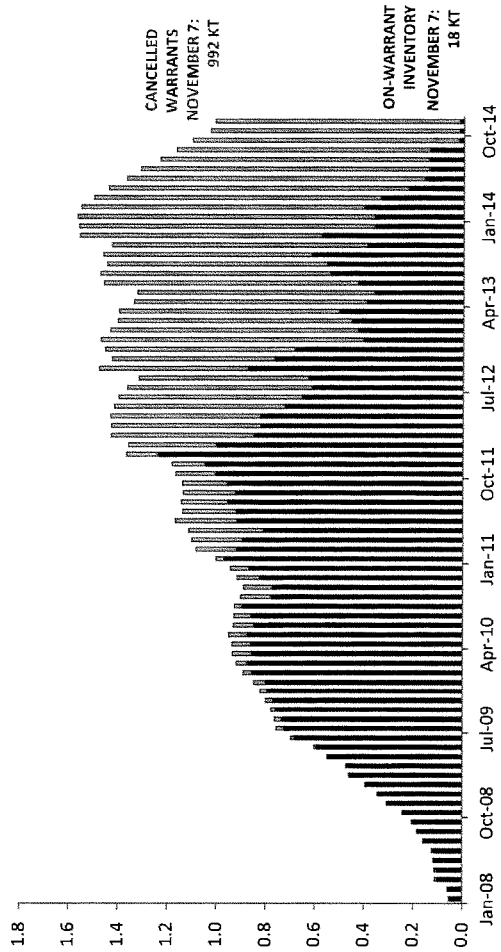
Source: HARBOR Aluminum with LME data



* confidential

DETROIT LME PRIMARY ALUMINUM INVENTORIES VS CANCELLED WARRANTS

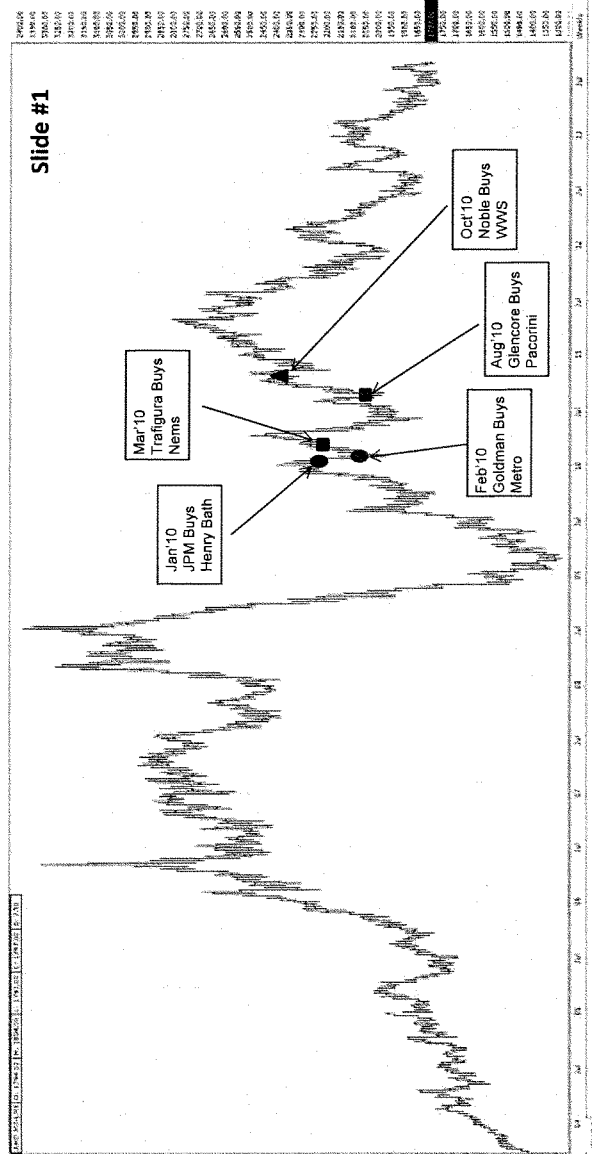
(million tons)



Source: HARBOR Aluminum with LME data

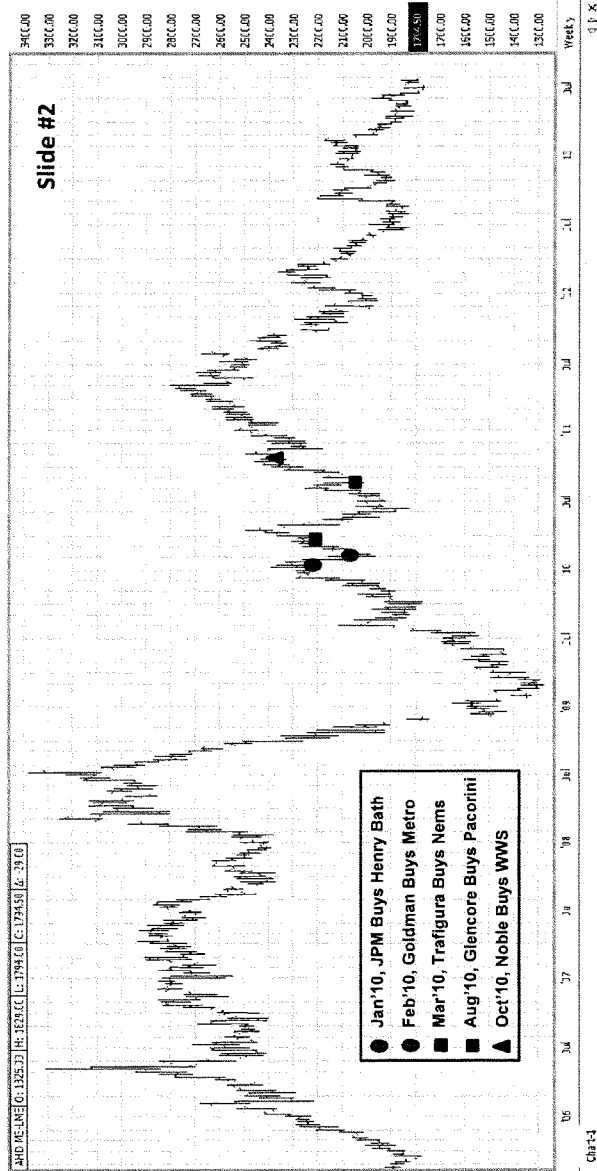
Weekly Aluminum Price Chart

APPENDIX 8



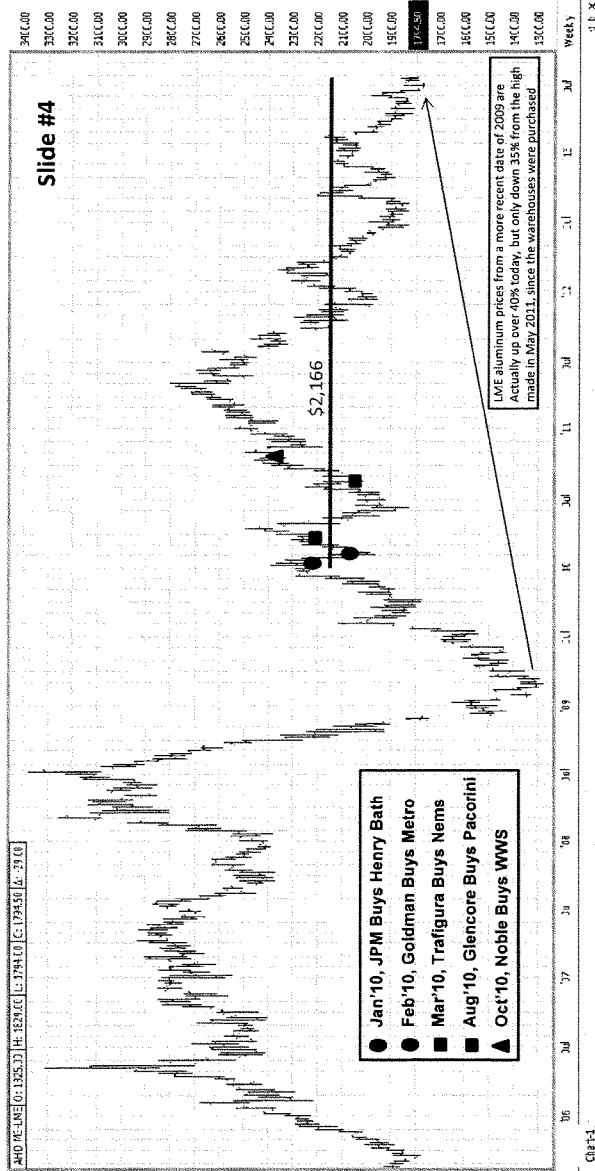
- Five major players purchase LME warehouses in 2010 as the opportunity to make money by storing, holding and controlling the flow of metal becomes apparent

Weekly Aluminum Price Chart



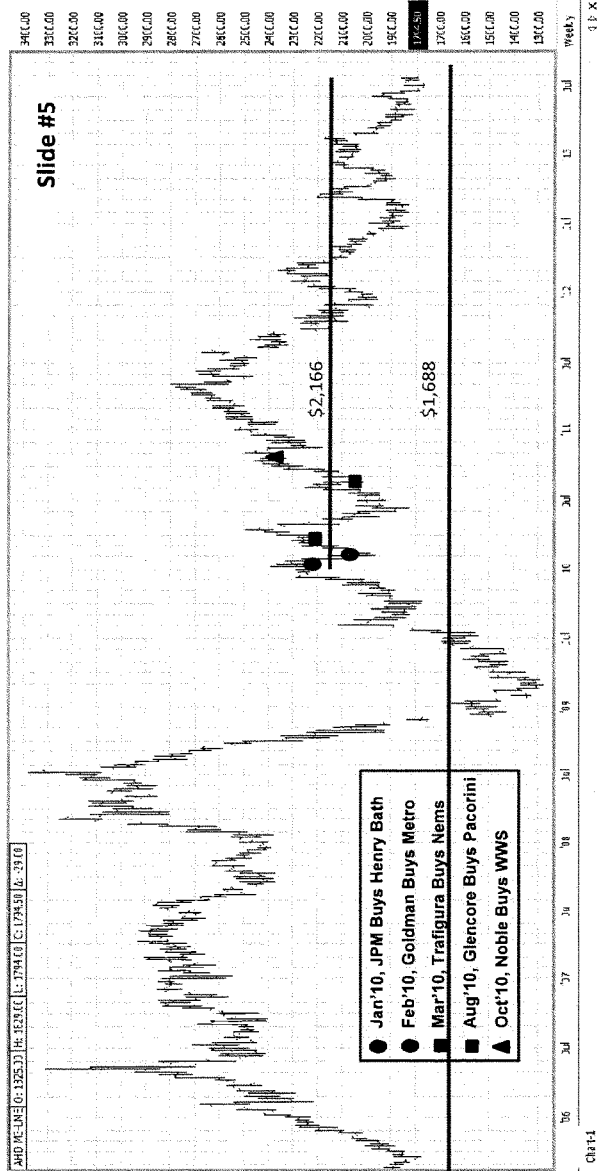
- LME aluminum prices are only slightly lower since the five major warehouse purchases of 2010, But...

Weekly Aluminum Price Chart



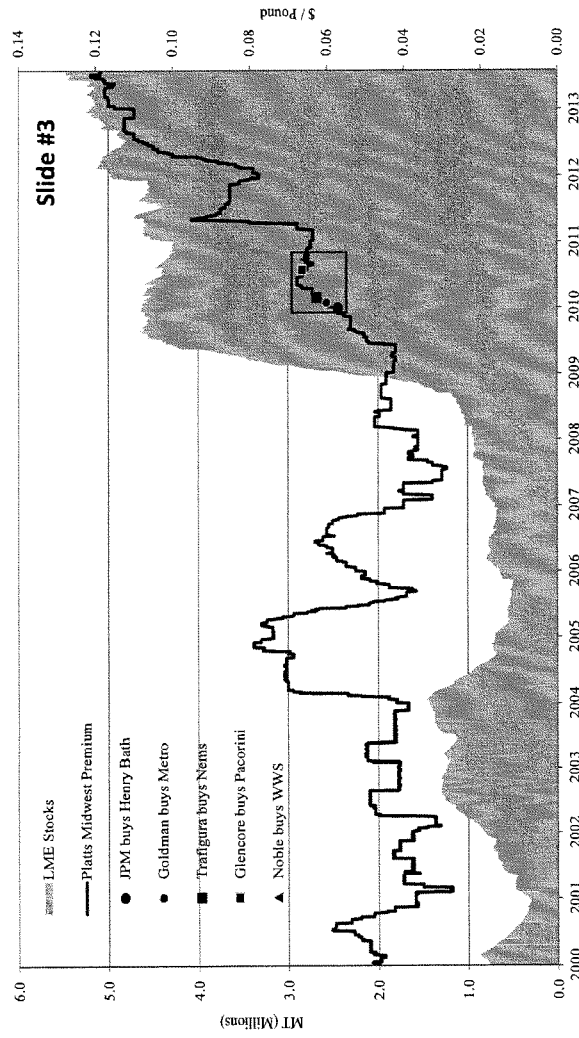
- LME aluminum prices are only 16% below the average price of \$2,166, since the five major warehouse purchases of 2010, but...

Weekly Aluminum Price Chart



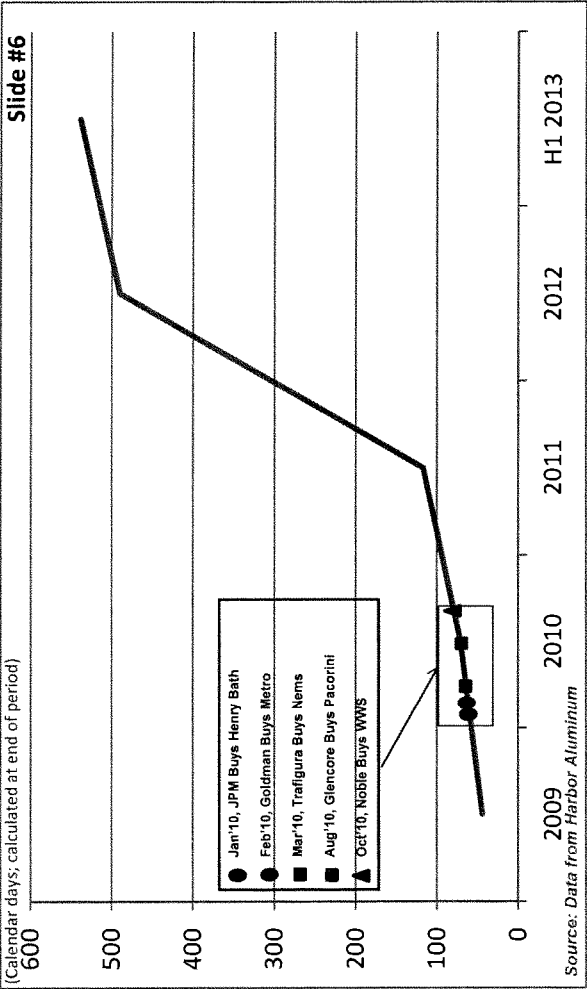
* ...LME aluminum prices averaged \$1,688 for the 10 years prior to the LME warehouse purchases, well below the current market and the past three year average price

Midwest Premiums and LME Stocks



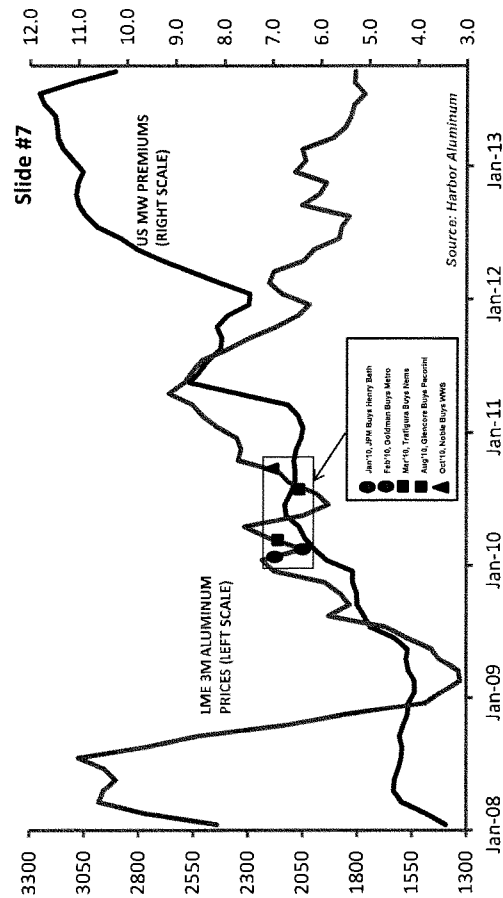
- ...LME stocks and Midwest Premiums (MWP) are both at record highs, with MWP's up 100% since the 2010 LME warehouse purchases

Maximum load-out queues, LME warehouse location Detroit



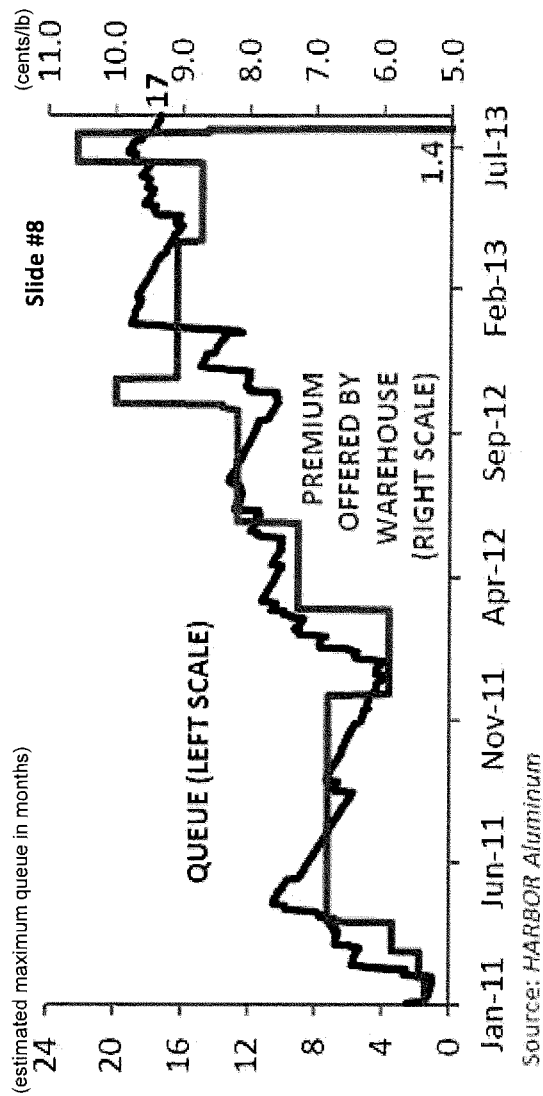
- LME load-out queues in Detroit were less than 50 days prior to the 2010 warehouse purchases, currently through first half of 2013 the queue is greater than 535 days

LME 3 mo. aluminum prices vs. Midwest Premiums (MWP)



- Since the warehouse purchases in 2010, LME prices have stayed in a relatively tight range while MWP's have hit all-time highs

Detroit load-out queue vs. premium paid by warehouse



- There has been a direct yet delayed correlation between the premiums offered by warehouses to producers and days metal spends in the queue

Slide #9

There have been claims that “only 5% of all the aluminum produced in the world per annum is in stock or in storage in delivery facilities through the LME warehouse system, so how can one say that this could possibly influence the price of the other 95% of the market?”

This is actually very common in the world of commodities

- For example on the Chicago board of trade (CBOT, part of CME Group), the “Mecca” for grain trading as the LME is to base metal trading, less than one tenth of one percent (0.1%) of all the corn produced in the world on an annual basis is in stock or in storage in delivery facilities through the CBOT...
 - ...only 0.5% of all the worlds soy beans, and
 - ...only 3.0% of the world's wheat
- As the LME is known for being the global centralized place for price discovery for base metals, so too is the CBOT for grains, only with much less underlining physical stocks and very few complaints
- What you don't see on the CBOT or other major commodity exchanges is major consumers, producers and even warehouse owners calling for greater transparency and rule changes, like in the case of the LME

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Appendix/Notes

- Slide #1, is a weekly LME 3 month aluminum price chart that shows the price action of aluminum, prior to, during and after the five major players purchased LME warehouses in 2010 as the opportunity to make money by storing, holding and controlling the flow of metal became apparent
- Slide #2 is again a weekly LME 3 month aluminum price chart that shows the price action of aluminum to support a point that LME aluminum prices are currently not much lower than when the warehouses were purchased in 2010
- Slide #3 shows the official Platts Midwest Premium (MWP) prices from the year 2000 along with the evolution and exponential growth of LME stocks during the same time period, it is interesting to note that as LME stocks and MWP's have all made new all-time record highs, with MWP's up 100% since the 2010 LME warehouse purchases. Under normal market conditions commodities, like in the case of aluminum, where warehouse stocks are at all-time record highs, signifying excessive supply, common sense dictates that MWP's should be at record lows, unless access to supply is somehow being adversely influenced.
- Slide #4 shows the LME 3 month aluminum price, depicting the average price of \$2,166, since the five major warehouse purchases of 2010 and the fact that LME aluminum prices are currently only 16% below this average. In addition the chart shows that LME aluminum prices from a more recent date of 2009 are actually up over 40% today, but only down 35% from the high made in May 2011, since the warehouses were purchased. These are more recent dates compared to a more relative price average over the past three and a half years from when the warehouses were acquired.
- Slide #5 this shows the LME 3 month aluminum price, the average price of \$2,166, from when the five major warehouses were purchased in 2010, as compared to a more relevant price average of LME aluminum prices for the 10 years prior to the LME warehouse purchases which is \$1,688, well below the past three and a half year average price and the current market.

Appendix/Notes

- Slide #6 this shows that the LME load-out queues in Detroit were less than 50 days prior to the warehouse purchases in 2010, but that currently through the first half of 2013 the queue in Detroit is now greater than 535 days. That is a more than “10 times longer” queue which is highly irregular and nothing like it exists on any other major commodity exchange in the world.
- Slide #7 this shows the LME 3 month aluminum price vs. the Midwest premium, since the warehouse purchases in 2010, LME prices have stayed in a relatively tight range while MWP’s have hit all-time highs
- Slide #8 this chart shows a direct yet delayed correlation between the premiums (or incentives) offered by warehouses to producers and traders to attract metal away from the market to their warehouses vs. the days aluminum spends in the Detroit queue. On other exchanges like the CME this practice of warehouses paying incentives to entice metal away from the market to their own warehouses, is strictly forbidden.
- Slide #9 this slide basically refutes the question that has been floating around the press and asked in the most recent Senate hearing: “If only 5% of all the aluminum produced in the world is in stock or in storage in delivery facilities through the LME warehouse system, how can one say that this could possibly influence the price of the other 95% of the market?”. This is very common with respect to other globally recognized centralized places for price discovery, like the LME or the CME. For example on the Chicago Board of Trade (CBOT, part of the CME), the “Mecca” for grain trading as the LME is to base metal trading, less than one tenth of one percent (0.1%) of all the corn in the world produced on an annual basis is in stock or in storage in delivery facilities through the CBOT and only (0.5%) of all the world’s soy beans, and 3.0% of the world’s wheat. What you don’t see on the CBOT or other major commodity exchanges is major consumers, producers and even warehouse owners calling for greater transparency and rule changes, like in the case of the LME system.

Appendix/Notes

Although slides and data have been used from Harbor Aluminum in this presentation, they have had no part in its preparation or message.

All information in this presentation is true and correct based on the best market intelligence at the time of its preparation.

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APPENDIX 9

-----From Executive Director: Regulation and Compliance

To: ALL MEMBERS, WAREHOUSE COMPANIES AND THEIR LONDON AGENTS

Ref: 98/362, A:350, R:020, W:071

Date: 13 October 1998

Subject: **RULE ADDITION – RELATIONSHIP BETWEEN MEMBERS AND WAREHOUSE COMPANIES: CONFIRMATION OF NOTICE 98/213, A:207, W:033**

Introduction

Notice 98/213, A:207, W:033 set out proposals by the Board of Directors to introduce rules to require "chinese walls" between a member of the Exchange and a related warehouse company. The proposed provisions were designed to prevent the misuse of confidential and price sensitive information and to ensure that members and warehouse companies could compete with each other on equal terms. The proposals were subject to consultation.

Consultation

Of the responses to the consultation, all but one were supportive of the Board's proposals. The one non-supportive respondent believed that members of the Exchange should not be allowed to own warehouses. Any rule which attempted to prevent members owning warehouses would, however, be in conflict with UK competition law and with the way potential conflicts of interest are addressed elsewhere in the UK's financial regulatory structure.

Several respondents suggested, in order to prevent warehouse abuses with any party, that the proposals should be widened to include all commercial agreements/relationships between members and warehouse companies which fall short of ownership. The Board's attention has been drawn to various comments and reports alleging payment of exceptional inducements, demand for a variety of substantial charges in addition to FOT charges and impediments to speedy physical re-delivery out of warehouses. The Exchange is looking into these matters and is reviewing, as a matter of urgency, its contractual arrangements with warehouse companies to ensure that LME approved warehouse companies and their placing metal on warrant

adhere to the spirit as well as the letter of the LME rules. The Board will give consideration to making changes to warehousing rules where considered appropriate in the light of this review. The specific issues relating to common ownership of members and warehouse companies need to be addressed separately through the introduction of "chinese walls" procedures.

On the details of the Board's proposals, amendments have been introduced in two areas in the light of the consultation. Under section 2 of the proposals – Definitions – it has been made clear that 'confidential information' includes any information which a warehouse company acquires through its warehousing activities in respect of specific LME brands, ahead of general publication by the LME. This clarification is incorporated by a new 2iv of the new rule addition set out below. Second, Ci of the proposals has been amplified to require that where the personnel of the related warehouse company and the member occupy the same premises, security access systems must be installed to prevent unauthorised access by the related company's personnel.

Rule Addition

The Board of Directors has approved the rule changes and guidance as set out below. The new procedures come into effect immediately.

1 Background

The review by the Financial Services Authority (formerly the Securities and Investments Board) of the LME and the metals markets raised aspects of the relationship between warehouse companies and members which are potentially open to anti-competitive and distorting behaviour.

Concern centred around the independence of members and warehouse companies from one another, the flow of information between them and the existence of systemic advantages which could restrict the ability of both members and warehouse companies to compete with each other on equal terms. The main areas of concern are:-

- i the possibility that a member might gain access to price and/or commercially sensitive information from a warehouse company;
- ii the possibility that a member could pass commercially sensitive information gained from having access to one warehouse company to another warehouse company;
- iii the ability of a member to advantage one warehouse company by offering warrants from a competing warehouse company to customers at a discount; and
- iv the effect of long term storage deals restricting the amount of LME stocks in circulation.

These issues are of most concern and give rise to serious potential conflicts of interest where a member and a warehouse company are both part of the same group.

In the light of both UK competition law and the dependence, throughout the UK's regulatory structure, on "chinese walls" to handle conflicts of interest, it is not open to the LME to prevent the common or related ownership of LME members and warehouse companies. This Notice, therefore, proposes provisions and procedures to establish and enforce strict "chinese walls" between a member and a related warehouse company. These provisions are designed to prevent the misuse of confidential and price sensitive information.

2 Definitions

For the purposes of this Notice:

"Confidential Information" means, in respect of a warehouse company's business, any of the following, ahead of general publication by the LME:

- i stock figures for LME deliverable metal;
- ii all information relating to proposed or actual shipments of LME deliverable metal to be made or received by that warehouse company (including, in respect of shipments to be made by that warehouse company, any information of a commercially sensitive nature given to that warehouse company by the shipper, his agent or the recipient of that shipment, such as the identity of the customer, customs information, etc);
- iii all information related to the issuance, holding and cancellation of LME warrants by that warehouse company; and
- iv any other information in relation to specific LME brands which a warehouse company acquires through its warehousing activities.

"Related warehouse company" means a warehouse company which is a subsidiary or holding company of a member, or a subsidiary or holding company of one of a member's subsidiaries or holding companies. The terms "holding company" and "subsidiary" have the meanings given to them in section 736 of the Companies Act 1985.

3 Members' and Warehouse Companies' Obligations

Under the terms of the Conditions and Obligatory Procedural Notes for warehouse companies, a warehouse company is prohibited from revealing Confidential Information to other entities. This prohibition is an important part of the Exchange's rules and practices designed to ensure the orderliness of its market.

A member which encouraged or facilitated a warehouse company to breach these prohibitions would itself be in breach of its obligation to observe high

standards of integrity and fair dealing and high standards of market conduct under Regulation 9.6 of Part 2 of the LME's Rules and Regulations.

Equally, a member which took advantage in its trading of Confidential Information would be in breach of Regulation 9.6.

4 Members and Related Warehouse Companies

The risk that Confidential Information may pass between a warehouse company and a member is increased if they are both companies in the same group. A member must not unfairly take advantage of its group relationship with a related warehouse company by utilising Confidential Information in a way which would jeopardise the proper functioning of the metals market, or breach any of the Financial Services Authority's Statements of Principle, with which all members must comply, along with the LME's own Rules and Regulations.

It is essential that personnel engaged in trading activities do not come into possession of any Confidential Information. The LME considers that members will only be able to satisfy this requirement if appropriate procedures exist within both the member and the related warehouse company. Within the member itself, this will require that all personnel engaged in trading activities are made aware of the confidentiality procedures adopted by the related warehouse company to comply with the requirements set out in 5 below, and advised that if they inadvertently come into possession of any Confidential Information they must not trade on the basis of the information. Strict procedures as set out below must be put in place within the member itself to ensure these provisions are complied with.

5 Procedures to be followed

In order to ensure that Confidential Information is properly protected where a member has a related warehouse company, the Exchange will expect the member and the related warehouse company to put in place procedures which satisfy the following requirements:

A "Need to Know" Principle

Access to Confidential Information must be given only to those personnel whose responsibilities could not be carried out without such access. The LME expects related warehouse companies to organise their affairs in such a way that this number is kept to a minimum. This should be the case both for personnel within the related warehouse company and within the related member. Normally, for the related member, and even then only in exceptional circumstances, such information will be confined to common directors.

B Physical Separation

- i All Confidential Information must be kept in a secure location to which only authorised personnel have access. Access to unauthorised personnel must be effectively restricted (i.e. by locked door, security card, signing in and out procedure etc.).
- ii All Confidential Information held within a computer system must be accessible only by authorised personnel and be protected by a password. Passwords should be changed at regular intervals.

C Separation of Personnel

- i Related warehouse company personnel should be physically separated from the personnel of the member. Where they occupy the same premises, security access systems must be installed to prevent unauthorised access.
- ii It is obviously essential that personnel with access to Confidential Information do not also carry out any functions for the member, although the LME acknowledges that for strategic reasons it may be necessary for an employee of the member or related warehouse company to be a director of both that related warehouse company and a member. In these circumstances strict procedures must be put in place regarding board meetings etc, to ensure that no Confidential Information is disclosed by that director to other personnel of that member.
- iii Both the member and the related warehouse company must maintain a contemporary record of personnel sitting on each side of the "chinese wall".

D Employee Awareness

- i It is essential that related warehouse companies ensure that relevant personnel are familiar with the procedures adopted to comply with this Notice and abide by them. It must be impressed upon relevant personnel that their obligations apply both during and outside of office hours. Employees must be trained in the procedures adopted and reminded of their obligations on a periodic basis.
- ii Each employee who has access to Confidential Information should also be given a set of written procedures to follow.
- iii Relevant employees should sign acknowledgements that they understand and will adhere to the confidentiality procedures.
- iv Internal sanctions should be established for breach of the confidentiality procedures and strictly enforced. Depending on the nature of the breach, sanctions may range from written warnings to dismissal.

6 Senior Employee

Related warehouse companies will be expected to appoint a senior employee who will be responsible for ensuring that the confidentiality procedures adopted are effective and are followed. Members' own compliance officers will be responsible for ensuring that members adopt and follow fully compliant procedures. Ultimately however, the LME will look to directors of the member to put in place procedures designed to ensure compliance with the terms of this Notice.

7 Duty to Inform LME

A member which comes into possession of any Confidential Information, whether through an employee or any other related party such as a Non-Executive Director or consultant, and whether from a related warehouse company or otherwise (or which is otherwise aware of a breach of these procedures) must immediately inform the LME of that fact.

8 Discounted LME Warrants

A member with a related warehouse company which is operating a listed warehouse in a particular location may not sell or offer to sell LME warrants issued in respect of other listed warehouses in the same LME approved Location or within a 250 mile radius of the related warehouse company at a discount to the related warehouse company's LME warrants, unless it can demonstrate that it would have offered the same discount even if it did not have a related warehouse company. Subject to the above proviso, a member must not otherwise offer any incentive to customers to exchange or substitute LME warrants issued by a related warehouse company for LME warrants issued by any other warehouse company's listed warehouse in the same Location or within a 250 mile radius of the related warehouse company. Any member or warehouse company which is aware of any such sale or offer must immediately inform the LME of that fact.

9 Access to Warehouses

Personnel of a member with responsibilities for a related warehouse company may not inspect metal held on LME Warrant by that member at another warehouse.

10 LME Inspections

The LME intends to make periodic and thorough inspections of members' and related warehouse companies' procedures to ensure compliance with the provisions of this Notice. These inspections may be conducted by third party professionals appointed by the LME. The cost of these inspection visits and any subsequent action taken will be paid for by the relevant member.

11 Disciplinary Sanctions

Breach of these procedures by a member or a related warehouse company will be regarded as an act of misconduct and will result in disciplinary action and the imposition of a severe penalty.

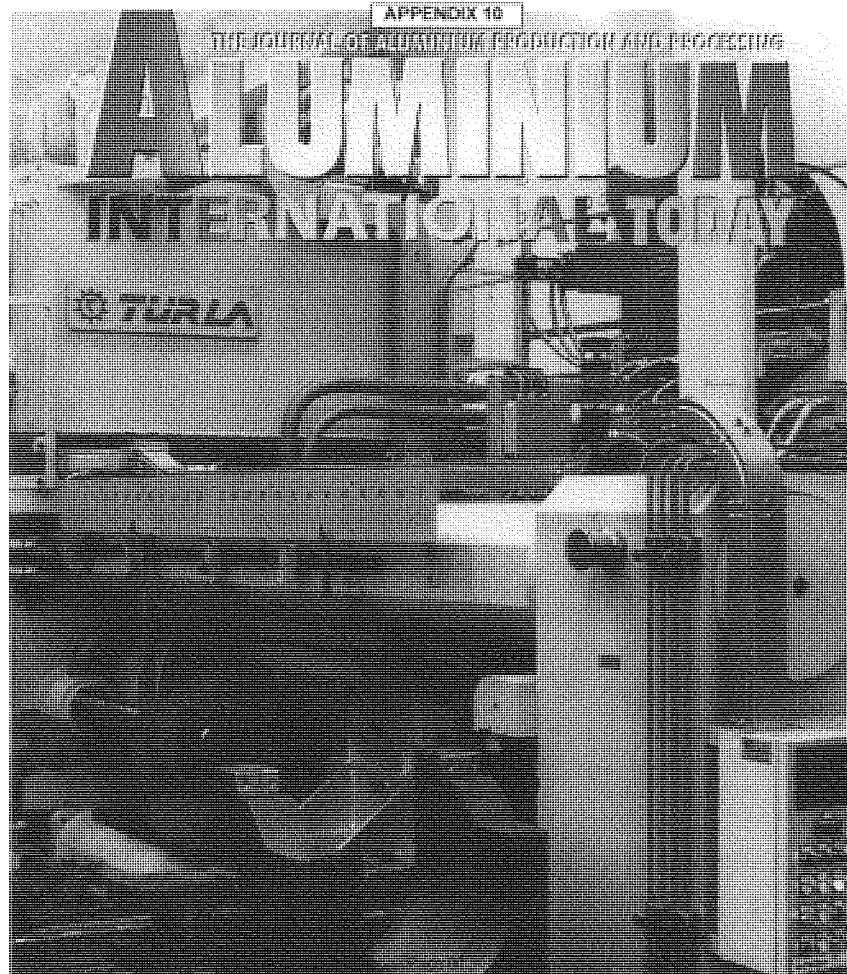
12 Review Procedures

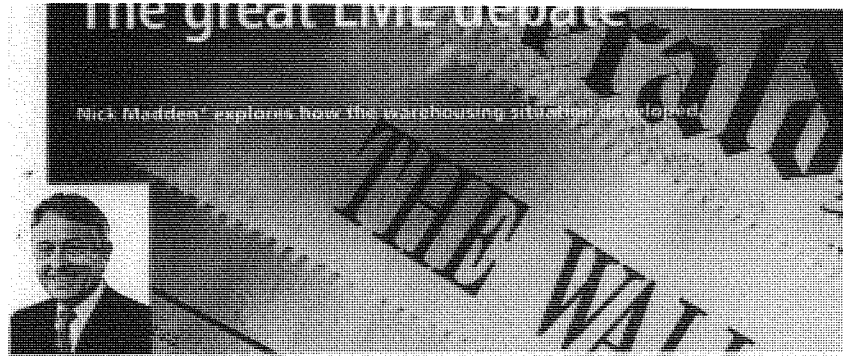


The new procedures will be strictly monitored and will be reviewed after one year to ensure that the new system is delivering fair and transparent trading relations and preventing the misuse of confidential and price sensitive information.

A WHITING

cc Board of Directors





In the last two years there has been a debate raging about London Metal Exchange (LME) warehouses, queues and inflated metal premiums. Consumers have publicly criticised the LME and called for sweeping reforms. Some producers have attacked these claims and sought to maintain the status quo. Lawsuits have been filed. The Senate Banking Committee, the Department of Justice, the Commodity and Futures Trading Commission, the Financial Conduct Authority and the European Commission have all been talking about the LME. An article in July on the front page of a Sunday edition of the New York Times talked about investment banks shuffling metal between warehouses in order to prop up the price of aluminium.

What has been going on? It's attempt to explain this issue from my own perspective. How did the warehousing situation develop?

The story begins in 2008 when the commodity boom ended abruptly and the financial crisis triggered a catastrophic drop in the aluminium price from \$3,300 to \$1,300 in the span of seven months. At the same time, we saw a 20% decline in global consumption of aluminium. World consumption (excluding China) dropped by five million tonnes, but primary production only fell by two million.

At the time, when there was such a significant oversupply, cutsbacks in primary production might have been expected. But this did not happen. With ultra low interest rates and a wide shortage, the opportunity belonged to stockpile aluminium and

Perhaps the most widely reported build-up was in Detroit. The metal was moving to Detroit because the LME-registered warehouse complex there had become the equivalent of a competitive buyer in the market. The warehouse company sought to lure aluminium onto their premises, gambling that the metal would remain in storage for a long time. They took a portion of the forecast metal that they would store and offered that as an incentive to primary producers. As the stockpile grew and the queue developed, the warehouse company was able to increase the incentive offered because they knew that the metal would be there for some time.

How did they know? Because the LME had rules which required the warehouse to ship a minimum of 1,000 tonnes per day, which increased to 2,000 tonnes per day on April 1, 2012. An analysis undertaken in January 2012 illustrated the captive rental income from metal stuck in the queue. (See Fig 1)

If Detroit had closed its doors to imports on January 31, still-shipped-out metal at the minimum loading rate until the warehouse warehouse it would have taken 2.5 years and the rent that would have been paid during that period by the owners of the stranded metal was estimated at \$230 million. This took into account the rule change in April 2012, which doubled the minimum load out rate for warehouses with more than 900,000 tonnes of stock. Certain warehouses treated this as a

What were the key problems?

#1: Inflated premiums

The ability of the warehouse to bid metal by offering incentives was the driver of the increase in the Mid West Premium from 7c/lb to over 12 c/lb at 2012 peak. And it quickly became obvious, especially to producers, that as long as the warehouse was bidding competitive numbers with the rising premium, provided an outlet for excess products thus keeping the market balanced, the premium was only able to reach the unbalanced levels because a complete different business model than conventional supply and demand drove the offer in the warehouse. The warehouse offer a fixed cash rental income and the more the metal would stay in storage, the performance was sustainable. Since metal stored in many other LME warehouses was locked in finance deals and the warrants were not in circulation. As a consequence in 2013, if a consumer wished to take metal out of the LME, would be offered far-flick incentives or no queue of warrant premiums, it reflected the already inflated market in the region. In Detroit for instance, a producer would join the back of the queue and rent, insurance and finance for 19 months while waiting for metal.

#2: Supply chain risk

One consumer visited the queue September 2011. The company had four lots in Detroit and waited five weeks until February 2012 for the metal to

Source: LME, The Times, 2012. Data courtesy of LME.

a serious problem for the supply chain, because although the aluminium is sitting in storage, it is inaccessible for this prolonged period. While most major aluminium consumers secure metal requirements on longer-term contracts, if a consumer wanted fast access to LME metal in response to a demand upswing, it was simply not accessible.

How high are the stakes?

One major consumer, MillerCoors in a US Senate banking hearing in July, talked about consumers over-paying for metal by \$3 billion per year. This number was an estimate of the artificial inflation of approximately \$120/t compared with normal premium levels; multiplied by non-Chinese annual production of about 25 million tonnes at the time. In reality, it was a conservative estimate. All metal outside China, including inventories in warehousing deals and scrap, was impacted by the higher premiums.

The premiums, such as the Mid West Premium and EU Duty Unpaid Premium are published in business journals such as *Platts* and *Metal Bulletin*. The prices are derived from surveys conducted by the publications on a daily basis to capture news of actual transactions taking place in the market. It can be a handful of transactions, which actually set the market price. These published prices are referenced in most supply contracts between producers, semi-fabricators and consumers. As a consequence, a very small volume of transactions sets the price for almost every contract in the region. This explains how the LME queue problem, and the consequent inflated premiums, can affect all metal flows in a region and ultimately in the world, leading to claims that consumers are paying \$3 billion too much for aluminium.

Who benefits?

Some believed that this windfall was going to the warehousing companies. This was not the case. They have a different business model, which benefits from rent earned on the metal in their warehouse.

In fact, the extra premiums go to primary producers. And if you want to know how much of the estimated \$3 billion goes to each producer, just multiply their primary production by \$120/t and it will give you an idea. For example for a non-Chinese producer of \$4 million tonnes, the windfall could be expected to be around \$480 million per year.

Aluminum User Group (AUG), formed in 2012. The AUG wanted the LME to overhaul the warehousing system and eliminate the queues quickly.

In July 2013, the LME responded to widespread criticism and published proposals to reform the warehouses and address the queue problem at locations with a queue of longer than 100 days. Their proposal sought to increase the minimum load-out rate of warehouses with long queues and introduced a mechanism to link the load-in and load-out rates to bring more equity between a warehouse's ability to absorb metal and to release it. The LME gave market participants three months to consider their proposals and provide feedback and ideas.

The AUG responded with a series of recommendations. At the heart of the AUG's feedback lay a simple concept. There should be no queue. When a buyer of any futures contract takes delivery and requests access to the asset, it should be immediately available. The AUG proposed that once a warrant is cancelled, the warehouse should not be able to charge rent after 30 days following cancellation. This would have a dual benefit of discouraging the warehouse from allowing a queue to develop through eliminating the rent, which it would earn, and would remove the driver of the incentive payment that drove up the premiums in the first instance.

The LME received feedback from over 40 market participants and finally released a reform package on November 7, 2013. Amongst the reforms, the new load out requirements would apply to warehouses with queues greater than 50 days, a reduction of 50 days from the initial proposals. Further, a new Physical Market Committee would be formed, a full warehouse logistics review would be held and delayed data on commitments of traders would be published. Through these changes, the LME sought to address the problem of the queues, market transparency and market representation. The new load-out arrangements become effective April 1, 2014.

How has the market reacted to the rule changes?

There is a reasonable consensus among consumers that the LME's changes seeking more equilibrium between a warehouse's ability to intake metal and the obligation to release metal make sense. But consumers do not believe that this should only apply to a warehouse with a queue of

changes to have an effect and there was little immediate reaction.

However, since the start of the New Year the Mid West premium has nearly doubled – moving from the 2013 peak of around 12 cents/lb to 21 cents/lb early in 2014.

On this occasion, the LME warehouse queues play only a small part. Some market players have accused the LME of "getting it wrong," implying that their rule changes have caused the spike in premiums. Of course, they have not. Since the announcement, we have seen an unprecedented cancelling of warrants as metal seeks to leave the warehouses, either to return to circulation in the free market or to simply be re-directed to a non-LME warehouse under another financing arrangement.

The recent spike has more to do with a very short-term shortage of metal in North America. With millions of tonnes of primary aluminium believed to be stored in stealth stock in unreported locations, recent producer cutbacks, a tight scrap market and an up tick in demand, along with the delay in accessing metal in LME warehouses, the market is simply short of spot physical metal. It has the appearance of an engineered squeeze because, despite an abundance of metal in storage, it can't be accessed freely and premiums are at astronomical levels.

However, the answer to this may be in these high premiums. With the Mid West Premium at \$450/t, metal is already being drawn from stocks in Europe. At the same time, it is not possible for the warehouses to compete with the premium at this level and those who are holding metal in stock will look seriously at liquidating it and taking the profits from the sky-high premiums. It seems that the premium has become over extended and should normalize in the coming months. However, many believe that it will be a long time before we see the Mid West Premium return to previous norms of four to seven cents per pound.

How can these issues be fixed permanently?

The LME is in a difficult spot. As LME officials stated when announcing the proposal back in July 2013, they could already see potential issues developing in the future. For example, when the market is in backwardation, and companies wish to deliver metal to satisfy their obligations, warehouses may refuse to accept large quantities simply because they do not

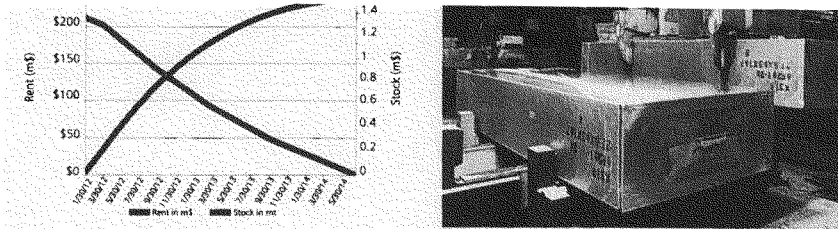
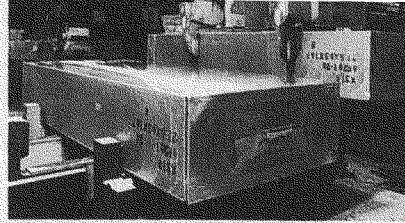


Fig 1 Detroit stock depletion and revenue (Q1 Jan 2012).



Aluminum ingots being prepared for rolling at Novelis plant in Oswego, NY

Why is this? There are players in the metal market who have an edge over regular physical users of the market. For example, certain banks may have LME brokerage, physical trading and warehousing operations and access to finance. Trading companies may not be LME brokers, but possess the other attributes and may offer OTC premium deals or fixed pricing on the back of their LME trades or physical books. The combination of multiple levers in the

market gives them an edge over other users and it is this edge that creates a conundrum for the LME.

No matter what the LME does, such market participants may look for gaps, flaws and loopholes in any new proposal and combine their levers to generate value for themselves at the expense of other market participants. This is the real issue.

It became clear over the last two years that warehousing and, more broadly, commodities are outside the normal scope

of the regulators. This is an enormous issue for consumers of commodities. This is what the LME has such difficulties in finding a silver bullet.

Because in this under-regulated market the players with all the levers have to many opportunities to generate value for themselves.

So what is the solution? Either increase the scope of regulation or prohibit financial institutions from participating in unregulated markets. ■



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APPENDIX 11



May 17, 2011

Mr. Martin Abbott,
Chief Executive
London Metal Exchange
56 Leadenhall Street
London, United Kingdom

Dear Mr. Abbott,

I would like to offer to you some observations related to the anomalous situation that exists in the physical aluminium market today and is a direct consequence of the LME warehouse load-out rules.

Novelis Inc. is the world's leading aluminium rolled products manufacturer and the largest buyer of aluminium, with 3 million tonnes purchased annually. The LME plays a hugely important role in our business. All Novelis contracts for sales and purchases include formulae which are based on the LME aluminium high grade price. We manage a significant hedging book with LME members, and at times we look to LME warehouses as a source of metal.

Novelis participated in the recent independent study into warehousing issues in North America and recommended a significant increase (on a tonnage basis) in the required output capacity of warehouses, with specific reference to Detroit. We applaud your initiative in conducting this review and look forward to a solution that alleviates the current bottleneck to the satisfaction of traders, consumers and producers.

There is no doubt that the Mid West and other regional premia are at all time highs since the introduction of aluminium warehouses in North America. We believe these high premia are a direct consequence of the bottleneck that has arisen in LME warehouses due to the limited output capacity required by LME warehouse load-out rules. It is otherwise very difficult to imagine that premia could be at historical highs when global inventory is also at an historical high.



The pain caused by the bottleneck issue is suffered by semi-fabricators who are struggling to source metal, particularly in North America, and by their customers who ultimately pay the high premia. At the same time, the producers are discouraged from supplying physical customers directly because every sale through the LME creates price advantages for them. The tightness created in the physical market causes premia to rise and that benefit is multiplied across their entire regional production system. As a consequence, the warehouse bottleneck is contributing to a migration of value from the consumers to the producers and warehouse companies. Without the elimination of the bottleneck, the impact on our supply chain will be intolerable. Accordingly we support the LME in its effort address this phenomenon.

At Novellis, we hope that the study will make clear that the warehouse bottleneck gives economic pricing advantage to producers and a disproportionate benefit to warehouse companies at the expense of consumers and creates significant price exposure and supply chain risk to the semi-fabricators and consumers, especially in North America. We hope that the LME will act quickly and decisively in line with the recommendations of the study and relieve the difficult situation that consumers are facing.

If you would be interested to discuss this further, I would be pleased to visit you or participate in a call.

Yours faithfully,

Nick Madden
Vice President & Chief Procurement Officer
Novellis Inc.

APPENDIX 12



August 19, 2011

Mr. Martin Abbott,
Chief Executive
London Metal Exchange
56 Leadenhall Street
London, United Kingdom

Dear Mr. Abbott,

I am writing to you for the second time regarding LME warehouses. For reference, my previous letter was mailed to you on May 17, 2011.

As you may know, Novelis is the largest buyer of aluminium in the world and a significant stakeholder in the market. In our May 17 letter, we strongly urged the LME to increase substantially the minimum load-out requirements to relieve the artificial market constraint in the U.S., specifically Detroit, where 25% of the LME's global stocks of aluminium are stored. In our view, the minimum load-out requirements have caused a bottleneck in the North American supply network, creating supply chain issues and leading to artificial upward pressure on the local market premium. The result has been historically high regional premia at the same time as LME stocks in storage were also a historical highs. This anomalous situation was entirely attributable to the minimum load-out requirements and has been causing a migration of value from consumers, on one hand, to producers and warehouse companies, on the other. In this way, producers are incentivized to ship discretionary metal to LME warehouses so that regional market supply remains tight and regional premia remain high in an over-supplied market. Warehouses also benefit, as increased storage of aluminium stocks under constrained load-out minimums translates to additional storage fees. As a consequence, the LME is contributing to market distortions that favor producers and warehouses to the disadvantage of consumers.

In June and July, the LME announced rule changes that increased the load-out requirements on a sliding scale. We applaud the LME for taking action and believe that this was move in the right direction. Nevertheless, the new minimum quantities are still too low and the implementation date of April 2012 is too late. Regional market premia have remained steady for near-term deliveries, despite the rule change.

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We write to you again because Novelis is deeply concerned that the bottleneck situation will not subside and is likely to become more severe over the next two or three years. While the LME took initial steps to alleviate the constraint in Detroit, aluminium stocks in Vlissingen increased by a staggering 200,000 tonnes overnight earlier this month. This phenomenon has now spread to the Zinc market (New Orleans), and we expect this effect to continue and to become more global.

The U.S. Federal Reserve Bank recently announced its intention to maintain short term interest rates close to zero until 2013. Coupled with a strong contango, this will encourage more and more warehousing deals that will absorb the projected excess primary production in 2011 and 2012. It is our expectation that LME stocks will continue to increase, warehousing capacity will be expanded and a supply reservoir will amass in LME warehouses.

While we do not question the motives of those who would own stored aluminium to generate income from cash and carry transactions, we are very concerned that warehouses have the ability to lure metal from producers using cash incentives. They can only do so if there is a reasonable certainty that the metal will be stored for sufficient time to generate a profitable return on the investment of the incentive. Since warehouse owners have a voice via the LME Warehousing Committee, they have the opportunity to influence the LME to maintain the status quo or at least limit the extent to which the minimum load-out requirements may be increased. By doing so, the warehouse companies have a detrimental impact on the functioning of the LME, which is exacerbated by the ownership of LME warehouses by members of the LME, such as Goldman Sachs and J.P. Morgan. We believe that LME members should not be allowed to own LME registered warehouses because we see a conflict of interests in the potential for undue influence (or, worse, manipulation) in both the physical delivery and metal warehousing functions of the market, as well as the rulemaking authority of the LME, which would directly affect the economic prospects of the warehouses.

We also believe that warehousing companies should not be allowed to make incentive payments to producers to attract metal for storage. The regional market premia are at an historically high level today because LME warehouses offer incentives which indirectly inflate local market premia. Producers have the option to ship discretionary (non-contracted) metal to physical customers, LME warehouses or not to produce it at all. The storage incentive offers from warehouses create a viable arbitrage option for the producers. The incentives themselves are entirely driven by the length of time the metal is expected to stay in the warehouse. In turn, the storage time in the warehouse is significantly affected by the load-out rate. If the rules were changed and warehouses were required to load-out pursuant to demand without any daily limit, matching their apparent ability to receive metal without any daily limit, there would be no opportunity for warehouses to skew normal supply-demand dynamics with incentives to producers and local market premia would reduce to a level that is consistent with an over-supplied market.

As we look ahead, Novelis is very concerned that the "anomaly" of historical highs in both tonnes of aluminium in storage and regional market premia will continue. If the LME allows these circumstances to persist, metal stocks in LME warehouses will continue to increase, creating additional serious risks that another, more significant, spike in premia will adversely affect the whole supply chain to the

detriment of consumers. To mitigate these risks, we strongly urge the LME to act quickly to discourage market manipulation by its members and stakeholders. Specifically, we would like to see the following:

1. Prohibit LME members from ownership of, or consortium relationships with, LME registered warehouse companies.
2. Prohibit incentive payments from LME warehousing companies to metal producers.
3. Increase minimum load-out rates as follows:
 - a. Where stocks are less than 300kt, increase minimum rate to 5kt per day.
 - b. Where stocks are greater than 300kt, increase minimum rate to 10kt per day.

Mr. Abbott, we must look ahead to the inevitable time when LME aluminium stocks are drawn-down. The current load-out requirements do not today and will not in the future allow for an adequate response to urgent demand from the physical market. In addition to liberating supply to meet market demand, the LME should address the ownership issues and incentives which create the opportunity for market distortions. The LME has the ability to address these complex issues with the three simple recommendations outlined above.

I did not receive a response from you to my previous letter and I read in the press that you had not received any formal complaints about the warehousing issues. Please consider this a formal complaint. The LME and its regulations are being "gamed" by market participants and this is distorting the market at the expense of consumers and, in the end, damaging the reputation of the LME.

I would like to meet you in person to discuss this further. We will both be in Paris attending the Metal Bulletin Conference in September, and I would be very pleased if you could find an hour in your schedule for a meeting. I will certainly make sure that I attend your presentation.

Yours sincerely,



Nick Madden
Vice President & Chief Procurement Officer
Novelis Inc.

European Economics Study

- Executive Summary**
- Recommendations**

*Executive Summary***1 EXECUTIVE SUMMARY****Introduction**

- 1 The London Metal Exchange (LME) commissioned Europe Economics to "Prepare an independent assessment for the LME of whether the current requirements in the LME warehouse contract for rates of physical delivery out are satisfactory." The Steering Committee for the project comprised LME Chief Executive Martin Abbott, Deputy Chief Executive Diarmuid O'Hegarty, and Head of Physical Operations Robert Hall.
- 2 Current LME regulations require approved Warehouses to be able to deliver out a minimum tonnage per day, which is 1,500 tonnes per day for Warehouses with space of 7,500 square metres or more (currently all but three Warehouses), 1,200 tonnes for 5,000 square metres and 800 tonnes for 2,500 square metres. In 2010 there were a number of complaints regarding delays to the delivery out of metal and the loading out process more generally.
- 3 This report covers the background to the emergence of long queues and the context of current regulations, in addition to an analysis of the problems that long queues cause and potential solutions. Broader issues surrounding allegations of manipulation and the entrance of large financial players are beyond the scope of this report.
- 4 The foundation of the study was information gathered in a programme of 46 interviews, including visits to 12 Warehouses in Europe, Asia and North America. The focus of the study is the aluminium market.

Background

- 5 Between March 2009 and August 2010 18 complaints were made to the LME about delays in loading out. Ten informal complaints were made in the period between March and April 2009 concerning Warehouses in South East Asia. Of these, only four related directly to delivery out and none was indicative of any systemic problem.
- 6 Eight complaints, one of which was made formally, related to Warehouses in the United States and, with the exception of one informal complaint in July 2009, were made in the period from February to June 2010. Three of the informal complaints concerned the performance of the Warehouse delivery out system as a whole. The formal complaint alleged that a Warehouse in Baltimore was not scheduling deliveries sufficient to achieve the 1,500 tonne per day minimum.
- 7 In the course of our consultation, stakeholders generally agreed that some queues were an inevitable part of the system, and that short queues did not pose an important systemic problem. Long queues were regarded as damaging, on the grounds that they inhibited arbitrage between the LME and the physical market, increased physical premiums and damaged the reputation of the LME.

Executive Summary

- 8 There was a general belief that the loading out obligation could and should be increased, though this was resisted by warehousemen. It was widely acknowledged that the loading-out rate should be considered in relation to the level of stocks in a Warehouse.
- 9 Although there was some interest in the idea of rent rebates, they were not seen as in themselves an effective way of reducing queues or of addressing their effect on the price discovery mechanism.

Problem Analysis

- 10 The longest queues that occurred in 2010 were of an unprecedented length, but were confined to limited to a small number of warehouses. Nevertheless, due to the large number of stocks in particular locations these queues affected approximately one fifth of the LME's aluminium warrants.
- 11 Queues may inhibit the LME's price discovery process by preventing arbitrage. Queues make arbitrage more costly because rent must be paid while metal is in the queue, because the length of queue is uncertain, and because of other uncosted inconvenience. In effect, this lowers the value of warranted metal in relation to the value of physically delivered metal.
- 12 This may be damaging to the price discovery process because this reduction in value is a result of warrant cancellations and LME loading out requirements, rather than a result of developments in the physical market. Changes in the LME price will then be related to changes in queue lengths, as well as to physical supply and demand.
- 13 While the effects of a short queue are likely to be trivial, long queues may have a significant impact on the value of warranted metal. This is of particular concern because any warrants whose value is significantly lowered will be used to settle Exchange contracts, and thereby set the LME price.
- 14 It is for this reason that persistently long queues are especially concerning. With sufficiently large stocks, which need only leave the Warehouse at a rate of 1,500 tonnes per day, the Warehouse's revenue may allow it to pay high enough incentives to maintain or increase its stocks, and these warrants, being both the most numerous and the least valuable, will come to dominate the settlement of contracts on the Exchange.
- 15 These arguments are supported by empirical evidence, which shows that premiums have increased in conjunction with the emergence of long queues, and that spreads have moved in conjunction with changes in the length of queues. They are also supported by the observations of some stakeholders that premium levels are greatly in excess of the cost of arbitraging between locations.
- 16 The origins of the current situation can be traced to macroeconomic developments. The collapse in demand that followed the financial crisis of 2008 resulted in a large surplus of physical metal and a consequent expansion in the LME's stocks. In response to the demand contraction monetary policymakers lowered interest rates.

Executive Summary

- 17 Although it was frequently alleged that finance deals constrained the supply of warrants and decreased liquidity on the Exchange, this argument is implausible because any shortage of warrants would result in a backwardation and either result in the creation of new warrants or induce other warrants out of rent deals. Nevertheless, finance deals do affect the distribution of cancellations among warehouses, resulting in a concentration of cancellations in those Warehouses that do not engage in finance deals.
- 18 When large amounts of metal are financed, movements of metal on and off warrant will be governed by changes in spreads, as institutions try to cut their cost of carry by moving metal off the LME during a prolonged contango, and put metal onto warrant in order to sell cash contracts during a backwardation. Given the large positions that some financial institutions can take, this had led to the large volumes of cancellations that are a necessary condition for the emergence of long queues.
- 19 However, large cancellations are not a sufficient condition for long queues. Rather, such queues result from large cancellations in particular Warehouses, each of which need not load out more than 1,500 tonnes per day. The potential for this to occur is a result of the accumulation of large stocks in individual Warehouses. The fact that the largest Warehouses can allow their Warrants to float at full rent makes such cancellations all the more likely.
- 20 Although it was argued that an increase in physical demand would reduce the size of the largest LME warehouses, thereby reducing queues, the amount of metal in the largest would take more than two and a half years to empty. Moreover, given the size of incentives that a large Warehouse can afford to pay, there is no reason to believe *a priori* that these Warehouses would not be able to maintain their stock levels. Indeed, as physical demand picked up and cancellations occurred for physical consumption, it is conceivable that queues could worsen.

Policy Options

- 21 The LME's five main policy options to address this issue comprise: capping particular locations; increasing the loading out requirement for all Warehouses; increasing the loading out requirement for larger Warehouses, in order to eliminate the critical mass feature of current regulations; extending the current loading out table proportionately beyond 7,500 square metres; and inviting Warehouses to offer rent rebates.
- 22 The capping provision in the LME's regulations was not envisaged as a routine method of controlling stocks and on the one occasion it was used, this to address the accumulation of a large volume of metal in a location on the West coast of the United States, which was seemingly immobile due to a lack of demand. Moreover, the idea of setting an absolute limit to the level of stocks in a location goes against the principle that the LME's stocks should expand and contract freely in order to reflect the physical market.
- 23 While some stakeholders advocated an increase in the loading out requirement for all Warehouses, it was clear that this was already at the limit of what was consistently

Executive Summary

achievable for some small Warehouses. Indeed, 2,000 tonnes per day was seen as the limit of what most Warehouses could consistently achieve.

24. A 2,000 tonne per day loading out rate would not succeed in eliminating long queues and, on the basis of the observed pattern of cancellations, would still have left queues of up to 54 days in 2010. Moreover, since queues are confined to a small number of Warehouses, this option would impose an unnecessarily large operational cost (an estimated upper bound to which is \$66.4 million in 2010) on the whole Warehousing industry, which would probably be passed on to warrant holders in the form of increased rent or FOT charges.
25. Implementing a loading out requirement of 1,500 tonnes per 300,000 tonnes of stock would affect many fewer Warehouses than a general increase, and the upper bound to its operational cost to the whole industry is calculated as \$9.3 million for 2010. However, while it would probably succeed in eliminating indefinitely long queues, it would still leave open the possibility of long, albeit transitory, queues, when Warehouses experienced a sudden large cancellation.
26. As this option would make it more difficult for the largest Warehouses to maintain their stock levels while floating their metal at full rent, it is likely that it would result in a more even distribution of cancellations across Warehouses.
27. Eliminating all long queues would require much more stringent loading out requirements than either an increase to 2,000 tonnes per day or a requirement of 1,500 tonnes per day per 300,000 tonnes of stock. Current requirements for Warehouses whose authorised space is below 7,500 square metres constrain queues to 19 warehouse days, on the assumption that one square metre of space may store three tonnes of metal and if all warrants were cancelled. (It should be noted that only three Warehouses' space is currently less than 7,500 square metres.) Rounding this up to 20 days would imply a loading out requirement equal to stock level divided by 20.
28. Given current stock levels, the loading out requirements that such a regulation would imply are beyond what is physically practicable. For example, at 1,000,000 tonnes of stock (less than the current maximum) a Warehouse would have a loading out requirement of 50,000 tonnes per day. Moreover, even if such amounts were physically possible, the extra operational costs involved (estimated at a minimum of \$255 million for 2010) apply across so many Warehouses that they would result in large increases in rent and/or FOT charges, which the Warehousing system, as presently configured, might be unable to support.
29. Offering rent rebates equivalent to half rent for metal caught up in queues between 10 and 20 days, and zero rent beyond 20 days would cost the Warehousing industry as a whole \$14.9 million in 2010, on the assumption of 40 cents rent and the observed pattern of cancellations. However, there are some doubts about the feasibility of this option.

*Executive Summary***Recommendations**

- 30 We do not recommend that the LME take no action, as the present loading out regulations are permitting queues of an undesirable length.
- 31 A universal increase in loading-out requirements would impose large costs across the Warehousing industry without eliminating long queues.
- 32 Rent rebates could address some aspects of the problem, though they are subject to significant feasibility issues which could hamper their effectiveness. We therefore recommend that this option be subject to further discussion.
- 33 A loading out requirement of 1,500 tonnes per 300,000 tonnes of stock would address the most acute problem, the persistent queue in a critical mass Warehouse. Moreover, this would be done without imposing a large burden on Warehouses.
- 34 Although this option also improves on current regulations by putting an upper bound to queue lengths, at 200 days this is still longer than desirable for the LME system. It is therefore recommended that the requirement of 1,500 tonnes per 300,000 tonnes of stock be formally reviewed at intervals of 6 months, and the level of stocks to which the 1,500 tonne delivery requirement applies be reduced should persistent and lengthy queues continue.

Recommendation to the LME Board Following Warehouse Study



LONDON METAL EXCHANGE

To: All Members, Warehouse Companies and London Agents

Ref: 11/141: A135 : W092

Date: 27 May 2011

Subject: **Warehouse Study by Europe Economics**

The Europe Economics report "Assessment of Warehouse Minimum Loading Out Rates" has been considered by a steering committee of the Executive together with the Independent Directors of the Exchange. A recommended course of action will be presented for a decision to the Board of LME Limited at its meeting on 16 June 2011.

The report is extremely detailed and contains a great deal of proprietary information that makes it impossible to publish the full version. However, the executive summary and the recommendation section from the Europe Economics report are attached to this notice and will be published on the LME website.

The decision to commission the report was taken because the LME recognised the concerns of various sectors of the industry with regard to the existence of long waiting times for the delivery of aluminium out of LME listed warehouses in North America.

It should be noted that this issue currently is specific to aluminium and to one location; the LME does not have a systemic issue with its warehouse network.

The mechanisms and systems that the LME approves are subject to the various pressures of the economic cycle, and that means that different problems will arise at different points in the cycle. The current LME procedures have developed over a long period in response to market requirements. It is desirable that the LME approves procedures that are capable of dealing with different circumstances with the minimum of change, but it is also necessary to recognise the impossibility of designing 'one-size fits all' regulations.

Market participants will recollect that only two years ago the North American aluminium industry was facing a major recession with the apparent collapse of its major automotive customers. At that time the concerns of the industry were all centred on the need to deliver material into warehouse, with dire warnings about the consequences for the LME should there be a capacity constraint that affected the free flow of surplus material onto warrant.

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LME.COM



We now find that the major concern of that same industry (and in some cases, the same participants) is the ability to take material out of warehouse. It is not surprising that there should be some tension created by such a rapid journey between the two poles of the aluminium economic cycle. We also note that the situation has been exacerbated by the coincidental availability of surplus aluminium with the widespread policy of central banks holding down interest rates and creating a pool of cheap money that increases the attractiveness of financing deals and in turn increases the pressure for fiscally-motivated stock movements. We do not make value judgements about the different motivations for warrant cancellation, but we do note that the system is under pressure as a result of some extraordinary factors.

The challenge for the LME is therefore to manage its warehouse regulations in such a way that the changing nature of the business environment can be managed within a relatively stable mechanism. It must also be recognised that there are consequences to all decisions (often leading, among other things, to higher costs) and that all actions must be viewed, as far as is possible, with a long term perspective.

The Europe Economics report contains a number of policy options that might appear to address the situation under review. The LME agrees with the authors of the report that the capping of storage capacity in particular locations is not consistent with the LME's general policies.

The report suggested that the implementation of rent rebates for material that is 'stranded' in a queue should be the subject of further discussion, though it noted that there are significant feasibility issues with this option. The LME believes the feasibility issues do indeed outweigh the advantages of this option.

The option of a significant increase in loading out rates across all warehouses is also not attractive. The increased cost of such an approach would impact all warehouses and therefore all users of the market and might simply create a new generation of problems.

The LME does agree that there should be a link between the amount of metal stored in a company's warehouses at a location and the minimum load out rate. The current regulation has a sliding scale of load out minimum rates, rising to an upper level of 1,500 tonnes per day. The scale is based on the total storage capacity that the company has in the location.



We are recommending to the Board of the LME that the sliding scale be changed. If the Board approves the recommendation then the load out requirement will be linked to the amount of metal stored rather than the storage capacity and the new scale will be as follows:

Warehouse company's tonnage stored per location	Minimum delivery out
Up to 300,000 tonnes	1,500 tonnes
300,000 to 600,000 tonnes	2,000 tonnes
600,000 to 900,000 tonnes	2,500 tonnes
More than 900,000 tonnes	3,000 tonnes

(The daily delivery rate does not include deliveries out for cobalt and roasted molybdenum concentrates: any deliveries out for these metals must be made in addition to the rates stipulated in the table above.)

The changes would be effective from 1 April 2012. The date has been chosen to give ample time for the warehouse companies to prepare for the new regime and for the market to digest the consequences of the change.

A handwritten signature in dark ink, appearing to read 'M. Abbott', with a stylized flourish at the end.

Martin Abbott
Chief Executive

cc: Board directors

APPENDIX 14

LME rule disappoints aluminium consumers

The Financial Times

By Jack Farchy

July 15, 2011

Some of the world's largest buyers of aluminium reacted with disappointment on Friday to a long-awaited decision by the London Metal Exchange to change its warehousing rules.

General Motors, one of the world's largest automakers, and Novelis, a leading aluminium processor, told the Financial Times that the LME's move to double the rate at which the largest warehouses must deliver metal did not go far enough.

The controversy has sparked a fierce debate in the metals community, pitching consumers against Wall Street banks and traders who own warehousing companies.

The consumers, along with several traders, banks and metal producers, argue that long queues to take delivery of aluminium, used in the manufacture of everything from drinks cans to cars and aircraft, have driven up the cost of metal in the physical market.

The debate is focused on Detroit, where some 200,000 tonnes of aluminium are waiting to be delivered from warehouses owned by Goldman Sachs.

Current LME rules stipulate that warehouses must deliver at least 1,500 tonnes of metal out each day – meaning a trader requesting delivery of their aluminium today could wait more than six months to receive it.

On Friday, Martin Abbott, chief executive of the LME, announced that the exchange would increase the minimum loading out rate for the largest warehouses to 3,000 tonnes a day, starting in April next year.

But Nick Madden, chief procurement officer at Novelis, which supplies companies including Coca-Cola, BMW and Tetra Pak, said he was "disappointed" that the LME had made only a "relatively minor adjustment to this critical problem".

"We believe a higher [load-out] rate is necessary," Mr Madden said. "We are also concerned that this change will not take effect until April 2012. This unnecessary delay will prolong anomalous pricing and supply chain issues for both manufacturers and consumers in the market."

Kevin Moore, senior manager for raw materials purchasing at GM, said the changes were "welcome", but added: "Unfortunately, many in the market have indicated to us that the rule changes are not likely to result in significant improvement."

"LME aluminium price and availability does not appear to be acting in according with natural market forces resulting in a less effective pricing tool and hedge mechanism," he said.

The decision by the LME was in line with an earlier proposal, which the LME's board failed to ratify at a previous meeting in June as several board members pushed for a higher load-out rate.

After an all-day meeting on Thursday, however, the LME agreed the new rules. Mr Abbott said the effectiveness of the changes would be kept "under constant review".

He said that he shared the concerns of metal consumers, but argued that a larger increase in loading out rates would not be possible because of "insurmountable logistical issues", including a "critical shortage of trucks" in the US Midwest.

"We do not make rules that cannot be kept," he said.

The change of rules could affect the profitability of warehouse owners, whose revenues are dependent on the amount of metal they hold. Warehousing has traditionally been a niche business dominated by privately owned companies, but in the past two years large banks and trading companies, including Goldman Sachs, JPMorgan, Glencore and Trafigura, have been buying up warehouses.

Barclays Capital is also considering investing.

LME warehouse load-out proposal not enough: US aluminum sources

Platts

June 2, 2011

Proposed recommendations by the London Metal Exchange to increase load-out rates by next April is too little, too late, as the market's landscape may be vastly altered over the next 10 months, according to US aluminum market players.

The LME on March 27 said its board would consider a recommendation to amend load-out rates at LME-registered warehouses after an independent consultant made its recommendations.

At a June 16 meeting, if the LME board agrees, the load-out requirement will be linked to the amount of metal stored, rather than the square meter storage capacity.

The rate will be set at a minimum of 1,500 mt/day for up to 300,000 mt stored; 2,000 mt/day for 300,000-600,000 mt; 2,500 mt/day for 600,000-900,000 mt; and 3,000 mt/day for more than 900,000 mt. The changes would be effective from April 1, 2012, thus allowing "ample time for the warehouse companies to prepare for the new regime and for the market to digest the consequences of the change."

The current regulation has a sliding scale of load-out minimum rates, rising to an upper level of 1,500 mt/day, for warehouse storage capacity of 7,500 meters/location.

Vast stock build-ups in certain warehouse locations, prompted in part by storage incentives paid by warehouse companies -- currently \$140-150/mt for aluminum in Detroit -- have led to accusations that the system is being distorted and that there are clear conflicts of interest now that a number of trading companies and financial institutions -- Goldman Sachs, JP Morgan, Glencore, Trafigura -- have acquired warehousing companies in the past 12-18 months.

As of June 2, there was 4.69 million mt of aluminum in warehouses -- 1.1 million of which was in Detroit alone -- up from 4.2 million mt in January and 4.5 million mt a year ago. Lead times to get metal out of Detroit are now nine months.

US aluminum market players have voiced concern over the long lead times to get metal out of US warehouses, particularly in Detroit. Market players said it will take until February/March 2012 to get metal out of Detroit. That is up from six months in February and from only two months in June 2010.

These complaints spurred the LME last year to hire Europe Economics to study the issue and make its recommendations.

Nick Madden, vice president and chief procurement officer for US aluminum sheet maker Novelis -- one consumer that wrote the LME pleading for changes -- said he was "very disappointed" with the proposed minimum output requirement, calling it "insufficient."

Further, he said, not implementing the change until 2012 "will simply prolong the pain being felt by consumers in North America. My preference would be to see the minimum requirement trebled for warehouses with stocks over 600,000 mt and to see the change take place immediately."

Madden previously told Platts that the aluminum supply chain would be at risk if the situation continued and suggested the LME consider increasing the load-out rates to 10,000 mt/day, among other options.

An extruder said he did not understand why it would take warehouses 10 months to get prepared for the changes when all they have to do is "hire staff and get a few more tow trucks."

A trader agreed and suspected the LME Board would agree to the recommendations "as a gesture. The warehouses will ship out a little more, but I don't think it's a significant change. They needed to do more."

A billet remelter said the potential increased load-out rates could have the opposite effect than was intended and spur an increase in warehouse stocks as "warehouses [owners] may want to buy more to make up for what they are losing with the load-out rates increasing. We are talking about banks and profits."

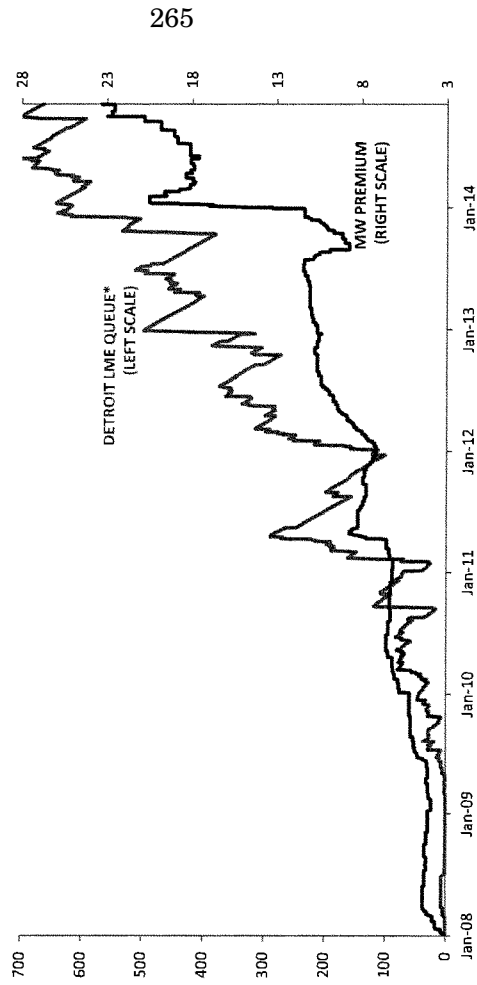
One trader said that although consumers think the recommendations are not enough, even just doubling the load-out rates could cost them more money. He said warehouses will need more revenue to be able to double the load-out rates. The trader said the current FOT rate in Detroit is \$33/mt, and the rent rate is 41 cents/mt/day.

Noting that deals "will be priced reflecting the logistical issues of getting trucks," he said the result could be that "metal will come out sooner, but consumers will be paying the same amount of money as if they waited nine months."



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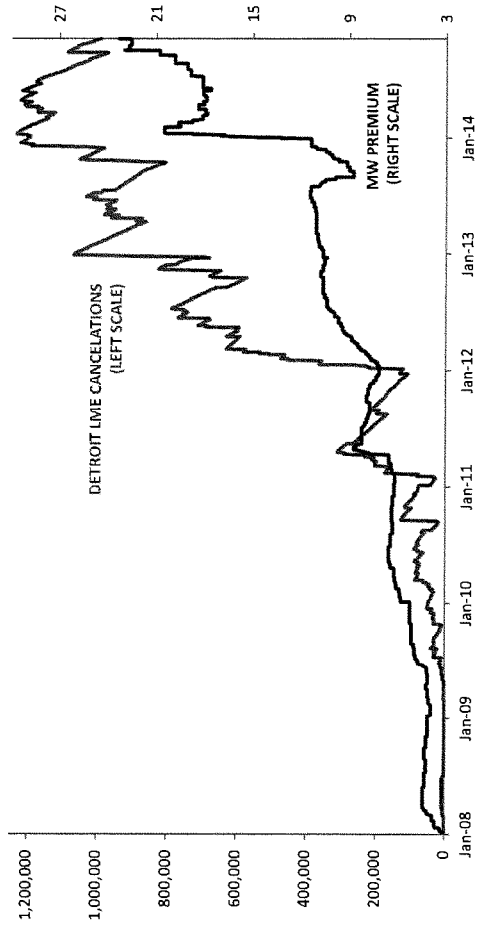
MIDWEST P1020 TRANSACTIONAL SPOT PREMIUM VS
ESTIMATED LME LOAD OUT QUEUE IN LME DETROIT*
(cts/lb vs calendar days; daily data)



*HARBOR's estimate
Source: HARBOR Aluminum and LME data on queues for the last day of each month from April 2014 to date



**MIDWEST P1020 TRANSACTIONAL SPOT PREMIUM vs
DETROIT LME PRIMARY ALUMINUM CANCELLED WARRANTS**
(cts/lb vs mtons; daily data)

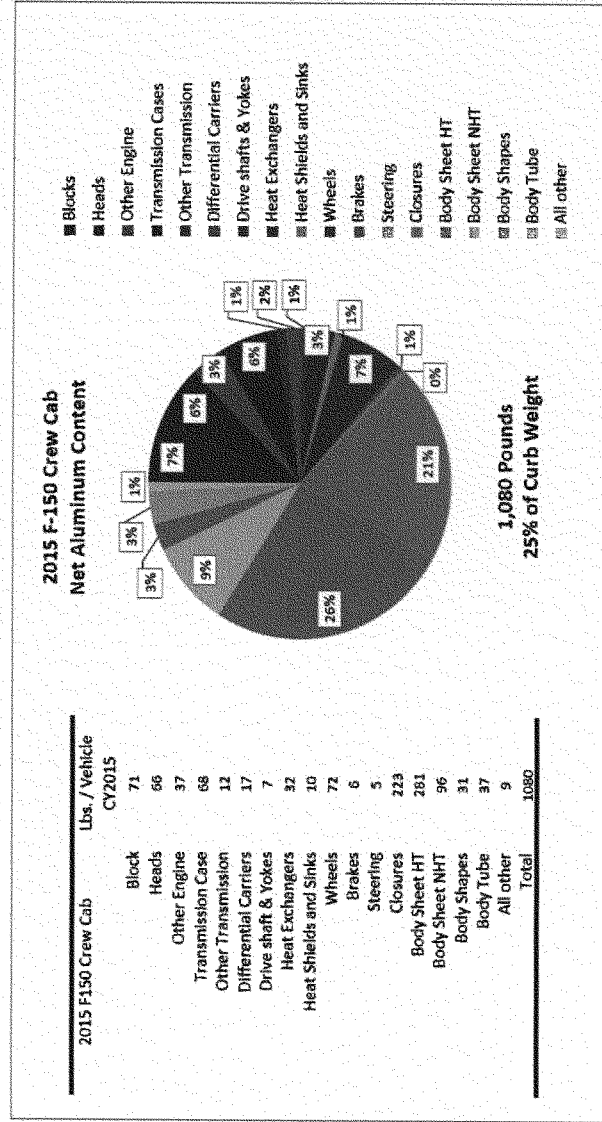


Source: HARBOR Aluminum and LME data for Detroit cancellations

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The 2015 Ford F-150 will have over 1,000 pounds of net aluminum content, or approximately 25% of its curb weight



**HEARING BEFORE THE SENATE PERMANENT
SUBCOMMITTEE ON INVESTIGATIONS**

November 20, 2014

Testimony of Simon Greenshields
Global Co-Head of Commodities, Morgan Stanley

Chairman Levin, Ranking Member McCain, and Members of the Subcommittee, thank you for the opportunity to be here today on behalf of Morgan Stanley. My name is Simon Greenshields. Since 2008, I have served as the Global Co-Head of Commodities for Morgan Stanley, along with my Co-Head Colin Bryce. I am proud to have worked at Morgan Stanley for the last thirty-two years, where we have built and managed a leading commodities business that for decades has provided liquidity to markets and met the business needs of our clients and counterparties.

We appreciate the Subcommittee's interest in the role of financial institutions in the commodities marketplace. We share your commitment to ensuring that financial institutions effectively manage the risks of commodities businesses and participate in competitive markets that have appropriate safeguards against manipulation. Institutions must also be transparent with regulators and responsive to their concerns. At Morgan Stanley, prudent risk management and transparency with our regulators are among our core values. Morgan Stanley is also committed to mitigating the environmental risks that it may face as a firm, and it encourages its clients to do the same. We expect all of our employees to meet the high standards of conduct that we and our regulators demand. I am particularly proud of the team that we have assembled in Morgan Stanley's Commodities Division, who are among the most experienced and dedicated professionals in the industry.

The Subcommittee requested that I speak to a number of topics, each of which is addressed briefly below to the best of my ability. I also understand that a number of my colleagues at Morgan Stanley have prepared written submissions and visited with your staff on multiple occasions to provide additional details and information of interest. We have sought to cooperate fully with the Subcommittee's inquiry.

I. Overview of the Commodities Division

Since 1982, Morgan Stanley's Commodities Division has been active in the physical and financial commodities markets. Morgan Stanley's commodities business is designed to provide a broad spectrum of price risk management and physical supply services needed by commodities market participants. Morgan Stanley provides integrated services, including financing, credit risk management, and physical supply solutions, in a cost effective manner.

Among other things, Morgan Stanley facilitates private sector investment in, and development of, critically-needed domestic energy supplies. Energy developers, for instance, use Morgan Stanley's commodities services in order to manage proactively fuel costs and projected revenue streams. The ability to better manage commodity prices fosters confidence among potential

lenders to extend credit—and lowers the cost of credit—which encourages energy developers to undertake necessary infrastructure improvements.

For example, during the past year Morgan Stanley's commodities business has helped renewable energy producers develop wind farms and harness solar power. By providing risk management services, Morgan Stanley facilitated the development of over 795 megawatts of new wind generation in Texas. In addition, Morgan Stanley helped to finance the development of over 20 megawatts of commercial and residential solar power projects throughout the United States.

Due to constantly changing supply and demand in the economy, commodities prices can fluctuate substantially. Moreover, the liquidity of commodities markets varies by commodity type, location, and time horizon. As an active participant in global commodities markets, Morgan Stanley has developed the expertise and judgment necessary to price risk effectively for physical transactions as well as swaps and futures. Clients and counterparties depend on the participation of large liquidity providers like Morgan Stanley to serve as a bridge between producers and end users of commodities that typically have different transaction goals in terms of price, quantity, location, and timing.

By owning some physical inventory, Morgan Stanley has been able to meet the demands of its clients whose businesses require that they transact in the physical market. These clients may not have the means to fulfill their physical supply requirements economically and efficiently, or they may not have the right infrastructure in the right locations, or they may have difficult-to-address seasonal or cyclical requirements. Ownership of physical commodities also facilitates participation in the derivatives market, where contracts may be settled by physical delivery. Our ability to participate in both the physical and derivative markets has enabled Morgan Stanley to provide clients with customized solutions to their price risk management and supply needs.

In light of changing market conditions and evolving regulatory expectations, we are seeking to focus our commodities business on its core strengths—providing clients with intermediation, risk management, and supply services. One outgrowth of our focus is our decision to sell our global physical oil merchanting business, discussed in more detail below. We understand that this is an area of interest for the Subcommittee and I look forward to answering your questions.

II. Risk Mitigation

Morgan Stanley is proud of its comprehensive approach to risk management, which has enabled the Firm to manage its commodities business prudently and effectively over the last three decades. Nevertheless, we recognize that past successes are no guarantee against future concerns, and we are always open to new ideas about how to better manage the risks inherent in our business activities.

Morgan Stanley's Commodities Division mitigates risk in a number of ways. For example, Morgan Stanley has protocols in both its business units and control groups to manage the risks associated with physical commodities activities. We also have a robust risk management framework through a Physical Operating Risk Steering Group ("Steering Group"), which monitors risk across various product groups. The Steering Group meets weekly and reports to my Co-Head and me. Its work includes assessing operational risk measures and standards,

recommending operational risk policies, reviewing and evaluating significant physical operating risk developments, and monitoring physical operating risk procedures.

In addition to the Steering Group, the Firm's Operational Risk Department conducts monthly operational risk review meetings, which also include representatives from the Fixed Income and Commodities Non-Market Risk Team, Commodities Chief Operations Officers, Operations, Controllers, Compliance, Information Technology, Market Risk, Credit Risk, and Internal Audit. The meetings are used to discuss current operational risk issues. Moreover, proposals to undertake new business activities are vetted by the New Product Approval Committee, which includes a broad range of experts, including members of operational risk, compliance, legal, insurance, and corporate treasury. Projects that may expose the firm to reputational risk are submitted to the Franchise Risk Committee, which is comprised of members of senior management from relevant divisions of the Firm. Depending upon the nature of a proposed activity or investment, the proposal may be required to be reviewed by a number of additional committees as well as be subject to various policies and procedures.

We are also keenly focused on efforts to measure operational risk as part of the Firm's risk management framework. The Operational Risk Department uses an exposure-based model for internal risk management calculations relating to physical commodities activities of the Commodities Division. This model creates simulations to estimate hypothetical losses. Morgan Stanley uses these calculations to manage operational risk by, among other things, maintaining insurance in excess of simulated losses and taking a prudent approach to meeting its capital requirements. Morgan Stanley's Risk and Insurance Management Department is responsible for the placement and management of the Commodities Division's insurance program, working with insurance brokers to ensure that the business has appropriate insurance coverage. The Department analyzes and reviews the Commodities Division's exposure related to ownership of physical commodities and assesses potential liability and risk using internal information as well as industry information and data.

Morgan Stanley believes that appropriate safeguards for financial institutions' involvement in physical commodities markets can reduce risks and promote market efficiency and security. Whether a financial institution is engaging in complementary commodities activities, merchant banking commodities investments, or grandfathered commodities activities, the common element that should apply to all of these activities and investments is the obligation to conduct them in a safe and sound manner through a robust risk management framework. In this regard, Morgan Stanley agrees with the general proposition stated by Chairman Levin in response to the Advance Notice of Proposed Rulemaking issued by the Board of Governors of the Federal Reserve System earlier this year, namely that a rulemaking should establish requirements for strong prudential safeguards for all physical commodities activities, whether under complementary, merchant banking, or grandfather authority, to prevent undue risks and unsafe or unsound practices. Financial holding companies should also be required to maintain capital and insurance at levels informed by operational risk models that are subject to review by the Federal Reserve. Regardless of the authority under which a financial holding company conducts a physical commodities activity, it should be conducted in accordance with sound risk management principles and with adequate capital and insurance coverage. Morgan Stanley also supports the comment that the rulemaking should propose more detailed reporting obligations to ensure that

the Federal Reserve is fully aware of all physical commodities activities undertaken by the financial holding company.

We recognize that risk can never be eliminated entirely, and that reputational risks in particular can be difficult to quantify. Our managers are expected to remain mindful of this, and are also expected to be fully transparent with our regulators, so that they can understand and be in a continuous dialogue with us about our risk profile. We believe that the staff of the Federal Reserve and our other regulators have a robust understanding of our business, and we very much value their direction and feedback. Ultimately, with respect to any business activity at Morgan Stanley, if we conclude that something involves risks that we do not fully understand or cannot appropriately mitigate, we will not undertake that activity.

III. Natural Gas and Oil Liquids Activity

Two wholesale commodities markets in which Morgan Stanley has been an active participant for many years, and in which the Subcommittee has expressed particular interest, are natural gas and oil liquids. In these sectors, Morgan Stanley's Commodities Division participates in the physical markets as well as the markets for associated futures and swaps.

A. Natural Gas

Morgan Stanley has been active in the wholesale natural gas market since 1989. In this market, we serve our clients' physical natural gas requirements and provide liquidity to the market.

Wentworth. Morgan Stanley recently formed Wentworth Gas Marketing LLC in order to provide natural gas to emerging Caribbean markets by leveraging a process that allows for more efficient shipping of compressed natural gas. The Wentworth business, which is not yet operational, is designed to deliver a cleaner and less expensive source of fuel to power generators and meet the needs of commercial end users for reliable natural gas supplies. The U.S. Department of Energy recently approved the Wentworth project. Although Morgan Stanley has created an initial structure and model for this project, we are actively exploring a sale of Wentworth to an unrelated party. While we believe Wentworth's business is well within the parameters of activity Morgan Stanley has traditionally engaged in and risk managed appropriately, our decision to transfer the business to others at this stage reflects Morgan Stanley's commitment to meeting evolving market conditions and regulatory expectations.

Southern Star. Morgan Stanley Infrastructure Partners LP ("MSIP"), which has an investment in Southern Star on behalf of the Firm and institutional investors, sits within Morgan Stanley's Investment Management Group ("MSIM"). Because MSIM is a separate business from Morgan Stanley's Institutional Securities Group, in which the Commodities Division operates, and is managed independently from the Commodities Division, I am not privy to information about MSIM's investment in Southern Star. In addition, Morgan Stanley has information barriers in place to prevent the transfer to the Commodities Division of material non-public information about MSIM's investments. I understand that others at Morgan Stanley have therefore been asked to provide you with requested information. Morgan Stanley believes that information barriers are an important safeguard to protect confidential information, and I appreciate the

Subcommittee's accommodation in seeking information on Southern Star from those outside of the Division I co-head.

B. Oil Liquids

Over the past twenty-five years, Morgan Stanley has built an oil liquids division that serves companies, municipalities, and other businesses seeking risk management services and market liquidity. Morgan Stanley has been active in the wholesale crude oil market since 1984 and the refined products market since 1985.

Morgan Stanley serves a number of important roles in the oil liquids markets. One way Morgan Stanley participates in these markets is by helping airlines manage the costs of jet fuel. For example, Morgan Stanley helped a leading U.S. airline in bankruptcy by entering into a long term contract to supply jet fuel and provide related logistical support. The contract helped the airline reduce its operating expenses because Morgan Stanley sold the airline jet fuel at a lower price than it was previously paying.

Recently, Morgan Stanley sold its ownership interest in TransMontaigne Inc., a U.S.-based oil storage, marketing, and transportation company, to NGL Energy Partners LP. Although Morgan Stanley has retained an interest in a TransMontaigne subsidiary that owns Olco Petroleum Group ULC, Olco no longer operates a refined oil sales business or gasoline stations. Morgan Stanley sold the majority of the Olco properties, and the remaining properties are non-operational and are being prepared for sale. Subject to obtaining regulatory approval, Morgan Stanley has also agreed to sell its global oil merchandizing business to Rosneft Oil Company, including its non-controlling stake in Heidmar Holdings LLC, which is the commercial pool manager of a fleet of independently owned commercial tankers. All of these activities are consistent with Morgan Stanley's forward looking business strategy of focusing our commodities business on its core strength.

* * *

IV. The Role of Financial Institutions in Commodities Markets

Financial institutions play an important role in meeting the needs of U.S. businesses, such as airlines and energy producers, in critical industries that depend on the wholesale commodity markets.

Morgan Stanley is aware that there are differing views as to the scope of permitted commodity activities under the so-called "grandfather clause" in section 4(o) of the Bank Holding Company Act. The activities that we conduct under this authority are within the permitted scope of activities based upon either a broad or a more narrow reading of the grandfather clause. Nevertheless, in light of differing views, Morgan Stanley agrees with the Chairman's comment letter on the Advance Notice of Proposed Rulemaking that it would be helpful for regulators to formally clarify the scope of activities that are permissible under this authority through notice and comment rulemaking. Further clarification would provide greater certainty to market participants as to the scope of future activities that may be considered under this authority. Morgan Stanley also agrees with Chairman Levin that all grandfather clause activities should be subject to prudent safety and soundness constraints.

The public benefits of permitting financial institutions to engage in wholesale physical commodities activities are real and significant. Our clients and counterparties are cooperatives, cities, governments, and corporations, ranging from small businesses to global enterprises. Financial institutions like Morgan Stanley play a critical role in meeting the needs of producers, processors, and commercial users of commodities by helping them manage complex and long-term commodity price and physical supply risk.

We also note that different firms may approach the commodities market in unique ways based on their core strengths, and, therefore, we can only speak to the approach that we believe works best for Morgan Stanley and its clients. Broadly speaking, though, the historical role of U.S. financial institutions in the commodities markets has contributed to enhanced liquidity, more sources of financing, and stronger support for commodity-related projects, such as in the energy sector, while also promoting national economic stability and security.

Thank you for the opportunity to testify today. I am happy to answer any questions you have.

**Statement of Gregory Agran Before
the U.S. Senate Permanent Subcommittee on Investigations
Hearing on “Wall Street Bank Involvement with Physical Commodities”
November 20, 2014**

Chairman Levin, Ranking Member McCain, and Members of the Subcommittee.

My name is Gregory Agran. I am co-head of Goldman Sachs’ Commodities Trading, where I have overall responsibility for all of the Firm’s commodities trading activities.

As you know, for much of modern financial history, a close connection has existed between capital markets and commodities. The interplay between the financial and physical commodities markets is crucial to determining the returns that thousands of companies earn for their products, as well as the risks they bear in producing them. By one measure, almost 40% of the equity capitalization of the S&P 500 index has meaningful exposure to commodities.

A core function for Goldman Sachs is to act as an intermediary, or market maker, for a range of clients. We perform this role across markets for interest rate, currency, equity, credit and commodity products, each of which we refer to as an “asset class.” Many of these transactions are settled financially, in which the parties make payments based on the terms of the transaction. A certain portion of these transactions are settled physically, where one party delivers an asset to the other in exchange for a payment. Depending on the asset class, the asset that is delivered may be a bond, a number of shares or a specified volume of a currency or commodity.

We have been an active market maker in commodities and commodity derivatives markets since 1981. Though these activities involve physical commodities, they otherwise mirror our market-making in purely financial instruments. In this role, we serve as a bridge between producers on the one hand and consumers and investors on the other, whose interests and exposures offset each other but do not perfectly match.

Our clients in the commodities business include many of the largest companies in the world across virtually every sector. Many of these companies as well as several municipal and trade organizations — more than 100 in total — have been outspoken about the importance to them of having financial institutions participate in the commodities markets, including with respect to physical markets.

Apart from helping clients finance their inventories or manage their risk, the Subcommittee staff has focused on specific instances in which the Firm makes an investment in a commodity-related area. While this is a relatively small part of our commodities business, we undertake extensive due diligence and risk analysis, beyond just an analysis of the economic risks. This includes examining environmental impacts, legal liability, insurance considerations and even whether the business we are considering has operated under high standards of compliance.

I want to briefly address three issues on which the Subcommittee staff has focused. While the significance and role of these issues are minor in the context of our commodities activities, I believe it is important to correct any misimpressions.

First, our sales and trading in aluminum are unrelated to the Firm's ownership of Metro. Metro was never integrated into our market making business, and we maintain a strict informational barrier between the two. Confidential information relating to Metro is not shared with Goldman Sachs metals sales and trading personnel. As the information we have provided to the Subcommittee confirms, there has not been a single instance where confidential Metro information went to our metals trading personnel.

Second, we have provided to you information involving uranium trading, a very small part of our business. In 2009, to provide a broader array of product offerings to our mining

company and public utility clients, we acquired Nufcor, a company that had acted as a market maker in uranium and related financial derivatives.

After extensive due diligence, we believed and remain confident that this activity does not present environmental risk to an entity acting in the limited capacity in which we act. In this business, our activities are limited to buying and selling **unenriched** uranium and entering into related financial derivatives. Of course unenriched uranium is not a harmful radioactive substance. Moreover, we do not take physical possession of uranium — let alone transport, deliver, or process it. Finally, our ownership interest is merely reflected as book entries at highly secure depositories that are subject to substantial government oversight. Notwithstanding these various considerations, given the misconceptions about this business, we have decided to manage down Nufcor's assets to zero.

Finally, I would like to address our standalone investment in CNR, a coal mining investment in Colombia. The acquisition of CNR arose from a pre-existing exposure arising from a contract to purchase coal over a period of time.

Notwithstanding the Subcommittee's statements regarding CNR, since Goldman Sachs made the investment in the company, CNR has achieved the highest international standards for environmental and safety management, and it is the only company in the region to have done so. I would also note that the limited liability protections of the investment's corporate structure, together with the company's capable management team, ensure that our risk in relation to the investment is limited to our invested capital.

We hope that our extensive engagement with the Subcommittee staff over these many months has contributed to a greater understanding of the role financial intermediation plays in the commodities markets, in addition to these specific areas in which you have expressed an interest. I look forward to answering your questions today with that same goal in mind.

Thank you.

**Statement of John Anderson
Co-Head of Global Commodities Group
JPMorgan Chase & Co.**

**U.S. Senate
Permanent Subcommittee on Investigations
November 20, 2014**

I am John Anderson, and I serve as Co-Head of the Global Commodities Group (“GCG”) within JPMorgan Chase & Co. (“J.P. Morgan” or the “Firm”). I am here to discuss the history of J.P. Morgan’s involvement in physical commodities and the status of our ongoing divestiture of much of that business. While some of the topics identified by the Subcommittee may not be in my particular area of responsibility or expertise, and while for many of these I may not have any firsthand knowledge, I have attempted to gather the relevant information from others at the Firm in an effort to be as responsive and helpful to the Subcommittee as possible; accordingly, at times, my testimony and answers will reflect not my personal knowledge, but rather what I understand from speaking with others working for J.P. Morgan.

It is important to state at the outset that today, much of J.P. Morgan’s physical commodities assets and business have been sold. Last month, we closed on the sale of a large portion of the business to Mercuria Energy Group. In addition, the Firm has sold and continues to sell other portions of the business to different buyers. Going forward, J.P. Morgan’s commodities business will remain focused on its financial derivatives business. Its associated physical activities will be limited to an exchange warrants business in base metals, traditional bank activities involving precious metals, and a commodities finance business that may involve taking title to physical commodities as the underlying collateral to the financing.

History of the Physical Commodities Business

First, I think it would be helpful to explain how physical commodities fit into J.P. Morgan’s overall customer business. GCG manages a customer-driven commodity derivatives and commodities financial intermediation business, providing our clients with risk management and financing solutions for their commodity exposures. Our customers include governments, producers, end-users (such as airlines and auto manufacturers), intermediaries, refiners, and investors.

J.P. Morgan's physical commodity inventory—which has included base metals, precious metals, and energy-related commodities—is related to these customer businesses; J.P. Morgan is not a user of or speculative investor in physical commodities. Rather, J.P. Morgan enters into physical commodity transactions in connection with its customer-driven commodities derivatives business or in connection with other customer driven transactions.

J.P. Morgan's role as market-maker, liquidity provider, and financial intermediary benefits its customers. For example, an airline that needs to obtain jet fuel on a regular basis may want to hedge its exposure to fluctuations in the price of the fuel. By offering a financial derivative to the airline, J.P. Morgan's commodities business delivers not only a hedge against future price fluctuations, but also a predictability that allows the airline to focus on the safe operation of its business. The Firm then hedges the exposure incurred by entering into an offsetting trade with another customer or by buying the physical commodity.

Every day there are people who are looking to enter into a contract to purchase, in either the immediate or longer term, a specific amount of a commodity at a specific price. They may want that commodity to use it for their business or to hold it as an investment. At the same time, there are people who want to enter into a contract to sell, at a specific price, a specific amount of a commodity, either now or in the future. These people may have obtained the commodity as an earlier investment or they may have been the company that extracted the commodity from the ground. What we, and other market makers do, is to serve as a readily available counter-party for those who want to buy or sell. When we buy a commodity it is not for ourselves, but to satisfy the needs of our clients. We strive to maintain a balance between our contracts to buy and our contracts to sell, so that at all times our actual net position for a commodity is fairly modest and our risk exposure is fairly limited. This is different from those investors who, speculating that the price of a particular commodity will either rise or fall, build up a position—either long or short—in that commodity.

J.P. Morgan's physical commodities business involving energy-related commodities expanded substantially when, at the height of the Financial Crisis, the Firm, at the behest of the government, acquired a varied collection of assets from Bear Stearns. With the sudden acquisition of Bear Stearns—and, with it, Bear Energy—J.P. Morgan received ownership interests in nine power plants and a number of tolling agreements, among other assets. Several years later, J.P. Morgan separately acquired the commodities business of RBS Sempra, which

included two additional tolling agreements and a base metals warehousing business, among other assets.

As a result of these acquisitions, J.P. Morgan has, at times, held equity interests in a small number of power plants over the past six years. Today, J.P. Morgan has divested or re-tolled all but three of the power assets acquired from Bear Stearns and RBS Semptra. All three of the remaining power plants are passive investments and are being managed by third parties, and all three are either currently in the process of being sold, or marketed for sale.

Regulatory Compliance

At J.P. Morgan, we operate our commodities business in conformity with the applicable rules. We are in regular and ongoing dialogue with our regulators about our physical commodities business. The business is supervised by two different regulating entities: the Office of the Comptroller of the Currency (“the OCC”) and the Federal Reserve. First, the OCC—as the lead regulator of JP Morgan Chase Bank, N.A. (the “Bank”), a national bank—oversees the physical commodities activities done within the Bank. The OCC has restricted the Bank’s physical commodities activities to hedging customer related derivatives business and has imposed an activity limit, requiring that physical activities be only a nominal percentage (5%) of the Bank’s overall commodities activity. These restrictions are designed to ensure that the Bank only engages in physical commodities activity to support its financially settled customer business and that only a small amount of overall activity in the Bank is in the physical markets.

The Federal Reserve regulates J.P. Morgan’s physical commodities activities in bank holding company subsidiaries (outside the Bank) and requires that the market value of physical commodities held by J.P. Morgan’s holding company (and its subsidiaries) as complementary activities not exceed 5% of its consolidated Tier 1 capital. This 5% limit applies to all complementary physical commodity activities approved by the Federal Reserve.

The Federal Reserve’s 5% limit does not include commodities positions held in the Bank pursuant to the authority granted by the OCC and it also does not include precious metals for which the Bank has express statutory authority. Even if the Bank’s risk position, outside of gold and silver, was to be factored into the Federal Reserve’s calculation, there would be little to no impact upon its risk profile. Further, the Federal Reserve requires that it be notified if the market value of such commodities exceeds 4% of Tier 1 capital. Whereas the OCC’s limit is an activity

limit, the Federal Reserve's limit is a prudential limit aimed at limiting the overall market risk of the holding company's physical commodities inventory.

J.P. Morgan's compliance with the Federal Reserve's limit is reported monthly, and the OCC, per its request, receives reports from J.P. Morgan on a quarterly basis (though the relevant activity is calculated daily). In addition, J.P. Morgan meets quarterly with both regulating entities, providing the regulators with a broader picture of the status of its overall commodities business, including its activities in physical commodities.

J.P. Morgan has never reached the Federal Reserve's limit, and its holdings have only reached the 4% reporting threshold on a few occasions. With regard to the OCC's 5% limit, and as a result of a large client-initiated trade, J.P. Morgan exceeded this limit in December 2011. This was and is the only time that J.P. Morgan has exceeded the OCC limit in the roughly 20 years it has been in place. J.P. Morgan immediately took steps to get back under the limit, and was in regular communication about this matter with both the OCC and the Federal Reserve during this time. Today, J.P. Morgan has an enhanced escalation process in place in the event that the Bank's activity would approach the OCC's limit.

J.P. Morgan is and has always been committed to candor and transparency with its regulators. At no time has it been J.P. Morgan's intent to misrepresent the relevant facts or circumstances, or to circumvent the applicable Federal Reserve or OCC limits.

Risk Management

J.P. Morgan has a robust risk management program that, within GCG, has been tailored to its activities—or, in many cases, prior activities—involving physical commodities. Before describing this comprehensive program, it is important to note that, going forward, the topic of operating risk management will become simplified because of the Firm's decision to divest much of its physical commodities business.

The overall risk framework first consists of pre-operating controls, which include, among other things, hiring skilled personnel who have had specific prior operational experience regarding the relevant physical commodities and maintaining a comprehensive Operating Risk Committee approval process for proposed new business initiatives.

Second, GCG employs strenuous operating controls for ongoing activities, which include policies imposing strict standards that must be used by third party vendors retained by GCG to

work with physical commodities. For instance, if GCG had chartered a ship to transport oil (an activity in which J.P. Morgan is no longer involved), that ship would have been operated by a vetted and qualified third party vendor, not by J.P. Morgan. Further, the actual owners and/or operators—and not J.P. Morgan—would have carried the primary liability for any incidents. Third, GCG also maintains, as part of its risk management program, comprehensive post-operating controls regarding incident management, including a customized, stand-alone emergency response procedure.

By these steps, GCG has sought to mitigate any unintended event related to its physical commodities business, and also any potential exposure for J.P. Morgan that could arise following such an event. In addition, GCG carries a significant level of insurance as an additional layer of protection. This insurance coverage includes (as of July): \$1.45 billion in coverage for offshore marine and cargo owner liability; \$500 million in coverage for onshore marine liability; and another combined \$650 million in coverage for all-risks cargo, terrorism, and pollution/legal liability.

Even if—notwithstanding the risk management program described above—an event occurred and liability was ascribed in excess of GCG’s robust insurance coverage, J.P. Morgan maintains a sufficient amount of operational risk capital across the Firm, as determined by the Federal Reserve, to address such a contingency.

Copper

Finally, the Subcommittee has asked about J.P. Morgan’s involvement with copper, including the Firm’s prior plans to launch an exchange traded fund (“ETF”) backed by physical copper. Contrary to some erroneous media speculation several years ago, the consideration of issuing a copper ETF was separate and apart from J.P. Morgan’s customer-driven physical commodities business. J.P. Morgan did not amass a copper inventory in anticipation of the previously-proposed ETF, nor did it ever attempt to do so. In no uncertain terms, all of J.P. Morgan’s copper trading is related to its customer-driven physical commodities business, and it does not engage in proprietary trading in copper (or any other physical commodity). While J.P. Morgan considered, but never launched, a copper ETF, there are no current plans to move forward with this product. In any event, I understand that even if we were ever to do so, further regulatory approvals would be necessary, and would only be undertaken in consultation with the appropriate regulators.

I am happy to respond to any questions you may have. Thank you.

Written Testimony of

Saula T. Omarova, Professor of Law, Cornell University

Before the U.S. Senate Committee on Homeland Security and Governmental Affairs,
 Permanent Subcommittee on Investigations
 (November 21, 2014)

**FINANCIAL HOLDING COMPANIES' ACTIVITIES IN PHYSICAL COMMODITY MARKETS: KEY
 ISSUES FROM THE PERSPECTIVE OF U.S. BANKING LAW AND POLICY**

I am a Professor of Law at Cornell University, where I teach subjects related to U.S. and international banking law and financial sector regulation. Prior to becoming a law professor, I practiced law in the Financial Institutions Group of Davis Polk & Wardwell and served as a Special Advisor on Regulatory Policy to the U.S. Treasury's Under Secretary for Domestic Finance. Since entering the legal academy in 2007, I have written articles examining various aspects of U.S. financial sector regulation, with a special focus on systemic risk containment and structural aspects of U.S. bank regulation. In 2013, I published an article examining the legal and regulatory authority and potential implications of large U.S. financial holding companies' growing involvement in physical commodity and energy markets.¹ On July 23, 2013, I testified before the Senate Committee on Banking, Housing, and Urban Affairs, Subcommittee on Financial Institutions and Consumer Protection, in a hearing on "*Examining Financial Holding Companies: Should Banks Control Power Plants, Warehouses, and Oil Refineries?*"²

This written submission incorporates some of the key arguments laid out in my article and prior congressional testimony, and examines important additional factors that merit attention in light of various market and regulatory developments since July 2013. In particular, this submission addresses some of the principal arguments repeatedly advanced by financial industry representatives and other interested private parties denying the need for regulatory action in this area.

**I. Why Banking Organizations' Participation in Physical Commodity Markets
 Raises Legal and Policy Issues: Some (Relevant) History on the Separation of
 Banking from Commerce**

One of the core principles underlying and shaping the elaborate regime of U.S. bank regulation is the principle of separation of banking and commerce, which generally prohibits banks and their corporate parent- and sibling-companies from engaging in non-financial businesses. The existence of an explicitly legislated "wall" between banking and commerce is the fundamental

¹ Saula T. Omarova, *The Merchants of Wall Street: Banking, Commerce, and Commodities*, 98 MINN. L. REV. 265 (2013), [hereinafter, "*Merchants*"], available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2180647.

² Written Testimony of Saula T. Omarova, Associate Professor of Law, University of North Carolina at Chapel Hill, before the Senate Committee on Banking, Housing, and Urban Affairs, Subcommittee on Financial Institutions and Consumer Protection (July 23, 2013) [hereinafter, the "**2013 Testimony**"], available at http://www.banking.senate.gov/public/index.cfm?FuseAction=Files.View&FileStore_id=6d49a599-f7dc-4c1f-9455-fa8d891f04c6.

structural factor distinguishing the U.S. from many European and Asian countries.³ In contrast to the European “universal bank” model, for example, the default rule for U.S. banking entities is that they are *not* allowed to conduct purely commercial activities. Any *permissible* commercial activity is an *exception* to that basic rule, which must be granted by or recognized under the relevant law governing individual banking entities’ business.

Therefore, for any U.S. banking organization, a decision to participate in the production, processing, transporting, storing, and trading physical commodities – all purely commercial activities – is never just a matter of their own or their clients’ profitability or convenience: it is, first and foremost, a matter of their *legal authority*. In order to enter the physical commodities supply chain, at any point and in any capacity, a bank or any bank-affiliated company has to find a specific legal or regulatory authorization to do so.

What this means is that, under U.S. law, these types of business decisions are deemed too important to be left purely to individual banks’ managers or private owners and, instead, are inextricably and fundamentally linked to broad considerations of *public policy*. That same fundamental premise must inform and guide the much-needed discussion of where to draw the line between permissible and impermissible commodities activities of U.S. banking entities in today’s complex financial system.

However, since the summer of 2013, when the controversy over certain large U.S. banking institutions’ growing commodity merchant businesses moved to the forefront of policy debate, the banking industry and its representatives – including powerful financial industry trade associations and prominent private law firms – have been trying to subvert and confuse the discussion by, among other things, misrepresenting what is at stake.

One of their fundamentally misleading arguments implies that the U.S. legal prohibition on mixing banking and commerce is not a significant barrier to allowing banks to drill for oil.⁴ To support this claim, they cite selectively to various bits of ancient and medieval European and Asian history as proof that there is nothing “radically new” – meaning, “nothing worrisome” – about JPMorgan selling electricity to Californians or Goldman Sachs controlling aluminum supplies to U.S. beer-brewers. This is a meaningless claim that serves only to distract from the real policy questions in the debate. Sampling of ancient foreign history is irrelevant as an argument about the proper application of current U.S. statutes and regulations.⁵

Perhaps aware of that obvious weakness, the same banking industry experts advance another logically specious claim that the principle of separation of banking from commerce is somehow

³ See Bernard Shull, *The Separation of Banking and Commerce in the United States: An Examination of Principal Issues*, 8 FIN. MARKETS, INSTITUTIONS & INSTRUMENTS 1 (1999).

⁴ See, e.g., Securities Industry and Financial Markets Association, American Bankers Association, Financial Services Forum, Financial Services Roundtable, Institute of International Bankers, *Comment Letter on the Advance Notice of Proposed Rulemaking on Complementary Activities, Merchant Banking Activities, and Other Activities of Financial Holding Companies Related to Physical Commodities* (Docket no. R-1479; RIN 7100 AE-10), April 16, 2014 [hereinafter, the “**Trade Associations’ Comment**”]. The following discussion addresses the industry’s history-based arguments contained primarily in Part II of the Trade Associations’ Comment.

⁵ It’s also worth noting that, in addition to being irrelevant, these industry proponents’ narrative conspicuously ignores various “inconvenient” episodes in the European history. For example, in 1374, the Venetian Senate specifically prohibited bankers from dealing in copper, tin, iron, lead, saffron, and honey – an early instance of prudential and market conduct regulation aiming to prevent banks from excessive risk-taking and monopolizing trade in these commodities. See Shull, *supra* footnote 3, at 3.

not legally binding (and perhaps even non-existent), simply because there have always been some limited exceptions to its application in practice. In lieu of supporting evidence, they simply describe various ways in which banks and securities firms in the past pushed against various regulatory boundaries, mostly unrelated to commodities, which finally led to the passage of the Gramm-Leach-Bliley Act in 1999 – an event this argument treats as something akin to the end of history, a naturally pre-ordained conclusion of the long journey from ancient Egypt to President Clinton's desk.

Incredibly, this narrative almost completely – and it seems deliberately – fails to mention the two key federal statutes that established the legally binding line between banking and commerce: the National Bank Act of 1863 and the Bank Holding Company Act of 1956. It is these statutes that embody most clearly the principle of separating banking from commerce – which is very much alive today – and articulate the main public policy objectives of such separation. A narrative that deliberately ignores that crucial part of the history of U.S. banks' involvement in commodity markets is hard to take seriously as offered in good faith.

Although this written statement does not seek to present a full historical account of U.S. banks' commodities activities, it is important to set the record straight by discussing briefly the genesis of and policy rationale behind the legal separation of banking and commerce in the United States.

The principle of separation of banking from commerce has always been a fundamental feature of the U.S. banking system. Early American banks were chartered by state legislatures, and these legislative grants typically limited chartered banks' business activities by prohibiting them from "dealing in merchandise."⁶ In 1825, New York became the first state to adopt a legal definition of banking powers and to expressly prohibit any activity not affirmatively allowed by the statute.⁷ Throughout most of the 19th century, despite the widespread adoption of general corporation laws giving rise to the modern corporate form, banks remained subject to restrictive special chartering that defined the nature of the enterprise. An important factor underlying the persistence of special bank charters was the recognition that banking was essentially an exercise of "public powers" that had to be granted with an explicit view toward a public purpose.⁸

When Congress created the federal bank charter in 1863-64, it followed New York's approach: the famous "bank powers clause" of the National Bank Act generally limits national banks only to activities within a relatively narrow band of "the business of banking."⁹ Since then, U.S. banks have been operating within the boundaries of that clause, which imposed an explicit statutory limit on their ability to move into commercial activities. To evade this legal prohibition, U.S. banks began developing various forms of entity arbitrage, including the formation of legally separate holding companies that were not technically subject to the bank powers clause and, therefore, could conduct bank-impermissible financial and non-financial activities.¹⁰ The early 20th century saw many of these arbitrage techniques end in financial panics, political scandals, and legislative reforms. The break-up of the "money trusts" and the subsequent birth of U.S.

⁶ Id. at 7.

⁷ Id.

⁸ Id. at 8.

⁹ 12 U.S.C. §24 (Seventh).

¹⁰ For a discussion of the rise of bank holding companies in the early 1900s and the history of the U.S. bank holding company regulation, see Saule T. Omarova & Margaret E. Tahyar, *That Which We Call a Bank: Revisiting the History of Bank Holding Company Regulation in the United States*, 31 REV. BANKING & FIN'L L. 113 (2011-12).

federal antitrust regulation and the Federal Reserve System were, to a great extent, responses to these developments.

The next step in this process came on the heels of the Great Depression and the New Deal reforms of the 1930s, which further limited bank powers, this time by prohibiting deposit-taking institutions from dealing and underwriting corporate securities and from affiliating with securities firms. At the same time, Congress established the federal deposit insurance system – a critically important element of U.S. bank regulation and a powerful embodiment of the inherently public-private nature of modern banking. The federal government’s extraordinary step of directly guaranteeing banks’ private liabilities to their depositors significantly raised the public-policy salience of keeping banking – now, an explicitly publicly subsidized business – separate from general commerce.

Yet, the New Deal legislation, including the famous Glass-Steagall Act, did not explicitly preclude banks – especially the more aggressively growth-oriented large “money-center” banks – from using the holding company structure to engage, albeit indirectly, in purely *commercial* activities. In the aftermath of the World War II, a number of large banks pursued aggressive growth through holding company acquisitions of additional banks and commercial enterprises – a trend that ultimately led Congress to pass the Bank Holding Company Act of 1956 (the “BHCA”), the single most important modern federal statute explicitly operationalizing the traditional U.S. policy of separating banking from commerce.¹¹ Under the BHCA, all bank holding companies (“BHCs”) – i.e., companies that own or control U.S. banks – are generally restricted in their ability to engage in any business activities other than banking or managing banks, although they may conduct certain financial activities “closely related” to banking through their non-depository subsidiaries.¹²

The BHCA is designed to address the key policy reasons underlying the long-standing U.S. principle of separation of banking from commerce. Traditionally, these policy reasons have included the needs (1) to preserve the safety and soundness of the U.S. banking system (by shielding depository institutions from risks associated with commercial activities); (2) to ensure a fair and efficient flow of credit to productive economic enterprise (by, among other things, preventing unfair competition, market manipulation, and bank conflicts of interest); and (3) to prevent excessive concentrations of financial and economic power in the financial sector. In my prior writings, I have elaborated more fully on each of these traditional policy objectives.¹³ For present purposes, it is important to re-emphasize that the BHCA was born as a fundamentally antitrust, anti-monopoly, anti-horizontal-integration law, concerned at least as much with the integrity of the nation’s credit market as with the stability of the U.S. banking system.

Since the passage of the BHCA in 1956, U.S. banking organizations wishing to conduct any commodities activities have had to find their way around the Act’s prohibitions and fit their commodities operations into specific statutory or regulatory exemptions.¹⁴ These efforts

¹¹ Bank Holding Company Act of 1956, Pub. L. No. 84-511, §§ 1-12, 70 Stat. 134, 135 (1956).

¹² 12 U.S.C. §§1841-43.

¹³ See Omarova, *Merchants*, *supra* note 1; Omarova, 2013 Testimony, *supra* note 2.

¹⁴ Both the National Bank Act and the BHCA contain certain limited exceptions to their general restrictions on permissible activities of banks and BHCs. The line separating banking from commerce has never been completely impenetrable in practice. Yet, that fact does not lend support to arguments denying the existence or fundamental significance of the separation of banking from commerce as a matter of U.S. law. The very existence of such

intensified greatly beginning in the 1980s-1990s, when significant changes in financial markets – such as the listing of the first standardized oil futures and the creation of over-the-counter commodity derivatives – prompted Wall Street firms to start actively trading and dealing in commodity-linked financial instruments. Elsewhere, I describe in detail how, beginning in the mid-1980s, some of the largest U.S. commercial banks lobbied the Office of the Comptroller of the Currency (“OCC”) to allow them to enter into commodity-linked derivatives contracts.¹⁵ The OCC, eager to help national banks to compete against securities firms, adopted an increasingly broad interpretation of the bank powers clause in the National Bank Act and ultimately allowed banks to trade in commodity derivatives and, subject to certain conditions, to make and take delivery of the underlying physical commodities.¹⁶ For present purposes, however, the key takeaway is not the OCC’s questionable interpretation of the statutory language but rather the underlying premise: in order to be able to trade even commodity derivatives – financial instruments, not physical materials – U.S. banks needed an explicit regulatory permission. This is hardly the kind of legal system in which statements to the effect that “banks have always traded in commodities” or “commodities have always been treated the same as paper money” are even remotely true.¹⁷ This is a legal system in which no bank could safely assume its “natural” historical or legal right to trade paper referencing commodity risk, let alone start drilling for oil or storing aluminum.

Not surprisingly, in the 1980s-1990s, the banking industry also began actively lobbying for relaxation of the BHCA limitations on BHCs’ activities, both financial and non-financial. Prior to 1999, the history of amendments to the BHCA largely reflected the familiar dynamics, where a statutory prohibition prompted the industry to arbitrage around it, which led to a new round of legislation to close specific loopholes, and so on. One classic example of such a loophole-closing amendment to the BHCA was the 1970 repeal of the “one-bank holding company” exemption that allowed companies controlling a single U.S. bank to avoid regulation as BHCs. Congressional resolve to continuously enhance the statutory regime by preventing entity arbitrage proves that keeping banks out of non-financial businesses remained a strong federal policy priority. The Federal Reserve, an agency in charge of administering the BHCA, was especially cautious about BHCs’ moving into the physical commodities business. For instance, in 1997, despite industry lobbying, the Federal Reserve refused to add the acceptance and delivery of physical commodities under derivatives contracts to the regulatory list of BHC-permissible activities “closely related to banking.”¹⁸

The most significant set of amendments to the BHCA came in 1999, when Congress passed the Gramm-Leach-Bliley Act (the “GLBA”), a statute that partially repealed the Glass-Steagall Act. The GLBA amended the BHCA to allow certain BHCs qualifying for the status of “financial holding company” (“FHC”) to conduct broader activities that are “financial in nature,” including

statutory exceptions underscores the supremacy of the main rule that banking and commerce are not to be mixed freely.

¹⁵ Saule T. Omarova, *The Quiet Metamorphosis: How Derivatives Changed the “Business of Banking”*, 63 MIAI L. REV. 1041 (2009).

¹⁶ *Id.*

¹⁷ For examples of this type of claims, see Trade Associations’ Comment, *supra* note 4, Part II.

¹⁸ The Federal Reserve, however, added these activities to its regulatory “laundry list” in 2003. For a more detailed discussion, see Omarova, *Merchants*, *supra* note 1, at 299-301.

securities dealing and insurance underwriting.¹⁹ In addition, the GLBA created important new authorizations for FHCs to conduct certain *commercial* activities.

II. Why the Current Legal and Regulatory Framework for FHCs' Commodity Activities Is Inadequate: the Unforeseen Effects of the Gramm-Leach-Bliley Act

Under the BHCA, as amended by the GLBA, there are currently three main sources of legal authority for FHCs (i.e., diversified financial groups that can control under one corporate roof commercial banks, securities firms, insurance firms, and other non-bank subsidiaries) to conduct *purely commercial* activities, despite the general separation of banking from commerce: (1) merchant banking authority; (2) "complementary" powers; and (3) "grandfathered" commodities activities. In order to engage, directly or through any subsidiary, in any non-financial, commercial activity – including producing, refining, storing, transporting, or distributing any physical commodity – an FHC has to "fit" that activity within the legal confines of at least one of these three statutory exceptions created by the GLBA. In that sense, the GLBA did not fundamentally alter the basic premise of the BHCA scheme. On the contrary, these new provisions have always been framed as merely opening some new "doors" in the wall separating banking from commerce, not demolishing the wall itself.²⁰

The real question, however, is whether these three statutory exceptions to the general rule are being implemented in a cautious and prudent manner, so as to achieve their stated goals without causing unanticipated damage to the broader regulatory scheme of the BHCA. That is precisely the question that the financial industry advocates do *not* want us to ask. According to them, the formally stated statutory conditions on the exercise of each of these three authorities are, by themselves, *a sufficient safeguard and practical proof* that large U.S. FHCs – such as JPMorgan, Goldman Sachs, and Morgan Stanley, for example – are *actually* conducting their physical commodities businesses (whatever those might be) in a safe and sound manner, fully consistent with the interests of the American taxpaying public. In other words, the argument goes, because the statute *says* FHCs are not to take these new powers too far, their new powers are not – and cannot possibly be – taken too far in the *real world*.²¹

Despite its facially flawed nature, this type of claim is widespread and insidious enough to warrant a brief explanation why it is not an effective argument against the need to re-examine, in light of our collective experiences in the past fifteen years, the practical impact of the GLBA on the system of separation of banking from commerce. Three simple points should suffice:

First, *what the law says* and *what the banks do* (to comply with it *and* to evade it) are not the same thing: if they were, we would not need law enforcement or bank supervision.

¹⁹ 12 U.S.C. §1843(k)(1)(A).

²⁰ For a detailed description of the GLBA provisions governing FHCs' physical commodity activities, see Omarova, *Merchants*, *supra* note 1, at 278-292.

²¹ This is the distilled logical essence of numerous arguments and claims advanced repeatedly by various pro-industry actors. Again, the Trade Associations' Comment represents the most convenient compilation of these and other arguments. See *supra* note 4. Of course, the well-paid and credentialed industry advocates are careful not to state their position in a way that would clearly expose its basic flaws. To the contrary, their claims are usually lengthy, repetitive, and exceedingly technical-sounding, with meticulous cites to specific sub-sections of the statute. Yet, they often merely restate various formal requirements of the statute and then make a logical leap to conclude that there are, in fact, strong practical limits to FHCs' ability to build physical commodity empires.

Second, the wording and the legislative history of the GLBA provisions allowing FHCs to conduct commercial activities often create significant ambiguity with respect to the precise scope of what's allowed. And such ambiguities can be easily exploited to push the statutory exceptions farther than originally intended.

Third, the Federal Reserve exercises significant regulatory discretion in interpreting and implementing the GLBA provisions governing FHCs' physical commodities activities. Understanding how the statute translates into practice, therefore, necessarily involves conducting an inquiry into the Federal Reserve's decision-making process.

As I have noted in my previous writings on the matter, the shortage of detailed public information on large FHCs' physical commodities activities and on the Federal Reserve's internal policy-formulation processes makes it difficult for an outsider to make a full assessment of how effective or ineffective the GLBA framework is in today's world of financial super-intermediaries. Nevertheless, there are plenty of reasons to doubt that the current legal and regulatory regime effectively safeguards the traditional U.S. policy of separating banking from commerce. In other words, there is considerable doubt whether the three GLBA-created "doors" in the venerable wall between banking and commerce can protect that wall from being effectively demolished in practice.²²

Merchant Banking

Prior to 1999, a BHC was generally permitted to make passive private equity investments in any commercial company only if such investments did not exceed 5% of such company's voting securities.²³ In the 1990s, banks viewed this as a major competitive disadvantage that kept them from making potentially lucrative private equity investments in start-up Internet and high-tech companies. Section 4(k)(4)(H) of the BHCA, added by the GLBA, sought to remedy that situation by permitting FHCs to acquire or control, directly or indirectly, up to 100% of the ownership interest in any commercial entity under the "merchant banking" authority.

The statute does not define the term "merchant banking." In 2001, the Federal Reserve and the Department of Treasury jointly issued a rule (the "Merchant Banking Rule"), which defines "merchant banking" as a catch-all authorization for FHCs to invest in commercial enterprises, as long as any such investment meets several requirements.²⁴ Thus, the investment cannot be held through an FHC's bank-subsiary and must be sold within 10-15 years after the acquisition (barring any special circumstances). The investment must be made "as part of a bona fide underwriting or merchant or investment banking activity" (i.e., it must be a financial investment for the purpose of appreciation and ultimate resale). Furthermore, an FHC cannot "routinely manage or operate" any portfolio company in which it has made the investment, except as may be necessary in order to obtain a reasonable return on investment upon resale.

These requirements were designed to ensure that FHCs use the merchant banking powers to facilitate their financial intermediation activities, as opposed to getting involved in the

²² The following discussion of the three specific sources of the FHCs' statutory authority to conduct physical commodity activities is based on Saule T. Omarova, *Beyond Finance: Permissible Commercial Activities of U.S. Financial Holding Companies*, in *AN UNFINISHED MISSION: MAKING WALL STREET WORK FOR US, A REPORT BY AMERICANS FOR FINANCIAL REFORM & THE ROOSEVELT INSTITUTE*, ED. BY MIKE KONCZAL & MARCUS STANLEY (2013), pp. 110-25.

²³ 12 U.S.C. § 1843(c)(6),(7).

²⁴ 12 C.F.R. § 225.170(a).

commercial businesses of companies in which they invest. Although an FHC is permitted to acquire full ownership of a commercial firm, the principal purpose of its investment must remain purely financial: making a profit upon subsequent resale or disposition of its ownership stake.

The real question is whether, in practice, FHCs comply with the rule's formal requirements while circumventing its intended purpose – that is, to what extent they are able to use merchant banking authority as a means of engaging in impermissible commercial activities. For instance, in general discussions of FHCs' merchant banking activities, the statutory prohibition on "routinely managing" portfolio companies is often understood as a requirement – and an effective assurance – of a purely passive "arm's length" relationship between an FHC and commercial entities it controls under that authority. Yet, this is not necessarily the case. The regulators interpreted the term "routinely managing" narrowly, leaving ample opportunities for FHCs to exercise decisive managerial control over their portfolio companies – and, in effect, to engage in such portfolio companies' non-financial business. Under the Merchant Banking Rule, the indicia of impermissible "routine management" of a portfolio company include certain kinds of "executive officer" interlocking and explicit contractual restrictions on the portfolio company's ability to make routine business decisions (e.g., hiring non-executive personnel or entering into transactions in the ordinary course of business).²⁵ Examples of permissible arrangements that do not constitute "routine management" include contractual agreements restricting the portfolio company's ability to take actions not in the ordinary course of business; providing financial, investment, and management consulting advice to, and underwriting securities of, the portfolio company; and meeting with the company's employees to monitor or advise them in connection with the portfolio company's performance or activities.²⁶ FHCs can also elect any or all of the directors of any portfolio company, as long as the board does not directly run the company's day-to-day operations. The last condition means merely that the portfolio company must employ officers and employees responsible for routinely managing and operating its affairs.²⁷

Thus, unwrapping regulatory interpretation of the statutory language reveals that FHCs enjoy considerable flexibility in directing business affairs of portfolio companies in which they invest pursuant to merchant banking authority. In practice, it is not difficult to structure an FHC's relationship with any particular commercial entity in a way that avoids formal indicia of "routine management" but gives it effective control over important substantive aspects of that entity's business – for the sake of *actually engaging in that business* rather than simply *financing* it.

"Complementary" to Financial Activities

The GLBA also authorizes FHCs to conduct commercial activities determined by the Federal Reserve to be "complementary" to a financial activity. The Federal Reserve must determine that any such complementary activity does not "pose a substantial risk to the safety or soundness of depository institutions or the financial system generally."²⁸ Once again, however, the statute does not define what "complementary" means.

Procedurally, the Federal Reserve makes these determinations on a case-by-case basis. Any FHC seeking to engage in any commercial activity it believes to be "complementary" to a financial

²⁵ 12 C.F.R. § 225.171(b)(1).

²⁶ 12 C.F.R. § 225.171(d)(2),(3).

²⁷ 12 C.F.R. § 225.171(d)(1).

²⁸ 12 U.S.C. § 1843(k)(1).

activity must apply for the Federal Reserve's prior approval and provide detailed information about the proposed activity. In making its determination, the Federal Reserve is required to make a specific finding that the proposed activity would produce public benefits that outweigh its potential adverse effects. The statutory list of such public benefits includes "greater convenience, increased competition, or gains in efficiency."²⁹ The Federal Reserve must balance these benefits against such dangers as "undue concentration of resources, decreased or unfair competition, conflicts of interests, unsound banking practices, or risk to the stability of the United States banking or financial system."³⁰ This list of potential dangers directly channels the policy concerns underlying the principle of separation of banking from commerce, which indicates Congress's intention to limit FHCs' potential expansion into commercial sphere. Yet, the statutory language leaves too many opportunities for interpreting "public benefits" too broadly and potential risks too narrowly.

The legislative history of this provision shows that the industry deliberately sought the inclusion of the "complementary" clause as an open-ended source of legal authority for banking organizations to engage in any commercial activities that may become feasible or profitable in the future. Again, banks' real goal was to be able to invest in internet and high-tech companies. Yet, the industry framed the congressional debate on "complementary" activities as a debate primarily about low-risk, low-profile activities, such as publishing travel magazines and using back-office over-capacity to offer telephone help lines.³¹

After 1999, the banking industry found other, less innocuous-looking uses for this "complementary" power, such as physical commodity and energy trading.³² Beginning in 2003, the Federal Reserve issued several orders allowing Citigroup, JPMorgan, Bank of America, and other FHCs to trade in a wide range of physical commodities as an activity "complementary" to their commodity *derivatives* businesses. In making its determinations, the Federal Reserve routinely equated the "*public* benefits" of proposed activities with the primarily *private* benefits to individual FHCs: their enhanced competitiveness and profitability.³³ With respect to potential adverse effects, the orders typically briefly noted the absence of any "substantial risks" to the safety and soundness of the FHC or the U.S. financial system.

The main safety-and-soundness limitation the Federal Reserve imposed on these activities was the prohibition on FHC ownership or operation of facilities for the extraction, storage, processing, or transportation of physical commodities. In response, FHCs developed ways to obtain effective operational control of power plants and oil refineries through contractual arrangements. And when, in the wake of the recent crisis, three large FHCs – Goldman Sachs, Morgan Stanley, and JPMorgan – emerged as major commodity merchants and owners of oil

²⁹ 12 U.S.C. § 1843(j)(2)(A).

³⁰ *Id.*

³¹ For an in-depth discussion of the legislative history of the GLBA provisions granting FHCs authority to conduct physical commodities activities, see Omarova, *Merchants*, *supra* note 1, at 278-292.

³² Between 2003 to 2013, the Federal Reserve approved only one other type of activity – certain disease management and mail-order pharmacy services – as complementary to a financial activity of underwriting and selling health insurance. Wellpoint, Inc., 93 Fed. Res. Bull. C133 (2007).

³³ See, e.g., Citigroup, Order Approving Notice to Engage in Activities Complementary to a Financial Activity, 89 Fed. Res. Bull. 508 (2003).

pipelines and metals warehouses, the Federal Reserve's original line-drawing began to seem even less relevant in practice.³⁴

More generally, this selective expansion of large FHCs into commodities and energy – vitally important and volatile sectors of the economy, inherently vulnerable to market manipulation and speculative bubbles – raises fundamental questions as to whether the vague regulatory concept of “complementarity” imposes meaningful limits on banking organizations’ commercial activities. Ultimately, any economic activity can be viewed as “complementary” to finance, simply by virtue of the universality of finance itself. How do we know where to stop?

“Grandfathered” Commodity Activities

The third source of authority for FHCs to enter commerce is Section 4(o) of the BHCA, which authorizes any company that becomes an FHC after November 12, 1999, to continue “activities related to the trading, sale, or investment in commodities and underlying physical properties,” if that company “lawfully was engaged, directly or indirectly, in any of such activities as of September 30, 1997, in the United States.”³⁵

On its face, Section 4(o) seems to allow a qualifying FHC to conduct virtually any kind of commodity trading and any related commercial activities (for example, owning and operating oil terminals and metals warehouses), if it happened to conduct any commodities business – even if on a very limited basis and/or involving different kinds of commodities – prior to the 1997 cut-off date. Potentially, so broadly stated an exemption may open the door for large financial institutions to conduct sizeable commercial activities of a kind typically not allowed for banking organizations.

The statute requires that the FHC’s aggregate consolidated assets attributable to commodities or commodity-related activities, *not otherwise permitted to be held by an FHC*, not exceed 5% of the FHC’s total consolidated assets (or such higher percentage threshold as the Federal Reserve may authorize).³⁶ Although this statutory 5% limit on the FHC’s total consolidated assets attributable to grandfathered commodities activities seems to operate as a built-in brake on a new FHC’s purely commercial activities in various markets for physical commodities, its practical significance is subject to considerable doubt. In absolute terms, even such a small fraction of total consolidated assets of a large FHC (with a trillion-dollar balance sheet) may allow for a considerable expansion of its commercial business of owning, producing, transporting, processing, and trading physical commodities. Perhaps even more importantly, the language of the provision may be read as capping only those physical commodity assets for which a qualifying FHC cannot find an alternative authorization, either under its merchant banking or “complementary” powers. In that sense, such grandfathered commodity operations may be viewed by the interested FHCs as a generous extra “add-on” to various (capped or uncapped) physical commodity operations “otherwise permitted” to them under the GLBA regime.

Generally, this kind of extreme open-endedness of the statutory language creates a fundamental ambiguity and raises a critical question: Does a mechanically permissive reading of the plain words of the statute properly reflect the original legislative intent? Does the word “continue,” for instance, refer only to a temporal factor (“proceed without interruption”) or does it also

³⁴ For a detailed discussion, see Omarova, *Merchants*, *supra* note 1, at 299-332.

³⁵ 12 U.S.C. § 1843(o)(1).

³⁶ 12 U.S.C. § 1843(o)(2).

implicitly limit the scope of the activities to be grandfathered (“only activities *already under way* before the cut-off date would be allowed to *continue* without interruption”)?

I have discussed at length the curious legislative history of Section 4(o) in my prior writings.³⁷ For present purposes, suffice it to say that the legislative history provides no support for the financial industry advocates’ claims that Congress in 1999 deliberately sought to allow firms like Goldman Sachs and Morgan Stanley to gain full access to the public subsidy available to banking organizations and, with the federal government’s explicit backing, to start accumulating control over oil, gas, electricity, copper, aluminum, grain, or any other commodity market they might view as offering profitable opportunities at any future time. In fact, former Representative Jim Leach was recently quoted as saying, “I assume no one at the time would have thought it would apply to commodities brokering of a nature that has recently been reported.”³⁸

Normally, ambiguous statutory provisions are interpreted by the regulatory agency in charge of administering the relevant statute. Unfortunately, the Federal Reserve has never interpreted the commodity grandfathering clause of the GLBA. The clause remained largely unnoticed until Morgan Stanley and Goldman Sachs, which became BHCs in September 2008, claimed it as the legal basis for keeping and aggressively expanding their vast operations in physical commodities and energy markets. Yet, even in the face of this radical shift in the scale and scope of mixing banking with commodities business, the Federal Reserve refrained from exercising its power to resolve the ambiguities in the “grandfather” clause.³⁹ Not surprisingly, the controversy over this issue added a particular sense of urgency to the recently reignited public debate on the proper limits of banking institutions’ non-financial activities – and the dangers of failing to police these limits in practice.

III. Why FHCs’ Physical Commodity Activities Raise Potentially Serious Public Policy Concerns: The Stakes in the Debate

Despite the financial industry advocates’ attempts to deny or diminish the game-changing nature of the GLBA with regard to mixing banking with physical commodities trade, the fact remains that U.S. banking conglomerates began aggressively expanding the scope and scale of their direct involvement in commodities markets in the early 2000s. The ready availability of new sources of legal authority to conduct commodities operations was especially convenient at that time, given the beginning of a major global commodities “super-cycle” and the market void left by the failure of Enron, the company that created a lucrative new business model combining large-scale physical energy trading with dealing in related derivatives. The story of large U.S. FHCs’ transformation into global commodity merchants of the Enron variety is, by now, well-

³⁷ See Omarova, *Merchants*, *supra* note 1, at 289-292.

³⁸ Matt Taibbi, *The Vampire Squid Strikes Again: The Mega Banks’ Most Deviant Scam Yet*, ROLLING STONE, Feb. 12, 2014.

³⁹ Section 5(b) of the BHCA grants the Federal Reserve broad authority to issue orders and regulations necessary to administer the statutory scheme and to prevent evasions thereof. 12 U.S.C. § 1844(b). Interpreting an ambiguous statutory provision, especially where the ambiguity directly implicates the fundamental purposes of the BHCA, falls within this grant of regulatory authority.

known.⁴⁰ It is, however, important to reiterate why this trend raises significant potential public policy concerns.

Safety and Soundness

One of the traditional policy reasons for separating banking from general commerce is the need to protect banks – private institutions performing critical public functions – from exposing their inherently vulnerable balance sheets to novel and potentially excessive risks associated with various commercial businesses. The creation of the federal deposit insurance scheme in the early 1930s further elevated the importance of keeping banking institutions from incurring additional risks, often of the kind not present in or necessary to their traditional activities. Running brick-and-mortar enterprises in the physical commodity supply chain introduces a broad variety of such additional risks exogenous to the business of banking. Catastrophic risks related to environmental accidents or terrorist attacks are the clearest examples of the potentially extreme risks that banking organizations face when they operate oil pipelines or nuclear power plants. Even the day-to-day operational, market, reputational, and legal risks associated with these activities may be both significant and unjustified.

The mere fact that banks routinely take on considerable risk (at least, in theory) when they extend 30-year mortgage loans – their traditional business activity – does not mean they should also be taking on a nearly infinite variety of unrelated or unnecessary risk exposures. Any potentially beneficial diversification effects of FHCs' physical commodity activities must be carefully and precisely assessed in light of such additional exposures and their impact on the institution's overall risk profile.

Systemic Risk

To the extent that large FHCs are already systemically important in their role as complex and inter-connected financial intermediaries, any potential increase in their individual risk exposure and profile raises significant concern about systemic financial (and broader economic) stability. In the aftermath of a major global financial crisis, this truth is self-evident. And the more tightly today's complex and unstable financial markets are linked with the equally complex and unstable markets for vital physical commodities, the more salient these systemic-risk concerns become.

Market Integrity and Consumer Protection

Another traditional policy goal behind keeping banks out of commerce is preventing banks from abusing their financial power to distort competition or manipulate prices for real goods. This concern is especially strong where large FHCs act simultaneously as major global dealers in commodity derivatives and as merchants in the underlying physical commodities. An FHC's ability to affect the price of an underlying commodity – even if only for a short period of time or in a particular market – may generate windfall profits in the same FHC's commodity derivatives business. This structural conflict of interest is especially worrisome both because such manipulative behavior may be difficult to detect or prosecute and because its ultimate costs are usually borne by ordinary Americans.

⁴⁰ See, generally, Omarova, *Merchants*, *supra* note 1.

Leakage of Public Subsidy

Another important issue raised whenever publicly-subsidized banking institutions start competing with unsubsidized commodity merchants is whether, and to what extent, access to the public subsidy gives the former an unfair advantage over the latter. Lower costs of funding, which banks and their affiliates enjoy because of the explicit and implicit public backing of their private liabilities, may be the main reason why they can supply their individual clients with cheaper raw materials and related services. To protect American taxpayers' interests, it is critical to ascertain that banking institutions do not, in fact, misuse the public subsidy in this manner. So far, however, the financial industry failed to produce any evidence to that effect.

Institutional Governability

Large FHCs that are active in physical commodities markets are all extremely complex organizations that conduct a wide range of financial activities through hundreds (and even thousands) of subsidiaries all around the globe. The latest financial crisis and a series of scandalous post-crisis revelations of misconduct and failure of risk-management at all of these institutions demonstrate how difficult – perhaps, even impossible – it is for them to keep track even of their core financial activities. Dealing with numerous additional risk-management and regulatory-compliance issues involved in running physical commodity businesses is likely to make matters far worse. Neither financial firms' public professions of success in managing and controlling all of their own (and all of their clients') risks, nor their voluminous "written policies and procedures," without more, provide sufficient comfort in this respect.

Regulatory capacity

Allowing banking organizations to conduct extensive and varied physical commodity activities also creates potentially insurmountable challenges from the perspective of FHC regulation and supervision. The current system of financial services oversight is already notoriously fragmented and complex, with many opportunities for socially harmful regulatory arbitrage. Introducing multiple non-financial regulatory agencies into the mix is likely to exacerbate jurisdictional conflicts, confusion, and inconsistencies in the application of different regulatory schemes. Moreover, neither the Federal Reserve nor any other financial regulator are properly equipped to exercise effective oversight of companies that operate oil pipelines and coal mines. Stretching their administrative and intellectual resources beyond reasonable boundaries serves no discernable public purpose.

Excessive Concentration of Economic and Political Power

Recent expansion of large U.S. financial conglomerates into direct production, processing, transporting, storing, and marketing physical commodities raises significant concerns related to the broader political-economy impact of this trend. It's been a venerable American tradition to view large aggregations of economic and financial power in the hands of a few "money trusts" with great suspicion and fear of this power translating into undue political influence. When the financial industry advocates dismiss these concerns as entirely frivolous, they are, in effect, dismissing one of the core values of American democracy: an active rejection of monopolistic power, in all of its incarnations.

IV. Why the Most Common Arguments Against Limiting FHCs' Physical Commodity Activities Are Ineffective: Dangerous Pitfalls in the Debate

Since July 2013, large financial institutions seeking to preserve their ability to conduct physical commodity operations appear to have mobilized the industry's significant resources to preempt potential regulatory or legislative action in this area. I cannot speak to the nature of these groups' non-public communications with policymakers and will limit my observations to their public statements.

Individual FHCs, financial industry trade associations, law firms representing large financial institutions, and FHCs' end-user clients submitted scores of comment letters defending the status quo in response to the Federal Reserve's Advanced Notice of Proposed Rulemaking ("ANPR") published on January 21, 2014. These letters, together with the industry-commissioned private reports and media statements, generally advance three types of arguments as to why Congress, the Federal Reserve, and the American public should not pursue stricter regulation or curtailment of FHCs' commodities activities. For the sake of simplicity, I refer to these three common themes as "pro-industry arguments."

Pro-industry argument no. 1: "There is no empirical evidence that FHCs' physical commodities activities have already caused, or will definitely cause, a serious problem in financial markets, so there is no need to worry"

One such common thread in the financial industry advocacy is to deny the existence and/or significance of any reasons for being concerned about FHCs' expansion into physical commodities. Some versions of this general argument, for example, hold that physical commodities businesses do not involve any unusually high or principally new risks, as compared to the typical risks associated with the business of banking. Industry advocates often demand an "empirical proof" that FHCs' physical commodities activities have actually caused a systemic failure and stress that, to date, no FHC has incurred an actual loss from a catastrophic accident, such as a major oil spill or a nuclear plant explosion. Other versions of this general argument stress that whatever risks there may be, all of them are successfully managed, controlled, and insured by the FHCs.

All of these variations on the theme suffer from the same fundamental logical flaw: their stated premises do not lead to their desired conclusions. Just because an oil spill has not happened yet does not mean it will never happen. Just because no bank has yet been publicly found as manipulating oil prices does not mean such manipulation is not going on undetected. In this connection, one might recall how, prior to September 2008, many financial industry experts argued that credit derivatives or synthetic CDOs, for example, were perfectly safe and well-managed for any significant risks. After all, until September 2008, there was no hard "empirical evidence" that either of those financial instruments could actually cause systemic instability. The latest crisis provided that evidence.

This argument implicates the fundamental issue of who should bear the burden of proof here. Contrary to the industry's claims, that burden should be placed on the FHCs and their advocates. Without specific and substantive evidence of how individual financial institutions and the industry as a whole assess, monitor, and manage the full gamut of risks posed by their physical commodity operations (and not only, e.g., the risk of having their corporate veils "pierced" in

court proceedings), the industry's assertions of having everything under control are of little value.

Pro-industry argument no. 2: "FHCs' physical commodities trading provides indispensable benefits to commodity end-users, so any attempt to push them out will hurt the economy"

The second line of the industry's defense is that FHCs are necessary participants in physical commodity markets because they are uniquely suited to provide liquidity and other benefits to end-users. Therefore, if banking institutions are forced to exit physical commodity markets, numerous commercial end-users will potentially face higher cost of doing business.

This argument fails to address the crucial question at hand: Why exactly are large FHCs able to provide such uniquely "efficient" (essentially, cheaper) intermediation services in physical commodities markets? Undoubtedly, FHCs' individual clients often benefit from FHCs' commodity trading. However, what might be "efficient" (i.e., relatively cheap and more convenient) for the individual parties in a transaction might not be *socially efficient*, if a significant reason for such micro-efficiency is the existence of implicit *public subsidies* to large financial institutions. We need to understand and evaluate this critical link before concluding that FHCs are, in fact, the most *efficient* – rather than simply *publicly-subsidized* – providers of liquidity in physical commodity markets. Purely declaratory and generalized assertions of private benefits accruing to individual end-users are neither responsive nor relevant to this inquiry. This argument, in any of its variations, can be relevant only if its advocates provide specific proof that the source of FHCs' superior ability to provide commodities intermediation services is entirely independent of their access to any form of public subsidy.

Recently, newspapers have reported that "small-town officials from Alabama, Louisiana, North Carolina and other states" have been lobbying policymakers not to restrict FHCs' activities in physical commodity markets claiming that any such restrictions could inhibit their local utilities' ability to hedge exposure to fluctuations in fuel prices – which could result in higher local prices for natural gas.⁴¹ This is, of course, the same familiar type of a pro-industry argument discussed immediately above, except with a politically more appealing "small-town," "Main Street" face. In this particular instance, however, there are at least two additional reasons to think that these claims overstate the industry's case.

First, even if FHCs are restricted in their ability to make physical fuel deliveries to municipal utilities, those utilities will still be able to continue hedging their commodity price risks by entering into *financial contracts (derivatives)* with banks – an activity traditionally provided by banks and other financial (and, increasingly, commercial) intermediaries. Banking institutions always tout their superior ability to create innovative, individually-tailored derivatives instruments that enable commercial clients, such as municipal utilities, to transfer the financial risks of their commercial operations. It is not a proven fact that banks' ability to supply physical natural gas to individual utilities is an indispensable condition to such financial risk transfer.

Second, getting all of the municipalities' natural-gas supplies and related risk-management services from one big-bank player may very well generate cost-savings in the short run – after all,

⁴¹ See Deborah Solomon and Ryan Tracy, *Small Towns Go to Bat for Wall Street Banks*, THE WALL STREET JOURNAL, Nov. 17, 2014.

that's why super-market shopping is (sometimes) better than buying produce at multiple specialty shops. However, by putting all of the municipality's proverbial eggs – physical and financial – in one basket may not be prudent in the longer run because (1) it concentrates the municipality's risk, and (2) potentially exposes the municipality to the complex array of hidden financial-market risks of the kind and magnitude not typically present in its daily activities. What will happen, for example, if Goldman Sachs or JPMorgan suddenly runs into serious trouble in its purely financial business and, as a result, is not able to supply gas to the utility that depends on it? The possibility of something going wrong in the world of complex global finance is a very realistic one, and no municipal utility can ignore the cost of living with that risk, especially if financial institutions don't get a government bailout next time around. Even in the absence of a financial-crisis scenario, what would prevent Goldman Sachs or JPMorgan, for example, from raising the cost to municipalities of their "integrated services" if they decide to do so in the future? In other words, while municipal utilities may be benefiting from FHCs' physical commodities activities in some important ways, these benefits must be examined in the broader context of all these other potentially important factors.

Pro-industry argument no. 3: "Unregulated and less transparent entities could take FHCs' place in commodities markets, which would make these markets less safe"

The third line of the pro-industry argumentation is that banning banking institutions from physical commodities will backfire by leaving global commodity markets to less transparent, unregulated entities. Several commodity end-users' comments on the Federal Reserve's ANPR, for example, expressed their concern about having to deal with less creditworthy, less transparent, and mostly unregulated non-bank commodity trading companies or trading arms of large commodity producers.

This argument confuses two separate issues: (1) the need for greater transparency and regulatory oversight of physical commodity markets, and (2) the desirability of allowing U.S. FHCs to participate in such markets. Proponents of this argument erroneously equate FHCs' unique regulatory status as *financial institutions* with the regulatory status – or overall health – of *physical commodity markets* in general. In reality, however, there is no logical connection between these two phenomena. U.S. banks and bank holding companies are heavily regulated and supervised under a system designed explicitly to address the risks of their financial activities. In fact, one of the principal tools for ensuring these institutions' safety and soundness is an imposition of severe restrictions on their non-financial activities. It is deeply ironic that this heavily restrictive regulation, designed fundamentally to keep banking organizations out of general commerce, is now being cited as a principal reason for allowing FHCs to function as global commodity merchants.

Because U.S. bank regulation is not designed specifically to address the risks associated with large-scale commodity merchanting, FHCs' participation in physical commodities markets cannot cure such markets' internal dysfunctions. In their capacity as physical commodity traders, FHCs are not necessarily more transparent or more effectively supervised than non-bank commodity trading houses. The fact that global commodity markets are opaque and dysfunctional is not an argument for allowing FHCs to participate in those markets but instead is an argument for bringing greater transparency and oversight to commodity markets.

V. Looking Ahead: Potential Avenues for Reform

Devising a comprehensive legal framework for regulating FHCs' activities in physical commodities markets is an ambitious and complex task. My far more modest goal in this submission is to highlight – on a broadly *conceptual level* rather than in specific detail – some of the potential options for addressing the key public policy concerns identified above.

As a general matter, various prescriptions for strengthening the regulatory regime governing FHCs' involvement in physical commodity markets may be viewed as specific points along a single continuum, from more radical (banning all such activities) to less radical (further restricting and dis-incentivizing such activities). In addition, some proposed measures require legislative amendments to the BHCA, while others can be accomplished through regulatory action alone.

The following brief list of potentially desirable legal and regulatory changes is not exhaustive but merely suggestive.

Repeal of certain statutory provisions

Two potential legislative measures merit serious consideration by Congress: (1) repealing the commodity grandfathering clause (Section 4(o) of the BHCA), and (2) repealing the statutory grant of merchant banking powers to FHCs.

The commodities grandfathering provision, added by the GLBA, is too open-ended and, in any event, doesn't seem to serve any appreciable policy purpose at this point.

There is also a potentially strong argument for repealing the statutory authorization of FHCs' merchant banking activities. The banking industry originally sought the inclusion of this authority in the GLBA to enable it to invest in Silicon Valley start-ups. Today, long after the dotcom boom ended in bust, FHCs can use this provision to conduct commercial activities that go far beyond the vague statutory concept of “bona fide merchant banking.” Given the practical difficulty of ensuring compliance with the spirit and purpose of this provision, it would make sense to reassess whether the real public benefits of allowing banking organizations to act as private equity funds outweigh potential risks such activities pose from the public policy perspective. U.S. capital markets may be perfectly capable of providing commercial companies with private capital from unsubsidized sources (venture capital funds, hedge funds, even crowdfunding), and FHCs will continue to play a critical intermediation role in this process, even if they would not be able to make direct “merchant banking” investments any more.

If these statutory provisions are not repealed, the Federal Reserve should limit the dangerously permissive potential of both of these sources of FHCs' authority to conduct physical commodity activities through regulatory action. The Federal Reserve should issue an official interpretation of Section 4(o) of the BHCA that clarifies and establishes meaningful limits on any newly-registered FHCs' properly grandfathered commodity activities, in line with the original legislative intent. Similarly, the Federal Reserve should amend its Merchant Banking Rule to tighten the restrictions on FHCs' ability to use their portfolio companies as vehicles for conducting physical commodities activities.

Size limits and capital requirements

More generally, the Federal Reserve has significant powers to strengthen the regulatory regime governing FHCs' physical commodity operations through agency action. The Federal Reserve announced its ongoing review of the regulatory policy in this area back in July 2013 and, in January 2014, published the ANPR (referred to above) soliciting public comments on a variety of issues. As of this writing, there has been no formal action by the Federal Reserve.

Nevertheless, it's generally expected that, if the Federal Reserve does adopt a formal rule, it is likely to address primarily the FHC safety and soundness concerns and to focus on (1) establishing more restrictive quantitative size limits of FHC-permissible physical commodity assets (e.g., by limiting the value of such assets to a lower percentage of some capital measure), and/or (2) imposing higher regulatory capital requirements on FHCs' physical commodity activities.

If adopted, both of these measures would be a welcome potential improvement to the current regime. However, such partial measures should be viewed with caution. The Federal Reserve should not focus its efforts solely, or even mainly, on the FHC safety and soundness: such micro-focus is inappropriate in today's regulatory environment. As elaborated above, the purposes of the BHCA are inherently antitrust and anti-monopoly oriented and explicitly channel the long-standing public policy concerns behind the traditional U.S. principle of separating banking from commerce. Any regulatory action implementing the statute must take into account these purposes as well and seek to address the full range of potential concerns with market integrity, consumer protection, prevention of excessive concentration of economic and financial power, and so forth.

It is also important to keep in mind that excessive reliance by regulators on quantitative measures, including percentage limits and minimum capital thresholds, often enables financial institutions to play sophisticated arbitrage games and to minimize the intended impact of such rules on their business practices. Therefore, how effective any particular size-limit or regulatory-capital measure is likely to be in practice depends greatly on how punitive and firm (or, conversely, how generous and pliable) each regulatory limit is. Given the sheer size of the large FHCs' balance sheets, the regulator should set the quantitative size limits much lower than the current "5%" of assets or capital. Regulatory quantitative limits should not be inconsistent or easy to manipulate; they should be transparent and non-additive (so that different size limits cannot be combined to raise the actual threshold above the official number). It would make sense, in this respect, to impose an overall cumulative size limit on all of the relevant FHC's permissible physical commodities activities.

Putting a tough rule on paper, however, is only the first step in the process. Ultimately, the practical impact of any quantitative or capital-based regulatory limitations on FHCs' commodity activities will depend on the Federal Reserve's ability and willingness to supervise and monitor FHCs' compliance with the rules.

Redefining supervisory objectives

It is critical that the Federal Reserve (1) collects more granular quantitative and qualitative data on each FHC's commodity activities, and (2) monitors each FHC's compliance with the statutory and regulatory requirements much more closely. The agency's principal supervisory goal should

be to understand and evaluate not only each FHC's full commodity-activity profile but also the overall pattern and potential effects (internal and external) of combining its physical and financial commodity operations.

In evaluating compliance, Federal Reserve examiners must not rely on review of FHCs' corporate documents and formal "policies and procedures." For instance, with respect to commodity assets held under the merchant banking authority, examiners should scrutinize the *actual relationships* between each FHC and its portfolio companies, in order to ensure that the FHC's merchant banking portfolio contains only genuinely *financial-in-nature* investments. The examiners' task would be to monitor the relationship between an FHC and each of its merchant banking portfolio companies for the indicia of de facto operational influence that potentially cross the line between *financing* commodity business and *engaging* in commodity business.

Portfolio-level reporting

To this end, the Federal Reserve could require that each commercial company controlled by an FHC pursuant to merchant banking authority regularly provide quantitative and qualitative information detailing all of its business dealings with the FHC or its clients (e.g., percentage of the company's revenues generated from such dealings, lists of business contracts with the FHC or its clients, specific information on FHC's participation in the management and business decisions of the company, etc.). To ease the administrative burden, this portfolio-level reporting requirement may be applied specifically and solely to portfolio companies engaged in physical commodity businesses.

The same type of reporting may be mandated with respect to FHCs' subsidiaries engaged in "complementary" activities in physical commodity markets. While the specific purpose of supervisory scrutiny in this context is somewhat different than in the case of FHCs' merchant banking portfolio, the overall goal is fundamentally similar: to ascertain the extent to which an FHC's "complementary" physical commodity activities indicate any potentially troubling (micro- or macro-) trends.

Additional procedural safeguards

The existing scheme for "complementary" activities can be further strengthened by imposing additional procedural requirements on the Federal Reserve's decision-making. For example, the BHCA can be amended to require the Federal Reserve to provide a more detailed substantive justification of its determination that the *public* benefits (which are not to be equated with profitability and competitive gains of FHCs) of allowing a particular FHC to engage in a specific complementary commodity-related activity outweigh *all* of the potential adverse effects specified in the statute (and not only those directly related to individual institutions' safety and soundness). Putting these implicit requirements directly into the words of the statute would make it more likely that the Federal Reserve fulfills its responsibilities as the guardian of the public interest.

It is also desirable to mandate periodic regulatory reviews and re-authorizations of each order granting individual FHCs' requests to conduct physical commodity activities "complementary" to finance. In effect, this requirement would create an automatic "sunset" period (e.g., every 5 or even 3 years) for "complementary" power grants, which would force the Federal Reserve to reconsider its decisions in light of new information. Again, in issuing re-authorization orders, the

Federal Reserve should be required to lay out in full the substantive reasoning behind its decision.

Targeted review of potential misuse of market information

Finally, the Federal Reserve should conduct a targeted review and analysis of FHCs' physical commodity operations, in order to evaluate whether FHCs improperly use their resulting informational advantages and cross-market presence. This is a problem with combining physical and financial commodity-related activities in general. Conceptually, however, this issue is particularly pronounced in the context of "complementary" power grants.

On the one hand, the primary justification for the "complementarity" between commodity merchandising and commodity derivatives businesses is the need for FHCs to access valuable proprietary information with respect to the pricing of physical commodities underlying their derivatives transactions. On the other hand, that same informational synergy creates a unique opportunity for an FHC to use its physical commodity operations to manipulate pricing and artificially boost profitability of its commodity derivatives trades. It gives large FHCs both the capacity and the incentives to engage in sophisticated market manipulation that may be difficult to detect under the existing regulatory schemes.

Financial institutions claim that they maintain impenetrable internal informational walls separating their physical traders from their derivatives traders. Leaving aside the question of such claims' veracity, it is obviously problematic when the same institutions that advocate seamless informational flow between physical and derivatives trading while petitioning for regulatory approval of their "complementary" commodity trading deny the very existence of such informational flows when questioned about the integrity of their market conduct.

It is critical, therefore, that we have a full understanding of how this tension is resolved in practice. Either there is no real need for FHCs to trade physical commodities to support their derivatives operations, or the efficacy of internal "information firewalls" is inherently questionable. If the former is true, the Federal Reserve simply should not permit FHCs to conduct physical commodity activities as "complementary" to their financial activities. If the latter is true, the agency should both (1) seriously reconsider and toughen its existing policy of granting FHCs' requests for "complementary" powers, and (2) institute a much stricter and more intrusive system of regulatory and supervisory controls over FHCs' market conduct on both sides of the informational divide.

VI. Conclusion

Large U.S. banking organizations' direct involvement in physical commodity markets raises a wide range of important and often difficult public policy issues. Some of these issues have traditionally been addressed through the regime of legal separation between banking and commerce, while others reflect relatively new concerns with the transmission and amplification of systemic risk and managing complexity in today's markets. I hope this written submission helps to clarify what is really at stake in this debate and to keep the focus on what really matters – the long-term interests of the American public.

Testimony of Chiara Trabucchi
Principal, Industrial Economics Incorporated

Thank you for the invitation to testify in today's hearing on matters relating to U.S. bank involvement with physical commodities. I am a Principal with Industrial Economics, Incorporated in Cambridge, Massachusetts. My expertise is in finance and economics, with specific focus on environmental risk management and financial assurance frameworks. Founded in 1981, Industrial Economics is a privately-owned professional services firm expert in the areas of financial and natural resource economics. The clients of the firm span the private and public sectors.

As requested by the Subcommittee in its November 4, 2014 letter, the focus of my testimony is on the environmental and catastrophic event risks that confront Financial Holding Companies (FHCs) involved in physical commodity activities, as well as mitigating strategies to manage these risks. To frame my testimony on these issues, I begin with an overview of financial assurance and environmental risk management.

Overview: Financial Assurance and Environmental Risk Management

The U.S. has a history of legislating liability and financial risk management regimes.¹ These regimes require that businesses remain financially responsible for consequences arising during the operational life of their facilities, and in many cases through post-closure and long-term stewardship. In so doing, businesses are obligated to demonstrate the ability to manage such risks, both technically and financially.

¹ See, for example, Oil Pollution Act § 1001(11), 33 U.S.C. 2701(11)(2007), 26 U.S.C. 9509 (Oil Spill Liability Trust Fund); Atomic Energy Act (including Price-Anderson Nuclear Industries Indemnity Act) 42 U.S.C. § 2210; Comprehensive Environmental Response, Compensation, and Liability Act § 221, 42 U.S.C. 9631 (2007); Superfund Amendments and Reauthorization Act § 517, 42 U.S.C. 9601 (11)(2006), 26 U.S.C. 9507 (Hazardous Substance Superfund).

Prudent risk management dictates consideration of who will finance the obligations arising from environmental and catastrophic risks, before such risks result in injury to private and public sector interests. Traditional financial assurance models presume that the owners or operators of industrial facilities are active business entities capable of setting aside the funds today to pay for future obligations.²

The prescriptive financial assurance requirements that underpin U.S. environmental regulation track to the expected value of probable loss, and are designed to incentivize businesses to site and operate their facilities in a safe and environmentally sound manner. Firms are more likely to undertake design and operating decisions that minimize environmental and remediation expenditures if they are held financially accountable and are not insulated from the consequences of their actions. Firms that fail to dedicate sufficient resources to infrastructure improvements and fail to maintain adequate financial assurances are less likely to be able to respond suitably to an environmental or catastrophic event, and the cost of doing so may be left for the U.S. taxpayers to absorb.

Environmental and Catastrophic Event Risks

There are various circumstances under which FHCs are permitted to hold interests in nonbanking organizations, including those engaged in commodities-related activities.³ As I understand, such interests may be held pursuant to three provisions of the Bank Holding Company Act, as amended by the Gramm-Leach-Bliley Act, including complementary authority,⁴ merchant banking authority,⁵ or grandfather authority.⁶

Businesses involved with physical commodity activities face specialty or nonstandard risks. Incidents documented in the public record evidence that activities involving the

² Financial assurance refers to steps that businesses take to ensure that funds for incident-related expenditures are adequate and accessible when needed.

³ See 79 FR 13 (Jan. 21, 2014), pp. 3329-3336. Complementary Activities, Merchant Banking Activities, and Other Activities of Financial Holding Companies Related to Physical Commodities.

⁴ 12 U.S.C. § 1843(k)(1)(B).

⁵ 12 U.S.C. § 1843(k)(4)(H).

⁶ 12 U.S.C. § 1843(o).

extraction, storage, transport, or refining of natural resources can cause several types of injury including, for example, human health effects, fatality, ecological damage, property damage, business interruption, or surface/subsurface trespass. The means by which injury occurs often vary by commodity type; however, common pathways include pipeline rupture or explosion, impoundment failure, mine collapse, contaminant release, industrial accident, mechanical failure, transport accident, or explosive decomposition.⁷

Many factors will influence the degree of injury including, for example, the type, magnitude and duration of the incident; proximity of workers, businesses or residents to the incident; site topography and geology; the presence of protected or sensitive environmental resources; weather and atmospheric conditions; proximity to sources of potable surface or groundwater; and the efficacy of incident response efforts.

The interplay between the type of commodity, nature of the event, and degree of injury will shape the risk profile and the magnitude of financial consequences associated with compensatory and natural resource damages, incident response, site clean-up and reconstruction, and environmental remediation and restoration. History has shown that catastrophic events involving environmentally sensitive commodities can result in incident-response costs and compensatory damages that exceed the market value of the commodity involved; a single environmental or catastrophic event can result in billions of dollars in incident-related expenditures.⁸ In some cases, financial impacts can exceed the available capital and financial assurances of the businesses involved, resulting in bankruptcy.⁹

⁷ See, for example, Kalamazoo River Oil Spill (Michigan, 2010); Deepwater Horizon Oil Spill (Gulf of Mexico, 2010); Kirtland Air Force Base Jet Fuel Spill (New Mexico, 1999) San Bruno PG&E Corporation Pipeline Explosion (California, 2010); TVA Kingston Fossil Plant Coal Fly Ash Spill (Tennessee, 2008).

⁸ See, for example, BP p.l.c., Annual Report and Form 20-F for fiscal year ended December 31, 2013 (Mar. 6, 2014); PG&E Corporation, Form 10-K for fiscal year ended December 31, 2013 (Feb. 11, 2014); and Tennessee Valley Authority, Form 10-K for fiscal year ended September 30, 2013 (Nov. 18, 2013).

⁹ See, for example, *In re Asarco LLC et al.*, U.S. Bankruptcy Court for the Southern District of Texas, Case no. 05-21207, December 10, 2009; *In re Kaiser Aluminum Corp.*, Bankr. D. Del. No. 02-10429, August 22, 2003; and *In re: Tranax Inc. et al.*, U.S. Bankruptcy Court for the Southern District of New York, Case no. 1:09-bk-10156.

Environmental Risk Management Strategies

As noted, activities in physical-commodity markets create a suite of risks to private and public sector interests. Prudent risk management dictates that firms operating in these sectors establish risk mitigation strategies to minimize the likelihood of an environmental event, and if an event should occur, have the financial resources to remain financially responsible for their actions.

Essentially, firms should demonstrate the ability to assume and manage risks inherent to their industry. By doing so, the firm is able to assure shareholders, whether private or public, that the value of their investment will not erode, and with time, will gain value. Traditional environmental financial assurance models require that risks be bounded, quantified and accounted for either directly as an expense, or indirectly through third-party financial instruments (letters of credit, surety bonds, insurance, to name a few). Many third-party financial assurance instruments establish limits of liability; and, in some cases, exclusions for certain types of cost reimbursement.¹⁰

Adopting prudent financial assurance standards that are based on probable loss scenarios tailored to the risks posed by activities in physical-commodity markets can help ensure that funds are adequate and accessible when needed. Analytic tools exist to estimate the expected range of dollar values for potential damages on a site-specific, event-specific basis. Firms in the risk management industry commonly use these tools to derive probable loss scenarios that provide a measure of ‘how bad it could get’ if an adverse event were to occur. These analyses also can inform the amount of financial assurances, or committed capital, that is necessary to minimize financial exposure from an environmental or catastrophic event. A

¹⁰ For example, in the context of environmental insurance, the nature of the policy, extent of allowable coverage and the degree to which exclusions exist for incident-related damages will dictate the degree to which the third-party assurance adequately protects the business from financial exposure should an environmental or catastrophic event occur. Further, should a court determine that a responsible party acted with “gross negligence” or engaged in “willful misconduct” the magnitude of incident-related expenditures may be significant, and third-party assurances may no longer be accessible to defray such expenditures.

responsible firm will ensure that it maintains sufficient financial assurance to cover the costs of such an outcome.

Firms with business ventures in physical commodity markets also may employ the following risk mitigating strategies in an effort to avoid the need for, or minimize the amount of, third-party financial assurances or committed capital.

One strategy involves reliance on the 'corporate veil' as a legal shield.¹¹ In the context of environmental risk management, this strategy involves establishing a series of holding companies, whereby the facility engaged in activities directly related to the physical commodity is sheltered behind a series of corporate veils. It also may involve spinning off the liabilities of a physical commodity business into a shell corporation to shield assets from financial exposure. The top-tier parent company believes itself shielded from the actions of its lower level subsidiary by virtue of the successive layers of corporate veils. In so doing, the parent company attempts to insulate itself from financial exposure arising from legacy environmental liabilities or catastrophic events occurring at the subsidiary facility. However, if the corporate veil between parent and facility is pierced, then the parent company may be held directly liable for the actions of the facility.¹²

Courts consider a variety of factors when determining whether the corporate veil may be pierced, and a parent company may be held directly liable for the actions of its facility.¹³

¹¹ The presumption of a corporate veil, i.e., parents and subsidiaries are separate and distinct corporate entities, is a fundamental precept of corporate law. FHCs tend to conduct complementary commodities activities through non-banking subsidiaries. However, the use of a corporate veil as a legal shield does not necessarily translate to a de facto shield from financial responsibility. See, for example, *Tronox Inc. v. Kerr McGee Corp. et al.*, case number 1:09-ap-01198, in the U.S. Bankruptcy Court for the Southern District of New York; Anadarko Petroleum Corporation, Form 10-K for fiscal year ended December 31, 2013 (Feb. 28, 2014); Press Release, Anadarko Petroleum Corporation, Anadarko Announces Settlement of Tronox Adversary Proceeding (Apr. 3, 2014) available at <http://www.anadarko.com/investor/pages/newsreleases/newsreleases.aspx?release-id=1915674>

¹² Another strategy employed by businesses is to hire a third-party contractor to store and transport the commodities through a lease or marketing arrangement. The ultimate parent company believes itself insulated by virtue of contracting the services. However, if the corporate veil between parent company and contractor is pierced, then the parent company may be held directly liable for the actions of the contractor. In addition, the parent company may be at greater financial risk if agreements exist that indemnify or release the contractor from liability.

¹³ See *United States v. Bestfoods*, 524 U.S. 51, (1998)

These factors are highly case-specific, and may involve the presence of: 1) a *joint venture*, wherein direct liability may be attributed to a parent company if it operates the subsidiary's facility alongside, or in the stead of the subsidiary; 2) a *parent company agent*, wherein an employee of the parent company that has no position in the subsidiary may effectuate direct liability if that individual manages or directs activities at the subsidiary's facility; or 3) *dual officers and directors*, wherein parent company officers, who also serve as officers for the subsidiary, act in a way that is inconsistent with the norms of corporate behavior such that the dual officer is acting in a manner that is "plainly contrary to the interests of the subsidiary yet nonetheless advantageous to the parent."¹⁴

FHCs relying on the corporate veil as a risk mitigation strategy to avoid environmental liability may adversely impact the public in several ways. The assignment of 'liability' as it relates to environmental and catastrophic event risks informs the risk premium applied by FHCs when assessing whether a physical commodity activity represents a viable business venture. Generally, the greater the belief in one's legal shield, and attendant insulation from financial exposure, the lower the risk premium that is attached to the venture and the greater the likelihood that investment in environmentally risky ventures will proceed.

FHCs also may limit disclosure of the contingent liability associated with an environmental or catastrophic event, if they assume that they are legally shielded from the attendant financial consequences. As a result, shareholders may be deprived of important information regarding their investments. By relying on the strength of its legal shield, the FHC also may believe that it can act with impunity, avoiding or delaying infrastructure improvements and retaining insufficient financial assurance to hedge its environmental exposures.

To the degree the legal shield fails, and insufficient resources exist for the FHC to meet its financial responsibilities, then some or all of the burden for responding to an environmental incident may well rest with the U.S. taxpayers. To the degree the legal shield holds, and the

¹⁴ Id.

subsidiary facility is insufficiently capitalized to meet its financial responsibilities, the U.S. taxpayers may be required to bear the financial burden associated with unfunded portions of the residual long-tailed liability.

A second risk mitigation strategy is to engage in physical commodity activities in foreign markets with less sophisticated regulatory and legal regimes than those present in the U.S. In so doing, the top-tier parent company believes that it, and the U.S. taxpayer, is insulated from environmental risks manifesting at the foreign subsidiary. However, the financial consequences of environmental or catastrophic events do not respect national borders. The financial crisis of 2008 highlighted the speed with which a global market contagion can take effect when a large corporation undervalues, and subsequently neglects to hedge, its long-tailed risks.

A third risk mitigation strategy is to assume expected loss scenarios at zero or near zero, under the presumption that ownership of the asset or physical system will transfer to another entity prior to an event occurring. Merchant banking investments can be held only for a limited amount of time.¹⁵ Thus, FHCs may downward estimate their environmental risk exposure on the basis that the physical asset forms part of its portfolio only on a short-term basis. To the extent the FHC does record a probable loss, it may hedge only the lost market value of the commodities involved, and not the expected value of incident-response costs and compensatory damages. Further, the FHC may argue that even if deemed liable for an environmental event, the “amount” of liability is negligible when measured against its capital structure. The consequential impact is that the firm limits full disclosure of its environmental exposure, and potentially minimizes the amount of capital committed for financial assurance, placing greater risk of an unfunded liability with the U.S. taxpayers.

¹⁵ 12 U.S.C. § 1843(k)(4)(H).

Risk mitigation strategies that presume a limit of liability, whereby the FHC may be financially responsible but only for a discount on the dollar, contribute to moral hazard.¹⁶ If the FHC believes itself insulated from risk, it may act less prudently with respect to the nature and scope of its involvement in physical commodity related activities. Further, the failure to recognize the breadth of potential exposure arising from its involvement in physical commodity activities coupled with the failure to maintain sufficient financial assurances to adequately hedge such exposure could compromise the financial soundness of the FHC and its subsidiary depository institutions. The consequential impact may be an inappropriate risk transfer to the public in the event the FHC and its nonbanking subsidiary are unable to meet their financial obligations. To the degree the affected FHC is a global systemically important bank (G-SIB), a risk transfer of this sort may send a potentially destabilizing shock through the financial markets.

The Impact of Transitory Investments in Physical Commodities

As I understand, of the 12 FHCs authorized to engage in one or more complementary commodities activities, 11 also are designated as G-SIBs.¹⁷ Further, pursuant to automatic authority under section 4(o) of the Bank Holding Company Act, two of these 11 FHCs engage in a potentially broader range of activities involving environmentally sensitive physical commodities.¹⁸

When considering whether or not to invest in a business venture, financiers seek value creation. Returns on investment in physical-commodity ventures will reflect the cash flows generated by the project, attendant legacy environmental liabilities, and the terminal value of the assets comprising the project, i.e., either salvage, or sale. Investments with positive cash flows, minimal costs, and high terminal values represent attractive value propositions.

¹⁶ Moral hazard refers to the specific situation where the risks of an unplanned event increase, because the responsible party is (partially) insulated from being held fully liable for resulting harm. If facilities are not held completely responsible for the consequences of their actions, arguably they will be less careful in their operating decisions, engaging in a less safe and less environmentally sound manner. Thus, the potential for environmental risk increases, because the chance of an unpredictable event occurring due to poor operating decisions increases.

¹⁷ See 79 FR 13 (Jan. 21, 2014). p. 3332

¹⁸ Id.

However, these investment goals tend not to align with the investment horizon of long-lived assets in physical commodity sectors. In general, the payback period for infrastructure improvements in commodity-related industries conflicts with short-term profit targets focused on maximizing near-term investment returns.

As noted, FHCs that make merchant banking investments in industrial facilities, such as power plants, pipelines, natural gas facilities, or refineries, expect to hold these assets for a relatively short period of time. The transitory nature of these investments suggests they may be less inclined to dedicate the financial resources, time, and expertise needed for operational and environmental improvements.

In so doing, the FHC is positioned to keep costs low and cash flows strong. However, any reluctance to make capital improvements can place the FHC at potentially greater risk of environmental and financial consequences when compared to peers that upgrade their infrastructure. By virtue of delaying or avoiding infrastructure improvements, the FHC may reap a short-term competitive advantage over market participants who do undertake long-term infrastructure investments. In addition, the 'sticky', illiquid nature of physical-commodity related assets coupled with the failure to keep current on infrastructure upgrades may render it challenging to find a buyer who is willing to absorb the risk profile of potentially long-tailed, legacy liabilities.

Supervisory Standards

There are varying degrees of supervisory standards imposed by the Board of Governors of the Federal Reserve System (Board) with respect to FHC involvement in physical commodity activities. As I understand, the nature and applicability of these standards vary depending on the statutory authority under which the FHC is engaged in such activities. For example, the Board placed prudential limits in orders permitting FHCs to engage in commodity-related activities under complementary authority. Specifically, the Board limited the total market value of all commodities so held to no more than five percent of the FHCs consolidated Tier 1

capital.¹⁹ Conversely, with respect to FHCs engaged in commodity-related activities pursuant to section 4(o) grandfather authority, the limit is relaxed by statute to not more than five percent of the FHC's total consolidated assets.²⁰

The ability of FHCs to meet either set of prescribed capital ratios may be immaterial if they have undervalued the long-tailed environmental risk exposure of their investments, either because they believe they will be legally insulated from liability or because they are "too big to fail." In the event the strength of the capital ratio is diluted, and risky investments proceed because the potential financial consequences of prospective environmental liabilities are undervalued, then some or all of an unfunded liability may be left for the U.S. taxpayers to bear in the event of an environmental or catastrophic event. Further, to the degree FHCs are broadly diversified, invested in a range of commodity-related activities with aggressive environmental risk profiles across an array of industrial sectors, their financial risk exposure may increase. If subsidiary institutions of G-SIBs also are separately financing the financial assurance instruments of other companies engaged in commodity-related activities, the negative impact of an environmental or catastrophic event on the stability of the financial holding company may be compounded.

Conclusion

FHCs involved in physical commodity activities should be required to appropriately value the breadth of their exposure to an environmental or catastrophic event, record these exposures in a transparent fashion on their financial statements, and maintain adequate financial assurances to offset the consequences of such exposure. Imposing financial standards on FHCs that are based on probable loss scenarios tailored to the specific environmental and catastrophic risks posed by activities in physical-commodity markets, on an event-specific and site-specific basis, will increase the likelihood that funds for incident-related expenditures will be adequate and accessible when needed. Tightening approval of complementary activities,

¹⁹ See, for example, "Order Approving Notice to Engage in Activities Complementary to a Financial Activity," in response to a request by Citigroup, Inc. 89 Fed. Res. Bull. 508, 509 (Dec. 2003).

²⁰ 12 U.S.C. 1843(o)(2)

tightening controls with respect to the duration and nature of merchant banking investments, denying applications that involve environmentally sensitive commodities with long-tailed risk profiles, and eliminating the ability of any FHC to own or operate facilities engaged in the extraction, transportation, storage or distribution of commodities will further mitigate the risk exposure facing FHCs from environmental or catastrophic events.

Ultimately, the public requires assurances that FHCs engaged in physical commodity related activities will be accountable for their actions and not avoid their financial responsibilities by seeking shelter behind a legal shield or by underappreciating the long-tailed risks of their involvement. Shareholders are entitled to transparency. They require assurance that companies are correctly accounting for, and suitably disclosing, the environmental risks associated with their activities, as well as maintaining sufficient financial assurance to appropriately hedge such risks. The U.S. taxpayers have the right to expect that businesses operating in commodity-related sectors will manage their operations in a safe and environmentally sound manner and remain financially accountable for incident-related expenditures if an adverse event should occur.

For release on delivery
9:30 a.m. EST
November 21, 2014

Statement of
Daniel K. Tarullo
Member
Board of Governors of the Federal Reserve System
before the
Permanent Subcommittee on Investigations
U.S. Senate
November 21, 2014

Chairman Levin, Ranking Member McCain, and other members of the subcommittee, thank you for the opportunity to testify at today's hearing. Let me begin by also thanking the subcommittee for its work on issues raised by the physical commodities activities of financial holding companies. Based on my quick perusal of the report you issued Wednesday, I am sure it will be an important input into our deliberations at the Federal Reserve on how we might adjust our regulatory and supervisory programs to address the risks that can be associated with these activities.

My testimony today first reviews briefly the history of bank and bank holding company engagement in physical commodities activities. I will then address the Federal Reserve's approach to supervising financial institutions engaged in physical commodities activities. I will close my remarks by discussing the Federal Reserve's ongoing review of the physical commodities activities of the institutions we supervise, including a summary of the responses we received on our Advance Notice of Proposed Rulemaking (ANPR) inviting public comment on physical commodities activities.

History of Physical Commodities Authority of Banks and Bank Holding Companies

Before the enactment of the Gramm-Leach-Bliley Act in 1999 (GLB Act), bank holding companies were authorized to engage in a limited set of commodities activities that were considered to be "so closely related to banking as to be a proper incident thereto."¹ These activities included the authority to buy, sell, and store certain precious metals (for example, gold, silver, platinum, and palladium) and copper, which are activities that national banks were generally permitted to conduct at the time. Bank holding companies were also authorized to engage as principal in cash-settled derivative contracts based on commodities, and in commodity

¹ Section 4(c)(8) of the Bank Holding Company Act, 12 USC 1843(c)(8).

derivatives that allowed for physical settlement if the bank holding company made reasonable efforts to avoid delivery of the commodity.²

Additionally, under the National Bank Act, the Office of the Comptroller of the Currency (OCC) has authority to approve national banks to engage in commodity-related activities under national banks' authority to "exercise . . . all such incidental powers as shall be necessary to carry on the business of banking."³ The OCC has approved some national banks to engage in customer-driven, perfectly matched, cash-settled derivative transactions referencing commodities; certain types of commodity derivatives transactions settled by transitory title transfer; the purchase and sale of coin and bullion, precious metals, and copper; and the holding of physical commodities to hedge customer-driven, bank-permissible derivative transactions.

Under the GLB Act, Congress created the financial holding company framework, which allowed bank holding companies with bank subsidiaries that are well capitalized and well managed⁴ to engage in expanded financial activities.⁵ Three provisions in the GLB Act have enabled certain financial holding companies to engage in commodities activities. The first provision--section 4(k)(1)(B) of the Bank Holding Company Act--authorizes a financial holding company to engage in any activity that the Board finds to be "complementary to a financial activity." This provision in the GLB Act enables financial holding companies to engage in commercial activities that complement their financial activities, so long as the activities do not pose a substantial risk to the safety and soundness of depository institutions or the financial

² 12 CFR 225.28 (b)(8).

³ 12 USC 24 (seventh).

⁴ In addition to the capital and management requirements, the GLB Act also requires the subsidiary depository institutions of financial holding companies to have at least a "Satisfactory" rating under the Community Reinvestment Act. The Dodd-Frank Wall Street Reform and Consumer Protection Act added a requirement that the financial holding companies themselves must be well capitalized and well managed.

⁵ Many bank holding companies of various sizes are financial holding companies. The Board maintains a list of financial holding companies on its website at www.federalreserve.gov/bankinforeg/fhc.htm.

system generally.⁶ In reviewing requests for complementary authority, the Board is required to consider whether performance of the activity can reasonably be expected to produce benefits to the public--such as greater convenience, increased competition, or gains in efficiency--that outweigh possible adverse effects, such as undue concentration of resources, decreased or unfair competition, conflicts of interest, or unsound banking practices.⁷

Beginning in 2003, the Board issued a limited number of orders permitting individual financial holding companies to engage in specified commodities-related activities as complementary activities under this statutory authority. These activities included physical settlement of derivative contracts involving certain approved commodities and spot trading of those commodities.⁸ A dozen financial holding companies currently have this 4(k) authority.⁹

In addition, a subset of these companies has been granted additional authority to engage in energy tolling and energy-management activities. Energy tolling involves making fixed, periodic payments to power plant owners that compensate the owners for their fixed costs in exchange for the right to all or part of their plants' power output. Energy-management activities are transactional and advisory services, which are provided to power plant owners.

The Board's orders placed prudential limits on financial holding companies that engage in commodities activities under complementary authority. The Board limited the total market value of all commodities held under this authority, including periodic payments under tolling

⁶ Section 4(k)(1)(B) of the Bank Holding Company Act, 12 USC 1843(k)(1)(B).

⁷ 12 USC 1843(j)(2).

⁸ This authority is generally limited to commodities for which derivatives contracts have been approved by the Commodity Futures Trading Commission for trading on a U.S. exchange. In a few cases, other commodities with comparable fungibility, liquidity, and other relevant characteristics have been approved.

⁹ The financial holdings companies currently authorized by the Board to engage in complementary physical commodities activities are Bank of America Corporation, Barclays Bank PLC, BNP Paribas, Citigroup Inc., Credit Suisse Group, Deutsche Bank AG, JPMorgan Chase & Co., Scotiabank, Société Générale, The Royal Bank of Scotland Group plc, UBS AG, and Wells Fargo & Company. The Board's approvals regarding section 4(k) are publicly available.

agreements, to 5 percent of the financial holding company's tier 1 capital. In addition, the Board prohibited financial holding companies from owning commodity transportation, storage, extraction, or refining facilities under complementary authority. Moreover, companies are required to demonstrate risk-management processes sufficient to support their activities and to put in place additional risk mitigants, such as insurance.

A second provision that Congress included in the GLB Act permits financial holding companies, without prior Board approval, to make merchant banking investments in companies engaged in activities not otherwise permitted for financial holding companies.¹⁰ There are several statutory conditions on merchant banking investments, including restrictions on the authority of a financial holding company to routinely manage or operate a merchant banking portfolio company and a requirement that merchant banking investments be held only for a limited period. To implement these restrictions, the Board adopted regulations in 2001 that require merchant banking investments to be disposed of within 10 years after purchase (or 15 years for investments made through a qualifying private equity fund), and that limit the officer and employee interlocks between financial holding companies and portfolio companies. These restrictions were designed to help ensure that merchant banking investments generally are passive investments and limited in duration.

A third provision in the GLB Act permits certain companies to engage in a broad range of physical commodities activities. Section 4(o) of the Bank Holding Company Act authorizes a company that was not a bank holding company and becomes a financial holding company after

¹⁰ 12 USC 1843(k)(4)(H). The merchant banking authority permits a financial holding company to acquire or control any amount of shares, assets, or ownership interests of any company or other entity that is engaged in an activity not otherwise authorized for the financial holding company under section 4 of the Bank Holding Company Act.

November 12, 1999, to continue to engage in activities related to the trading, sale, or investment in commodities that were not permissible activities for bank holding companies if the company was engaged in the United States in any of such activities as of September 30, 1997.¹¹ In contrast to section 4(k) complementary authority, this authority is automatic--meaning no approval by or notice to the Board is required for a company to rely on this authority for its commodities activities. Also, unlike the firms conducting limited commodities activities found to be complementary to financial activities under section 4(k), the section 4(o) grandfathered firms are authorized to engage in the transportation, storage, extraction, and refining of commodities. Moreover, while the cap on complementary activities under section 4(k) is 5 percent of tier 1 *capital*, commodities activities permitted under the section 4(o) grandfather provision may represent up to 5 percent of the company's total consolidated *assets*. Only two financial holding companies currently qualify for these grandfather rights--Goldman Sachs and Morgan Stanley.

During 2008, both Goldman Sachs and Morgan Stanley became bank holding companies and elected financial holding company status. They each claim the right to conduct commodities activities under the grandfather provision found in section 4(o). In addition, during this same period, J.P. Morgan Chase & Co. acquired Bear Stearns and Bank of America Corporation acquired Merrill Lynch; both Bear Stearns and Merrill Lynch engaged in a substantial amount of commodities trading activities. However, the range of permissible physical commodities activities of these latter two financial holding companies is limited because they are not grandfathered under section 4(o).

¹¹ 12 USC 1843(o).

Federal Reserve Supervision of Commodities Activities

The prudential supervision of the largest, most complex banking companies is a cooperative effort in which the Federal Reserve acts as the prudential regulator and supervisor of the consolidated holding companies, with some of the principal business activities of such companies supervised by other functional regulators. The Federal Reserve's supervisory program focuses on the enterprise-wide risk profile and risk management of those companies, with particular focus on financial strength, corporate governance, and risk-management practices and competencies of the company as a whole. To this end, we monitor the largest of these institutions on a continuous basis and routinely conduct inspections and examinations of all of these firms to encourage their safe and sound operation.

The Federal Reserve has no direct role in the supervision of the commodities markets generally. The Commodity Futures Trading Commission (CFTC) was created by Congress in 1974 as an independent agency with the mandate to regulate commodity futures and option markets. Congress significantly expanded the authority of the CFTC to regulate the over-the-counter commodity derivative markets in the Dodd-Frank Wall Street Reform and Consumer Protection Act. Additionally, the Securities and Exchange Commission (SEC) oversees our nation's securities exchanges and markets and disclosures by public companies, among other things. Other independent agencies, such as the Federal Energy Regulatory Commission (FERC), also regulate segments of the physical commodities market.

Over the last five years, the Federal Reserve has taken several steps to strengthen its ongoing supervision of the largest, most complex banking companies. Most importantly, we established the Large Institution Supervision Coordinating Committee (LISCC) to ensure that oversight and supervision of the largest firms incorporates a broader range of internal

perspectives and expertise; involves regular, simultaneous, horizontal (cross-firm) supervisory exercises; and is overseen in a centralized process to facilitate consistent supervision, a well-considered response to risks or problems that may be present in more than one firm, and a perspective on the financial system as a whole. The committee includes senior bank supervisors from the Board and relevant Reserve Banks as well as senior Federal Reserve staff from the research, legal, and other divisions at the Board and from the markets and payment systems groups at the Federal Reserve Bank of New York. To date, the LISCC has developed and administered several horizontal supervisory exercises, notably the capital stress tests and related comprehensive capital reviews of the nation's largest bank holding companies.

Bank holding companies that conduct commodities activities pursuant to either section 4(k) complementary, merchant banking, or section 4(o) grandfather authority are typically subject to continuous supervision by the Federal Reserve. That supervisory oversight, for example, includes review of internal management reports, periodic meetings with the personnel responsible for managing and controlling the risks of the firm's commodities activities, and targeted examinations of those activities. The primary goals of our supervision of commodities activities are to monitor the management of risks of those activities to the financial holding companies and assess the adequacy of the firms' control environments relating to physical commodities activities.

The Federal Reserve expanded the scope of its examination and review of the firms engaged in physical commodities activities as the events of 2008 and 2009 alluded to earlier brought more firms engaged in commodities activities under the supervisory purview of the Federal Reserve. In 2009, the Federal Reserve formed an examination team to conduct

horizontal examinations of firms across the LISCC portfolio that are engaged in commodities activities.

Among the supervisory activities taken were additional reviews by examination staff specializing in commodities risk-management practices. During these reviews, the teams examined the ways firms managed risks from commodities activities. In addition, the teams reviewed the firms' processes for assessing capital needs associated with these activities. On an ongoing basis, supervisory experts monitored the firms' exposures and assessed the strength of the corresponding risk-management and control processes. This work led us to explore possible additional actions in our ANPR.

The Board requires financial holding companies that engage in commodities activities to hold regulatory capital to absorb potential losses from those activities. Financial holding companies have long been required to hold capital against the counterparty credit risk from commodity derivatives (and other types of over-the-counter derivatives) and against the market risk of all commodity positions. Following the financial crisis, the Board has strengthened its capital requirements for the credit risk and market risk of these transactions.

Still, physical commodities activities can pose unique risks to the safety and soundness of financial holding companies. While firms engaged in physical commodities activities employ measures to limit liability--including using a variety of legal structures that attempt to limit liability for catastrophic and environmental events, purchasing insurance, and allocating capital aimed at mitigating operational risk--there are considerable difficulties in estimating the possible damages related to environmental or catastrophic incidents, as evidenced by some well-publicized events in recent years. Moreover, just the uncertainty that can come about after a

catastrophic event as observers wait to see the ultimate damages could put extraordinary pressure on a financial institution engaged in these activities that could threaten its safety and soundness.

Federal Reserve Review of Physical Commodities Activities

This past January, the Federal Reserve invited public comment through an ANPR on a range of issues related to the commodities activities of financial holding companies. The scope of our ongoing review covers commodities activities and investments under section 4(k) complementary authority, merchant banking authority, and section 4(o) grandfather authority. Recently, some of the financial holding companies engaged in physical commodities activities have publicly indicated that they are reducing or terminating some of these activities.

As the ANPR explains, we are exploring what further prudential restrictions or limitations on the ability of financial holding companies to engage in commodities-related activities as a complementary activity are warranted to mitigate the risks associated with these activities. Such additional restrictions on complementary commodities activities could include reductions in the maximum amount of assets or revenue attributable to such activities, increased capital or insurance requirements on such activities, and prohibitions on holding specific types of physical commodities that pose undue risk to the company. We also are exploring what restrictions or limitations on investments made through the merchant banking authority would appropriately address those or similar risks.

In response to the notice, the Board received 184 unique comments and more than 16,900 form letters. Commenters included members of Congress, individuals, public interest groups, academics, end users, banks, and trade associations. The comments present a range of views and perspectives. Those opposed to financial holding company involvement in physical commodities activities argued that the different roles of financial holding companies in the commodities

markets (such as trading and credit) allow these firms an unfair competitive advantage and present conflicts of interest in dealing with customers. They also contend that physical commodities activities pose a wide range of risks (including compliance with environmental laws and potential market conduct issues) to financial holding companies that are difficult for companies to measure and mitigate, and for regulators to monitor.

On the other hand, a number of commodities end-users, including corporate treasurers and municipalities, as well as several trade associations and others, argued that financial holding companies provide valuable and hard-to-replace services to end-users. They also argued that financial holding companies are reliable and low-risk counterparties that enhance the efficiency of the commodities markets and provide additional liquidity to those markets. These commenters contended that financial holding companies can successfully mitigate the risks of commodities activities with robust risk management, insurance, and maintenance of appropriate corporate separateness.

As would be expected from this range of views, commenters also suggested a range of potential Board actions--from no action to prohibiting trading or ownership of commodities associated with catastrophic risk, strengthening prudential safeguards (such as reducing caps on the amount of permitted activities), strengthening risk-management practices, enhancing public disclosure, requiring additional capital, increasing regulatory coordination, and developing risk-management best practices. The Federal Reserve has been reviewing the comments and considering what steps would be appropriate to address the risks posed by physical commodities activities.

The Board has discretion with regard to the complementary activities approved under section 4(k). We are also considering whether additional restrictions are appropriate on

merchant banking investments to ensure that the investments are truly passive. Moreover, we are exploring measures such as additional capital requirements, enhanced risk-management requirements, and additional data collection and reporting requirements on physical commodities activities to help ensure that such activities do not pose undue risks to the safety and soundness of financial holding companies and their subsidiary depository institutions, or to financial stability.

Conclusion

Our review of the commodity-related activities of the firms we supervise is ongoing. We are assessing the potential risk of physical commodities activities to the safety and soundness of the financial holding companies engaged in these activities. In doing so, we are focusing on the risk to safety and soundness presented by specific activities and on whether those risks can be appropriately and adequately mitigated. In addition, we are conducting a careful and thorough assessment of the costs and benefits of financial holding company engagement in these activities. Our work includes a complete assessment of the comments we received in response to the ANPR. We expect to issue a formal notice of public rulemaking regarding these matters in the first quarter of next year.

Thank you for your attention. I would be pleased to answer any questions you might have.

**Testimony of Larry D. Gasteiger
Acting Director, Office of Enforcement
Federal Energy Regulatory Commission
Before the Permanent Subcommittee on Investigations
United States Senate
November 21, 2014**

Mr. Chairman, Ranking Member McCain, and Members of the Subcommittee:

Thank you for inviting me to testify today. My name is Larry Gasteiger, and I am the Acting Director of the Office of Enforcement of the Federal Energy Regulatory Commission (FERC, or the Commission). I appear before you as a staff witness, and the views I present are not necessarily those of the Commission or any individual Commissioner. In my testimony, I will summarize the Commission's authorities and responsibilities regarding its ability to investigate manipulation of electricity prices and markets, ensure just and reasonable energy prices, and support grid reliability, and in so doing will respond to the Subcommittee's specific questions in its hearing invitation.

I. FERC Responsibilities and Authorities

a. Prohibition on Market Manipulation

The Commission's statutory authority and responsibility to investigate market manipulation in FERC-jurisdictional energy markets is the Energy Policy Act of 2005 (EPAcT 2005). Following Enron's manipulation of the Western energy markets, Congress passed EPAcT 2005, which broadly prohibited market manipulation in FERC-regulated wholesale physical natural gas and electric markets. Congress patterned EPAcT 2005's

fraud and manipulation prohibition on the similarly broad anti-fraud and anti-manipulation provisions in the Securities and Exchange Act of 1934. Shortly after EAct 2005 was passed, the Commission implemented its new statutory authority through its anti-manipulation regulations, codified at 18 C.F.R. Section 1c. The Commission relies on the anti-manipulation authority granted in EAct 2005 to investigate potential fraud or market manipulation and, when a matter cannot settle on terms found to be within the public interest, bring enforcement actions against companies or individuals who engage in fraud or manipulation affecting FERC-regulated markets.

In EAct 2005, Congress also significantly enhanced the Commission's ability to impose civil penalties for violations of FERC rules, including fraud and manipulation, by increasing maximum civil penalties from only \$10,000 per violation per day, to up to \$1 million per violation per day. These changes strengthened FERC's ability to carry out a robust enforcement program. To date, the Commission has imposed and collected approximately \$902 million in civil penalties and disgorgement following EAct 2005. This consists of over \$602 million in civil penalties, which were distributed to the U.S. Treasury, and almost \$300 million in disgorgement of unjust profits, which were returned to affected market participants and consumers. (This amount does not include fines in electric market manipulation matters to be reviewed in federal court, for example, the approximately \$453 million civil penalties assessed by the Commission in the pending *Barclays* market manipulation matter.)

b. Ensure Just and Reasonable Energy Prices

The Commission also has the fundamental responsibility, under the Federal Power Act (FPA) Sections 205 and 206 and Natural Gas Act (NGA) Sections 4 and 5, to ensure “just and reasonable” prices in wholesale power and natural gas markets and other jurisdictional transactions. FPA Section 206 and NGA Section 5 authorize the Commission to investigate, on its own motion or upon complaint, jurisdictional rates and terms of service. If the Commission determines that such rates or terms of service do not meet the statutory standard, it must determine and establish the just and reasonable rate or term of service to be observed.

c. Protect Grid Reliability

Another aspect of FERC’s authority is to protect the reliability of the nation’s bulk power system, which it carries out through review and approval of mandatory reliability standards, as well as through audits of reliability programs and investigations of potential violations of the standards. Pursuant to Section 215 of the Federal Power Act, the Commission certified the North American Electric Reliability Corporation (NERC) as the “Electric Reliability Organization.” There are also eight Regional Entities, to which the Electric Reliability Organization may delegate authority for proposing regional reliability standards and enforcing all reliability standards, and carrying out day-to-day reliability responsibilities. Under the structure established by Congress in Section 215, NERC proposes mandatory reliability standards for the bulk power system, and the Commission

has the authority to approve the standards. In 2007, in Order No. 693,¹ the Commission approved the initial Reliability Standards, which became mandatory and enforceable that year. NERC and the Commission may carry out investigations together, or the Commission may do so independently.

To date, the Commission has completed and assessed civil penalties in eleven reliability investigations, nine of them conducted jointly with NERC. The eleven penalties assessed in reliability settlements range from \$50,000 to \$25,000,000 and total \$47.1 million. The most recent three reliability settlements arose out of the 2011 blackout of San Diego, Yuma, Arizona, and Baja California, Mexico, which left at least 5 million individuals without power for up to 12 hours.

II. Enforcement Cases Regarding Manipulation Schemes Involving Banks

The Subcommittee has specifically asked about the Commission's investigation and enforcement efforts related to electricity price manipulation schemes involving financial institutions. A number of such cases have been part of our efforts in the past few years. Although the mechanics of a manipulative scheme can be highly detailed and complex, in many of these investigations, the market manipulation scheme at issue follows the same general pattern—a trader moves prices of physical energy in the Commission's jurisdiction in order to benefit a related position held in the financial markets. This type of manipulation scheme is possible because prices in the physical

¹ *Mandatory Reliability Standards for the Bulk-Power System*, Order No. 693, FERC Stats. & Regs. ¶ 31,242, *order on reh'g*, Order No. 693-A, 120 FERC ¶ 61,053 (2007).

energy markets can serve as the basis for the prices of related financial products, such as swaps, futures contracts, other derivatives, or Financial Transmission Rights. Because the physical and financial markets are interrelated, transactions of physical energy can be used to manipulate a physical price either up or down for the purpose of increasing the value of a related financial position whose value is tied to (and indeed may settle directly on) that physical price. The trader may lose money in the physical markets as part of his manipulative scheme, but nonetheless profit overall because his financial position is more highly leveraged than his physical position—that is, his gains in the financial markets outweigh (sometimes significantly) the physical losses incurred to produce those gains.

Understanding the purpose behind the physical and financial transactions is one of the key elements of a manipulation case. If the subject intended, or acted recklessly, to move prices or distort the proper functioning of FERC-jurisdictional energy markets, that satisfies the fraudulent intent element of a manipulation case. If the subject, however, engaged in transactions based on the supply and demand fundamentals of the market, or based on hedging risk, those circumstances, absent more, do not constitute manipulative intent and therefore do not violate the Commission's anti-manipulation rule. Our approach to market manipulation cases (like other potential violations of Commission rules, regulations, and orders) is to pay rigorous attention to the specific facts of a case—and just as we do not hesitate to seek penalties and bring enforcement actions against market manipulators, we do not hesitate to close investigations where the facts show there was no violation.

Given the importance that Congress has placed on FERC's role in policing market fraud and manipulation—rightfully so, given the wide disruption such schemes can cause to wholesale energy markets and harm to consumers—the Office of Enforcement's effort to combat fraud and market manipulation has been and will continue to be its top priority. Of the settlements Enforcement has reached in the past three years, approximately one-third involve fraud and manipulation.

Let me turn to the three cases that you asked me to discuss, which involved JP Morgan Chase, Deutsche Bank, and Barclays.

Fraud and manipulation can take other forms than the physical trading-financial position framework described above. A notable example is the Commission's July 2013 settlement with a wholly-owned subsidiary of JP Morgan which, among other terms, required JP Morgan to pay a combined \$410 million in civil penalties and disgorgement to ratepayers.²

The JP Morgan case involved gaming of two regional electric markets. This settlement resolved the Office of Enforcement's investigation into 12 manipulative bidding strategies designed to make profits from power plants that were usually out of the money in the marketplace. In these manipulative strategies, which are described in greater detail in the settlement agreement and order approving it, the JP Morgan subsidiary defrauded market operators in California (the California Independent System

² See *In Re Make-Whole Payments and Related Bidding Strategies*, 144 FERC ¶ 61,068 (2013).

Operator, known as CAISO) and the Midcontinent ISO (MISO) by making bids into these markets that were not grounded in the normal forces of supply and demand, and were expected to, and did, lose money at market rates. The JP Morgan subsidiary's purpose in submitting these bids was not to make money based on market fundamentals, but to create artificial conditions that would cause the CAISO and MISO systems to pay the company outside the market at premium rates. Enforcement staff also determined that JP Morgan knew that the CAISO and MISO markets received no benefit from making these inflated payments and, thus, the company defrauded these market operators by obtaining payments for benefits it did not deliver.

Another recent settlement, our January 2013 settlement with Deutsche Bank, resolved our investigation into conduct that more neatly fits the physical trading-financial position framework.³ Deutsche Bank held a type of energy contract commonly used to hedge against, or profit from, the “congestion” on a transmission line that occurs when the line cannot carry all the electricity needed at a particular supply or delivery point on the grid. These contracts are often called Financial Transmission Rights or FTRs—though in the CAISO market at issue in the *Deutsche Bank* matter, they are called Congestion Revenue Rights (CRRs). In early 2010, Deutsche Bank began to lose money on its CRR contracts. The company initially sought to limit its losses by purchasing new CRRs in the CAISO market to reduce its exposure to congestion. But these new CRR

³ See *Deutsche Bank Energy Trading, LLC*, 142 FERC ¶ 61,056 (2013).

purchases did not fully cover its losses. So Deutsche Bank's energy traders devised and implemented a manipulative scheme that involved buying and selling physical electricity so as to alter congestion levels, and resulting market prices, at the same point corresponding to its CRR contracts. These physical transactions (in addition to violating the CAISO tariff) were unprofitable and inconsistent with market fundamentals, but did have the effect of increasing the value (*i.e.*, by limiting losses) of Deutsche Bank's CRRs.

In short, Deutsche Bank used physical energy transactions to affect congestion levels and corresponding energy prices within CAISO in order to increase the value of its CRR contracts—in violation of EPCA 2005 and the Commission's anti-manipulation rule.

The Commission's July 2013 Order Assessing Civil Penalties in *Barclays* addressed conduct that also fit this framework.⁴ The Commission's assessment of civil penalties and disgorgement in *Barclays* is currently under review in federal district court in Sacramento, so the litigation is ongoing. That being said, I can provide a brief description based on published Commission orders.

Barclays and its energy traders amassed substantial positions of physical electricity contracts through their transactions on the IntercontinentalExchange (ICE) trading platform. Barclays and its traders also assembled a financial swaps position at four

⁴ See *Barclays Bank, PLC, et al.*, 144 FERC ¶ 61,041 (2013).

important trading points in Western energy markets, whose value was pegged to published electricity price indices set by the physical electric contracts Barclays traded. The Commission found that Barclays engaged in manipulative physical trades to “flatten out” the physical electricity positions it had amassed on its trading books in a manner designed to influence the index prices that determined the value of its swaps. Barclays’s physical trading was uneconomic and not based on market fundamentals; indeed, the company often lost money in the physical markets. But Barclays’s physical trading nonetheless profited the company overall because its trades helped move the index price that set the value of its larger financial swaps benefiting position.

III. Surveillance Efforts to Identify Manipulation in the Electricity Markets

The Subcommittee has asked about FERC’s efforts to identify price manipulation in both physical and financial markets related to electricity. In the last few years, FERC has enhanced its abilities in this area by adding surveillance tools, expert staff, and new analytical capabilities. In 2012, the Commission established a dedicated unit for market surveillance and analysis, called the Division of Analytics and Surveillance (DAS) in the Office of Enforcement. There are approximately 45 professionals in our DAS unit, including economists, energy industry analysts, former traders, and former risk managers. They develop surveillance tools, analyze transactional and market data to detect potential manipulation and anticompetitive behavior, and assist in the analytical rigors of market manipulation investigations.

DAS employs sophisticated market screens as the centerpiece of its surveillance program. Based on statistical analysis and behavioral patterns, staff has built automated processes that it uses to evaluate market data to identify suspicious trading activity. For example, market screens can help staff identify problematic trading by monitoring the interactions between bidding strategies and potentially benefiting physical and financial positions. Other screens identify patterns in offers for physical energy which result in abnormal out of market payments. As Commission rulemakings in the last few years have expanded data sources, DAS has incorporated new information into its screens and gained greater visibility into trading between markets.

In the past year, FERC's surveillance and enforcement efforts have been enhanced by information-sharing with the Commodity Futures Trading Commission (CFTC). Because the electric markets are interrelated with financial markets containing power-based products and indices, relevant financial data in manipulation cases is often found in markets regulated by the CFTC. This past January, FERC and the CFTC signed a Memorandum of Understanding to enable the agencies to share surveillance-related information. So far this year, the implementation of the MOU has assisted FERC's investigative efforts. Also this year, FERC began receiving a daily feed of data from the CFTC's Large Trader Report (LTR), which includes participant-level open financial positions for certain energy products. The LTR has proven to be very useful to our surveillance work, especially for identifying potentially manipulative conduct. Going forward, the LTR will continue to be a significant resource for our surveillance and

enforcement efforts.

In addition to their surveillance work, DAS staff works closely with the Division of Investigations, which includes approximately 45 attorneys and other staff who conduct investigations and bring enforcement actions. DAS refers suspicious conduct for possible investigation, provides data analysis in ongoing investigations, and gives other expert assistance.

Thus, the Office of Enforcement is in a better position than ever to identify and enforce the Commission's rules when violations occur. Our DAS unit has developed into a sophisticated, well-staffed operation that has been able to continually refine its surveillance of the markets. Our Division of Investigations has a top-notch staff of attorneys and support professionals to carry out the mandates in EAct 2005 and bring enforcement actions under those new authorities. Increased cooperation with other regulators, including the CFTC, but also the Department of Justice, United States Attorneys' Offices, the Securities and Exchange Commission, the Federal Trade Commission, and the Federal Reserve, has also advanced our mission.

The Subcommittee has asked about any impediments to FERC's surveillance and investigative efforts. On the whole, FERC has the resources and tools it needs to effectively police FERC-regulated markets. One limitation, however, follows from the decision by the U.S. Court of Appeals for the District of Columbia Circuit last year in *Hunter v. FERC*, 711 F.3d 155 (D.C. Cir. 2013). In *Hunter*, FERC brought an

enforcement action against the market manipulation by a trader at the Amaranth hedge fund. After the Commission assessed a \$30 million penalty, the court ruled that the CFTC's exclusive jurisdiction over futures contracts deprives FERC of authority to bring an action based on manipulation in the futures market, even if the activity affected prices in the physical markets for which FERC has exclusive jurisdiction. Although the Commission reads the *Hunter* decision as narrow in scope, some market participants interpret the decision more broadly to cover not only manipulation in the futures market, but also many additional transactions and products, including those squarely within FERC's jurisdictional markets. Accordingly, a legislative fix to eliminate uncertainty on this matter could ensure that FERC has the full authority needed to police manipulation of wholesale physical natural gas and electric markets.

IV. Reliability Compliance

I know the Subcommittee is also interested in patterns of grid reliability compliance or other reliability efforts in connection with bank owners or bank operators of power plants. While we have not discerned any patterns regarding official enforcement actions for reliability failures in connection with bank owners or operators, there is at least one instance in which a bank's actions had the potential to impact reliability efforts.

In summer 2012, the California grid system operator, CAISO, identified a need for additional voltage support in Southern California for the following summer due to the

outage of a generating station during a time of peak demand.⁵ CAISO designated two generating units in Huntington Beach, which had been taken out of service, as “reliability must-run units,” and sought to convert the units in order to produce the needed voltage support, which CAISO pursued as the only feasible option given the short time frame. A JP Morgan Chase subsidiary had an agreement with the owner and operator of those two generating units, and though the owner agreed to the conversion project, it did not believe it could move forward without the consent of JP Morgan, which refused its consent. CAISO pressed JP Morgan to allow the reliability project to proceed, but the bank protested. When CAISO sought relief from the Commission, JP Morgan responded that the dispute was essentially a private dispute over a business contract, over which the Commission held no jurisdiction.

In January 2013, the Commission issued an order, determining that JP Morgan’s agreement for the sale at wholesale of capacity and energy produced by those units was within the Commission’s jurisdiction. Moreover, it determined that JP Morgan’s consent was not necessary for the reliability project to proceed, and that the bank’s questions about CAISO’s reliability decisions were beyond the scope of the proceeding because CAISO’s solution was feasible and well within its authority. Ultimately, JP Morgan transferred its agreement regarding the two plants, among others, to Southern California

⁵ *Cal. Indep. Sys. Operator Corp.*, 142 FERC ¶ 61,016 (Order on petition for declaratory order) (2013).

Edison Company, which consented to the reliability project.⁶

V. Role of Financial Institutions

Another topic the Subcommittee has asked about is whether financial holding company involvement with physical energy production has affected how those financial institutions approach the power plant business. The Commission has not taken any view on the participation in its regulated markets by financial holding companies (or any trading firm, bank, or other financial institution) versus more traditional energy companies like generators or utilities. Instead, the Commission's general view has been that financial institutions of all kinds, as well as energy companies of all kinds, can benefit markets in numerous ways. However, the Commission expects financial institutions, like all other participants in FERC-regulated markets, to have good compliance programs, transact in a manner that follows market rules in letter and spirit, work cooperatively with grid operators and the Commission when there are concerns, and self-report potential violations.

With regard to reliability, the model is structured in such a way that all users, owners, and operators of the Bulk Power System must register with NERC for the defined functions each performs. By this registration, each entity's roles and responsibilities are clearly defined, as are the specific reliability standards to which each

⁶ *Cal. Indep. Sys. Operator Corp.*, 145 FERC ¶ 61,004 (Order on rehearing) (2013). The transfer of rights mooted the issue, which was Commission's rationale in dismissing JP Morgan's additional litigation. *Id.*

must comply.⁷ The reliability standards require generators to operate their units (provide more or less power) as needed and directed by system operators (i.e., reliability coordinators, transmission operators, and balancing authorities). So long as the generator owners devote the time, effort, and resources required to be in compliance with the applicable reliability standards, the Commission has not found it necessary to restrict ownership of individual generation projects to traditional generators or affiliates.

In conclusion, I want to thank the Subcommittee for the invitation to testify today. I look forward to answering any questions you may have.

⁷ See NERC Statement of Compliance Registry Criteria, [http://www.nerc.com/FilingsOrders/us/RuleOfProcedureDL/Appendix_5B_RegistrationCriteria_20140701_updated_20140602%20\(updated\).pdf](http://www.nerc.com/FilingsOrders/us/RuleOfProcedureDL/Appendix_5B_RegistrationCriteria_20140701_updated_20140602%20(updated).pdf)

United States Senate
PERMANENT SUBCOMMITTEE ON INVESTIGATIONS
Committee on Homeland Security and Governmental Affairs

Carl Levin, Chairman
John McCain, Ranking Minority Member

**WALL STREET BANK
INVOLVEMENT WITH
PHYSICAL COMMODITIES**

**MAJORITY AND MINORITY
STAFF REPORT**

**PERMANENT SUBCOMMITTEE
ON INVESTIGATIONS**

UNITED STATES SENATE



**RELEASED IN CONJUNCTION WITH THE
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NOVEMBER 20 AND 21, 2014 HEARING**

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WALL STREET BANK INVOLVEMENT WITH PHYSICAL COMMODITIES

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WALL STREET BANK INVOLVEMENT WITH PHYSICAL COMMODITIES

I. EXECUTIVE SUMMARY

For more than a decade, the U.S. Senate Permanent Subcommittee on Investigations has investigated and presented case histories on the workings of the commodities markets, with the objective of ensuring well-functioning markets with market-based prices, effective hedging tools, and safeguards against market manipulation, conflicts of interest, and excessive speculation. Past investigations have presented case studies on pricing gasoline; exposing a \$6 billion manipulation of natural gas prices by a hedge fund called Amaranth; closing the Enron loophole impeding energy market oversight; tracing excessive speculation in the crude oil and wheat markets; exposing the increased role of mutual funds, exchange traded funds, and other financial firms in commodity speculation; and revitalizing position limits as tools to combat market manipulation and excessive speculation.¹

This investigation focuses on the recent rise of banks and bank holding companies as major players in the physical markets for commodities and related businesses. It presents case studies of three major U.S. bank holding companies, Goldman Sachs,² JPMorgan Chase,³ and Morgan Stanley that over the last ten years were the largest bank holding company participants in physical commodity activities. Those activities included trading uranium, operating coal mines, running warehouses that store metal, stockpiling aluminum and copper, operating oil and gas pipelines, planning to build a compressed natural gas facility, acquiring a natural gas pipeline company, selling jet fuel to airlines, and operating power plants.

The United States has a long tradition of separating banks from commerce. The Subcommittee's case studies show how that tradition is eroding, and along with it, protections from a long list of risks and

¹ See, e.g., U.S. Senate Permanent Subcommittee on Investigations reports and hearings, "Gas Prices: How Are They Really Set?" S. Hrg. 107-509 (April 30 and May 2, 2002); "U.S. Strategic Petroleum Reserve: Recent Policy has Increased Costs to Consumers But Not Overall U.S. Energy Security," S. Prt. 108-18 (March 5, 2003); "The Role of Market Speculation in Rising Oil and Gas Prices: A Need to Put the Cop Back on the Beat," S. Prt. 109-65 (June 27, 2006); "Excessive Speculation in the Natural Gas Market," S. Hrg. 110-235 (June 25 and July 9, 2007); "Excessive Speculation in the Wheat Market," S. Hrg. 110-235 (June 25 and July 9, 2007); "Excessive Speculation and Compliance with the Dodd-Frank Act," S. Hrg. 112-313 (November 3, 2011); and "Compliance with Tax Limits on Mutual Fund Commodity Speculation," S. Hrg. 112-343 (January 26, 2012).

² The terms "Goldman Sachs" and "Goldman" are intended to refer to The Goldman Sachs Group, Inc., the financial holding company, unless otherwise indicated.

³ The terms "JPMorgan Chase" or "JPMorgan" are intended to refer to JPMorgan Chase & Co., the financial holding company, unless otherwise indicated.

potentially abusive conduct, including significant financial loss, catastrophic event risks, unfair trading, market manipulation, credit distortions, unfair business competition, and conflicts of interest. The investigation also highlights how the Federal Reserve has identified financial holding company involvement with physical commodities as a significant risk, but has taken insufficient steps to address it. More is needed to safeguard the U.S. financial system and protect U.S. taxpayers from being forced to bailout large financial institutions involved with physical commodities.

A. Subcommittee Investigation

The Subcommittee initiated this investigation in 2012. As part of the investigation, the Subcommittee gathered and reviewed over 90,000 pages of documents from Goldman Sachs, JPMorgan, Morgan Stanley, the Federal Reserve, the Office of the Comptroller of the Currency (OCC), Commodity Futures Trading Commission (CFTC), and Federal Energy Regulatory Commission (FERC), as well as from a number of other financial firms and agencies. The Subcommittee obtained information from them through information requests, briefings, interviews, and reviews of publicly available information. The Subcommittee participated in 78 interviews and briefings involving the financial institutions, regulators, and other businesses and agencies. In addition, the Subcommittee spoke with academic and industry analysts, as well as experts in a variety of fields, including banking law, commodities trading, environmental and catastrophic risk management, and the aluminum, copper, coal, uranium, natural gas, oil, jet fuel, and power markets. Goldman Sachs, Morgan Stanley, and JPMorgan, as well as U.S. federal banking regulators, other U.S. agencies, and the London Metal Exchange (LME) all cooperated with Subcommittee requests for information.

B. Investigation Overview

The Subcommittee investigation developed case studies involving the three U.S. financial holding companies with the largest levels of involvement with physical commodities, Goldman Sachs, JPMorgan, and Morgan Stanley. Within each case study, the Subcommittee looked at three specific commodities issues in detail to illustrate the wide variety of physical commodity activities underway and the particular concerns they raise.

The Goldman case study looks at Goldman's acquisition of a company called Nufcor which bought and sold physical uranium and supplied it to nuclear power plants. The case study also examines Goldman's ownership of two open-pit coal mines in Colombia and its use of Colombian subsidiaries to produce, market, and export that coal. In addition, it scrutinizes Goldman's involvement with aluminum,

including its acquisition of Metro International Trade Services LLC, a warehouse company with nearly 30 Detroit warehouses containing the largest LME-certified aluminum stocks in the United States.

The Morgan Stanley case study focuses on Morgan Stanley's involvement with natural gas, in particular its effort to construct a new compressed natural gas facility in Texas and its involvement with a natural gas pipeline company in the Midwest named Southern Star. It also examines Morgan Stanley's involvement with oil storage and transport activities, and its role as a supplier of jet fuel to United Airlines and as a jet fuel hedging counterparty to Emirates airline.

The JPMorgan case study features JPMorgan's acquisition of over 30 power plants across the United States, and subsequent involvement with manipulating electricity payments and blocking plant modifications to improve grid reliability. The case study also examines JPMorgan's involvement with physical copper activities, including massive copper trades, a multi-billion-dollar copper inventory that operates free of regulatory size limits, and a proposal to establish a copper-backed exchange traded fund that some industrial copper users view as potentially creating artificial copper shortages and price increases. In addition, the case study examines how JPMorgan used loopholes, exclusions, and valuation minimization techniques to stay under regulatory limits on the size of its physical commodity holdings.

In addition to analyzing financial company involvement with physical commodity activities, the investigation examined the level of oversight exerted by the Federal Reserve, which has sole authority over bank holding companies in the United States, including bank holding companies that have elected to operate as "financial holding companies" authorized to engage in physical commodity activities. In 2009, as part of its effort to analyze risks in the U.S. financial system after the financial crisis, the Federal Reserve identified bank involvement with physical commodities as an area of concern and initiated a multi-year review of the issue. In an October 2012 report, the Federal Reserve Bank of New York Commodities Team that conducted the special review issued an internal, staff-level report concluding bank involvement with physical commodities raised significant concerns that required action. A year ago, the Federal Reserve signaled that it was considering initiating a rulemaking to reduce the risks associated with physical commodities, but has yet to issue a proposed rule.

Risky Activities. All three of the financial holding companies examined by the Subcommittee were engaged in a wide range of risky physical commodity activities which included, at times, producing, transporting, storing, processing, supplying, or trading energy, industrial metals, or agricultural commodities. Many of the attendant risks were

new to the banking industry, and could result in significant financial losses to the financial institutions.

One set of risks arose from the sheer size of each financial institution's physical commodity activities. Until recently, Morgan Stanley controlled over 55 million barrels of oil storage capacity, 100 oil tankers, and 6,000 miles of pipeline. JPMorgan built a copper inventory that peaked at \$2.7 billion, and, at one point, included at least 213,000 metric tons of copper, comprising nearly 60% of the available physical copper on the world's premier copper trading exchange, the LME. In 2012, Goldman owned 1.5 million metric tons of aluminum worth \$3 billion, about 25% of the entire U.S. annual consumption. Goldman also owned warehouses which, in 2014, controlled 85% of the LME aluminum storage business in the United States. Those large holdings illustrate the significant increase in participation and power of the financial holding companies active in physical commodity markets.

In addition to accumulating large inventories, the three financial holding companies engaged in transactions involving massive amounts of physical commodities. JPMorgan executed a series of copper trades in 2010 involving more than \$1.5 billion, and a series of aluminum trades in 2011 involving \$1.9 billion. In 2012, Goldman twice made purchases of LME warrants providing title to physical aluminum worth more than \$1 billion. In 2012, Morgan Stanley bought 950,000 barrels of heating oil. These transactions represented outsized physical commodity trades within their respective markets. Since most physical commodity transactions are not subject to regulation by the Commodity Futures Trading Commission, Securities Exchange Commission (SEC), or bank regulators, those transactions also represent an area in which risky conduct may escape federal oversight.

In addition to compiling huge commodity inventories and participating in outsized transactions, the three financial holding companies chose to engage in commodity-related businesses that carried potential catastrophic event risks. While the likelihood of an actual catastrophe remained remote, those activities carried risks that banks normally avoided altogether. Goldman, for example, bought a uranium business that carried the risk of a nuclear incident, as well as open pit coal mines that carried potential risks of methane explosions, mining mishaps, and air and water pollution. Its coal mines also experienced extended labor unrest, which at one point led to requests for police and military assistance to remove a human blockade preventing entry to the mines, risking injuries, an international incident, or worse. Morgan Stanley owned and invested in extensive oil storage and transport facilities and a natural gas pipeline company which, together, carried risks of fire, pipeline ruptures, natural gas explosions, and oil spills. JPMorgan bought dozens of power plants whose risks included fire,

explosions, and air and water pollution. Throughout most of their history, U.S. banks have not incurred those types of catastrophic event risks.

In some cases, the financial holding companies intensified their liability risks. Morgan Stanley formed shell companies to launch construction of a compressed natural gas facility, and ran the venture entirely with Morgan Stanley employees and resources, opening up the financial holding company to direct liability if a worst case scenario should occur. Goldman bought two Colombian coal mines, took control of 100% of the coal sales, and provided other essential services to its subsidiaries running the business, putting itself at significant financial risk if potential mining-related accidents were to occur. Goldman also purchased an existing uranium business and, after its employees left, used Goldman personnel to buy and sell uranium and supply it to nuclear power plants. JPMorgan took 100% ownership of several power plants, exposing the financial holding company, as the direct owner, to financial liability should any of those plants experience a catastrophic event.

At the same time, none of the three financial holding companies was adequately prepared for potential losses from a catastrophic event related to its physical commodity activities, having allocated insufficient capital and insurance to cover losses compared to other market participants. In its recent public filing seeking comment on whether it should impose new regulatory constraints on financial holding companies conducting physical commodity activities, the Federal Reserve described a litany of past industrial disasters, including massive oil spills, railway crashes, nuclear power plant meltdowns, and natural gas explosions.⁴ The Federal Reserve wrote:

“Recent disasters involving physical commodities demonstrate that the risks associated with these activities are unique in type, scope and size. In particular, catastrophes involving environmentally sensitive commodities may cause fatalities and economic damages well in excess of the market value of the commodities involved or the committed capital and insurance policies of market participants.”⁵

When the Federal Reserve Commodities Team, in 2012, analyzed the extent to which a group of four financial holding companies, including the three examined here, had allocated capital and insurance to cover “extreme loss scenarios,” it determined that all four had

⁴ See “Complementary Activities, Merchant Banking Activities, and Other Activities of Financial Holding Companies Related to Physical Commodities,” 79 Fed.Reg. 3329 (daily ed. Jan. 21, 2014)(hereinafter “ANPR”), <http://www.gpo.gov/fdsys/pkg/FR-2014-01-21/pdf/2014-00996.pdf>.

⁵ Id. at 3331.

insufficient coverage, and that each had a shortfall of \$1 billion to \$15 billion.⁶ In other words, if a catastrophic event were to subject a financial holding company to multi-billion-dollar costs to the same extent as, for example, BP Petroleum in the Deep Water Horizon oil spill disaster, the financial holding company would not have the capital and insurance needed to cover its losses which, in turn, might lead to its business partners and creditors reducing their business activities or lending to the financial holding company, exacerbating its financial difficulties. In a worst case scenario, the Federal Reserve and ultimately U.S. taxpayers could be forced to step in with financial support to avoid the financial institution's collapse and consequential damage to the U.S. financial system and economy.

Unfair Trading Advantages. A second set of issues involves unfair trading advantages. When financial holding companies seek permission from the Federal Reserve to engage in physical commodity activities, a common reason given for approving the activities is that exposure to the physical market would improve the company's trading in the corresponding financial market. For example, in its 2005 application to the Federal Reserve for complementary authority to participate in physical commodity activities, JPMorgan explained that engaging in such activities would:

“position JPM Chase in the supply end of the commodities markets, which in turn will provide access to information regarding the full array of actual produce and end-user activity in those markets. The information gathered through this increased market participation will help improve projections of forward and financial activity and supply vital price and risk management information that JPM Chase can use to improve its financial commodities derivative offerings.”⁷

In the activities reviewed by the Subcommittee, the financial companies often traded in both the physical and financial markets at the same time, with respect to the same commodities, frequently using the same traders on the same trading desk. In some cases, after purchasing a physical commodity business, the financial holding company ramped up its financial trading. For example, after Goldman bought Nufcor, the uranium company, it increased Nufcor's trading activity tenfold, going in four years from an annualized rate of 1.3 million pounds of uranium to trades involving 13 million pounds. In all of the commodities examined by the Subcommittee, however, the trades executed by the

⁶ 10/3/2012 “Physical Commodity Activities at SIFIs,” prepared by Federal Reserve Bank of New York Commodities Team, (hereinafter “2012 Summary Report”), FRB-PSI-200477 - 510, at 498, 509 [sealed exhibit]. See also ANPR, at 3332 - 3333.

⁷ 7/21/2005 “Notice to the Board of Governors of the Federal Reserve System by JPMorgan Chase & Co. Pursuant to Section 4(k)(1)(B) of the Bank Holding Company Act of 1956, as amended, and 12 C.F.R. §225.89,” PSI-FederalReserve-01-000004 - 028, at 016.

financial holding companies in a commodity's physical markets remained a small percentage of the trades they executed in the corresponding financial markets, reflecting the greater focus of the financial holding companies on earning substantial revenues from trading in those financial markets.

In some cases, financial holding companies used their physical commodity activities to influence or even manipulate commodity prices. JPMorgan, for example, paid \$410 million to settle charges by the Federal Energy Regulatory Commission that it used manipulative bidding practices to obtain excessive electricity payments in California and the Midwest. Goldman was sued by over a dozen industrial users of aluminum claiming that Goldman's warehouses were artificially delaying the release of aluminum from storage to boost prices and restrict supplies. As discussed below, in connection with its warehouses in Detroit, Goldman approved "merry-go-round" transactions in which warehouse clients were paid cash incentives to load aluminum from one Metro warehouse into another, essentially blocking the warehouse exits while they moved their metal. Those merry-go-round transactions lengthened the queue for other metal owners seeking to exit the Detroit warehouses, accompanied by increases in the Midwest Premium for aluminum. In another troubling development, JPMorgan proposed an exchange traded fund (ETF) to be backed with physical copper, described below. In filings with the Securities and Exchange Commission, some industrial copper users charged that the proposed ETF would create artificial copper shortages as copper was stockpiled to back the fund, leading to price hikes and, potentially, manipulation of market prices.

In addition, in each of the three case studies, evidence showed that the financial holding companies used their physical commodity activities to gain access to commercially valuable non-public information that could be used to benefit their financial trading activities. For example, Morgan Stanley's oil storage and transport activities gave it access to information about oil shipments, storage fill rates, and pipeline breakdowns. That information was available not only with respect to its own activities, but also for clients using its storage and pipeline facilities. Goldman's warehouse business gave over 50 Goldman employees access to confidential warehouse information about aluminum shipments, storage volumes, and warrant cancellations. Its coal mines in Colombia, the number one exporter of coal to the United States, provided Goldman with non-public information about coal prices, export levels, and environmental regulatory developments that could affect coal exports. JPMorgan's power plants gave it insights into electricity costs, congestion areas, and power plant capabilities and shutdowns, all of which could be used to advantage in trading activities. In each instance, non-public market intelligence about physical

commodity activities provided an opportunity for the financial holding company to use the information to benefit its financial trading activities.

U.S. commodities laws traditionally have not barred the use of non-public information by commodity traders in the same way as securities laws have barred its use in securities trades. But when large financial holding companies begin to take control of physical commodity businesses, gain access to large amounts of commercially valuable market intelligence unavailable to most market participants, and use that information to make large profitable trades in financial markets, concerns deepen about unfair trading advantages. Those types of concerns have been magnified by the financial holding companies' increased involvement with physical commodities.

Commodity markets used to be dominated by commodity producers and end-users, like farmers, manufacturers, airlines, and municipalities who relied on the commodity markets to determine fair prices for critical materials, and to hedge their future price risks. They typically held 70% of the open interest in the futures markets, while commodity speculators held about 30%. But by 2011, those percentages were reversed, with commodity speculators dominating U.S. commodity markets, including financial holding companies like the three Wall Street banks examined by the Subcommittee. Under those changed circumstances, if commodity markets are to be fair, it is particularly important that large traders like financial holding companies not gain unfair trading advantages.

Mixing Banking and Commerce. For over 150 years, the United States has generally restricted banks to the business of banking and discouraged the mixing of banking and commerce. Multiple concerns, discussed in more detail below, have been articulated over the years to support the separation of banking from commerce, but the case studies discussed in this Report show how that principle is being eroded.

The case studies show how financial holding companies have taken control of numerous commercial businesses that have never before been run by a bank or bank holding company. Morgan Stanley's effort to construct a compressed natural gas facility, for example, is unprecedented for a bank or bank holding company, and in direct competition with a similar project by a private company. Morgan Stanley's jet fuel supply services also compete directly with oil and refining companies providing the same services. Goldman's coal operations are in direct competition with those of an American company that is the second largest coal producer in Colombia. In running its power plants, JPMorgan competes with utilities and other energy companies that specialize in that business. Until recently, banks and

their holding companies focused on financing private sector businesses, rather than acquiring and using subsidiaries to compete against them.

One key concern when financial holding companies compete against non-bank companies is that their borrowing costs will nearly always undercut those of their non-bank competitors. Another advantage is their relatively low capital requirements. The Federal Reserve Commodities Team determined that, in 2012, corporations engaged in oil and gas businesses typically had a capital ratio of 42% to cover potential losses, while bank holding company subsidiaries had a capital ratio of, on average, 8% to 10%, making it much easier for them to invest corporate funds in their business operations.⁸ In addition to those fundamental economic advantages over non-bank companies, a financial holding company could, in theory, help its rise in a particular business simply by not providing financing to its rivals. Some experts have identified less expensive financing, lower capital, and control over credit decisions as key factors that give financial holding companies an unfair advantage over non-bank competitors and represent some of the concerns motivating the traditional U.S. ban on mixing banking with commerce. Avoiding the catastrophic risks described above is another.

Still another set of concerns involves the transitory nature of a financial holding company's involvement in any particular physical commodity operation. In most cases, financial holding companies are looking for short-term financial returns rather than making long-term commitments to run a business like a power plant or natural gas facility. In addition, financial holding companies that make so-called merchant banking investments in a commercial company are constrained by law to sell those investments generally within ten years.

Those relatively short-term investment horizons mean that financial holding companies are not or may not be willing to develop or dedicate the resources, time, and expertise needed to make complex infrastructure investments and meet regulatory requirements. For example, in the case studies, Goldman chose not to upgrade its port in Colombia with new coal loading equipment, while JPMorgan stalled upgrades to two power plants in California to support grid reliability, making decisions contrary to the companies participating in those business sectors for the long haul. Without those investments, however, a financial holding company may place itself at greater risk of violating regulations or experiencing a catastrophic event. A related concern is whether decisions by financial holding companies to delay or avoid infrastructure investments disadvantage competitors who do make those investments and may, in fact, pressure those competitors to delay or skimp on needed infrastructure as well.

⁸ 2012 Summary Report, at FRB-PSI-200499.

Many physical commodity businesses today rely on a small cadre of experienced corporations with long term investment horizons to transport oil and gas, mine coal, process uranium, or generate electricity. Those corporations make expensive infrastructure investments. The prospect of financial holding companies changing those markets by buying particular companies, capturing profits, and then pulling out, is a troubling scenario.

Inadequate Safeguards. A final set of issues involves a current lack of effective regulatory safeguards related to financial holding company involvement with risky physical commodities. As explained in the following chapters, financial holding companies currently conduct physical commodity activities under one of three authorities provided in the Gramm-Leach-Bliley Act of 1999, the so-called complementary, merchant banking, and grandfather authorities. Despite enactment of that law 15 years ago, the Federal Reserve has yet to address a host of pressing questions related to how that law should be implemented.

For example, the Federal Reserve has never issued guidance on the scope of the grandfather authority that allows financial firms that convert to bank holding companies to continue to engage in certain physical commodity activities. That failure has allowed Goldman and Morgan Stanley to use expansive readings of the grandfather authority to justify otherwise impermissible physical commodity activities. The Federal Reserve has also failed to specify capital and insurance minimums to protect against losses related to catastrophic events. Nor has it clarified whether financial holding companies can use shell companies to conduct physical commodity businesses as Morgan Stanley and Goldman have done in their compressed natural gas and uranium trading businesses. Procedures to force divestment of impermissible physical commodity activities are also opaque and slow.

One key problem is that the Federal Reserve currently relies upon an uncoordinated, incoherent patchwork of limits on the size of the physical commodity activities conducted under various legal authorities, permitting major exclusions, gaps, and ambiguities. In September 2012, for example, according to its own records, JPMorgan held physical commodity assets with a combined market value of at least \$17.4 billion, which was then equal to nearly 12% of its Tier 1 capital of \$148 billion, while at the same time calculating its physical commodity assets for regulatory purposes at \$6.6 billion or just 4.5% of its Tier 1 capital. JPMorgan was able to report that lower amount by excluding and minimizing the market value of many of its physical commodity assets, including billions of dollars in industrial metal held by its subsidiary national bank. The Federal Reserve has not, to date, objected to JPMorgan's key exclusions. The Office of the Comptroller of the Currency (OCC) has its own size limit, which applies to its banks, but

those are also ineffective in calculating the actual size of a bank's commodity holdings. Size limits subject to massive exclusions provide an illusion of risk management. The existing size limits on physical commodities need to be reworked to ensure they effectively achieve the intended limit on financial holding companies' and banks' commodities holdings.

A final set of problems arise from the lack of essential data. The Federal Reserve only recently began requiring regular reports from financial holding companies tracking their compliance with size limits, and has yet to clarify how the market value of commodity holdings should be calculated for compliance purposes. Commodity-related merchant banking investments are made by multiple components within a financial holding company – in the commodities division, proprietary investment units, infrastructure funds, and other capital funds – but the Federal Reserve does not require a listing of all of those physical commodity investments on a single report. Instead, the Federal Reserve requires an annual merchant banking report with such high level aggregate data that it cannot be used to analyze the extent to which those investments involve physical commodities or the extent to which the data includes all of the commodity-related investments taking place throughout the financial holding company. The Federal Reserve does even less with respect to grandfathered physical commodity activities, not requiring any regular reports at all. Moreover, the availability of public information on financial holding company involvement with physical commodities is almost non-existent. Ensuring physical commodity activities are conducted in a safe and secure manner will require more comprehensive, regular, and publicly available reports from financial holding companies.

In early 2014, the Federal Reserve indicated that it was considering issuing a new rulemaking to address the risks to the financial system caused by bank involvement with physical commodities. That announcement was based upon several years of work examining the physical commodity activities being conducted by financial holding companies. The Federal Reserve's focus on the issue has also led all three of the financial holding companies examined by the Subcommittee to reduce the level and breadth of their physical commodity activities. However, none of the three has yet exited the area completely, and other financial institutions are considering entering the field or increasing their physical commodity activities. In addition, Goldman has said that it considers physical commodities to be a core business it is not leaving.

C. Findings of Fact and Recommendations

Findings of Fact

- (1) **Engaging in Risky Activities.** Since 2008, Goldman Sachs, JPMorgan Chase, and Morgan Stanley have engaged in many billions of dollars of risky physical commodity activities, owning or controlling, not only vast inventories of physical commodities like crude oil, jet fuel, heating oil, natural gas, copper, aluminum, and uranium, but also related businesses, including power plants, coal mines, natural gas facilities, and oil and gas pipelines.
- (2) **Mixing Banking and Commerce.** From 2008 to 2014, Goldman, JPMorgan, and Morgan Stanley engaged in physical commodity activities that mixed banking and commerce, benefiting from lower borrowing costs and lower capital to debt ratios compared to nonbank companies.
- (3) **Affecting Prices.** At times, some of the financial holding companies used or contemplated using physical commodity activities, such as electricity bidding strategies, merry-go-round trades, or a proposed exchange traded fund backed by physical copper, that had the effect or potential effect of manipulating or influencing commodity prices.
- (4) **Gaining Trading Advantages.** Exercising control over vast physical commodity activities gave Goldman, JPMorgan, and Morgan Stanley access to commercially valuable, non-public information that could have provided advantages in their trading activities.
- (5) **Incurring New Bank Risks.** Due to their physical commodity activities, Goldman, JPMorgan, and Morgan Stanley incurred multiple risks normally absent from banking, including operational, environmental, and catastrophic event risks, made worse by the transitory nature of their investments.
- (6) **Incurring New Systemic Risks.** Due to their physical commodity activities, Goldman, JPMorgan, and Morgan Stanley incurred increased financial, operational, and catastrophic event risks, faced accusations of unfair trading advantages, conflicts of interest, and market manipulation, and intensified problems with being too big to manage or

regulate, introducing new systemic risks into the U.S. financial system.

- (7) **Using Ineffective Size Limits.** Prudential safeguards limiting the size of physical commodity activities are riddled with exclusions and applied in an uncoordinated, incoherent, and ineffective fashion, allowing JPMorgan, for example, to hold physical commodities with a market value of \$17.4 billion – nearly 12% of its Tier 1 capital – while at the same time calculating the market value of its physical commodity holdings for purposes of complying with the Federal Reserve limit at just \$6.6 billion.
- (8) **Lacking Key Information.** Federal regulators and the public currently lack key information about financial holding companies' physical commodities activities to form an accurate understanding of the nature and extent of those activities and to protect the markets.

Recommendations

- (1) **Reaffirm Separation of Banking and Commerce as it Relates to Physical Commodity Activities.** Federal bank regulators should reaffirm the separation of banking from commerce, and reconsider all of the rules and practices related to physical commodity activities in light of that principle.
- (2) **Clarify Size Limits.** The Federal Reserve should issue a clear limit on a financial holding company's physical commodity activities; clarify how to calculate the market value of physical commodity holdings; eliminate major exclusions; and limit all physical commodity activities to no more than 5% of the financial holding company's Tier 1 capital. The OCC should revise its 5% limit to protect banks from speculative or other risky positions, including by calculating it based on asset values on a commodity-by-commodity basis.
- (3) **Strengthen Disclosures.** The Federal Reserve should strengthen financial holding company disclosure requirements for physical commodities and related businesses in internal and public filings to support effective regulatory oversight, public disclosure, and investor protections, including with respect to commodity-related merchant banking and grandfathered activities.

- (4) **Narrow Scope of Complementary Activity.** The Federal Reserve should narrow the scope of “complementary” activities by requiring financial holding companies to demonstrate how a proposed physical commodity activity would be directly linked to and support the settlement of other financial transactions conducted by the company.
- (5) **Clarify Scope of Grandfathering Clause.** The Federal Reserve should clarify the scope of the “grandfather” clause as originally intended, which was only to prevent disinvestment of physical commodity activities that were underway in September 1997, and continued to be underway at the time of a company’s conversion to a financial holding company.
- (6) **Narrow Scope of Merchant Banking Authority.** The Federal Reserve should tighten controls over merchant banking activities involving physical commodities by shortening and equalizing the 10-year and 15-year investment time periods, clarifying the actions that qualify as “routine operation and management” of a business, and including those activities under an overall physical commodities size limit.
- (7) **Establish Capital and Insurance Minimums.** The Federal Reserve should establish capital and insurance minimums based on market-prevailing standards to protect against potential losses from catastrophic events in physical commodity activities, and specify the catastrophic event models used by financial holding companies.
- (8) **Prevent Unfair Trading.** Financial regulators should ensure that large traders, including financial holding companies, are legally precluded from using material non-public information gained from physical commodities activities to benefit their trading activities in the financial markets.
- (9) **Utilize Section 620 Study.** Federal regulators should use the ongoing Section 620 study requiring regulators to identify permissible bank activities to restrict banks and their holding companies from owning or controlling physical commodities in excess of 5% of their Tier 1 capital and consider other appropriate modifications to current practice involving physical commodities.

- (10) Reclassify Commodity-Backed ETFs.** The Commodity Futures Trading Commission (CFTC) and Securities Exchange Commission should treat exchange traded funds (ETFs) backed by physical commodities as hybrid security-commodity instruments subject to regulation by both agencies. The CFTC should apply position limits to ETF organizers and promoters, and consider banning such instruments due to their potential use in commodity market corners or squeezes.
- (11) Study Misuse of Physical Commodities to Manipulate Prices.** The Office of Financial Research should study and produce recommendations on the broader issue of how to detect, prevent, and take enforcement action against all entities that use physical commodities or related businesses to manipulate commodity prices in the physical and financial markets.

II. BACKGROUND

This section provides background information on the history of U.S. bank involvement with physical commodities, including how federal statutes governing permissible bank activities have changed over time. It also provides background information on the concerns motivating U.S. efforts to restrict federal banks to the “business of banking” and discourage the mixing of banking with commerce; the roles played by federal regulators charged with overseeing commodity-related activities; and the key physical commodity regulatory issues now facing federal bank regulators.

A. Short History of Bank Involvement in Physical Commodities

For the first 150 years of banks operating in the United States, commodities played a very limited role in bank activities, in part because federal laws discouraged the mixing of banking and commerce. More recently, however, in response to bank pressure, federal regulators began to weaken the separation of banking and commerce. In the 1980s, with the invention of energy-based commodities that could be traded in futures and swaps markets, U.S. banks began to increase their commodities activities. In 1999, Congress enacted the Gramm-Leach-Bliley Act which explicitly allowed banks to engage in commercial activities, including activities involving commodities. Over the next decade, a handful of major U.S. banks not only began to expand their trading in commodity-based financial instruments, but also to take ownership interests in, or exert control over, businesses handling physical commodities. The 2008 financial crisis further boosted bank involvement, when one major bank acquired a securities firm with commodity investments, and two securities firms with extensive commodity holdings converted to bank holding companies. Today, a handful of large U.S. banks and their holding companies are major players in U.S. commodities markets. Those banks not only dominate commodities trading on financial markets, but also own or exercise control over businesses that produce, store, transport, refine, supply, and utilize physical commodities, including oil products, natural gas, coal, metals, and electricity. The current level of bank involvement with critical raw materials, power generation, and the food supply appears to be unprecedented in U.S. history.

(1) Historical Limits on Bank Activities

In the United States, banks have traditionally operated under laws that restrict them to engaging in the “business of banking.”⁹ The key federal statutory provision authorizes national banks to engage in:

“all such incidental powers as shall be necessary to carry on the business of banking; by discounting and negotiating promissory notes, drafts, bills of exchange, and other evidences of debt; by receiving deposits; by buying and selling exchange, coin, and bullion; by loaning money on personal security; and by obtaining, issuing, and circulating notes”¹⁰

Since 1956, bank holding companies have operated under a similar set of restrictions.¹¹ The Bank Holding Company Act generally limits companies that own or control a bank to engaging in banking activities or activities determined by the Federal Reserve “to be so closely related to banking as to be a proper incident thereto.”¹² According to one expert, the Bank Holding Company Act was designed to “prevent[] a holding company from being used by banking organizations to acquire commercial firms and to enter activities prohibited to banks themselves.”¹³

The basis for these statutory restrictions is a longstanding U.S. principle that banking should not mix with other types of commerce.¹⁴

⁹ 12 U.S.C. §24 (Seventh).

¹⁰ *Id.*, originating as the “bank powers clause” of the National Bank Act of 1863, and attaining its current wording in the Glass-Steagall Act of 1933, P.L. 73-66, 48 Stat. 162 (1933), §16. See also “Permissible Securities Activities of Commercial Banks Under the Glass-Steagall Act (GSA) and the Gramm-Leach-Bliley Act (GLBA),” Congressional Research Service, No. R41181 (4/12/2010) (hereinafter “2010 CRS Report on GSA and GLBA”), at 3 (“Banks are institutions of limited power; they may only engage in the activities permissible pursuant to their charter, which generally limits them to the ‘business of banking’ and all powers incidental to the business of banking.”).

¹¹ See Bank Holding Company Act of 1956, P.L. 84-511, 70 Stat. 134 (1956). See also 1970 amendments, P.L. 91-607 (12/31/1970).

¹² *Id.*; 12 U.S.C. §1843(a) and (c)(8).

¹³ “The Separation of Banking and Commerce in the United States: an Examination of Principal Issues,” OCC Economics Working Paper 1999-1, Bernard Shull (hereinafter “Shull”), at 57-58, see also 19, <http://www.occ.gov/publications/publications-by-type/economics-working-papers/1999-1993/wp99-1.pdf>.

¹⁴ See, e.g., “The Merchants of Wall Street: Banking, Commerce, and Commodities,” Professor Saule Omarova, 98 Minnesota Law Review 265, 268 (2012) (hereinafter “The Merchants of Wall Street”); Shull at 12. The separation between banking and commerce in the United States has never, however, been absolute. Federal law has, for example, allowed commercial firms to own industrial banks, 12 U.S.C. §1841(c)(2)(H), and unitary thrift holding companies, 12 U.S.C. §1841(c)(2)(D), and has long permitted bank holding companies to retain small equity ownership stakes in non-financial corporations, 12 U.S.C. §1843(c)(6) and (7). A banking expert at a 2013 Senate hearing put it this way:

“The principle of keeping banking separate from commerce can be a useful way to simplify the otherwise complex U.S. banking laws. Certainly, the basic structure of the National Bank Act and the [Banking Holding Company] Act reflects this general principle. But this general principle is not a binding legal rule and does not create an

This principle was first manifested in the charters issued to early banks operating within the United States; those charters typically prohibited banks from dealing in “merchandise.”¹⁵ New York bank charters, and later New York banking statutes, also expressly prohibited banks from “dealing or trading in ... goods, wares, merchandise, [or] commodities.”¹⁶ Early U.S. courts generally interpreted the charter and legal restrictions narrowly, ruling that banks were prohibited from issuing mortgages, investing in real estate, purchasing stocks as an investment, or operating any non-bank, commercial business.¹⁷ The purpose behind those prohibitions was generally to prevent banks from competing with other types of businesses and from engaging in risky investments, limiting them instead to conducting a narrow range of banking activities.¹⁸

Bank Circumvention of Restrictions. U.S. banks have traditionally chafed under the legal limitations on their activities, and U.S. history is replete with examples of banks willfully circumventing them. One notorious example, in the early 1900s, involved Wall Street banks that established affiliates that dealt in securities, insurance, and real estate, and acquired ownership interests in a wide range of commercial businesses.¹⁹ A few major banks formed so-called “trusts” that acted as holding companies for massive commercial enterprises, including businesses that handled physical commodities, such as railroads, oil companies, steel manufacturers, and shipping and mining ventures.²⁰ In 1901 and 1907, bank actions to acquire or trade stocks in commercial corporations contributed to chaotic stock prices and

impermeable wall, and reasonable people can disagree as to where the line is and should be drawn.”

Prepared testimony of Randall Guynn, counsel with Davis Polk & Wardell LLP, before U.S. Senate Committee on Banking, Housing and Urban Affairs, hearing on “Examining Financial Holding Companies: Should Banks Control Power Plants, Warehouses, and Oil Refineries,” (7/23/2013)(hereinafter “Guynn Testimony”), at 20.

¹⁵ Shull, at 12.

¹⁶ Shull, at 13, footnote 29; see also *id.* at 15.

¹⁷ *Id.* at 15-16. See also *Investment Company Institute v. Camp*, 401 U.S. 617 (1971) (analyzing “hazards” that arise when bank affiliates become involved with investment banking).

¹⁸ See Shull, at 10-12, 55. Professor Shull noted that the principle against mixing banking and commerce had roots as far back as the thirteenth and fourteenth centuries, writing that, in 1374, “the Venetian senate prohibited bankers from dealing in copper, tin, iron, lead, saffron, and honey ... probably to keep banks from undertaking risky activities and monopolizing the specified commodities.” *Id.* at 6.

¹⁹ See, e.g., *id.* at 16; *Investment Company Institute v. Camp*, 401 U.S. at 630 (“[I]n 1908 banks began the practice of establishing security affiliates that engaged in, inter alia, the business of floating bond issues and, less frequently, underwriting stock issues.”).

²⁰ See, e.g., *The House of Morgan*, Ron Chernow (Grove Press 1990), at 67-68 (railroad trusts), 81-86 (U.S. Steel trust), 100-103 (shipping trust), 109 (farm equipment trust), and 123 (copper trust).

financial panics, triggering Congressional hearings and legislative reforms.²¹

Pujo Hearings. In 1912 and 1913, hearings held by a subcommittee of the U.S. House Committee on Banking and Currency, known as the “Pujo Committee” after Committee Chairman Arsene Pujo of Louisiana, confirmed allegations that some Wall Street banks had acquired control over major commercial enterprises critical to the U.S. economy, while also asserting control over “the money, exchange, security and commodity markets.”²² Among other matters, the hearings disclosed to the public that a handful of major Wall Street banks controlled hundreds of businesses in the areas of insurance, finance, transportation, and commodities; had set up interlocking directors with their fellow banks and trusts; had restrained competition; and had contributed to financial panics through massive stock trading, inadequate capital reserves, and bad loans.²³

In response to the Pujo or “money trust” hearings as well as pressure from President Theodore Roosevelt, Congress enacted several laws to break up the banks’ influence over the economy and increase bank regulation. The Clayton Antitrust Act of 1914, which strengthened the Sherman Antitrust Act of 1890, provided new tools to prevent monopolistic, anti-competitive conduct.²⁴ The landmark Federal Reserve Act of 1913 established the Federal Reserve System to act as a central bank for the United States, required national banks to become members of the system, imposed capital and reserve requirements on them, and mandated OCC and Federal Reserve examinations to stop unsafe and unsound banking practices.²⁵ The Federal Reserve Act also modestly expanded bank activities by permitting foreign branches and certain loans secured by farmland, while leaving in place the general prohibition against banks engaging in commerce.²⁶

Stock Market Crash of 1929. A dozen years later, the pendulum swung the other way, and banks gained new statutory authority, under

²¹ Id. at 91-93 (describing massive stock trades by JPMorgan’s predecessor bank to acquire control of the Northern Pacific railroad in 1901, leading to dramatic price volatility in the railroad’s stock price, financial panic by speculators who had shorted the stock, and the largest stock market crash in a century), and 122-128 (describing the 1907 financial panic which began with a collapse in copper prices and a corresponding plunge in United Copper stock prices which, in turn, undermined the financial stability of certain trust companies and banks, and threatened widespread economic damage).

²² See “Money Trust Investigation: Financial and Monetary Conditions in the United States,” hearing before a subcommittee of the House Committee on Banking and Currency (5/16/1912), HRG-1912-BCU-0017, Y4.B22/1:M74/2-1, <http://congressional.proquest.com/congressional/docview/t29.d30.hrg-1912-bcu-0017?accountid=45340> (first of multiple days of hearings continuing into 1913), at 4.

²³ Id. See also, e.g., *The House of Morgan*, Ron Chernow (Grove Press 1990), at 150-156.

²⁴ Clayton Antitrust Act of 1914, P.L. 63-212.

²⁵ Federal Reserve Act of 1913, P.L. 63-43.

²⁶ Id. See also Shull, at 17.

the McFadden Act of 1927, to buy and sell marketable debt obligations and issue more types of real estate loans.²⁷ The OCC followed with regulations permitting federally chartered banks, through affiliates, to underwrite, buy, and sell both debt and equity instruments.²⁸ Those expansions in banking powers led to a rapid increase in bank participation in the securities markets, with banks acting on behalf of both clients and themselves.

Two years later came the stock market crash of 1929. The ensuing depression and economic turmoil led to the closure of thousands of banks. A subsequent investigation by a U.S. Senate Committee on Banking and Currency subcommittee, led in part by subcommittee counsel Ferdinand Pecora, pointed to bank involvement in non-banking activities as a key contributor to the market's collapse, including the underwriting and trading of questionable securities, the repackaging of poorly performing foreign loans into bonds sold to the public, and in the case of one bank, providing new stocks at below market prices to Administration officials, Members of Congress, and businessmen considered to be friends of the bank.²⁹ The Pecora hearings examined a wide range of banking activities, but did not highlight problems with commodities.

Glass-Steagall Act of 1933. In response to the bank closures and Great Depression that followed the stock market crash, Congress enacted several laws that reinstated restrictions on bank activities. The most prominent was the Banking Act of 1933, also known as the Glass-Steagall Act after the Congressmen who championed key provisions.³⁰ The Glass-Steagall Act explicitly prohibited U.S. banks from dealing in securities or establishing subsidiaries or affiliates that dealt in securities.³¹ It also prohibited banks from engaging in securities transactions undertaken “for its own account” rather than on behalf of a

²⁷ McFadden Act of 1927, P.L. 69-639, §§2(b) and 16.

²⁸ See Shull, at 17.

²⁹ See, e.g., “Stock Exchange Practices,” report of the U.S. Senate Committee on Banking and Currency, S. Hrg. 73-1455, (6/6/1934), http://fraser.stlouisfed.org/publications/sensep/issue/3912/download/59691/sensep_report.pdf, and associated hearings from January 1933 to May 1934 (known as the Pecora hearings); *The House of Morgan*, Ron Chernow (Grove Press 1990), at 352-373; *Investment Company Institute v. Camp*, 401 U.S. at 630-631 (“Congress was concerned that commercial banks in general and member banks of the Federal Reserve System in particular had both aggravated and been damaged by [the] stock market decline partly because of their direct and indirect involvement in the trading and ownership of speculative securities.”). The Pecora hearings also disclosed other problematic bank conduct, including substantial bank loans given to bank officers and later forgiven; interlocking directors with other banks and trust companies; and nonpayment of taxes by wealthy bankers.

³⁰ Banking Act of 1933, P.L. 73-66, 48 Stat. 162 (1933). Senator Carter Glass (D-Virginia) was then a member of the Senate Committee on Banking and Currency as well as Chairman of the Appropriations Committee; Congressman Henry B. Steagall (D-Alabama) was chairman of the House Committee on Banking and Currency.

³¹ Banking Act of 1933, P.L. 73-66, 48 Stat. 162 (1933), §§16, 20, 21, and 32.

client.³² In addition, the law established the federal deposit insurance system to safeguard bank deposits.³³

The new Glass-Steagall prohibitions compelled major U.S. banks to terminate or divest themselves of their securities trading operations as well as other prohibited activities.³⁴ Two prominent banks that spun off their securities operations were J.P. Morgan & Co. and First Boston.³⁵ The result was that the banking community essentially split into two groups, commercial banks which offered deposits, checking services, mortgages, and loans; and investment banks which traded securities and invested in new businesses.

Bank Holding Company Act of 1956. In 1956, Congress enacted the Banking Holding Company Act (BHCA). According to a 2012 study by the Federal Reserve Bank of New York:

“A key original goal of the BHCA was to limit the comingling of banking and commerce, that is, to restrict the extent to which BHCs or their subsidiaries could engage in nonfinancial activities (more details and historical background are found in Omarova and Tahyar, forthcoming; Santos 1998; Aharony and Swary 1981; and Klebaner 1958). This separation is intended to prevent self-dealing and monopoly power through lending to nonfinancial affiliates and to prevent situations where risk-taking by nonbanking affiliates erodes the stability of the bank’s core financial activities, such as lending and deposit-taking (Kroszner and Rajan 1994; Klebaner 1958). To further enhance stability, BHCs are also required to maintain minimum capital ratios and to act as a ‘source of strength’ to their banking subsidiaries, that is, to provide financial assistance to banking subsidiaries in distress.”³⁶

Gramm-Leach-Bliley Act. Banks and bank regulators respected the Bank Holding Company Act and Glass-Steagall prohibitions for more than 40 years, and U.S. banking flourished. By the 1970s, however, some banks began pressing regulators and Congress to allow them once more to engage in a wider array of commercial and financial activities, including dealing in securities, insurance, and, for the first time, the growing field of derivatives.³⁷ In response to bank pressure, the OCC and Federal Reserve began weakening the Glass-Steagall restrictions, in particular by expanding the securities and derivatives

³² Id. at §16.

³³ Id. at §8.

³⁴ See, e.g., *The House of Morgan*, Ron Chernow (Grove Press 1990), at 384-386; Shull at 18.

³⁵ Id.

³⁶ “A Structural View of U.S. Bank Holding Companies,” Dafna Avraham, Patricia Selvaggi, and James Vickery of the Federal Reserve Bank of New York, *FRBNY Economic Policy Review* (7/2012), at 3; <http://www.newyorkfed.org/research/epr/12v18n2/1207avra.pdf> [footnotes omitted].

³⁷ See 2010 CRS Report on GSA and GLBA, at 8, 28.

activities considered to be within the “business of banking” or “incidental” to banking.³⁸ In 1998, in direct defiance of Glass-Steagall prohibitions, Citibank announced that it intended to merge with the Travelers insurance group, and pressed bank regulators and Congress to allow it to create what it described as the largest financial services company in the world.³⁹

In 1999, faced with Citibank’s planned merger, regulatory actions that undercut the Glass-Steagall prohibitions, and a rapidly changing banking landscape in which banks were conducting an expanding variety of financial activities, Congress enacted the Financial Modernization Act of 1999. This law is commonly referred to as the Gramm-Leach-Bliley Act after the Congressmen who championed its enactment.⁴⁰ The new law repealed key Glass-Steagall restrictions on banks and widened the activities authorized for bank holding companies.⁴¹ In particular, the law explicitly authorized commercial banks to affiliate with other types of financial companies using a new “financial holding company” structure.

Under the new structure, a bank holding company could elect to also become a “financial holding company” and own, not only one or more banks, but also any other type of company that the Federal Reserve determined was “financial in nature,” “incidental” to a financial activity, or “complementary” to a financial activity, if certain conditions were met.⁴² In addition, the law explicitly authorized bank holding companies

³⁸ See *id.* at 8-15; *The Merchants of Wall Street*, at 279; Shull at 20, 24. The Office of the Comptroller of the Currency has published a comprehensive listing of the various activities related to derivatives that national banks are authorized to engage in. See Comptroller of the Currency, “Activities Permissible for a National Bank, Cumulative” (April 2012), at 57-64.

³⁹ See, e.g., “Citicorp and Travelers Plan to Merge in Record \$70 Billion Deal: A New No. 1: Financial Giants Unite,” Mitchell Martin, *New York Times* (4/7/1998), <http://www.nytimes.com/1998/04/07/news/07iht-citi.t.html>; “Citicorp-Travelers Merger Shakes Up Wall Street Rivals,” Patrick McGeehan and Matt Murray, *Wall Street Journal* (4/7/1998), <http://online.wsj.com/article/SB891903040436602000.html>.

⁴⁰ Financial Services Modernization Act of 1999, P.L. 106-102 (1999). Senator Phil Gramm (R-Texas) was then Chairman of the Senate Committee on Banking, Housing and Urban Development. Congressman Jim Leach (R-Iowa) was Chairman of the House Committee on Banking and Financial Services. Congressman Tom Bliley (R-Virginia) was Chairman of the House Committee on Commerce.

⁴¹ See “A Structural View of U.S. Bank Holding Companies,” Dafna Avraham, Patricia Selvaggi, and James Vickery of the Federal Reserve Bank of New York, *FRBNY Economic Policy Review* (July 2012), at 3, <http://www.newyorkfed.org/research/epr/12v18n2/1207avra.pdf>.

⁴² See Section 4(k) of the Bank Holding Company Act, as amended by the Gramm-Leach-Bliley Act, which states that a financial holding company:

“may engage in any activity, and may acquire and retain the shares of any company engaged in any activity, that the [Federal Reserve] Board [...] determines (by regulation or order) --

(A) to be financial in nature or incidental to such financial activity; or

(B) is complementary to a financial activity and does not pose a substantial risk to the safety or soundness of depository institutions or the financial system generally.”

to engage in “merchant banking,” meaning they could buy ownership interests in any company as a private equity investment, so long as the bank did not try to operate the business itself and held it as a passive investment for a limited period of time.⁴³ Together, these provisions significantly weakened the longstanding separation of banking and commerce.

The Gramm-Leach-Bliley Act authorized all existing bank holding companies that met certain capital and operating requirements to elect to become financial holding companies.⁴⁴ In addition, the law allowed bank holding companies or other firms that, after enactment of the law, sought to become a financial holding company, to “grandfather” in certain prior holdings and businesses rather than divest them.⁴⁵ Today, “virtually all” large bank holding companies are also registered as financial holding companies.⁴⁶

In 2000, Congress enacted another law, the Commodities Futures Modernization Act, which prohibited all federal regulation of the leading type of derivative known as a “swap.”⁴⁷ Derivatives are financial instruments that derive their value from another asset.⁴⁸ Swaps are generally bilateral contracts in which two parties essentially make a bet on the future value of a specified financial instrument, interest rate, or currency exchange rate. By prohibiting federal regulation of swaps, among other consequences, the law effectively authorized banks to engage in an unrestricted array of swap activities, including swaps linked to commodities. That law, like the Gramm-Leach-Bliley Act, further undermined the separation of banking from commerce.

Together, the Gramm-Leach-Bliley Act and the Commodities Futures Modernization Act authorized U.S. banks to engage in many financial activities that had been denied to them under the Glass-Steagall Act, including activities that essentially mixed banking with commercial

12 U.S.C. §1843(k). The Gramm-Leach-Bliley Act also authorized banks, subject to certain conditions, to own or control their own “financial subsidiaries” when established to engage in “activities that are financial in nature or incidental to financial activity,” as well as “activities that are permitted for national banks to engage in directly.” 2010 CRS Report on GSA and GLBA, at 20-21; 12 U.S.C. §24(a)(2)(A).

⁴³ See 12 U.S.C. §1843(k)(4)(H).

⁴⁴ See 12 U.S.C. §1843(k)(1). To become a financial holding company, a bank holding company had to meet a list of statutory criteria, including that it and its subsidiary banks were well capitalized and well managed. 12 C.F.R. §225.82(a) (2013). For a current list of all bank holding companies that have elected to become financial holding companies, see <http://www.federalreserve.gov/bankinfo/reg/fhc.htm>.

⁴⁵ See, e.g., 12 U.S.C. §1843(n) and (o).

⁴⁶ “A Structural View of U.S. Bank Holding Companies,” Dafna Avraham, Patricia Selvaggi, and James Vickery of the Federal Reserve Bank of New York, *FRBNY Economic Policy Review* (July 2012), at 3; <http://www.newyorkfed.org/research/epr/12v18n2/1207avra.pdf>.

⁴⁷ The 2000 Commodity Futures Modernization Act was enacted as a title of the Consolidated Appropriations Act of 2001, P.L. 106-554.

⁴⁸ See U.S. Securities and Exchange Commission website, <http://www.sec.gov/answers/derivative.htm>.

activities. Major U.S. bank holding companies soon attained financial holding company status and began to affiliate with securities and insurance firms. The resulting financial conglomerates expanded into multiple financial activities, including many that were high risk. Less than ten years later, major U.S. banks triggered the financial crisis that devastated the U.S. economy and from which the country is still recovering.⁴⁹

(2) U.S. Banks and Commodities

For the first 150 years banks operated in the United States, commodities played a very limited role in bank activities. It was not until the 1980s, with the invention of energy-based commodities that could be traded in futures and swaps markets, that U.S. banks began dealing in U.S. commodities in a substantial way. Over time, with the acquiescence of federal bank regulators, a handful of major U.S. banks began, not only to develop and trade in commodity-based financial instruments, but also to take ownership interests in, or exert control over, businesses handling physical commodities. Today, banks are major players in U.S. commodities markets, not only dominating the trading of commodity-related futures, options, swaps, and securities, but also owning or exercising control over businesses that produce, store, transport, refine, supply, and utilize physical commodities. Those commodities include oil products, natural gas, coal, metals, agricultural products, and electricity.

Early History of Limited Bank Involvement in Commodities.

Some experts contend that, because banks handle money, they have a long history of dealing with commodities, highlighting commodities that represent “an efficient medium of exchange and store of value,” such as gold and silver bullion.⁵⁰ While that exception to the rule is true, for most of U.S. history, U.S. banks were not major players in commodity markets.

⁴⁹ For more information on key causes of the financial crisis, see “Wall Street and the Financial Crisis,” hearings before the U.S. Senate Permanent Subcommittee on Investigations, S. Hrg. 111-671 to 111-674, Volumes 1-5 (April 13, 2010); “Wall Street and the Financial Crisis: Anatomy of a Financial Collapse,” a bipartisan report by the U.S. Senate Permanent Subcommittee on Investigations, S. Hrg. 112-675, Volume 5, (April 13, 2011). See also prepared testimony of Joshua Rosner, managing director of Graham Fisher & Co., before U.S. Senate Committee on Banking, Housing and Urban Affairs, hearing on “Examining Financial Holding Companies: Should Banks Control Power Plants, Warehouses, and Oil Refineries,” (7/23/2013)(hereinafter “Rosner Testimony”), at 3 (“While the actions of many parties ... led us to [the financial] crisis the fact remains that structured products innovated and sold as a result of the combination of commercial and investment banking, devastated Main Street USA and ravaged consumers and businesses alike. Banks, which had previously been prevented from investment banking activities, had stimulated demand for faulty mortgage products.”).

⁵⁰ See, e.g., Gwynn Testimony, at 15-16.

The first commodities exchange established in the United States was the Chicago Board of Trade (CBOT) which opened in 1848, as a central marketplace for the buying and selling of grain.⁵¹ Almost twenty years later, in 1865, CBOT developed the first standardized futures contracts that could be traded on the exchange.⁵² Over the next 100 years, the commodities traded on U.S. exchanges grew to encompass a variety of agricultural products. The resulting trade in futures and options was viewed as a specialized business generally handled by large agricultural companies and commodity brokers, not banks.⁵³

At times, especially during the last decade of the nineteenth century and the first decade of the twentieth century, a handful of major banks acquired ownership interests in businesses that handled physical commodities, including railroads, oil companies, and shipping and mining ventures. But bank ownership of those businesses largely halted after the Pujo money trust hearings and the enactment of restrictions on bank activities. During the 1920s, many banks began trading stocks and bonds, but largely ignored the agriculturally-based commodity exchanges. When Congress enacted the first major federal commodities law, the Grain Futures Act of 1922, banks were not even mentioned in the statute.⁵⁴

When banking reforms were put into place after the stock market crash of 1929, commodities were, again, hardly mentioned in the new statutes, given the paucity of bank involvement with commodities. The Glass-Steagall Act of 1933, for example, mentioned commodities only once, in a section that established a Federal Reserve oversight responsibility to prevent banks from facilitating undue speculative activity through the issuance of bank credit. That section directed each regional Federal Reserve Bank to:

“keep itself informed of the general character and amount of the loans and investments of its member banks with a view to ascertaining whether undue use is being made of bank credit for the speculative carrying of or trading in securities, real estate, or commodities, or for any other purpose inconsistent with the maintenance of sound credit conditions.”⁵⁵

⁵¹ See CME Group “Timeline of Achievements,” <http://www.cmegroup.com/company/history/timeline-of-achievements.html>.

⁵² *Id.*

⁵³ See, e.g., *Merchants of Grain* by Dan Morgan (Viking Press 1979) (tracing grain trading and commodities markets in the United States from the 1800s to the 1970s, and describing the roles played by five major grain merchants, but making no mention of U.S. banks as market participants).

⁵⁴ See Grain Futures Act of 1922, P.L. 67-331.

⁵⁵ Banking Act of 1933, P.L. 73-66, 48 Stat. 162 (1933), §3.

The Glass-Steagall Act also directed each Federal Reserve Bank to report “any such undue use of bank credit by any member bank” to the Federal Reserve Board.⁵⁶ No provision addressed any other aspect of bank trading in commodities. Similarly, the landmark Commodities Exchange Act of 1936, which revamped federal law on commodities markets, mentioned banks only in passing in a single provision allowing commodity brokers to commingle customer funds in their corporate bank accounts.⁵⁷

Further evidence of bank noninvolvement with commodities comes from extensive bank statistics compiled by the Federal Reserve over a 60-year period, from 1896 to 1955.⁵⁸ The report published by the Federal Reserve includes a four-page list of banking activities that occurred during those years, but nowhere mentions commodities.⁵⁹

Banks Begin Trading Financial Commodities. It was not until decades later, when U.S. commodity exchanges began to undergo fundamental change, that banks and other financial firms began to participate in them. The primary change was an expansion of the concept of commodities to encompass more than agricultural products. The first expansion occurred during the 1970s, when commodity exchanges developed standardized foreign currency and interest rate futures and options contracts that could be traded on the exchanges.⁶⁰

In 1979, Goldman Sachs, then a securities firm and not a bank, registered with the Commodity Futures Trading Commission (CFTC), regulator of U.S. futures markets, as a “Futures Commission Merchant” (FCM) and received authorization to buy and sell futures and options on regulated exchanges.⁶¹ Three years later, in 1982, Goldman expanded

⁵⁶ Id.

⁵⁷ See Commodities Exchange Act of 1936, P.L. 74-674, §5.

⁵⁸ See “All-Bank Statistics United States 1896 - 1955,” prepared by the Board of Governors of the Federal Reserve System, (April 1959), Federal Reserve Archives, <http://fraser.stlouisfed.org/docs/publications/allbkstat/1896-1955/us.pdf> (containing historical banking data).

⁵⁹ Id. at Appendix E, “Composition of Asset and Liability Items,” at 85 - 89.

⁶⁰ See, e.g., CME Group “Timeline of Achievements,” <http://www.cmegroup.com/company/history/timeline-of-achievements.html> (CME introduced the first foreign currency contracts in 1972, and the first interest rate future in 1975); *Fool’s Gold*, Gillian Tett (Free Press 2009), at 10-11.

⁶¹ See Goldman Sachs & Co. FCM information, National Futures Association (NFA) Background Affiliation Status Information Center (BASIC) website, <http://www.nfa.futures.org/basicnet/Details.aspx?entityid=uZSsBZcBKLE%3d&rn=Y>. For more information on Futures Commission Merchants, see NFA “Glossary,” <http://www.nfa.futures.org/basicnet/glossary.aspx?term=futures+commission+merchant> (defining FCM as “[a]n individual or organization which solicits or accepts orders to buy or sell futures or options contracts and accepts money or other assets from customers in connection with such orders. Must be registered with the Commodity Futures Trading Commission.”). The OCC authorized banks to become commodity exchange members as early as 1975, according to an unpublished letter cited in OCC Interpretative Letter No. 380 (12/29/1986), reprinted in Banking L. Rep. CCH ¶ 85, 604. See also 2010 CRS Report on GSA and GLBA, at 10-11, footnote 54.

its commodity operations by purchasing J. Aron & Co., a commodities trading firm that has since become Goldman's principal commodities trading subsidiary.⁶² Goldman initially directed J. Aron & Co. to expand into the trading of interest rate and currency futures.⁶³

In 1982, the OCC explicitly authorized national banks to execute and clear trades in futures contracts.⁶⁴ Both JPMorgan⁶⁵ and Morgan Stanley,⁶⁶ which were not then national banks or regulated by the OCC, registered as FCMs that year. In 1983, the OCC took the next step and authorized banks to execute and clear exchange-traded options.⁶⁷

That same year, the New York Mercantile Exchange (NYMEX), a leading U.S. commodities exchange, introduced the first standardized futures contracts for crude oil and heating oil.⁶⁸ They were the first energy-related futures traded on a regulated exchange. Additional standardized futures contracts for natural gas and electricity products followed, and futures and options trading expanded rapidly.⁶⁹ In 1986, the OCC issued a series of letters interpreting the "business of banking" clause of the National Bank Act to permit national banks to engage in a widening range of commodity-related trading activities.⁷⁰

⁶² See Goldman Sachs' response to the Subcommittee questionnaire (8/8/2014); PSI-Goldman-11-000001 - 011, at 002.

⁶³ See *The Partnership: The Making of Goldman Sachs*, Charles D. Ellis (Penguin Books 2008), at 252-254.

⁶⁴ OCC Interpretive Letter (7/23/1982), unpublished.

⁶⁵ See JP Morgan Futures Inc. FCM information, NFA BASIC website, <http://www.nfa.futures.org/basicnet/Details.aspx?entityid=jSzQxZANWxY%3d&rn=Y>. That FCM license was withdrawn in 2011. *Id.* JP Morgan Securities LLC also holds the FCM license that Bear Stearns obtained in 1982. See JP Morgan Securities LLC FCM information, NFA BASIC website,

<http://www.nfa.futures.org/BasicNet/Details.aspx?entityid=7YD6PX%2bm0vo%3d>.

⁶⁶ See Morgan Stanley & Co. LLC FCM information, NFA BASIC website, <http://www.nfa.futures.org/basicnet/Details.aspx?entityid=UpygXzt3Ct4%3d&rn=N>.

⁶⁷ OCC Interpretive Letter No. 260 (6/27/1983). See also OCC Interpretive Letter No. 896 (8/21/2000)(national bank may purchase options on futures contracts on commodities to hedge the credit risk in its agricultural loan portfolio).

⁶⁸ See "NYMEX Energy Complex," prepared by NYMEX, at 7, <http://www.kisfutures.com/NYMEX-energy-complex.pdf>. See also, e.g., *Oil: Money, Politics, and Power in the 21st Century*, Tom Bower (Grand Central Publishing 2009), at 47.

⁶⁹ See, e.g., David B. Spence & Robert Prentice, "The Transformation of American Energy Markets and the Problem of Market Power," 53 B.C. L. Rev. 131, 152 (2012).

⁷⁰ See, e.g., OCC Interpretive Letter No. 356 (1/7/1986) (authorizing a bank subsidiary to trade agricultural and metal futures for clients seeking to hedge bank loans); OCC Interpretive Letter No. 372 (11/7/1986) (authorizing a bank subsidiary to act as a broker-dealer and market maker for exchange-traded options for itself, its affiliated bank, and clients); OCC Interpretive Letter No. 380 (12/29/1986), reprinted in *Banking L. Rep. CCH ¶ 85,604* (authorizing a bank to provide margin financing to its clients to trade commodities; execute and clear client transactions involving futures and options in gold, silver, or foreign currencies on exchanges and over the counter; and direct a subsidiary to become a commodities exchange member). See also "Activities Permissible for a National Bank, Cumulative," prepared by the OCC (April 2012), at 57-64 (listing permissible derivative-based activities for national banks).

Also in 1986, Chase Manhattan Bank and Koch Industries reportedly entered into the first oil-related swap, introducing the concept of swaps linked to the price of a physical commodity.⁷¹ Other commodity swaps followed, creating a rapidly expanding over-the-counter commodities market in derivatives, separate and apart from the regulated commodity exchanges.

In 1987, in response to a request, the OCC authorized national banks to engage in transactions involving commodity price index swaps.⁷² The OCC authorized the activity even though banks were still prohibited from directly investing in physical commodities.⁷³ A later OCC Handbook explained:

“A national bank may also enter into derivative transactions as principal or agent when the bank is acting as a financial intermediary for its customers and whether or not the bank has the legal authority to purchase or sell the underlying instrument for its own account. Accordingly, a national bank may enter into derivative transactions based on commodities or equity securities, even though the bank may not purchase (or may be restricted in purchasing) the underlying commodity or equity security for its own account.”⁷⁴

At first, the OCC allowed banks to enter into commodity index swaps only on a “matched” basis to offset risk,⁷⁵ but over time relaxed that as well as other, earlier restrictions.⁷⁶

In 1991, Goldman Sachs, again operating solely as an investment bank, launched the Goldman Sachs Commodity Index whose value

⁷¹ See “Oil Derivatives: In the Beginning,” *EnergyRisk* magazine (July 2009), at 31, http://db.riskwaters.com/data/energyrisk/EnergyRisk/Energyrisk_0709/markets.pdf. The swap was a bilateral contract in which, for a four-month period, one party agreed to make payments to the other for 25,000 barrels of oil per month using a fixed price per barrel, while the other party agreed to make payments using the average monthly spot price for oil.

⁷² See OCC No-Objection Letter No. 87-5 (7/20/1987).

⁷³ See, e.g., OCC Interpretive Letter No. 652 (9/13/1994), at 5.

⁷⁴ “Risk Management of Financial Derivatives,” *Comptroller’s Handbook* (1997), at 68, <http://www.occ.gov/publications/publications-by-type/comptrollers-handbook/deriv.pdf>.

⁷⁵ See OCC No-Objection Letter No. 87-5 (7/20/1987) (authorizing the bank to act as a principal in commodity price index swaps with clients only on a “matched basis” in which the bank’s commodity price index contract with a commodity “user” was offset by an index contract with a commodity “producer,” so that “the Bank would be matched as to index, amount and maturity on each side of the transaction”).

⁷⁶ See, e.g., OCC No-Objection Letter No. 90-1 (2/16/1990), reprinted in *Banking L. Rep. CCH* ¶ 83,095 (authorizing the bank to engage as a principal in unmatched commodity index swaps with its clients so long as the swaps were cash settled); OCC Interpretive Letter No. 507 (5/5/1990) (authorizing a bank subsidiary to execute all types of commodity futures and options for all types of customers, whether or not hedging a bank loan); OCC Interpretive Letter (3/2/1992) (authorizing bank to engage in unmatched commodity index swaps, warehouse the swap contracts, and hedge them on a portfolio basis).

reflected price changes in a broad basket of commodity futures.⁷⁷ Over the next few years, commodity index trading exploded, accompanied by a sharp increase in futures trading used to hedge the index transactions.⁷⁸

Expansion into Physically-Settled Transactions. At the same time some commercial and investment banks deepened their involvement with commodity-linked financial instruments, some began increasing their involvement with physical commodities. One reason was that some commodity futures contracts, including those involving crude oil, natural gas, and electricity, allowed transactions to be settled financially or through physical delivery of the specified commodity. Some banks wanted to be able to settle futures contracts through physical delivery, contending that physical settlements would give them more flexibility, enable them to engage in more effective hedging with lower risks and costs, and enable them to compete more effectively in commodities markets.⁷⁹

In response, in 1993, the OCC issued an interpretive letter which greatly expanded the ability of banks to engage in physical commodity transactions. The letter interpreted the banking powers clause to allow national banks to hedge permissible banking activities by making or taking “physical delivery of commodities,” including by taking or delivering documents providing title to the commodities, such as warehouse receipts or warrants.⁸⁰ In addition, the OCC explicitly authorized banks to engage in related physical commodity activities such as “storing, transporting, and disposing of the commodities.”⁸¹

The 1993 OCC letter stated that banks could use physically-settled transactions only to “reduce risk” and only when they would “provide a more accurate hedge than available exchange-traded or over-the counter transactions.”⁸² The OCC required the physically-settled transactions to be “customer-driven,” prohibited their use for “speculative purposes,” and stated that they should constitute “only a nominal percentage of a bank’s hedging activities.”⁸³ To limit the associated risks, the OCC

⁷⁷ See “S&P GSCI Commodity Index,” prepared by Goldman Sachs, <http://www.goldmansachs.com/what-we-do/securities/products-and-business-groups/products/gsci/>. In 2007, Goldman Sachs transferred the index to Standard & Poor’s. In 2012, the index was acquired by S&P Dow Jones Indices LLC, a subsidiary of The McGraw-Hill Companies. See “Our History,” prepared by S&P Dow Jones Indices, <http://us.spindices.com/about-sp-indices/our-history/>.

⁷⁸ See, e.g., “Excessive Speculation in the Wheat Market,” Permanent Subcommittee on Investigations, S. Hrg. 111-155, report at 168-171.

⁷⁹ See, e.g., OCC Interpretive Letter No. 632 (6/30/1993), PSI-OCC-01-000358 - 366, at 359-361; OCC Interpretive Letter No. 684 (8/4/1995), PSI-OCC-01-000368 - 374, at 372.

⁸⁰ OCC Interpretive Letter No. 632 (6/30/1993), PSI-OCC-01-000358 - 366, at 358-359.

⁸¹ Id. at 361. See also OCC Interpretive Letter No. 935 (5/14/2002), PSI-OCC-01-000170, at 173 (warning about additional storage, transportation, environmental, and insurance risks posed by physical commodity transactions).

⁸² OCC Interpretive Letter No. 632 (6/30/1993), PSI-OCC-01-000358, at 358, 365.

⁸³ OCC Interpretive Letter No. 684 (8/4/1995), PSI-OCC-01-000368, at 368-369.

required the bank to develop management expertise and internal controls to ensure safe and sound banking practices, submit a “detailed plan” to the OCC, and obtain “prior written authorization” by the OCC’s supervisory staff before going forward.⁸⁴

In 1995, the OCC issued another interpretive letter giving banks broad authority to engage in physically-settled transactions involving metals, as well as to engage in “ancillary activities” such as storing, transporting, and disposing of the physical commodities.⁸⁵ The OCC expressed approval of banks taking delivery of the physical commodities through warehouse receipts or transitory title transactions, noting that “[i]n no case would the Bank take delivery by receipt of physical quantities . . . on Bank premises.”⁸⁶ The OCC letter directed the bank to establish risk management procedures in accordance with Banking Circular 277, which had been issued earlier that year, and also required the bank to implement the additional safeguards first identified in the 1993 letter.⁸⁷

At the time, the Federal Reserve chose not to follow the OCC’s lead in expanding bank involvement with physical commodities. Instead, in 1997, while the Federal Reserve amended its Regulation Y to broaden the list of permissible bank holding company activities, it declined at that point to grant bank holding companies broad authority to participate in physically-settled commodity transactions.⁸⁸ Instead, the Federal Reserve continued to generally limit bank holding companies to trading in cash-settled commodity transactions. Despite that setback, banks continued to lobby for broader authority to conduct physical commodity transactions.

Gramm-Leach-Bliley Expansion. More fundamental change came two years later, in 1999, when Congress enacted the Gramm-Leach-Bliley Act. That Act created the financial holding company structure described earlier and authorized banks to affiliate with subsidiaries engaged in a wider array of financial activities, including trading in commodities.

The law contained four provisions which dramatically increased the ability of banks, through their financial holding companies, to engage in physical commodities transactions and related businesses.

⁸⁴ OCC Interpretive Letter No. 632 (6/30/1993), PSI-OCC-01-000358, at 358, 366.

⁸⁵ See OCC Interpretive Letter No. 684 (8/4/1995), PSI-OCC-01-000368, at 372-374. See also OCC Interpretive Letter No. 1073 (10/19/2006), PSI-OCC-01-000425 - 432 (allowing banks and their foreign branches to engage in “customer-driven, metal derivative transactions that settle in cash or by transitory title transfer”); OCC Interpretive Letter No. 693 (11/14/1995), PSI-OCC-01-000135 - 141 (allowing banks to buy and sell physical copper).

⁸⁶ OCC Interpretive Letter No. 684 (8/4/1995), PSI-OCC-01-000368, at 369.

⁸⁷ *Id.* at 370, 373-374.

⁸⁸ 62 Fed. Reg. 9290, 9311 (Feb. 28, 1997).

First, the law allowed financial holding companies to engage in any activity which the Federal Reserve determined was “financial in nature” or “incidental to a financial activity.”⁸⁹ Second, the law enabled a financial holding company to engage directly in any nonfinancial, commercial activity which the Federal Reserve determined to be “complementary” to a financial activity.⁹⁰ The Federal Reserve later interpreted that provision to allow financial holding companies to engage in activities involving physical commodities.⁹¹ Third, the law allowed financial holding companies to exercise so-called “merchant banking” authority to make a temporary, passive equity investment in any type of commercial company, including firms involved with physical commodities.⁹² Finally, the law included a special grandfathering provision that allowed certain financial firms that later became financial holding companies to continue any commodities activities they had undertaken, directly or indirectly, in the United States on or before September 30, 1997.⁹³

According to one analysis, “[s]oon after the enactment of [the Gramm-Leach-Bliley Act], the largest U.S. [financial holding companies] began using their new powers to build physical commodity trading businesses.”⁹⁴

By the time the Gramm-Leach-Bliley Act was enacted in 1999, banks and bank holding companies had already become interested in expanding their commodity activities for a number of reasons. Earlier in the decade, Enron Corporation, then a leading U.S. energy company, had popularized the concept of energy “commodities” that could be traded like stocks and futures. From 1992 until its collapse in 2001, Enron convinced a number of large U.S. banks to finance or participate in its energy commodity trades, including entering into over \$8 billion in energy trades with Citigroup and JPMorgan Chase Bank in transactions later exposed as hidden loans.⁹⁵ In 1999, Enron also launched an energy commodities electronic trading platform known as EnronOnline to trade energy commodities involving natural gas and electricity.⁹⁶ By 2001, EnronOnline was the leading U.S. energy trading platform.⁹⁷ After

⁸⁹ 12 U.S.C. §1843(k).

⁹⁰ 12 U.S.C. §1843(k)(1)(B). The law also defined “financial activity” by referencing the activities that the Federal Reserve determined were “closely related to banking,” in Regulation Y. 12 C.F.R. §225.28(a).

⁹¹ See descriptions of Federal Reserve orders, below.

⁹² 12 U.S.C. §1843(k)(4)(H).

⁹³ 12 U.S.C. §1843(o); Gramm-Leach-Bliley Act amendment of the Bank Holding Company Act, adding §4(o).

⁹⁴ *The Merchants of Wall Street*, at 26.

⁹⁵ See “The Role of the Financial Institutions in Enron’s Collapse – Volume 1,” Permanent Subcommittee on Investigations, S. Hrg. 107-618, (July 23 and 30, 2002), at 231, 264.

⁹⁶ For more information about Enron Online, see “Asleep At the Switch: FERC’s Oversight of Enron Corporation,” U.S. Senate Committee on Governmental Affairs, S. Hrg. 107-854, (November 12, 2002), Volumes I-IV, at 238-245.

⁹⁷ *Id.* at 238.

Enron's collapse, the platform was sold and later closed,⁹⁸ and some Enron traders were convicted of using the platform and other schemes to manipulate electricity prices in the western United States.⁹⁹ Prior to that ignoble end, however, Enron's activities had hastened the development of energy commodities and bank involvement with them.

Further Expansion. In 2000, Congress enacted the Commodities Futures Modernization Act (CFMA) which, as explained earlier, barred all federal regulation of swaps, making it difficult for federal bank regulators to restrict trading of commodity swaps by banks and their holding companies.¹⁰⁰ The CFMA also barred CFTC oversight of energy and metal commodity trades executed on electronic exchanges used by large traders.¹⁰¹ That same year, several investment banks, including Goldman Sachs and Morgan Stanley, joined with major oil companies to establish the Intercontinental Exchange (ICE), an electronic exchange specializing in commodity-related swaps.¹⁰² Over the next decade, ICE would grow into a leading commodities exchange.

Around the same time, some banks and financial holding companies began to deepen their involvement with electricity markets. Beginning in 2002, the OCC issued a series of interpretive letters expanding bank authority to participate in electricity derivatives and related businesses. Among other measures, the OCC allowed banks to hedge their transactions by taking title to electricity commodities,¹⁰³

⁹⁸ In 2002, Enron's trading business was purchased by UBS Warburg, which closed it less than a year later. See, e.g., "UBS Closing Trading Floor It Acquired From Enron," *New York Times*, David Barboza (11/21/2002), <http://www.nytimes.com/2002/11/21/business/ubs-closing-trading-floor-it-acquired-from-enron.html?pagewanted=print&src=pm>.

⁹⁹ For more information about Enron's manipulation of electricity prices, see "Asleep At the Switch: FERC's Oversight of Enron Corporation," U.S. Senate Committee on Governmental Affairs, S. Hrg. 107-854, (November 12, 2002), Volumes I-IV, at 251-260.

¹⁰⁰ Commodity Futures Modernization Act, Title I, Consolidated Appropriations Act of 2001, P.L. 106-554.

¹⁰¹ See Section 2(h)(3) of the Commodity Exchange Act, added by CFMA, codified at 7 U.S.C. §2(h)(3). This exemption was known as the "Enron loophole," because it was included in CFMA at the request of Enron and others, and once in place, exempted from federal oversight the energy and metals contracts traded on Enron Online. See "Excessive Speculation in the Natural Gas Market," Permanent Subcommittee on Investigations, S. Hrg. 110-235 (6/24 and 7/9/2007), at 204, 246-247. The Enron Loophole was later closed. See CFTC Reauthorization Act of 2008, Title XIII of the Food, Conservation, and Energy Act of 2008, P.L. 110-246 (2008); Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, P.L. 111-203 (2010).

¹⁰² See "U.S. Strategic Petroleum Reserve: Recent Policy Has Increased Costs to Consumers but Not Overall U.S. Energy Security," Minority Staff Report, Permanent Subcommittee on Investigations, S. Prt. 108-18 (3/5/2003), at 42-43; information provided by Morgan Stanley's legal counsel to the Subcommittee (9/29/2014). The firms who formed ICE were BP Petroleum, Dean Witter, Deutsche Bank, Goldman Sachs, Morgan Stanley, Royal Dutch/Shell Group, SG Investment Bank, and Totalfina Elf Group. The OCC also issued several interpretive letters allowing banks to become members of ICE, ICE Europe, and ICE Trust. See, e.g., OCC Interpretive Letter No. 1113 (3/4/2009); OCC Interpretive Letter No. 1116 (5/6/2009); OCC Interpretive Letter No. 1122 (7/30/2009).

¹⁰³ See, e.g., OCC Interpretive Letter No. 937 (6/27/2002)(allowing banks to engage in customer-driven, cash-settled derivatives based on electricity prices and in related hedging activities); OCC Interpretive Letter No. 962 (4/21/2003) (allowing banks to engage in "customer-driven, electricity derivative transactions that involve transfer of title to electricity"); OCC Interpretive

acquire royalty interests in energy reserves, and use reserve royalty payments to repay loans extended to the reserve owner.¹⁰⁴ The OCC also authorized national banks to make merchant banking investments in energy-related businesses.¹⁰⁵ Along the way, the OCC continued to approve bank requests to deal in additional types of commodities.¹⁰⁶

Still another change came as commercial and investment banks began to devise new types of securities whose values were linked to commodities. Those securities could then be traded on U.S. stock exchanges rather than on the less well known and more expensive commodity exchanges. In some cases, the security explicitly referenced a specific commodity future; in other cases, it referenced a broad-based index. In still other cases, the value of the security was supported by an inventory of commodity futures or an inventory of physical commodities. For example, the first commodity-based Exchange Traded Fund (ETF) in the United States,¹⁰⁷ backed by gold futures, was traded on the New York Stock Exchange in November 2004.¹⁰⁸ Since then, multiple ETFs backed by commodity futures or physical commodities

Letter No. 1025 (4/6/2005) (allowing banks to engage in “customer-driven electricity derivative transactions and hedges, settled in cash and by transitory title transfer”).

¹⁰⁴ See OCC Interpretive Letter No. 1117 (5/19/2009) (allowing banks to issue credit to an electricity producer in return for receiving a limited royalty interest in the producer’s hydrocarbon reserves and receiving payments from the energy produced from those reserves over a stated term, so-called “Volumetric Production Payment” loans). See also OCC Interpretive Letter No. 1071 (9/6/2006) (allowing banks to become members of Independent Systems Operators and Regional Transmission Organizations that oversee electricity transactions).

¹⁰⁵ See, e.g., OCC Community Development Investment Letter No. 2005-3 (7/20/2005)(construction and operation of ethanol plant); OCC Community Development Investment Letter No. 2008-1 (7/31/2008)(development of solar energy facilities); OCC Community Development Investment Letter No. 2009-6 (12/16/2009)(installation of photovoltaic systems in low-income housing); OCC Community Development Investment Letter No. 2011-2 (12/15/2011)(construction of wind turbines).

¹⁰⁶ See, e.g., OCC Interpretive Letter No. 1040 (9/15/2005)(allowing banks to engage in “customer-driven physically settled derivative transactions in emission allowances”); OCC Interpretive Letter No. 1060 (4/26/2006)(allowing banks to engage in “customer-driven coal derivative transactions that settle in cash *or* by transitory title transfer and that are hedged on a portfolio basis with derivative and spot transactions that settle in cash *or* by transitory title transfer”)(emphasis in original); OCC Interpretive Letter No. 1065 (7/24/2006)(allowing banks to engage in cash-settled derivative transactions referencing “petroleum products, agricultural oils, grains and grain derivatives, seeds, fibers, foodstuffs, livestock/meat products, metals, wood products, plastics and fertilizer”).

¹⁰⁷ For more information on exchange traded funds, see NYSE Explanation of ETFs, <http://www.nyse.com/pdfs/ETFs7109.pdf>, or SEC statement regarding ETFs, <http://www.sec.gov/answers/etf.htm>.

¹⁰⁸ See NYSE Information Memo Number 04–59 (November 18, 2004) (trading of streetTRACKS Gold Shares: Rules 1300 and 1301); Securities Exchange Act Release No. 50603 (October 28, 2004), 69 FR 64614 (November 5, 2004) (approval of the listing and trading of streetTRACKS Gold Shares). See also OCC Interpretive Letter No. 1013 (1/7/2005)(authorizing banks to buy and sell ETF shares); 9/30/2010 CFTC “Request for Comment on Options for a Proposed Exemptive Order Relating to the Trading and Clearing of Precious Metal Commodity-Based ETFs; Concept Release,” 75 FR 189, at 60412.

have been approved.¹⁰⁹ The Securities and Exchange Commission has also approved the trading of futures and options referencing commodity-based ETFs.¹¹⁰ Designing, selling, and trading commodity-based securities further deepened bank involvement with commodities.

Commodity Price Rise. Still another factor motivating bank involvement with commodities was that, beginning in 2000, commodity prices began a sharp and sustained increase, which continued to accelerate for years.¹¹¹ According to the World Bank, between 2003 and 2008, “[a]verage commodity prices doubled in U.S. dollar terms (in part boosted by dollar depreciation), making this boom longer and stronger than any boom in the 20th century.”¹¹² While some have attributed that price rise to market forces of supply and demand, others have attributed a portion of it to increased commodity speculation fueled by banks and securities firms trading in U.S. commodities markets. In addition, commodity price volatility increased over the same period,¹¹³ inviting commodity speculators like the banks to profit from the price changes.¹¹⁴

Federal Reserve Expansion. As banks continued to trade financial instruments linked to commodities, they also continued to lobby the Federal Reserve to loosen its restrictions on bank holding companies, in particular with respect to physical commodities. In 2003, the Federal Reserve amended Regulation Y to give bank holding companies more leeway in physically settled transactions. The amended rule allowed the holding companies to participate in commodity trades which required them to take or make delivery of documents giving title to physical commodities on an “instantaneous pass-through basis,” so long as the underlying assets were approved by the CFTC for trading on an exchange.¹¹⁵ The Federal Reserve also eliminated a requirement that holding companies enter into only those commodity contracts that explicitly permitted financial settlements or terminations. At the same time, like the OCC, the Federal Reserve continued to discourage holding

¹⁰⁹ See “Excessive Speculation and Compliance with the Dodd-Frank Act,” Permanent Subcommittee on Investigations, S. Hrg. 112-313 (11/3/2011), at 176-178.

¹¹⁰ See, e.g., 9/30/2010 CFTC “Request for Comment on Options for a Proposed Exemptive Order Relating to the Trading and Clearing of Precious Metal Commodity-Based ETFs; Concept Release,” 75 FR 189, at 60412.

¹¹¹ See *The Merchants of Wall Street*, at 300.

¹¹² World Bank, *Global Economic Prospects 2009: Commodities at the Crossroads*, http://siteresources.worldbank.org/INTGEP2009/Resources/10363_WebPDFw47.pdf.

¹¹³ See “Speculators and Commodity Prices - Redux”, CFTC Commissioner Bart Chilton (February 24, 2012), <http://www.cftc.gov/PressRoom/SpeechesTestimony/chiltonstatement022412>; see also “Global Commodity Markets – Price Volatility and Financialisation”, Alexandra Dwyer, George Gardner and Thomas Williams (June, 2011), <http://www.rba.gov.au/publications/bulletin/2011/jun/pdf/bu-0611-7.pdf>.

¹¹⁴ See “Derivatives, Innovation in the Era of Financial Deregulation,” Wallace Turbeville (June, 2013), at 18.

¹¹⁵ 68 Fed. Reg. 39,807, 39,808 (7/3/2003); 12 C.F.R. §225.28(b)(8)(ii)(B).

companies from actually taking possession of the physical commodities involved in the trades.¹¹⁶

In addition, beginning in 2003, in response to individual applications, the Federal Reserve issued a series of orders granting major financial holding companies permission under the Gramm-Leach-Bliley Act to deal in a much wider array of physical commodity activities. In those orders, the Federal Reserve determined that the activities requested by the financial holding companies were “complementary” to their trading in commodity derivatives.¹¹⁷

The earliest order explicitly allowed financial holding companies to buy and sell oil, natural gas, agricultural products, and other commodities in the physical spot market, and to take and make delivery of physical commodities to settle commodity-linked derivative transactions.¹¹⁸ A later order allowed a financial holding company to contract with a third party to “refine, blend, or otherwise alter” its physical commodities, essentially authorizing it to sell crude oil to an oil refinery and buy back the refined oil products.¹¹⁹ The order also allowed the financial holding company to enter into long-term electricity supply contracts with large industrial and commercial customers, and to enter into “tolling agreements” and “energy management” agreements with power generators.¹²⁰ Together, these orders explicitly permitted banks, through their financial holding companies, to engage in a broader set of physical commodity activities than ever before in U.S. banking history.

To minimize the accompanying risks, the orders also required the relevant financial holding company to make a number of commitments to limit the size and scope of its physical commodities activities. For example, each financial holding company had to commit that the market

¹¹⁶ *Id.* The amended Regulation Y explicitly required holding companies to make “every reasonable effort to avoid taking or making delivery of the asset underlying the contract.” Alternatively, it allowed financial companies to participate in instantaneous title transfers to the underlying assets only “by operation of contract and without taking or making physical delivery of the asset.” 12 C.F.R. §225.28(b)(8)(ii)(B)(3) and (4).

¹¹⁷ For more information on the individual orders, see below.

¹¹⁸ 2003 Federal Reserve “Order Approving Notice to Engage in Activities Complementary to a Financial Activity,” in response to a request by Citigroup, Inc., 89 Fed. Res. Bull., at 508 (12/2003) (hereinafter “Citigroup Order”), http://fraser.stlouisfed.org/docs/publications/FRB/2000s/frb_122003.pdf.

¹¹⁹ 2008 Federal Reserve “Order Approving Notice to Engage in Activities Complementary to a Financial Activity,” in response to a request by Royal Bank of Scotland Group plc, 94 Fed. Res. Bull. C60 (2008) (hereinafter “RBS Order”), http://fraser.stlouisfed.org/docs/publications/FRB/2000s/frb_2008comp.pdf.

¹²⁰ *Id.* A tolling agreement typically allows the “toller” to make periodic payments to a power plant owner to cover the plant’s operating costs plus a fixed profit margin in exchange for the right to all or part of the plant’s power output. As part of the agreement, the toller typically supplies or pays for the fuel used to run the plant. *Id.* at C64. An energy management agreement typically requires the “energy manager” to act as a financial intermediary for the power plant, substituting its own credit and liquidity for the power plant to facilitate the power plant’s business activities. The energy manager also typically supplies market information and advice to support the power plant’s efforts. *Id.* at C65.

value of its commodities holdings resulting from trading activities would not exceed 5% of its consolidated Tier I capital, and that the company would alert the Federal Reserve if and when the market value exceeded 4%.¹²¹ Despite those and other commitments, the financial holding companies given complementary authority were able to use that authority to dramatically increase their physical commodity operations over time.

Financial Crisis Expansion. In 2008, as the financial crisis deepened in the United States and several large U.S. financial institutions declared bankruptcy or teetered on the edge of insolvency, U.S. bank acquisitions of weaker financial institutions as well as the sudden conversion of investment banks into bank holding companies led to even greater U.S. bank involvement with physical commodities.

In March 2008, for example, essentially at the request of the Federal Reserve, JPMorgan acquired The Bear Stearns Companies Inc. (Bear Stearns), a large investment bank that was then nearly insolvent.¹²² At the time, Bear Stearns had extensive physical commodity holdings, including commodities that it traded in the spot markets, oil refineries, and power plants.¹²³ Through its acquisition of Bear Stearns, JPMorgan gained control of all of those physical commodity activities.

Six months later, in September 2008, after Lehman Brothers failed, the Federal Reserve gave immediate approval to applications from both Goldman Sachs and Morgan Stanley to become bank holding companies with access to Federal Reserve lending programs.¹²⁴ Both firms also elected to become financial holding companies authorized to engage in a broad array of financial activities. At the time of their conversions, both were heavily invested in a wide array of physical commodities and related businesses.¹²⁵

Four months after that, in January 2009, again in response to the turmoil created by the financial crisis, Bank of America acquired Merrill

¹²¹ See, e.g., Citigroup Order, http://fraser.stlouisfed.org/docs/publications/FRB/2000s/frb_122003.pdf.

¹²² See "Bear Stearns, JPMorgan Chase, and Maiden Lane LLC," press release issued by the Federal Reserve, http://www.federalreserve.gov/newsevents/reform_bearstearns.htm.

¹²³ See, e.g., 7/2008 Federal Reserve Supervisory Plan, Risk Assessment Program & Institutional Overview of JPMorgan Chase & Co., FRB-PSI-305013 - 030 (identifying Bear Stearns assets being integrated into JPMorgan).

¹²⁴ See Order Approving Formation of Bank Holding Companies, 94 Fed. Res. Bull. C101, C102 (2008), 2008 WL 7861871, at *4 (order approving Goldman Sachs Group's request to become a BHC upon conversion of Goldman Bank to a state chartered bank); Order Approving Formation of Bank Holding Companies and Notice to Engage in Certain Nonbanking Activities, 94 Fed. Res. Bull. C103, C105 (2008), 2008 WL 7861872, at *5 (Fed. Reserve Bd., Sept. 21, 2008) (order approving Morgan Stanley's request to become a BHC upon conversion of Morgan Stanley Bank to a bank).

¹²⁵ See histories of Goldman Sachs and Morgan Stanley, below.

Lynch, a troubled investment bank with \$650 billion in assets.¹²⁶ The acquisition gave Bank of America control over Merrill Lynch's extensive commodity holdings, which the bank estimated at "roughly ten times the size" of its own commodity operations.¹²⁷ The new assets included Merrill Lynch's substantial holdings in North American physical natural gas and electrical power markets.¹²⁸

In 2010, Goldman and JPMorgan participated in additional acquisitions that further deepened their involvement with physical commodities. In February 2010, Goldman acquired Metro International, a company with a worldwide network of commodity storage warehouses.¹²⁹ Later that year, in two separate transactions, JPMorgan acquired the Royal Bank of Scotland's 51% ownership stake in RBS Semptra, a joint venture with extensive North American and European energy and commodity operations involving oil, natural gas, metals, and power plants.¹³⁰ As part of that acquisition, JPMorgan also took ownership of Henry Bath Inc. which, like Metro International, owned a worldwide network of commodity storage warehouses.¹³¹

From 2009 to 2011, Goldman and JPMorgan extended their reach again, acquiring ownership stakes in the London Metals Exchange (LME), the leading futures market in metals. Together, the two banks, through their financial holding companies, became the LME's largest shareholders until, in 2012, the shareholders sold the LME to a Hong Kong exchange.¹³²

¹²⁶ See 5/4/2010 letter from Bank of America legal counsel to the Federal Reserve providing notice of the bank's intent to engage in an expanded set of physical commodity activities as a result of its acquisition of Merrill Lynch, FRB-PSI-500001 - 218, at 013.

¹²⁷ *Id.* at 020-021.

¹²⁸ *Id.* at 020.

¹²⁹ See 9/12/2013 letter from Goldman legal counsel to Subcommittee, "January 11, 2013 Questionnaire," PSI-GoldmanSachs-06-000001 - 021, at 017 (Exhibit C); "Goldman and JPMorgan Enter Metal Warehousing," *Financial Times*, by Javier Blas (3/2/2010), <http://www.ft.com/cms/s/0/5025f82a-262e-11df-aff3-00144feabdc0.html#axzz2kXv0R8iX>. Compare Goldman Sachs Group, Form 10-K for the fiscal year ending December 31, 2010, at Exhibit 21.1 (including "Metro International Trade Services LLC" as a subsidiary of GS Power Holdings LLC), with Goldman Sachs Group, Form 10-K for the fiscal year ending December 31, 2009, at Exhibit 21.1 (not listing GS Power Holdings LLC or Metro International as significant subsidiaries of Goldman Sachs).

¹³⁰ JPMorgan Chase & Co., Form 10-K for the fiscal year ending December 31, 2011, at 184, <http://sec.gov/Archives/edgar/data/19617/000001961712000163/corp10k2011.htm#s508731DA912EFDF440782294EA306391>.

¹³¹ See 7/1/2010 JPMorgan press release, "J.P. Morgan completed commodities acquisition from RBS Semptra," <https://www.jpmorgan.com/pages/detail/1277505237241>.

¹³² See, e.g., 6/5/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMC-11-000001 - 002, at 001; 8/8/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-Goldman-11-000001 - 011, at 003, 004; "HKEx and LME announce completion of transaction," prepared by Hong Kong Exchanges and Clearing Limited (HKEx) and LME Holdings Limited (12/6/2012), <http://www.lme.com/en-gb/news-and-events/press-releases/press-releases/2012/12/hkex-and-lme-announce-completion-of-transaction/>.

Bank Commodities Involvement Today. Today, a handful of large U.S. banks, directly and through their financial holding companies, are major participants in global commodity markets. In recent years, JPMorgan, Goldman Sachs, and Morgan Stanley were the three largest U.S. participants in physical commodities.¹³³ Bank of America, Barclays, and Citi were the next largest participants.¹³⁴ Deutsche Bank, Wells Fargo, and BNP followed them.¹³⁵

The largest of those banks, through their financial holding companies, were among the largest commodity traders in the world and dominated the U.S. commodities futures, options and swaps markets. OCC data shows that, in 2013, of the commercial banks it tracked, four U.S. banks – JPMorgan, Bank of America, Citi, and Goldman Sachs – accounted for more than 90% of commodities derivatives trading and holdings within the U.S. commercial banking system.¹³⁶ OCC data also shows that, for all U.S. insured banks over the last five years, the total notional dollar value of their outstanding commodity contracts, including futures, exchange traded options, over-the-counter options, forwards, and swaps, has centered around \$1 trillion:

NOTIONAL VALUE OF COMMODITY CONTRACTS¹³⁷

	2009	2010	2011	2012	2013
Notional value of commodity contracts	\$979 billion	\$1.195 trillion	\$1.501 trillion	\$1.402 trillion	\$1.241 trillion

Source: OCC Quarterly Report on Bank Trading and Derivatives Activity Fourth Quarter 2013, Graph 3.

¹³³ Subcommittee briefing by the Federal Reserve (12/13/2013). Royal Bank of Scotland, which sold its major commodity holdings to JPMorgan, is no longer active in physical commodity activities in the United States. *Id.*

¹³⁴ *Id.*

¹³⁵ *Id.* According to the Federal Reserve, Deutsche Bank has indicated that it is planning to exit its U.S. physical commodities activities. *Id.* In August 2014, Deutsche Bank sold certain commodity-related assets to Morgan Stanley. 9/19/2014 letter from Morgan Stanley to Subcommittee, PSI-MorganStanley-13-000001 - 009. Wells Fargo acquired its physical commodity activities through its acquisition of Wachovia Bank, which had a Federal Reserve order to engage in them; Wells Fargo has indicated it plans to continue to engage in physical commodity activities to a limited extent. Subcommittee briefing by the Federal Reserve (12/13/2013). According to the Federal Reserve, Royal Bank of Scotland, which sold its major commodity holdings to JPMorgan in 2010, is no longer conducting physical commodity activities in the United States. In contrast, BNP engages in physical commodity activities to a limited extent in the United States. *Id.* Fortis, which had a Federal Reserve order allowing it to engage in physical commodity activities, was acquired by ABN Amro Bank which, according to the Federal Reserve, no longer operates in the United States. *Id.* UBS and Societe General, each of which had a Federal Reserve order to engage in physical commodities, no longer engage in those activities, again according to the Federal Reserve. *Id.*

¹³⁶ See OCC Quarterly Report on Bank Trading and Derivatives Activity Fourth Quarter 2013, at 1, Graph 4 and 5A, Tables 1, 2, 9 and 10, <http://www.occ.gov/topics/capital-markets/financial-markets/trading/derivatives/dq413.pdf>.

¹³⁷ Data is taken from OCC Quarterly Report on Bank Trading and Derivatives Activity Fourth Quarter 2013, at Graph 3, <http://www.occ.gov/topics/capital-markets/financial-markets/trading/derivatives/dq413.pdf>.

The data indicates that the dollar value of the banks' commodity contracts peaked in 2011 at \$1.5 trillion, and while it has since declined, the value still exceeds \$1.2 trillion.

The physical commodity activities of the four key banks and their financial holding companies comprise a relatively small percentage of their total commodities activities, which remain dominated by financial instruments traded on exchanges or over the counter. Public data depicting the actual size and value of their physical commodities holdings is, however, limited. One of the few sources of public data is the FR Y-9C report, a quarterly report which bank holding companies with consolidated assets of \$500 million or more are required to file with the Federal Reserve, providing specified financial information. One of the required information items is the gross market value of any physical commodities held by the bank holding company in its trading inventory.¹³⁸

The data provided on the FR Y-9C report offers a limited but useful measure of bank holding company involvement with physical commodities. As one analyst explained:

“The gross market value of FHCs' physical commodity trading inventory ... measures solely their current exposure to commodity price risk. It does not provide a full picture of these organizations' actual involvement in the business of producing, extracting, processing, transporting, or storing physical commodities.”¹³⁹

Despite this limitation, the FR Y-9C reports filed by the holding companies featured in this Report indicate that, in each of the last five years, the physical commodity holdings in their trading inventories had a total dollar value of \$3 to \$26 billion:

**GROSS FAIR VALUE OF PHYSICAL COMMODITY
TRADING INVENTORIES**

	2009	2010	2011	2012	2013
Goldman Sachs	\$ 3.7 billion	\$13.1 billion	\$ 5.8 billion	\$11.7 billion	\$ 4.6 billion
JPMorgan	\$10.0 billion	\$21.0 billion	\$26.0 billion	\$16.2 billion	\$10.2 billion
Morgan Stanley	\$ 5.3 billion	\$ 6.8 billion	\$ 9.7 billion	\$ 7.3 billion	\$ 3.3 billion

Source: Consolidated Financial Statements for Bank Holding Companies, FR Y-9C Reports, Schedule HC-D, Item M.9.a.(2).¹⁴⁰

¹³⁸ See “Consolidated Financial Statements for Bank Holding Companies – FR Y-9C,” Schedule HC-D (“Trading Assets and Liabilities”), Item M.9.a.(2) (“the ‘Gross Fair Value of Physical Commodities held in Inventory’”) for each bank. Publicly traded companies provide the same information in their quarterly 10-Q filings with the SEC.

¹³⁹ The Merchants of Wall Street, at 30 [citations omitted].

¹⁴⁰ See National Information Center website – http://www.ffiec.gov/nicpubweb/NICDataCache/FRY9C/FRY9C_2380443_20091231.PDF, at 23; http://www.ffiec.gov/nicpubweb/NICDataCache/FRY9C/FRY9C_2380443_20101231.PDF, at 23;

This FR Y-9C data also shows that the value of the physical commodity trading inventories at the three institutions has fluctuated from year to year, and that their trading inventories comprised only a small part of the financial holding companies' overall commodity activities. That the data provides only a partial picture can be seen by comparing the reported figures against estimated values used by the Federal Reserve during its special review of bank involvement with physical commodities. In 2011, for example, a Federal Reserve examination team estimated that the physical commodity activities at Goldman Sachs had a total value of \$26 billion, a total four times greater than the \$5.8 billion reported by the company on the FR Y-9C report for 2011.¹⁴¹

Whether the individual financial holding companies' physical commodities activities are valued at billions or tens of billions of dollars, the bottom line is that they are substantial. They include involvement with metals warehouses, oil storage facilities, oil tankers, oil and gas pipelines, natural gas facilities, electrical power plants, gold and coal mines, and uranium. Bank holding companies are supplying crude oil to refineries, jet fuel to airlines, natural gas to manufacturers, coal to power plants, and electricity to regional power authorities.

The evidence indicates that this substantial level of bank involvement with physical commodities is a relatively recent phenomenon that has grown significantly in only the last ten years. The posture of the financial holding companies stands in sharp contrast to the longstanding U.S. principle against mixing banking with commerce. The current level of bank involvement with critical raw materials, power generation, and the food supply appears to be unprecedented in U.S. history.

In the last year, some financial holding companies have taken steps to reduce their involvement with physical commodities. In 2013, JPMorgan, Morgan Stanley, and Deutsche Bank announced plans to sell the bulk of their physical commodities businesses; in 2014, all three sold

http://www.ffiec.gov/nicpubweb/NICDataCache/FRY9C/FRY9C_2380443_20111231.PDF, at 23;
http://www.ffiec.gov/nicpubweb/NICDataCache/FRY9C/FRY9C_2380443_20121231.PDF, at 24;
http://www.ffiec.gov/nicpubweb/NICDataCache/FRY9C/FRY9C_2380443_20131231.PDF, at 25;
http://www.ffiec.gov/nicpubweb/NICDataCache/FRY9C/FRY9C_1039502_20091231.PDF, at 23;
http://www.ffiec.gov/nicpubweb/NICDataCache/FRY9C/FRY9C_1039502_20101231.PDF, at 23;
http://www.ffiec.gov/nicpubweb/NICDataCache/FRY9C/FRY9C_1039502_20111231.PDF, at 23;
http://www.ffiec.gov/nicpubweb/NICDataCache/FRY9C/FRY9C_1039502_20121231.PDF, at 24;
http://www.ffiec.gov/nicpubweb/NICDataCache/FRY9C/FRY9C_1039502_20131231.PDF, at 25;
http://www.ffiec.gov/nicpubweb/NICDataCache/FRY9C/FRY9C_2162966_20091231.PDF, at 23;
http://www.ffiec.gov/nicpubweb/NICDataCache/FRY9C/FRY9C_2162966_20101231.PDF, at 23;
http://www.ffiec.gov/nicpubweb/NICDataCache/FRY9C/FRY9C_2162966_20111231.PDF, at 23;
http://www.ffiec.gov/nicpubweb/NICDataCache/FRY9C/FRY9C_2162966_20121231.PDF, at 24;
http://www.ffiec.gov/nicpubweb/NICDataCache/FRY9C/FRY9C_2162966_20131231.PDF, at 25.

¹⁴¹ 2011 Work Plan, at FRB-PSI-200455 - 476, at 465.

major holdings.¹⁴² Those actions may have been in response to declining profits in the commodities field, as well as Federal Reserve pressure to reduce some activities. In contrast, although Goldman Sachs announced plans to sell a certain portion of its physical commodity activities, it also informed the Federal Reserve that it planned to continue to pursue physical commodities as a core business line.¹⁴³ In addition, other banks, such as Bank of America, have pending requests to increase their physical commodity activities.¹⁴⁴

B. Risks Associated with Bank Involvement in Physical Commodities

Increased U.S. bank involvement with physical commodities has evolved despite a longstanding U.S. principle discouraging national banks from operating commercial enterprises. Multiple concerns have been articulated over the years in support of separating banking from commerce. In the case of physical commodities, at least seven different concerns have been identified when banks own or control substantial physical commodities and related businesses: (1) it provides banks with unfair economic and informational advantages; (2) it distorts credit decisionmaking; (3) it creates conflicts of interest between banks and their clients; (4) it invites market manipulation and excessive commodity speculation; (5) it creates inappropriate bank and systemic risks; (6) it creates undue concentrations of economic power; and (7) it intensifies the too-big-to-fail problem by creating financial conglomerates that are too big to manage or regulate.

Unfair Economic Advantages. One key concern with mixing banking and commerce is that it may provide banks, through their financial holding companies and subsidiaries, with unfair economic or informational advantages compared to other commercial competitors.

¹⁴² See, e.g., 9/9/2014 Morgan Stanley press release, "Morgan Stanley to Sell TransMontaigne Ownership Stake to NGL Energy Partners," <http://www.morganstanley.com/about/press/articles/fc833211-9eeb-4616-87ff-3024b89db7b1.html>; 3/19/2014 Mercuria press release, "Mercuria Announces Acquisition of J.P. Morgan Physical Commodities Business," <http://www.mercuria.com/media-room/business-news/mercuria-announces-acquisition-jp-morgan-physical-commodities-business>; 12/5/2013 Deutsche Bank press release, "Deutsche Bank refocuses its commodities business," https://www.db.com/ir/en/content/ir_releases_2013_4413.htm.

¹⁴³ Subcommittee briefing by the Federal Reserve (12/13/2013). See also, e.g., "Goldman Sachs Stands Firm as Banks Exit Commodity Trading," Bloomberg, Ambereen Choudhury (4/23/2014), <http://www.bloomberg.com/news/2014-04-22/goldman-sachs-stands-firm-as-banks-exit-commodity-trading.html>.

¹⁴⁴ See 5/4/2010 letter from Bank of America legal counsel to Federal Reserve, FRB-PSI-500001 - 218 (requesting complementary authority to engage in an expanded set of physical commodity activities as a result of its acquisition of Merrill Lynch). In addition, in 2012, Toronto Dominion Bank requested complementary authority to engage in certain physical commodity activities involving natural gas, but has since withdrawn that request. 10/2/2012 letter from Toronto Dominion Bank legal counsel to Federal Reserve, FRB-PSI-500219 - 231; 11/17/2014 email from the Federal Reserve to the Subcommittee, PSI-FRB-21-000001 - 002, at 002. Despite the passage of four years, the Bank of America request remains pending at the Federal Reserve.

Most banks have access to low cost financing through either the Federal Reserve's lending programs or interbank loans bearing low interest rates. National banks have federally insured deposits, and some are also perceived as too big to fail, factors that generally lower their lending costs. Nonbank businesses typically do not have the same access to low cost financing, giving banks a competitive advantage when they operate commercial enterprises.

One expert described the problem this way:

"The growth of big banks is a case of too much of a good thing metastasizing into a bad thing. What started out with a limited safety net designed to protect the payments system and to provide a safe place for small, unsophisticated depositors to place their savings has morphed into an anticompetitive system where government subsidized banks can use unfair advantage to enter and dominate any market or business, financial or nonfinancial, that they choose."¹⁴⁵

In a 2013 editorial opposing bank involvement in commodity speculation, a business publication wrote:

"The largest U.S. banks are accused of causing problems in markets ranging from energy to aluminum. ... Why are the banks in these businesses in the first place?

Part of the answer is that they're among the country's most subsidized enterprises. The Federal Deposit Insurance Corp. and the Federal Reserve, both backed by taxpayers, provide an explicit subsidy by ensuring that banks can borrow money in times of market turmoil. Banks that are big and connected enough to bring down the economy enjoy an added implicit subsidy: Creditors will lend to them at low rates on the assumption that the government won't let them fail. ...

Congress could ... strictly limit all federally insured banks to the business of taking deposits, lending, and processing payments."¹⁴⁶

Unfair Informational Advantages. In addition to low cost financing, major banks that, through subsidiaries or financial holding company affiliates, own pipelines, warehouses, shipping operations, or refineries are likely to acquire commercially useful, non-public information that could benefit their trading activities and perhaps lead to unfair trading advantages.

¹⁴⁵ Rosner Testimony, at 15.

¹⁴⁶ "The Wrong Business for Big Banks," *Bloomberg Businessweek* (8/1/2013), <http://www.businessweek.com/articles/2013-08-01/bloomberg-view-the-wrong-business-for-big-banks>.

Useful non-public information could come from the bank's own operations or from observing or assisting actions taken by clients, and include a wide variety of types of data, including information about commodity price trends, upcoming large transactions, supply disruptions, transport flows, or regulatory actions. That physical commodity activities can provide access to commercially valuable non-public information has long been recognized by both market participants and regulators. In a 2005 application seeking authority to engage in physical commodity activities, for example, JPMorgan stated that the activities would:

“position JPM Chase in the supply end of the commodities markets, which in turn will provide access to information regarding the full array of actual produce and end-user activity in those markets. The information gathered through this increased market participation will help improve projections of forward and financial activity and supply vital price and risk management information that JPM Chase can use to improve its financial commodities derivative offerings.”¹⁴⁷

A Federal Reserve analysis of the physical commodity activities conducted by Morgan Stanley and Goldman Sachs also noted the informational advantage those activities produced:

“In addition to the financial return, these direct investments provide MS [Morgan Stanley] and GS [Goldman Sachs] with important asymmetrical information on conditions in the physical markets such as production and supply/demand information, etc., which a market participant without physical global infrastructure would not necessarily be privy to.”¹⁴⁸

Since U.S. commodities laws do not currently prohibit using non-public information in commodities trading in the same way that U.S. securities laws restrict the use of non-public information in securities transactions, banks can legally obtain and use nonpublic information to trade in the commodity futures, swaps, and options markets. For example, a bank whose affiliate has a controlling interest in a refinery

¹⁴⁷ 7/21/2005 “Notice to the Board of Governors of the Federal Reserve System by JPMorgan Chase & Co. Pursuant to Section 4(k)(1)(B) of the Bank Holding Company Act of 1956, as amended, and 12 C.F.R. §225.89,” PSI-FederalReserve-01-000004, at 016. See also 12/30/2009 “Notice to the Board of Governors of the Federal Reserve System by JPMorgan Chase & Co. Pursuant to Section 4(k)(1)(B) of the Bank Holding Company Act of 1956,” PSI-FederalReserve-02-000012 - 059, at 019 - 020, 032 (“The Complementary Activities will further complement the Existing Business by providing JPMVEC [JPMorgan’s subsidiary] with important market information. The ability to be involved in the supply end of the commodities markets through tolling agreements provides access to information regarding the full array of actual producer and end-user activity in those markets.”).

¹⁴⁸ Undated but likely early 2011 “Comparison of Risks of Commodity Activities at Morgan Stanley and Goldman Sachs between 1997 to Present,” prepared by Federal Reserve, FRB-PSI-200428 - 454, at 439 [sealed exhibit].

could quickly learn of a pending shutdown due to technical problems and use that inside information to profit from a short position in the commodity markets. A bank with an affiliate that controls a shipping operation could find out when bad weather has delayed deliveries and, again, use that information legally to profit in the commodities markets from shorting prices. Concerns about unfair trading advantages deepen when the commodities trader is a large financial institution drawing on client data and its own commodity activities to profit from counterparties.

Those types of unfair informational advantages would not apply to banks whose affiliates do not own or control physical commodities or related businesses.

Credit Distortions. A second problem with mixing banking and commerce is the concern that it may distort bank decisions about extending credit to businesses.

The concern is that, if a bank's affiliate owns or controls a business that handles physical commodities, the bank may not only extend credit to that business on favorable terms, but also deny credit to its competitors. A bank that owns or profits from a solar power plant, for example, may view any request for financing made by that firm in a favorable light. In contrast, the bank may be reluctant to provide financing to a rival solar power generator or may agree to lend funds only on more expensive terms. Because of its commercial involvement, the bank's credit decisions may no longer utilize objective lending criteria, but may be distorted by the bank's desire to see a particular business succeed.

One expert has warned that distorted credit decisions create a number of risks:

"A bank may extend credit to a company in which it has an ownership interest, independent of the company's creditworthiness, to assist the company and increase the value of its stock. Such an extension would conflict with the interest of its depositors, its safety and soundness, and the integrity of the deposit insurance fund. Further, rival companies, unaffiliated with the banking organization, might be subject to unfair credit terms."¹⁴⁹

¹⁴⁹ Shull, at 40. See also id. at 58 ("Will [small and new businesses] have less access to credit than rivals who are affiliated with banks, and, when they obtain credit, will their rates be higher? ... Will higher rates compel most businesses to affiliate with banks if they can?"); Rosner Testimony at 12 (describing a "risk that a bank may choose to deny lending or underwriting to a competitor of their commercial affiliate ... [or] may choose to lend, at preferential rates, to a commercial affiliate ... [or] may, legally or illegally, tie loans to the purchase of a commercial affiliate's products").

A related concern is that distorted credit determinations will not be limited to the enterprises owned or controlled by the bank's affiliates, but may extend to other businesses as well. In one scenario, if a bank has an ownership interest in a particular commodity-related business, it may seek to guide related business opportunities to other clients in which the bank has invested or provided financing. For example, if the bank's solar power plant needed manufacturing equipment, the bank might recommend a manufacturer that has an outstanding loan with the bank.

The Supreme Court recognized similar problems in a 1971 decision which overturned an OCC interpretive letter allowing bank subsidiaries to form and sell shares in mutual funds. The Court identified a litany of "hazards" that could unfold from that business, including credit problems:

"[S]ince public confidence is essential to the solvency of a bank, there might exist a natural temptation [by the bank] to shore up the affiliate through unsound loans or other aid. Moreover, the pressure to sell a particular investment and to make the affiliate successful might create a risk that the bank would make its credit facilities more freely available to those companies in whose stock or securities the affiliate has invested or become otherwise involved. ... The bank might exploit its confidential relationship with its commercial and industrial creditors for the benefit of the [mutual] fund. ... The bank might make loans to facilitate the purchase of interests in the fund."¹⁵⁰

The Supreme Court summarized this set of concerns by warning that a bank's ownership interest in its affiliate "might impair its ability to function as an impartial source of credit."¹⁵¹

Conflicts of Interest. A third problem with mixing banking and commerce is that it invites conflicts of interest between a bank and its clients. In the case of physical commodities, those conflicts can arise in multiple settings. If the bank's affiliate owns a solar power plant, for example, it may put that plant's financing interests before those of a client with a rival power plant. If the bank's affiliate owns a metals warehouse and the bank trades metals in the futures market, the bank may time the release of the warehoused metal in ways that benefit the bank's own commodities positions and contrary to the interests of its clients. If a bank's affiliate supplies crude oil to a refinery while the bank trades oil futures, the bank may delay its oil deliveries to restrict the supply and boost oil prices in the futures market, increasing the value

¹⁵⁰ *Investment Company Institute v. Camp*, 401 U.S. 617, 631-632 (1971).

¹⁵¹ *Id.* at 631.

of its long positions while decreasing the value of the short positions held by its counterparties.

Possible conflicts of interest permeate virtually every type of commodity activity. If the bank's affiliate leases an electrical power plant, the bank may attempt to use regional pricing conventions to boost its profits, even at the expense of clients that pay the higher electricity costs. If the bank's affiliate mines coal while the bank trades coal swaps, the bank may ask its affiliate to store the coal rather than sell it to help restrict supplies, and benefit from long swap positions, while causing its counterparties to incur losses. If the bank's affiliate operates a commodity-based exchange traded fund backed by gold, the bank may ask the affiliate to release some of the gold into the marketplace and lower gold prices, so that the bank can profit from a short position in gold futures or swaps, even if some clients hold long positions.

Market Manipulation. A fourth problem with mixing banking and commerce is that, in the context of physical commodities, it invites market manipulation and excessive speculation in commodity prices. If a bank's affiliate owns or controls a metals warehouse, oil pipeline, a coal shipping operation, refinery, grain elevator, or exchange traded fund backed by physical commodities, the bank has the means to affect the marginal supply of a commodity and can use those means to benefit the bank's physical or financial commodities trading positions. If a bank's affiliate controls a power plant, the bank can "manipulate the availability of energy for advantage" or to obtain higher profits.¹⁵²

In recent years, banks and their holding companies have settled allegations of price manipulation by paying substantial fines and legal fees. In July 2013, for example, JPMorgan paid \$410 million to settle FERC charges that it used multiple pricing schemes to manipulate the price of electricity produced by power plants it controlled in California and Michigan, in a matter explained in more detail below.¹⁵³ That same month, FERC charged Barclays Bank with manipulating electricity prices in California from 2006 to 2008, in order to benefit its swap positions in other markets, directing it to disgorge \$35 million plus interest and pay a penalty totaling \$435 million.¹⁵⁴ Specifically, FERC

¹⁵² Rosner Testimony, at 12.

¹⁵³ See "FERC, JP Morgan Unit Agree to \$410 Million in Penalties, Disgorgement to Ratepayers," FERC News Release (7/30/2013).

¹⁵⁴ *FERC v. Barclays Bank PLC*, Docket No. IN08-8-000, Order Assessing Civil Penalties, 144 FERC ¶ 61,041 (7/16/2013). The CFTC has also charged hedge funds with market manipulation, demonstrating that financial firms have the means to manipulate commodity futures and swap prices. See, e.g., *CFTC v. Amaranth Advisors, LLC*, Case No. 07-CV-6682 (DC) (S.D.N.Y.)(7/25/2007); "Amaranth Entities Ordered to Pay a \$7.5 Million Civil Fine in CFTC Action Alleging Attempted Manipulation of Natural Gas Futures Prices," CFTC Press Release No. 5692-09 (8/12/2013)(describing how, in 2009, the CFTC collected \$7.5 million in fines from a hedge fund, Amaranth Advisors LLC, and its Canadian subsidiary, for attempted manipulation of natural gas futures prices in 2006); *CFTC v. Moncada*, Case No. 09-CV-8791 (S.D.N.Y.)(12/4/2012)(describing how, in 2012, the CFTC charged two related hedge funds,

alleged that Barclays and its traders “engaged in a coordinated scheme to manipulate trading at four electricity trading points in the Western United States ... by engaging in loss-generating trading of next-day fixed-price physical electricity on the IntercontinentalExchange ... to benefit Barclays’ financial swap positions in those markets.”¹⁵⁵ Barclays is contesting both the charges and penalty.

In another case the prior year, in January 2013, Deutsche Bank settled FERC charges that it, too, had manipulated electricity prices.¹⁵⁶ FERC alleged that Deutsche Bank had “engag[ed] in a scheme in which [it] entered into physical transactions to benefit its financial position,” identifying occasions in 2010 in which the bank made physical electricity trades to offset losses in electricity-related financial instruments held by the bank.¹⁵⁷ Deutsche Bank admitted the facts, but neither admitted or denied the violations of law, while paying disgorged profits and a civil penalty totaling over \$1.6 million. In still another case, involving agricultural commodities rather than electricity, the CFTC reached a settlement, in 2014, with FirstRand Bank, Ltd. of South Africa on charges of “executing unlawful prearranged, noncompetitive trades involving corn and soybean futures contracts on the Chicago Board of Trade (CBOT).”¹⁵⁸ The CFTC found:

“[O]n several occasions, from June 2009 to August 2011, FirstRand and another foreign-based company entered into prearranged noncompetitive trades involving CBOT corn and soybean futures contracts. Before these trades were entered on the CBOT, employees for FirstRand and the other company had telephonic conferences with each other during which they agreed upon the contract, quantity, price, direction, and timing of those trades. These prearranged trades negated market risk and price competition and constituted fictitious sales, in violation of the [Commodities Exchange Act].”¹⁵⁹

BES Capital LLC and Serdika LLC, with attempted manipulation of wheat futures prices in 2009; they are contesting the charges).

¹⁵⁵ *FERC v. Barclays Bank PLC*, Docket No. IN08-8-000, Order To Show Cause and Notice of Proposed Penalty, 141 FERC ¶ 61,084 (10/31/2012). For more information, see discussion of JPMorgan’s involvement with electricity, below.

¹⁵⁶ See *In re Deutsche Bank Energy Trading, LLC*, FERC Case No. IN12-4-000, “Order Approving Stipulation and Consent Agreement,” (1/22/2013), 142 FERC ¶ 61,056, <http://www.ferc.gov/EventCalendar/Files/20130122124910-IN12-4-000.pdf>.

¹⁵⁷ 1/22/2013 FERC press release, “FERC Approves Market Manipulation Settlement with Deutsche Bank,” <http://www.ferc.gov/media/news-releases/2013/2013-1/01-22-13.asp>.

¹⁵⁸ 8/27/2014 CFTC press release, “CFTC Orders FirstRand Bank, Ltd. to Pay \$150,000 Civil Monetary Penalty for Unlawfully Executing Prearranged, Noncompetitive Trades on the CBOT,” <http://www.cftc.gov/PressRoom/PressReleases/pr6985-14>.

¹⁵⁹ *Id.*

To settle the charges, FirstRand agreed, without admitting or denying the facts or violations of law, to pay a \$150,000 civil penalty and revamp its procedures to prevent future fictitious trades.¹⁶⁰

These cases are consistent with prior investigations by this Subcommittee which included evidence of bank participation in commodity trading strategies that, collectively, constituted excessive speculation in such energy and agricultural commodities as crude oil, natural gas, and wheat.¹⁶¹ Banks suspected of engaging in manipulation or excessive speculation in commodity markets risk civil and criminal investigations, legal expenses, reputational damage, and penalties.

Increased Bank and Systemic Risks. A fifth problem with mixing banking and commerce in the context of physical commodities is that it imposes a wide range of new and increased risks on both individual banks and the broader U.S. financial system and economy.

Banks that own or control businesses with physical commodities, either directly or through their financial holding companies, incur risks that are common in those businesses, but uncommon in banking. For example, if the BP oil rig that caused a major oil spill in the Gulf of Mexico had instead been owned, leased, or controlled by a bank, that bank would have confronted multi-billion-dollar liabilities that otherwise would never have threatened its balance sheet. Similar low-probability but high-risk operational risks affect a wide range of commodities, including coal, natural gas, and uranium, as well as a wide range of commodity activities, such as mining, transporting, storing, or refining commodities with toxic properties. Another set of risks include the expenses and disruptions that may be caused by the sudden destruction of a major asset such as a power plant, warehouse, or pipeline; major thefts of physical inventory; or industrial accidents that injure individuals or property. Still another type of unusual risk is undergoing investigation for possible manipulation of physical commodity prices, with the attendant legal expenses, reputational damage, and, in some cases, large fines. Each of those risks does not normally apply to a bank, and would not apply if the bank's affiliates did not handle physical commodities.

In addition to the risks imposed on individual banks, physical commodities create systemic risks. Currently, substantial physical

¹⁶⁰ See *In re FirstRand Bank, Ltd.*, CFTC Case No. 14-23 (CFTC Administrative Proceedings), "Order Instituting Proceedings Pursuant to Sections 6(c) and 6(d) of the Commodity Exchange Act, Making Findings and Imposing Remedial Sanctions," at 1, <http://www.cftc.gov/ucm/groups/public/@lrenforcementactions/documents/legalpleading/enffirstrandorder082714.pdf>.

¹⁶¹ See, e.g., "The Role of Market Speculation in Rising Oil and Gas Prices: A Need to Put the Cop Back on the Beat," report by Permanent Subcommittee on Investigations, S. Prt. 109-65 (6/27/2006); "Excessive Speculation in the Wheat Market," hearing before Permanent Subcommittee on Investigations, S. Hrg. 111-155 (7/21/2009).

commodity activities have been undertaken by a handful of the country's largest banks, each of which qualifies as a systemically important financial institution. If one of those banks were to suffer an environmental or operational disaster involving its physical commodities or sudden massive commodity trading losses, the resulting financial consequences might be difficult to confine to that one bank. For example, if the bank were to lose market confidence, it might find itself unable to obtain short term financing, derivatives counterparties, or business partners, or might have to accept higher expenses to continue to operate. Deposit runs or restricted liquidity could worsen the situation. If the bank held substantial interests in non-banking commercial enterprises, its troubles could taint those nonbanking enterprises as well. Regulatory action, and ultimately a U.S. taxpayer bailout, might be required to prevent contagion spreading from one major bank to other financial institutions or other sectors of the U.S. economy.

One business publication framed the problem this way in an editorial opposing bank involvement in physical commodity businesses:

"Subsidized financing – made particularly cheap by the Fed's efforts to stimulate the economy with near-zero interest rates – [have] encouraged banks and their clients to build bigger stockpiles [of commodities] than they otherwise would have, tying up supplies. If the bets were to go wrong and lead to distress at a big bank, the Fed would have to provide emergency financing for an activity that taxpayers never intended to support."¹⁶²

A related risk, identified by another expert, is that banks, for legal or reputational reasons, may take on the debts of affiliated commercial companies, creating unanticipated risks not only to the bank itself, but also possibly systemic risks:

"Unfortunately, reputational risk within a systemically important financial institution can result in requirements that the firm backstop assets, even those that were legally isolated. In 2008 Citi was obligated to guarantee and then repurchase \$17.4 billion of structured investment vehicles (SIVs). As a result, the failure of the federal government to backstop a firm's reputation against such losses during a time of crisis could exacerbate panics and lead to contagion and the creation of larger systemic problems."¹⁶³

A second set of systemic risks involves the physical commodities themselves. Banks whose affiliates hoard key industrial metals such as copper, aluminum, or uranium in a warehouse or an ETF could impose

¹⁶²"The Wrong Business for Big Banks," *Bloomberg Businessweek* (8/1/2013), <http://www.businessweek.com/articles/2013-08-01/bloomberg-view-the-wrong-business-for-big-banks>.

¹⁶³Rosner Testimony, at 7-8.

higher costs or a scarcity of raw materials on manufacturers, technology companies, the automobile sector, nuclear power plants, or other industries. Banks that manipulate electricity prices could impose higher costs on whole regions of the country. Banks that supply jet fuel to airlines, coal to power plants, or natural gas to manufacturers could, if they faltered, affect industries far afield from the banking sector. Ultimately, they could negatively impact the U.S. economy.

Undue Concentrations of Economic Power. A sixth problem with mixing banking and commerce in the context of physical commodities involves undue concentrations of economic power.¹⁶⁴

Banks already occupy a critical role in the U.S. economy, as custodians of the country's wealth, facilitators of funding transfers worldwide, and arbiters of credit. Well aware of their special status, banks have used their access to inexpensive financing and excess deposits to expand into multiple business sectors. According to Federal Reserve data, at the end of 2011, the top five U.S. banks alone held assets equal to 56% of the U.S. economy.¹⁶⁵

Enabling major banks to straddle, not only the financial sector, but also key raw material and energy markets, would further extend their economic power. Industrial metals such as copper and aluminum are essential in countless U.S. industries, including computers, automobiles, and manufacturing equipment. Uranium is a critical contributor to nuclear power plants, as well as certain defense and medical industries. Low cost natural gas is rejuvenating U.S. manufacturing, as well as heating homes and producing low cost electricity. Economical electricity generation is fundamental to the entire country, as is reasonably priced crude oil. Refined oil products such as diesel fuel, heating oil, and jet fuel play critical roles in the U.S. economy. Agricultural products, including wheat, corn, and soybeans, not only help feed the world, but produce biofuels that reduce U.S. dependence on foreign oil. If banks were to dominate, not only the financial sector, but also key energy, metals, and agricultural sectors, they would have even more influence over the economy.

¹⁶⁴ A 2012 study by the Federal Reserve Bank of New York noted that separating banking from commerce was, in part, "intended to prevent self-dealing and monopoly power" by bank holding companies. "A Structural View of U.S. Bank Holding Companies," Dafna Avraham, Patricia Selvaggi, and James Vickery of the Federal Reserve Bank of New York, *FRBNY Economic Policy Review* (July 2012), at 3, <http://www.newyorkfed.org/research/epr/12v18n2/1207avra.pdf>

¹⁶⁵ See "Big Banks: Now Even Too Bigger to Fail," *Bloomberg Businessweek*, David J. Lynch (4/19/2012), <http://www.businessweek.com/articles/2012-04-19/big-banks-now-even-too-bigger-to-fail> (stating: "Five banks – JPMorgan Chase (JPM), Bank of America (BAC), Citigroup (C), Wells Fargo (WFC), and Goldman Sachs (GS) – held more than \$8.5 trillion in assets at the end of 2011, equal to 56 percent of the U.S. economy, according to the Federal Reserve. That's up from 43 percent five years earlier").

One expert observed that if major banks:

“are allowed to control vast networks of nonfinancial assets, either as principal or agent, they will have the power to pick winners and losers in the commercial world, not based on the productivity or competitive advantages of those firms’ operations but as a result of their own profit motives.”¹⁶⁶

The same expert quoted a warning by the Independent Community Bankers Association:

“Over time, the individual, the small business owner, small towns, and rural countryside will suffer economically. More power will devolve to fewer and fewer hands, and economic diversity will wither, and with it, choices.”¹⁶⁷

In the first decade of the twentieth century, a handful of U.S. banks dominated major U.S. industries, including railroads, oil, mining, and the nascent electrical industry. The Pujo or money trust hearings concluded that those banks had abused the public trust.¹⁶⁸

Too Big to Manage or Regulate. A final problem with mixing banking and commerce in the context of physical commodities is that it intensifies the problem of too-big-to-fail banks by producing complex financial conglomerates that are too big to manage or regulate. Businesses that conduct commodities-related activities involving the producing, storing, transporting, and refining of commodities are, in themselves, complex enterprises with multiple regulatory and practical difficulties. Adding those complexities to the complexities already attendant to global banks conducting hundreds of billions of dollars of complicated financial transactions around the world raises regulatory and management problems it would be foolhardy to ignore or discount.

C. Role of Regulators

Increased bank involvement with physical commodities could not have taken place in the United States without the acquiescence of federal bank regulators that set the parameters on permissible bank activities. Because most bank involvement with physical commodities takes place through the bank’s financial holding company, actions by the Federal Reserve, the exclusive regulator of bank holding companies, take center

¹⁶⁶ Rosner Testimony at 13.

¹⁶⁷ Id., citing Cam Fine of the Independent Community Bankers Association, Chicago Fed Letter, “The Mixing of Banking and Commerce: A conference summary,” Nisreen H. Darwish, Douglas D. Evanoff, Essays on Issues, The Federal Reserve Bank of Chicago, No. 244a (Nov. 2007), http://qa.chicagofed.org/digital_assets/publications/chicago_fed_letter/2007/cflinovember2007_244a.pdf.

¹⁶⁸ *Inflated: How Money and Debt Built the American Dream*, (John Wiley & Sons, 2010), at 106.

stage. Because a few banks also participate directly in physical commodity activities, actions taken by the OCC, the primary regulator of national banks, also come into play. In addition, other federal agencies exercise oversight of certain aspects of physical commodity activities, including agencies that oversee U.S. commodities markets; electricity markets and energy production; commodity-related securities; and commodity-related environmental and safety issues.

(1) Federal Reserve Board

The Federal Reserve Board of Governors has exclusive responsibility under the Bank Company Holding Act of 1956 to regulate holding companies that own or control banks, including overseeing their involvement with physical commodities.

The Federal Reserve currently oversees nearly 5,000 domestic and foreign-owned bank holding companies.¹⁶⁹ Less than 150 of those holding companies are major global institutions with \$50 billion or more in assets. In 2011, 26 domestic bank holding companies and 106 foreign-owned bank holding companies reported \$50 billion or more in total consolidated assets.¹⁷⁰ Together, those holding companies reported a combined global value in excess of \$70 trillion.¹⁷¹

Within the Federal Reserve, the Division of Banking Supervision and Regulation (BS&R) oversees bank holding companies. Within BS&R, the Large Institution Supervision Coordinating Committee (LISCC) coordinates the efforts of the Federal Reserve System to oversee the largest and most complex bank holding companies and other systemically important financial institutions.¹⁷² Created in response to the financial crisis of 2008, LISCC was designed to centralize supervision of those firms and to apply a cross-firm, interdisciplinary approach to identify and reduce material risks to the U.S. and global banking system.¹⁷³

¹⁶⁹ 5/23/2012 letter from Federal Reserve System's Office of Inspector General to the Federal Reserve's Division of Banking Supervision and Regulation (BS&R) regarding an audit of BS&R efforts to develop enhanced prudential standards under Section 165 of the Dodd-Frank Act (hereinafter "5/23/2012 Federal Reserve Inspector General Letter"), at 3, http://www.federalreserve.gov/oig/files/BOG_enhanced_prudential_standards_progress_May2012.pdf (stating that, as of March 31, 2011, the Federal Reserve oversaw 4,770 domestic and 179 foreign-owned bank holding companies).

¹⁷⁰ *Id.*

¹⁷¹ *Id.*

¹⁷² See Federal Reserve SR Letter 12-17, "Consolidated Supervision Framework for Large Financial Institutions," (12/17/2013), at 2, <http://www.federalreserve.gov/bankinfo/srletters/sr1217.pdf>.

¹⁷³ See, e.g., testimony of Federal Reserve Governor Daniel K. Tarullo before the Senate Committee on Banking, Housing and Urban Affairs, hearing on Dodd-Frank Act Implementation, (6/6/2012), <http://www.federalreserve.gov/newsevents/testimony/tarullo20120606a.htm>.

Additional supervisory duties are held by two BS&R subgroups known as the Large Banking Organizations (LBO) Section and the International Banking Organizations (IBO) Section. The LBO Section helps oversee domestic bank holding companies that have \$50 billion or more in consolidated assets but are not overseen by LISCC.¹⁷⁴ It works with the examination and supervisory efforts of the district Reserve Banks; reviews examination and other reports on bank holding companies and state member banks; and helps develop informal and formal enforcement actions.¹⁷⁵ The IBO Section helps oversee foreign banking organization that have \$50 billion or more in consolidated U.S. assets but are not overseen by LISCC.¹⁷⁶ It monitors foreign country developments that could affect supervision of foreign banks operating in the United States; works with foreign regulators of U.S. banks operating abroad; and provides Federal Reserve views on supervisory issues and banking trends of international interest.¹⁷⁷

To oversee large bank holding companies, the Federal Reserve assigns a team of examiners to each institution. In New York, the head of the team is called the Senior Supervisory Officer (SSO); outside of New York, the team leader is generally called the Central Point of Contact (CPC).¹⁷⁸ Depending upon the size and complexity of the holding company, the SSO or CPC examination team has between 10 and 40 members with various areas of expertise.¹⁷⁹ At larger holding companies, the examination team typically spends four days per week on site at the assigned institution and one day per week at Federal Reserve offices.¹⁸⁰

The examination team typically develops an annual supervisory plan and conducts routine and special examinations on a wide range of holding company issues, including capital and liquidity adequacy, management of core business lines, internal controls, stress testing, and risk management. Risk specialists may assist or conduct certain examinations. The team provides written materials summarizing examination results, identifying problems, and requiring or encouraging corrective actions. Team members also conduct ongoing meetings with the holding company to monitor developments and communicate concerns. In addition, the examination team helps prepare the Federal Reserve's annual rating assessment of the bank holding company.

¹⁷⁴ See Federal Reserve SR Letter 12-17, "Consolidated Supervision Framework for Large Financial Institutions," (12/17/2013), at 3, <http://www.federalreserve.gov/bankinfo/srletters/sr1217.pdf>.

¹⁷⁵ 5/23/2012 Federal Reserve Inspector General Letter, at 4.

¹⁷⁶ See Federal Reserve SR Letter 12-17, "Consolidated Supervision Framework for Large Financial Institutions," (12/17/2013), at 3, <http://www.federalreserve.gov/bankinfo/srletters/sr1217.pdf>.

¹⁷⁷ *Id.* at 4-5.

¹⁷⁸ Subcommittee briefing by the Federal Reserve (12/13/2013).

¹⁷⁹ *Id.*

¹⁸⁰ *Id.*

According to the Federal Reserve, the BS&R division does not maintain a group of examiners who specialize in physical commodity issues, nor do SSO and CPC teams typically include physical commodities specialists.¹⁸¹ Instead, SSO and CPC teams typically assign physical commodity related concerns to examiners who also handle other issues.¹⁸²

Key Federal Reserve regulatory issues related to physical commodities include application of the Gramm-Leach-Bliley authorities for permissible financial activities, nonfinancial complementary activities, merchant banking investments, and grandfathered commodity activities, as well as enforcement of prudential limits on physical commodity activities.

(2) Other Federal Bank Regulators

While the Federal Reserve has exclusively responsibility for regulating financial holding companies, the Office of the Comptroller of the Currency (OCC) and Federal Deposit Insurance Corporation (FDIC) are charged with overseeing individual national banks and their subsidiaries. The OCC has primary regulatory authority over national banks, and is charged with, among other tasks, ensuring those banks comply with the law restricting them to the “business of banking” and operate in a safe and sound manner. The FDIC exercises secondary authority over national banks, with its responsibilities centered around protecting the federal deposit insurance system from losses.

Over the years, the OCC has played a key role in the physical commodities area by expansively interpreting the scope of the bank powers clause of the National Bank Act to permit commodity-related activities. As explained earlier, the bank powers clause sets out the boundaries of permissible activities by national banks. It states that a national bank may exercise:

“all such incidental powers as shall be necessary to carry on the business of banking; by discounting and negotiating promissory notes, drafts, bills of exchange, and other evidences of debt; by receiving deposits; by buying and selling exchange, coin, and bullion; by loaning money on personal security; and by obtaining, issuing, and circulating notes”¹⁸³

Both the OCC and the courts have determined that the banking powers granted by this clause should be interpreted broadly.¹⁸⁴ During

¹⁸¹ Id.

¹⁸² Id.

¹⁸³ 12 U.S.C. §24 (Seventh).

¹⁸⁴ See, e.g., *NationsBank of North Carolina, N.A. v. Variable Annuity Life Co.*, 513 U.S. 251, 257-59, 115 S. Ct. 810 (1995); OCC Interpretive Letter No. 632 (6/30/1993), at 5.

the 1980s, when commodity issues first arose, the OCC reasoned that, since commodities were not expressly mentioned in the bank powers clause, the key issue was whether they were permissible “incidental powers.” Over the years, the OCC has used several tests to make that determination. In some interpretive letters, the OCC used a judicial standard which required only that the commodity-related activity “be ‘convenient and useful’ in the performance of the bank’s expressly permitted activities.”¹⁸⁵ That non-demanding standard made it easy for the OCC to find that a variety of commodity-related activities were permissible.

In another letter, the OCC used a more detailed, four-part test, citing multiple court decisions as the basis for the standards:

- “(1) whether the activity is similar to the types of activities permitted by the Act and not expressly prohibited ... or is not ‘so disconnected with the banking business as to make it in violation of’ section 24 ...
- (2) whether the activity is a ‘generally adopted method’ of banks or one in which banks have traditionally engaged ...
- (3) whether the activity in question ‘has grown out of the business needs of the country’ ... or would ‘promote the convenience of [the bank’s] business for itself or for its customers’ ... and
- (4) whether the activity is usual and useful to the bank, or is expected of the bank, in performing its functions in the current competitive climate.”¹⁸⁶

While this test is not explicitly cited in other OCC interpretive letters, its standards seem to underlie much of the OCC’s analysis. For example, a number of OCC interpretive letters analogized the bank’s authority to execute commodity-related transactions to its longstanding authority to act as a financial intermediary, broker, or lender for its clients, and concluded that the similarity justified finding that the commodity-related activities were permissible under the bank powers clause.¹⁸⁷

Beginning in the 1990s, OCC interpretive letters often used another approach which analyzed whether the commodity-related activity:

- “(1) [was] functionally equivalent to or a logical outgrowth of a traditional banking activity; (2) would respond to customer needs

¹⁸⁵ See, e.g., OCC Interpretive Letter No. 260 (6/27/1983), at 4, citing *Arnold Tours, Inc. v. Camp*, 472 F.2d 427 (1st Cir. 1972); OCC Interpretive Letter No. 356 (1/7/1986), at 2; OCC Interpretive Letter (6/19/1986), at 2; OCC Interpretive Letter No. 1025 (4/6/2005), at 6.

¹⁸⁶ OCC Interpretive Letter No. 494 (12/20/1989), at 11-12 (citations omitted).

¹⁸⁷ See, e.g., *id.* at 16-25; OCC No-Objection Letter No. 87-5 (7/20/1987), at 4-6; OCC Interpretive Letter (3/2/1992), at 3-4; OCC Interpretive Letter No. 652 (9/13/1994), at 4; OCC Interpretive Letter No. 929 (2/11/2002), at 4-5.

or otherwise benefit the bank or its customers; and (3) involve[d] risks similar to those already assumed by banks.”¹⁸⁸

In 1993, the OCC used that three-part test in its key interpretive letter approving national banks taking delivery of physical commodities and conducting related activities such as storing, transporting, and disposing of the commodities.¹⁸⁹ The OCC letter found that taking physical delivery of commodities was a logical outgrowth of a bank’s other permissible activities and served as a means to manage the risks arising from those permissible activities.¹⁹⁰ The letter determined that the bank’s clients would benefit from the bank’s accepting physical commodities by providing the bank with “more accurate and economical hedges” and by increasing the bank’s ability to compete in the commodities markets, both of which could lead to reduced prices for clients.¹⁹¹ The letter also determined that the bank itself would benefit from using more accurate hedges that reduced risk.¹⁹² Finally, the OCC letter found that the risks associated with taking physical delivery of commodities were similar to those in other permissible banking activities.¹⁹³ The OCC used the same three-part test in several other interpretive letters allowing banks to engage in physically-settled commodity transactions.¹⁹⁴

Even after finding that taking physical delivery of commodities was within the business of banking, however, the OCC routinely placed prudential conditions on the exercise of that activity, requiring the bank to put into place risk management, documentation, and audit controls to ensure safe and sound banking practices. As part of that effort, the OCC required a bank, prior to engaging in any physically-settled commodity transactions, to submit a detailed plan to the OCC and obtain prior written authorization from its OCC supervisory staff.¹⁹⁵ Another letter placed limits on the volume of permissible commodities trading.¹⁹⁶ Still others required the implementation of a bank circular on risk management.¹⁹⁷

Another line of OCC interpretive letters extended bank involvement with physical commodities by approving proposed

¹⁸⁸ OCC Interpretive Letter No. 632 (6/30/1993), at 4.

¹⁸⁹ *Id.*

¹⁹⁰ *Id.* at 5.

¹⁹¹ *Id.* at 4.

¹⁹² *Id.*

¹⁹³ *Id.*

¹⁹⁴ See, e.g., OCC Interpretive Letter No. 693 (11/14/1995), at 4 (metals); OCC Interpretive Letter No. 937 (6/27/2002), at 7-10 (electricity); OCC Interpretive Letter No. 1060 (4/26/2006), at 6-7 (coal).

¹⁹⁵ OCC Interpretive Letter No. 632 (6/30/1993), at 6.

¹⁹⁶ See OCC Interpretive Letter No. 507 (5/5/1990), at 3.

¹⁹⁷ See, e.g., OCC Interpretive Letter No. 937 (6/27/2002), at 10-11.

merchant banking investments in energy-related businesses.¹⁹⁸ Still another line of OCC letters approved credit arrangements in which energy producers agreed to repay bank loans by assigning the bank a royalty interest in the producer's physical energy reserves.¹⁹⁹

Through its interpretation of the bank powers clause, the OCC continually extended the scope of national bank involvement with commodities, including physical commodities. Its decisions allowed national banks and their subsidiaries to execute and clear futures, options and swaps; become members of commodity exchanges and clearinghouses; engage in physically-settled transactions involving the delivery of physical commodities; store, transport, and dispose of physical commodities; invest in commodity-related businesses; and deal with a wide range of commodities with unique and toxic properties, from oil products to natural gas, metals, uranium, agricultural products, emissions, electricity, and more. Since bank holding companies are also restricted to engaging in banking or closely related activities, the OCC's interpretations expanded their ability to engage in physical commodity activities as well.

(3) Dodd-Frank Provisions

One set of regulatory issues that is outside the scope of this Report, but may have a significant future impact, is how implementation of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (Dodd-Frank Act) will affect bank involvement with physical commodities.²⁰⁰

At least five Dodd-Frank provisions have the potential to restrict or reshape bank involvement with physical commodities. Section 171 requires minimum, risk-based capital and leverage standards for federally insured banks, their holding companies, and affiliates. If bank regulators were to determine that physical commodity activities constitute high risk activities, they could impose minimum capital or leverage standards to mitigate the risk associated with conducting such activities and discourage, reshape, or reduce bank involvement.

Section 165 authorizes enhanced supervision and prudential standards for large bank holding companies with assets in excess of \$50 billion. It explicitly permits more stringent rules based on a company's

¹⁹⁸ See, e.g., OCC Community Development Investment Letter No. 2005-3 (7/20/2005)(construction and operation of ethanol plant); OCC Community Development Investment Letter No. 2008-1 (7/31/2008)(development of solar energy facilities); OCC Community Development Investment Letter No. 2009-6 (12/16/2009)(installation of photovoltaic systems in low-income housing); OCC Community Development Investment Letter No. 2011-2 (12/15/2011)(construction of wind turbines).

¹⁹⁹ See, e.g., OCC Interpretive Letter No. 1117 (5/19/2009)(volumetric production payment loans).

²⁰⁰ P.L. 111-208 (7/21/2010).

“capital structure, riskiness, complexity, financial activities (including the financial activities of their subsidiaries), size” or other factors.²⁰¹ If bank regulators were to determine that physical commodity activities created sufficient risk, they could impose contingent capital, credit exposure, or leverage standards, concentration limits, stress testing, or other measures to minimize risk and discourage, reshape, or reduce bank involvement with physical commodities.

Section 619, which is part of the Merkley-Levin provisions and includes the so-called Volcker Rule, prohibits banks and their subsidiaries from engaging in proprietary trading as well as hedging or market-making activities that create client conflicts of interest or high risk exposures. Depending upon implementation of the Volcker Rule’s provisions, this section could also restrict and reshape some of the physical commodity activities now undertaken by banks, their holding companies, and affiliates.

Section 111 of the law created the Financial Stability Oversight Council (FSOC) whose mission is to identify and address systemic risks to the U.S. financial system. Section 152 created the Office of Financial Research which the FSOC could task with gathering and analyzing data on possible systemic risks caused by bank involvement with physical commodities. If the FSOC were to determine that bank involvement in physical commodities imposed systemic risks to the U.S. financial system, it could recommend or take measures to restrict or restructure those activities.

Finally, Section 620 of the law requires federal bank regulatory agencies to conduct a study of appropriate banking activities. Work on that study is underway. If the study were to conclude that conducting physical commodity activities, in whole or in part, is inappropriate for federally insured banks, their holding companies, or affiliates, the study could recommend measures to reduce, restructure, or even eliminate some of those activities.

Most of the Dodd-Frank provisions are not fully in effect, and the required Section 620 study is not yet complete. Multiple agencies are in charge of their implementation, and multiple outcomes are possible. Depending upon agency implementation, each of these Dodd-Frank provisions offers tools that could be used to discourage, reshape, or reduce bank involvement with physical commodities.

(4) Other Agencies

In addition to federal banking regulators, other federal agencies also exercise oversight of various aspects of bank involvement with

²⁰¹ Section 165(a)(2)(A).

physical commodities. They include agencies that oversee U.S. commodities markets; electricity markets and energy production; commodity-related securities; and a wide range of commodity-related environmental and safety issues.

Commodity Markets. The Commodity Futures Trading Commission (CFTC) is charged with overseeing the fair and orderly operation of commodity futures, swaps, and options markets, whether trading takes place on an exchange, swap execution facility, or over-the-counter. The CFTC is also charged with preventing, detecting, and punishing commodity price manipulation and excessive speculation. While the CFTC does not have direct authority over physical commodity markets, those markets can and do affect prices on the financial markets, and can lead to misconduct within the CFTC's jurisdiction. The lack of transparency in many of the physical markets, as well as the ability of prices or actions in one market to affect prices in another market, further complicate CFTC oversight. Since major U.S. banks now dominate commodity swaps and are major traders of commodity futures and options, CFTC oversight responsibilities include monitoring and reviewing their conduct.

Energy Regulation. The Federal Energy Regulatory Commission (FERC) is charged with ensuring U.S. electricity prices are just and reasonable. In addition, FERC is charged with ensuring energy reliability, which includes overseeing energy production facilities, distribution networks, and electrical grids, among other tasks. Its work includes oversight of power plants run on oil, natural gas, solar, wind, geothermal, biofuel, and other energy sources, as well as refineries that produce a wide variety of oil-based products, such as jet fuel, heating oil, and bunker fuel. FERC's mission also includes preventing price and market manipulation in electricity markets. Since major U.S. banks have now become participants in many U.S. electricity markets, FERC oversight responsibilities include reviewing their conduct.

Commodity-Related Securities. While commodity prices used to be the product of transactions in the physical or financial commodity markets, today they are also affected by transactions in the securities markets. The Securities and Exchange Commission (SEC) is charged with ensuring the fair and orderly operation of U.S. capital markets, including multiple stock exchanges and security-based swaps markets. The SEC also oversees the issuance and sale of a wide variety of commodity-related securities, including securities linked to commodity index swaps and commodity-based exchange traded funds (ETFs). The agency is also charged with detecting and punishing misconduct, including insider trading, price manipulation, and securities fraud. Since major U.S. banks often design, administer, and trade commodity-related

securities, SEC oversight responsibilities now include examining their conduct.

Environmental and Safety Oversight. A fourth category of federal agencies with commodity-related oversight encompasses agencies responsible for overseeing a wide range of environmental and safety issues. The Environmental Protection Agency (EPA), which is primarily charged with preventing pollution, has oversight responsibilities that affect a broad range of commodity-related activities, from refineries to smelting facilities, mining operations, and power plant emissions. The Coast Guard, which is charged with ensuring marine safety and dealing with water-based oil spills, oversees oil tankers, ships that transport other types of commodities such as coal, grain, or iron ore, and port facilities used to load and unload commodity cargos. The responsibilities of the Department of Transportation (DOT) include oversight of land-based oil storage tanks, oil and gas pipelines, trucks, and railroads, all of which are used by commodity-related businesses. The Department of Energy issues energy export licenses and oversees a vast range of energy-related issues. The Mine Safety Administration is charged with ensuring that U.S. mines operate in a safe manner. The U.S. Department of Agriculture (USDA) oversees grain elevators and food safety. The Occupational Safety and Health Administration (OSHA) is charged with ensuring safe workplace operations.

This federal agency list is far from exhaustive and does not even begin to address regional, state, local, or international authorities that may have oversight or regulatory responsibilities related to physical commodities. As noted earlier, when banks, through their financial holding companies, initiate activities involving crude and refined oil products, natural gas, coal, uranium, solar and wind energy, metals, agricultural products, pipelines, shipping, railroads, refineries, mining, smelting, uranium enrichment, and electricity generation and distribution, among others, a massive network of complex regulations and overlapping regulatory authorities follow.

While this Report does not focus on the oversight efforts of non-banking federal agencies, they, too, play a critical role in the physical commodity activities undertaken by banks and their holding companies.

III. OVERSEEING PHYSICAL COMMODITY ACTIVITIES

The Federal Reserve Board of Governors has exclusive responsibility for regulating holding companies that own or control banks, and has played a central role in delineating the extent of their allowable involvement with physical commodities. Prior to enactment of the Graham-Leach-Bliley Act of 1999, the Federal Reserve permitted very little physical commodity activities. That stance changed after the Graham-Leach-Bliley Act authorized banks and their holding companies to engage in a broader array of activities, including those involving physical commodities.

Since then, drawing on authority from either the Gramm-Leach-Bliley Act or the Bank Holding Company Act, financial holding companies have engaged in physical commodity activities which they assert are:

- (1) “financial in nature” or “incidental” to financial activities,
- (2) non-financial, but found by the Federal Reserve to be “complementary” to financial activities,
- (3) “grandfathered” under the Graham-Leach-Bliley Act, or
- (4) qualified “merchant banking” investments.

The Federal Reserve’s oversight of the resulting physical commodity activities can be seen as falling generally into two phases. In the first phase, from 2000 to 2008, the Federal Reserve generally permitted financial holding companies to expand and deepen their physical commodity activities. In the second phase, from 2009 to the present, after the financial crisis raised concerns about hidden risks to the U.S. financial system, the Federal Reserve began to reconsider bank involvement with physical commodities. A newly created Federal Reserve Risk Secretariat identified bank involvement with physical commodities as a major emerging risk and dedicated resources for a multi-year special review of the issue. The special review surveyed ten financial holding companies’ physical commodity activities, marked the growth in the variety and dollar value of those activities, and identified multiple concerns including operational, catastrophic event, and reputational risks, inadequate risk management, insufficient capital and insurance, and ineffective regulatory safeguards.

While the review was underway, the Federal Reserve began taking some steps to curb high risk physical commodity activities at bank holding companies, including by halting previously permitted activities, delaying or denying requests for expanded activities, and adopting changes to capital rules that increased protections against commodity-related risks. At the same time, the Federal Reserve left unresolved major issues about what physical commodities activities were permissible under the law, permitted a wide range of risky activities, and

failed to close loopholes exploited by some financial holding companies to weaken the impact of limits on the size of their physical commodity holdings. In early 2014, the Federal Reserve solicited public comment on whether it should propose new regulatory limits on banks with physical commodities, but has yet to propose a rulemaking.

A. Expanding Physical Commodity Activities, 2000-2008

From 2000 to 2008, the Federal Reserve steadily expanded the range of allowable physical commodity activities by financial holding companies, enabling them to become major participants in markets for a wide array of commodities, from uranium²⁰² to natural gas²⁰³ to electricity.²⁰⁴ During this phase, among other measures, the Federal Reserve issued orders explicitly authorizing expanded commodity activities, provided relaxed interpretations of Gramm-Leach-Bliley provisions on permissible financial, complementary, grandfathered, and merchant banking activities, and failed to resolve key issues that would limit those activities.

(1) Expanding Permissible “Financial” Activities

Historically, the Bank Holding Company Act of 1956 has restricted holding companies that own or control banks to engaging in “banking” activities or activities determined by the Federal Reserve “to be so closely related to banking ... as to be a proper incident thereto.”²⁰⁵ The Gramm-Leach-Bliley Act of 1999 gave financial holding companies greater leeway, allowing them to engage in any activity, or retain the shares of any company engaged in any activity, that the Federal Reserve determined was “financial in nature or incidental to such financial activity.”²⁰⁶ The Federal Reserve was given sole authority to define which holding company activities were “financial in nature” or “incidental” to a financial activity.²⁰⁷

From 2000 to 2008, the Federal Reserve used its new authority to expand the physical commodity activities that financial holding companies were allowed to conduct. In Regulation Y, the Federal Reserve had created a non-exclusive list of “permissible nonbanking

²⁰² See discussion below involving Goldman Sachs.

²⁰³ See discussion below involving Morgan Stanley.

²⁰⁴ See discussion below involving JPMorgan.

²⁰⁵ See Section 4 of the Bank Holding Company Act of 1956, P.L. 84-511, codified at 12 U.S.C. §1843(a) and (c)(8).

²⁰⁶ 12 U.S.C. §1843(k).

²⁰⁷ Under the bank powers clause of the National Bank Act, 12 U.S.C. §24 (Seventh), the OCC has sole authority to determine what activities constitute the “business of banking” and so qualify as a “banking” activity, as explained in Chapter II. Because the OCC is charged with defining banking activities, its determinations necessarily affect the determinations made by the Federal Reserve regarding what activities are incidental to banking.

activities” for bank holding companies.²⁰⁸ That lengthy list was revised to include the following commodity-related activities:

- providing “advice with respect to any transaction in foreign exchange, swaps, and similar transactions, commodities, and any forward contract, option, future, option on a future, and similar instruments;”²⁰⁹
- allowing a subsidiary to register with the CFTC as a futures commission merchant, execute and clear futures and options on regulated exchanges, and act as an agent to trade commodities for clients;²¹⁰ and
- engaging as principal, subject to some limitations, in “forward contracts, options, futures, options on futures, swaps, and similar contracts, whether traded on exchanges or not, based on any rate, price, financial asset (including gold, silver, platinum, palladium, copper, or any other metal approved by the Board), nonfinancial asset, or group of assets, other than a bank-ineligible security.”²¹¹

The Federal Reserve also amended Regulation Y to give bank holding companies more authority to make or take delivery of physical commodities. Originally, Regulation Y limited bank holding companies to commodity transactions that provided for cash settlement of the transaction or for the assignment, termination, or offset of any physical commodities, so that a bank holding company could not be required to take actual delivery of any physical commodity. In 2003, the Federal Reserve amended the rule to also allow bank holding companies to enter into commodity contracts that provided for the delivery of physical commodities, so long as the holding company made “every reasonable effort to avoid taking or making delivery of the asset underlying the contract” and, if it did take delivery, did so by taking paper title to the commodities or arranging for their delivery to another party on an “instantaneous, pass-through basis.”²¹² The regulation also limited bank

²⁰⁸ 12 C.F.R. §225.28. Regulation Y contains the key rules for bank holding companies. It lists permissible activities for financial holding companies in 12 C.F.R. §225.86 (listing activities that are “financial in nature or incidental to a financial activity”) and permissible nonbanking activities for all bank holding companies in 12 C.F.R. §225.28 (listing activities that are “so closely related to banking or managing or controlling banks as to be a proper incident thereto”). Section 225.86 explicitly incorporates all of the activities listed in Section 225.28.

²⁰⁹ 12 C.F.R. §225.28(b)(6)(iv) (1997).

²¹⁰ 12 C.F.R. §225.28(b)(7)(iv) and (v) (1997).

²¹¹ 12 C.F.R. §225.28(b)(8)(ii)(B) (2003); See also, e.g., 2003 Federal Reserve “Order Approving Notice to Engage in Activities Complementary to a Financial Activity,” in response to a request by Citigroup, Inc., 89 Fed. Res. Bull. 508, 509 (12/2003) (hereinafter “Citigroup Order”), http://fraser.stlouisfed.org/docs/publications/FRB/2000s/frb_122003.pdf Citibank Order (containing the Federal Reserve’s summary of commodity related activities authorized by Regulation Y as of 2003).

²¹² 68 Fed. Reg. 39,807, 39,808 (7/3/2003); 12 C.F.R. §225.28(b)(8)(ii)(B)(3).

holding companies to trading commodities that had been approved by the CFTC for trading on an exchange.²¹³

Over time, the expansion of permissible activities under Regulation Y enabled bank holding companies to engage in a wider range of commodity-related financial transactions, including, for the first time beginning in 2003, transactions that could result in their taking or making delivery of physical commodities.

(2) Authorizing Commodity-Related “Complementary” Activities

The Graham-Leach-Bliley Act also gave the Federal Reserve sole authority to permit financial holding companies to engage in any activity, or retain the shares of any company engaged in any activity that the Federal Reserve first determined was “complementary to a financial activity.”²¹⁴ The Federal Reserve has interpreted this statutory provision as allowing it to permit an activity that “appears to be commercial rather than financial in nature but that is meaningfully connected to a financial activity such that it complements the financial activity.”²¹⁵

During the legislative process leading to enactment of the Gramm-Leach-Bliley Act, this complementary provision was presented as a way to allow financial holding companies to engage in a limited amount of low risk activities that would support their banking operations, such as selling data processing services that took advantage of excess capacity in bank technology systems.²¹⁶ The legislative record contains little or no mention of commodities. In addition, complementary activities were generally expected to be insignificant relative to the overall financial activities of the financial holding company and its affiliates.²¹⁷ Since enactment, however, the complementary provision has been used almost exclusively to approve greater bank involvement with physical

²¹³ 12 C.F.R. §225.28(b)(8)(ii)(B)(4).

²¹⁴ 12 U.S.C. §1843(k).

²¹⁵ See, e.g., Citigroup Order, at 508, 509.

²¹⁶ See “Examining Financial Holding Companies: Should Banks Control Power Plants, Warehouses, and Oil Refineries?,” hearing before the U.S. Senate Committee on Banking, Housing, and Urban Affairs, S. Hrg. 113-67 (7/23/2013), at 5, written testimony of Saule T. Omarova, Professor of Law, (hereinafter “Omarova Testimony”) http://www.banking.senate.gov/public/index.cfm?FuseAction=Files.View&FileStore_id=6d49a599-f7dc-4c1f-9455-fa8d891f04c6; “The Merchants of Wall Street: Banking, Commerce, and Commodities,” Professor Saule Omarova, 98 Minnesota Law Review 265, 288 (2012) (hereinafter “The Merchants of Wall Street”); See also 145 Cong. Rec. H11529 (11/4/1999) (House Banking Chairman Leach: “It is expected that complementary activities would not be significant relative to the overall financial activities of the organization.”).

²¹⁷ See, e.g., 145 Cong. Rec. H11529 (daily ed. Nov. 4, 1999) (Statement of Chairman Leach) (“It is expected that complementary activities would not be significant relative to the overall financial activities of the organization.”).

commodities,²¹⁸ and revenues related to physical commodities activities have grown into billions of dollars.

Prior Notice and Approval. What constitutes a “complementary” activity is not defined by the statute. Rather, the Gramm-Leach-Bliley Act established a process through which such activities could be authorized by the Federal Reserve on a case-by-case basis.²¹⁹ A financial holding company seeking to rely on the Act’s complementary authority must first notify and obtain approval from the Federal Reserve of the proposed activities.²²⁰ Under implementing regulations issued by the Federal Reserve, the financial holding company must file an application describing each proposed activity, its proposed size and scope, the financial activity to which it would be complementary, how the proposed activity would complement the financial activity, the attendant risks, and the “public benefits” that would be produced.²²¹

In their applications requesting permission to engage in “complementary” commodity activities, the financial holding companies gave several reasons. One commonly cited reason was that increased access to information about physical commodity activities would help the financial holding company in its commodity trading activities, such as in the futures and swaps markets. For example, in its 2005 application for complementary authority, JPMorgan explained that engaging in physical commodities activities would:

“position JPM Chase in the supply end of the commodities markets, which in turn will provide access to information regarding the full array of actual produce and end-user activity in those markets. The information gathered through this increased market participation will help improve projections of forward and financial activity and supply vital price and risk management information that JPM Chase can use to improve its financial commodities derivative offerings.”²²²

JPMorgan also stated that it “must have the ability to enter into physically settled transactions” in order to “compete effectively” in offering commodity-linked products to its customers,²²³ and that the authority would allow them to “hedge ... commodities derivatives

²¹⁸ The Federal Reserve told the Subcommittee that all of the complementary orders it has issued, save one, approved commodities activities. 12/13/2013 Federal Reserve briefing of the Subcommittee. See also Omarova Testimony, at 5.

²¹⁹ 12 U.S.C. §1843(j).

²²⁰ 12 U.S.C. §1843(j)(1); 12 C.F.R. §225.89(a).

²²¹ 12 C.F.R. §225.89(a).

²²² 7/21/2005 “Notice to the Board of Governors of the Federal Reserve System by JPMorgan Chase & Co. Pursuant to Section 4(k)(1)(B) of the Bank Holding Company Act of 1956, as amended, and 12 C.F.R. §225.89,” PSI-FederalReserve-01-000004 - 028, at 016.

²²³ Id. at 015.

positions more effectively and cheaply.”²²⁴ All three reasons indicate that the primary motivating factor for entering into physical commodity activities was to complement the financial holding company’s financial activities, including its participation in the commodity-related futures and swaps markets.

Before approving a request for complementary authority, the Federal Reserve is legally required to make an explicit finding that the proposed activity meets the statutory requirements that it would “not pose a substantial risk to the safety or soundness of depository institutions or the financial system generally,”²²⁵ and that it “can reasonably be expected to produce benefits to the public ... that outweigh possible adverse effects.”²²⁶ The statutory list of possible public benefits includes “greater convenience, increased competition, or gains in efficiency,” while the list of possible adverse effects includes “undue concentration of resources, decreased or unfair competition, conflicts of interests, unsound banking practices, or risk to the stability of the United States banking or financial system.”²²⁷

Complementary Orders. From 2003 to 2008, the Federal Reserve used its case-by-case approval process to issue a series of orders and letters authorizing financial holding companies to engage in a variety of physical commodity activities found to be “complementary” to their trading in commodity-related financial instruments.²²⁸ Ultimately, thirteen financial holding companies were approved to engage in various categories of complementary activities, including purchasing and selling physical commodities in the spot markets,²²⁹ making and taking delivery of physical commodities to settle derivatives transactions,²³⁰ entering into energy tolling agreements,²³¹ and providing energy management services.²³²

The first such order, granted in 2003, permitted Citigroup, through its then commodity trading subsidiary, Phibro, to buy and sell oil, natural gas, agricultural products, and other commodities in the physical spot markets, and to take and make delivery of physical commodities to settle commodity-linked derivative transactions.²³³ This was the first

²²⁴ *Id.*

²²⁵ 12 U.S.C. §1843(k)(1)(B).

²²⁶ 12 U.S.C. §1843(j)(2)(A). See also 12 C.F.R. §225.89(b)(3).

²²⁷ 12 U.S.C. §1843(j)(2)(A).

²²⁸ See, e.g., Citigroup Order, at 508.

²²⁹ *Id.*

²³⁰ *Id.*

²³¹ See 2011 “Work Plan for Commodity Activities at SIFIs,” presentation prepared by the Federal Reserve Bank of New York (hereinafter, “2011 Work Plan”), FRB-PSI-200455 - 476, at 458.

²³² *Id.*

²³³ See Citigroup Order. In 2009, Citigroup sold Phibro to Occidental Petroleum Corporation. 10/9/2009 Citigroup Inc. press release, “Citi to Sell Phibro LLC,” <http://www.citigroup.com/citi/press/2009/091009a.htm>.

time the Federal Reserve had allowed a bank holding company to buy and sell physical commodities in the physical spot markets.

To reduce the risks associated with these new activities, the order required Citigroup to make a number of commitments to limit the size and scope of its physical commodity activities. Among other measures, the order stated:

- That as a condition of the order, Citigroup must cap the market value of its commodities holdings resulting from trading activities at 5% of its consolidated Tier 1 capital;
- Citigroup must also alert the Federal Reserve if the market value exceeded 4% of its Tier 1 capital;
- Citigroup may make or take physical delivery of only those commodities which have been approved by the Commodity Futures Trading Commission (CFTC) for trading on U.S. futures exchanges, unless it separately obtained permission from the Federal Reserve;
- Citigroup was not authorized to own, operate, or invest in facilities for the extraction, transportation, storage, or distribution of commodities; and
- Citigroup was not authorized to process, refine, or otherwise alter commodities.²³⁴

Over the next five years, the Federal Reserve issued similar complementary orders or letters to eleven other major financial holding companies. Those orders or letters were issued to UBS²³⁵ and Barclays²³⁶ in 2004; JPMorgan in 2005;²³⁷ Deutsche Bank,²³⁸ Societe Generale,²³⁹ Wachovia,²⁴⁰ and Fortis²⁴¹ in 2006; Bank of America,²⁴²

²³⁴ Id.

²³⁵ 2004 Federal Reserve "Order Approving Notice to Engage in Activities Complementary to a Financial Activity," in response to a request by UBS AG, 90 Fed. Res. Bull. 215 (Spring 2004), http://fraser.stlouisfed.org/docs/publications/FRB/2000s/frb_q22004.pdf.

²³⁶ 2004 Federal Reserve "Order Approving Notice to Engage in Activities Complementary to a Financial Activity," in response to a request by Barclays Bank PLC, 90 Fed. Res. Bull. 511 (Autumn 2004), http://fraser.stlouisfed.org/docs/publications/FRB/2000s/frb_q42004.pdf.

²³⁷ 2006 Federal Reserve "Order Approving Notice to Engage in Activities Complementary to a Financial Activity," in response to a request by JP Morgan Chase & Co., 92 Fed. Res. Bull. C57 (2006)(hereinafter "JPMorgan Order")(effective as of November 18, 2005), http://fraser.stlouisfed.org/docs/publications/FRB/2000s/frb_2006comp_p2.pdf. JPMorgan has subsequently sought and received additional complementary authority.

²³⁸ 2006 Federal Reserve "Order Approving Notice to Engage in Activities Complementary to a Financial Activity," in response to a request by Deutsche Bank AG, 92 Fed. Res. Bull. C54 (2006), http://fraser.stlouisfed.org/docs/publications/FRB/2000s/frb_2006comp_p2.pdf.

²³⁹ 2006 Federal Reserve "Order Approving Notice to Engage in Activities Complementary to a Financial Activity," in response to a request by Societe Generale, 92 Fed. Res. Bull. C113 (2006), http://fraser.stlouisfed.org/docs/publications/FRB/2000s/frb_2006comp_p2.pdf.

²⁴⁰ 4/13/2006 Federal Reserve letter regarding Wachovia Corporation, PSI-FRB-20-000012-014.

²⁴¹ 9/29/2006 Federal Reserve letter regarding Fortis S.A./N.A., PSI-FRB-19-000027-030; and later 94 Fed. Res. Bull. C20 (2008), http://fraser.stlouisfed.org/docs/publications/FRB/2000s/frb_2008comp.pdf.

Credit Suisse,²⁴³ and BNP Paribas²⁴⁴ in 2007; and Wells Fargo in 2008.²⁴⁵ Each permitted the named financial holding company, either directly or through one or more affiliates, to engage in the same types of physical commodity activities as Citigroup. In addition, each required the financial holding company to comply with specified safeguards such as size restrictions, risk management controls, and prohibitions against owning, operating or investing in “facilities for the extraction, transportation, storage, or distribution” of commodities, and against processing, refining or altering commodities.²⁴⁶

In 2008, the Federal Reserve issued a complementary order for the Royal Bank of Scotland (RBS) in which it authorized the firm to engage in an even greater range of physical commodities activities.²⁴⁷ First, the RBS Order omitted a limitation in the prior orders that had restricted the banks to trading commodities that had been approved for trading by the CFTC on U.S. exchanges. Instead, after describing the relevant over-the-counter (OTC) markets as “sufficiently liquid,” the order authorized RBS to trade in nickel, butane, asphalt, kerosene, marine diesel, and other oil products that had not received CFTC approval for trading on U.S. exchanges.²⁴⁸

Second, the order allowed RBS to contract with a third party to “refine, blend, or otherwise alter” its physical commodities, essentially authorizing RBS to sell crude oil to a refinery and buy back the refined oil products.²⁴⁹ In still another major expansion, the order allowed RBS to enter into long-term electricity supply contracts with large industrial and commercial customers, and to enter into “tolling agreements” and

²⁴² 4/24/2007 Federal Reserve letter regarding Bank of America Corporation, PSI-FRB-20-000001-005.

²⁴³ 3/27/2007 Federal Reserve letter regarding Credit Suisse Group, PSI-FRB-20-000006-011.

²⁴⁴ 8/31/2007 Federal Reserve letter regarding BNP Paribas, PSI-FRB-19-000012-017.

²⁴⁵ 4/10/2008 Federal Reserve letter regarding Wells Fargo & Company, PSI-FRB-19-000018-023.

²⁴⁶ See 2011 FRBNY Commodities Team Work Plan, FRB-PSI-200455, at 459.

²⁴⁷ 2008 Federal Reserve “Order Approving Notice to Engage in Activities Complementary to a Financial Activity,” in response to a request by Royal Bank of Scotland Group plc, 94 Fed. Res. Bull. C60 (2008) (hereinafter “RBS Order”), http://fraser.stlouisfed.org/docs/publications/FRB/2000s/frb_2008comp.pdf. The order applied to both the Royal Bank of Scotland and a joint venture called RBS Semptra Commodities that the Royal Bank of Scotland had formed with Semptra Energy, a U.S. energy company.

²⁴⁸ *Id.*

²⁴⁹ *Id.* See also *The Merchants of Wall Street*, at 304-05. Prior Federal Reserve complementary orders had prohibited holding companies from engaging in such activities. A few months later, the Federal Reserve provided the same authority to JPMorgan. See 11/25/2008 “Notice to the Board of Governors of the Federal Reserve System by JPMorgan Chase & Co. Pursuant to Section 4(k)(1)(B) of the Bank Holding Company Act of 1956, as amended, and 12 C.F.R. §225.89,” PSI-FederalReserve-01-000553 - 558, at 555 (requesting authority to refine, blend, or alter physical commodities); 4/20/2009 letter from Federal Reserve to JPMorgan, PSI-FRB-11-000001 - 002 (granting JPMorgan’s request). JPMorgan used that authority to set up an arrangement in which it sold crude oil to a refinery in Philadelphia and bought 100% of the refined oil products. See, e.g., 1/24/2013 “Commodities Physical Operating Risk,” prepared by JPMorgan, FRB-PSI-301379 - 382, at 381 (Chart entitled, “Physical Operating Risk Review of Project Liberty”).

“energy management” agreements with power generators.²⁵⁰

Collectively, these authorities gave RBS permission to engage in an unprecedented range of physical commodity activities.²⁵¹ At the same time, as in prior orders, the Federal Reserve conditioned its approval of the new commodity activities on RBS’ meeting certain prudential requirements, such as adequate risk controls and size restrictions. After issuing the RBS order, the Federal Reserve granted similar authority to other financial holdings companies as well.²⁵²

In sum, since the first complementary order was issued less than a dozen years ago, the Federal Reserve has granted complementary authority for financial holding companies to:

- buy and sell physical commodities like oil, natural gas, metal, and agricultural products in the physical spot markets;
- take and make delivery of physical commodities to satisfy derivative trades without Regulation Y’s requirement of taking all reasonable steps to avoid physical delivery;
- enter into tolling agreements and energy management contracts with power plants;
- sell crude oil to refineries and buy back the refined oil products; and
- enter into long term commodity supply contracts.

Without the complementary orders and letters issued by the Federal Reserve, many of those physical commodity activities would not otherwise have been permissible “financial” activities under federal banking law.²⁵³ By issuing those complementary orders, the Federal Reserve directly facilitated the expansion of financial holding companies into new physical commodity activities.

²⁵⁰ RBS Order, at C64. A tolling agreement typically allows the “toller” to make periodic payments to a power plant owner to cover the plant’s operating costs plus a fixed profit margin in exchange for the right to all or part of the plant’s power output. As part of the agreement, the toller typically supplies or pays for the fuel used to run the plant. *Id.* at C64. An energy management agreement typically requires the “energy manager” to act as a financial intermediary for the power plant, substituting its own credit and liquidity for the power plant to facilitate the power plant’s business activities. The energy manager also typically supplies market information and advice to support the power plant’s efforts. *Id.* at C65.

²⁵¹ See also 4/10/2008 Federal Reserve “Order Approving Notice to Engage in Activities Complementary to a

Financial Activity,” in response to a request by Wells Fargo & Co., 90 Fed. Res. Bull. 215 (2008), http://fraser.stlouisfed.org/docs/publications/FRB/2000s/frb_q22004.pdf.

²⁵² For example, the Federal Reserve later granted JPMorgan similar complementary authority to engage in refining and power plant activities. See 4/20/2009 letter from the Federal Reserve to JPMorgan, PSI-FRB-11-000001 - 002 (on refining authority); 6/30/2010 letter from the Federal Reserve to JPMorgan, FRB-PSI-302571 - 580 (on power plant activities).

²⁵³ Subcommittee briefing by the Federal Reserve (12/13/2013). It is important to note, however, that neither Goldman nor Morgan Stanley has requested or received a complementary order; each relies instead on the Gramm-Leach-Bliley grandfather and merchant banking authorities to conduct much of their physical commodity activities, as explained in the following sections.

(3) Delaying Interpretation of the Grandfather Clause

A third legal basis for financial holding companies engaging in physical commodity activities involves the Gramm-Leach-Bliley Act's "grandfather" clause. This clause was enacted over fourteen years ago in 1999, yet its contours have yet to be delineated by the Federal Reserve in regulation, guidance, or order. Resolving questions about its scope and meaning gained urgency six years ago, in 2008, after Goldman Sachs and Morgan Stanley converted to bank holding companies and became the first financial institutions to invoke the clause as the legal basis for engaging in a wide range of physical commodity activities that would not otherwise be permitted under law.²⁵⁴ Despite Goldman's and Morgan Stanley's increasing reliance on the grandfather clause to conduct otherwise impermissible commodity activities, in six years, the Federal Reserve has taken no action to clarify its scope and proper interpretation.

As explained earlier, the Gramm-Leach-Bliley grandfather clause, which appears in Section 4(o) of the Bank Holding Company Act, provides that any company that becomes a financial holding company after November 12, 1999, may "continue to engage in ... activities related to the trading, sale, or investment in commodities and underlying physical properties," provided that several conditions are met.²⁵⁵ Those conditions include that:

- the company "lawfully was engaged, directly or indirectly, in any of such activities as of September 30, 1997, in the United States";
- the company's non-authorized commodity assets do not exceed 5% of the company's total consolidated assets or any higher threshold set by the Federal Reserve; and
- the company does not permit a subsidiary that is engaged in grandfathered commodities activities to cross-market its products and services to an affiliated bank.²⁵⁶

Differing Interpretations. The grandfather clause states that a firm can "continue" its commodities activities provided that it was lawfully engaged in "any" of such activities in the United States as of September 30, 1997. This statutory language has resulted in at least two very different interpretations of the law, neither of which has been validated to date by the Federal Reserve.

²⁵⁴ Goldman cited the clause in its original application to convert to a bank holding company as justification for continuing all of its then existing commodity activities. See 9/21/2008 Goldman application to the Board of Governors to the Federal Reserve System, FRB-PSI-303638 - 662, at 648 - 649.

²⁵⁵ 12 U.S.C. §1843(o).

²⁵⁶ *Id.*

The first interpretation contends that the grandfather clause should be read narrowly, reasoning that its sole purpose was to protect firms from having to discontinue or disinvest their commodity activities or assets upon becoming a financial holding company. It views the grandfather clause as preserving only those specific commodity activities that originated prior to the trigger date in 1997, and that were still ongoing in the United States on the date that the firm converted to a financial holding company. In contrast, the second interpretation contends that the grandfather clause should be read expansively, so that if a financial holding company's subsidiaries, affiliates, or predecessor companies conducted any type of physical commodity activities in the United States to any degree prior to the trigger date in 1997, then the financial holding company is entitled to engage in all types of physical commodity activities at any time into the future, subject only to the 5% cap imposed by the law.²⁵⁷

The first reading essentially focuses on the word, "continue," while the second emphasizes the word, "any." The Federal Reserve, which, again, has sole authority to interpret the grandfather clause, has yet to issue any guidance on the correct interpretation.

Legislative History. Grandfather clauses, by their nature, typically safeguard existing activities, rather than authorize new or expanded activities.²⁵⁸ The legislative history indicates that, in keeping with that approach, the Gramm-Leach-Bliley grandfather clause was presented as a way to avoid forcing a firm to discontinue or divest itself of existing commodity activities or assets in order to become a financial holding company. The Senate Banking Committee Chairman at the time, Senator Phil Gramm, who offered the amendment that formed the basis for Section 4(o), entitled it: "Gramm Amendment on Grandfathering Existing Commodities Activities." The amendment also contained this short explanation of its purpose:

"The above amendment assures that a securities firm currently engaged in a broad range of commodities activities as part of its traditional investment banking activities, is not required to divest certain aspects of its business in order to participate in the new authorities granted under the Financial Services Modernization

²⁵⁷ See, e.g., 3/25/2009 letter from Morgan Stanley legal counsel to Federal Reserve, FRB-PSI-706298 - 304, at 299-300; Guynn Testimony, at 11.

²⁵⁸ See, e.g., *Pac. N.W. Venison Producers v. Smith*, 20 F.3d 1008, 1012-13 (9th Cir. 1994) (stating that the grandfather clause in a Washington State Department of Wildlife regulation banning import of exotic animals applied to new sales and imports but allowed the continued possession of animals legally held within the state prior to the passage of the regulation); see also "definition of 'grandfather clause,'" *Farlex Financial Dictionary* (10/8/2014), <http://financial-dictionary.thefreedictionary.com/Grandfather+Clause> (defining the term grandfather clause as "[a] provision included in a new rule or regulation that exempts a business that is already conducting business in the area addressed by the regulation from penalty or restriction").

Act. This provision ‘grandfathers’ existing commodities activities.”²⁵⁹

The author’s explanation of his amendment indicates it was intended to prevent divestitures of “existing” commodities activities. It makes no mention of any intent to authorize new commodities activities or “any” and all commodities activities. Accordingly, the explanation of the Gramm amendment suggests that the grandfather clause should be read as a preservation of activities then-existing when a company converted to a financial holding company status, and not as an authorization to conduct additional or new activities. This reading is also consistent with the use of the word “continue” in the statutory text.

A second issue is what “existing commodities activities” were intended to be covered by the clause. With respect to this question, the Committee Report on the bill stated:

“[A]ctivities relating to the trading, sale or investment in commodities and underlying physical properties shall be construed broadly and shall include owning and operating properties and facilities required to extract, process, store and transport commodities.”²⁶⁰

This Committee Report language focuses on protecting from divestment any existing activity that fits within a broad interpretation of the terms “commodities” and “underlying physical properties.” Consistent with the explanation of the Gramm amendment, it does not express any intention to authorize new commodities activities not already underway as of the trigger date and the date of conversion to a financial holding company.

Goldman and Morgan Stanley. From 2000 until 2008, no financial holding company relied on the grandfather clause to authorize its physical commodity activities.²⁶¹ That changed when Goldman Sachs and Morgan Stanley converted to bank holding companies during the depths of the financial crisis in 2008.

In its September 2008 application to become a bank holding company, Goldman explicitly cited the grandfather clause as authorizing

²⁵⁹ Committee Amendment No. 9, “Gramm Amendment on Grandfathering Existing Commodities Activities,” offered by Senator Phil Gramm during committee markup of the Financial Modernization Act, (3/4/1999), <http://banking.senate.gov/docs/reports/fsmod99/gramm9.htm>.

²⁶⁰ Gramm-Leach-Bliley Act, H.R. Committee Report No. 104-127, pt. 1, at 97 (5/18/1995).

²⁶¹ Subcommittee briefing by the Federal Reserve (12/13/2013). The Federal Reserve told the Subcommittee that, to date, only two financial holding companies, Goldman and Morgan Stanley, have cited the grandfather clause as the legal basis for engaging in otherwise impermissible physical commodity activities.

it to continue to conduct its physical commodity activities.²⁶² Since then, both Goldman and Morgan Stanley have asserted that the grandfather clause provides legal authority for them to, not only continue physical commodity activities underway in 2008, but also renew past activities and engage in entirely new commodities activities.

In its 2008 application to become a bank holding company, Goldman's legal counsel wrote:

"The Section 4(o) exemption does not require that a company have been engaged prior to September 30, 1997 in all the activities that it seeks to grandfather under Section 4(o) at the time the company becomes a BHC [Bank Holding Company], rather it only requires that the company have been engaged prior to that date in commodity-related activities that were not permissible for a BHC in the United States on that date."²⁶³

Similarly, in a 2009 letter to the Federal Reserve, Morgan Stanley's legal counsel wrote:

"[T]he plain language of Section 4(o) authorizes a qualifying financial holding company to continue to engage in any activities related to trading, selling, and investing in any type of commodities and related physical properties or facilities, if certain conditions are satisfied. Section 4(o) does *not* merely authorize the retention of investments in commodities or related physical properties or facilities made or held on a certain date. Instead, it expressly extends to the *continuation* of any *activities* related to the trading, selling, and investing in any type of commodities and related properties or facilities, if certain conditions are satisfied."²⁶⁴

In internal documents, the Federal Reserve has taken note of the Goldman and Morgan Stanley interpretations of the grandfather clause, observing that the firms have asserted an expansive reading that allows them to engage in "trading, selling, and investing in any type of commodity and its related physical properties or facilities, including mining, processing, storage, transport, generation and refining, and any related activities."²⁶⁵

To better understand the issues related to the grandfather clause, from 2009 to 2011, a Federal Reserve team of examiners undertook an in-depth review of the two financial holding companies' physical

²⁶² 9/21/2008 "Confidential Application to the Board of Governors of the Federal Reserve System by The Goldman Sachs Group, Inc. and Goldman Sachs Bank USA Holdings LLC," prepared by Goldman, FRB-PSI-303638 - 662, at 648 - 649, 661.

²⁶³ *Id.* at 649.

²⁶⁴ 3/25/2009 letter from Morgan Stanley legal counsel to Federal Reserve, FRB-PSI-706298 - 304, at 298 - 300 (emphasis in original).

²⁶⁵ 2011 Work Plan, FRB-PSI-200455, at 461 [sealed exhibit].

commodity activities, including comparing their activities prior to the 1997 trigger date and in 2010.²⁶⁶ During that review, a detailed status report was prepared indicating that both financial holding companies had greatly expanded their commodity activities and incurred numerous new risks, while claiming their new activities were permitted under the grandfather clause.²⁶⁷ That internal Federal Reserve report's findings included the following:

"The scope and size of commodity based industrial activities and trading in physical and financial commodity markets at MS [Morgan Stanley] and GS [Goldman Sachs] has increased substantially since 1997.

There are a large number of new commodities traded by these firms today which they did not trade in 1997 ... The new commodities traded today by MS number 37 and GS 35 (this is a representative sampling and represents a lower bound). Several of these commodity related activities involve substantially new types of risks emanating from newer deal and investment structures, expansion in new markets (e.g. uranium by GS, emission credits), and geographic regions

Much of the new business conducted by MS and GS is in the form of industrial processes involving commodities. The expansion of these firms into power generation, shipping, storage, pipelines, mining and other industrial activities has created new and increased potential liability due to the catastrophic and environmental risks associated with the broader set of industrial activities.

Below are examples of industrial processes which are new or greatly expanded today from 1997:

- Leasing of ships and ownership of shipping companies at MS and GS
- New ownership, and expanded leasing of oil storage facilities at MS
- Ownership of companies owning oil refineries at MS
- Ownership of coal mines and distribution at GS
- New ownership of power plants at GS and expanded ownership at MS
- Leasing of power generation at MS and GS
- Ownership of retail gasoline outlets at MS

²⁶⁶ See undated but likely early 2011 "Comparison of Risks of Commodity Activities at Morgan Stanley and Goldman Sachs between 1997 to Present," prepared by Federal Reserve, FRB-PSI-200428 [sealed exhibit].

²⁶⁷ Id.

- Ownership of royalty interests from gold mining at MS
- Ownership and development of solar panels at GS

These types of industrial activities are of greater concern as they are held over longer holding periods than more purely financial activities and are more difficult to value and risk manage due to the absence of market liquidity. ...

More recently, these firms have expanded their investment activity in emerging markets ... [which] are more subject to liquidity risks and price shocks

The expansion of these firms into power generation, shipping, storage, pipelines, mining and other industrial activities has created new and increased potential liability for firms with access to the federal safety net supporting the banking system for catastrophic event risk arising from industrial control failures – including environmental liability in particular – of a type that is difficult for bank supervisors to dimension.

The severity of this risk is in proportion to the potential damage and associated liability of industrial accidents in handling different commodities. Some, like uranium, may be more severe than others. ...

Furthermore, the scale of bank involvement in industrial commodity processes is not widely understood – even within the bank regulatory community. As a result, it is possible that losses within the banking sector arising from these activities will be surprising and further lead to questions regarding the integration of this industry within banking.

Lastly, there appears to be differences between banks and industrial energy firms in income recognition practices, capitalization methods and risk management practices. It is possible that bank incentives to expand in this industry are affected by their use of mark-to-market valuation for activities that are otherwise accounted for as accrual income at energy firms – and rates of capitalization for these activities that are much less than those used by energy firms. ...

The commodities businesses at MS and GS are material drivers of firm profitability, capitalizing on economics in a wide breadth of commodity markets and activities. Risk exposures run the gamut from exchange traded futures to leases on power plants and oil

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storage facilities to equity investments in coal mines and oil shipping operations.”²⁶⁸

The report also included the following chart comparing the banks’ commodity activities in 1997 versus 2010.²⁶⁹

²⁶⁸ Id. at 428 - 430.

²⁶⁹ Id. at 433.

The chart below is a comparison of the range of activities from 1997 to 2010, related to financial contract for the physical settlement and delivery of various commodity products.

Chart 1			
Goldman Sachs		Morgan Stanley	
Sept 97	Dec 10	Sept 97	Dec 10
Agricultural Products		Agricultural Products	
	Barley		
	Cattle		
Cocoa	Cocoa		Cocoa
Coffee	Coffee		
Corn	Corn		Corn
	Cotton		Cotton
	European Rapeseed		European Rapeseed
	Foreign Products – Pulp		
Hogs	Hogs		
	Rice		
	Rubber		
	Soybean		Soybean Meal
	Soybean Meal		Soybean Oil
	Soybean Oil		Soybeans
	Sugar		Sugar
	Wheat		Wheat
Metals		Metals	
Aluminum	Aluminum		Aluminum
	Cooper		Cooper
Bank Eligible*	Gold	Bank Eligible***	Gold
Lead	Lead		Lead
Nickel	Nickel		Nickel
Bank Eligible*	Palladium	Bank Eligible***	Palladium
Bank Eligible*	Platinum	Bank Eligible***	Platinum
Rhodium	Unknown	Rhodium	Unknown
Bank Eligible*	Silver	Bank Eligible***	Silver
	Steel		Steel
	Tin		Tin
Zinc	Zinc		Zinc
		"Base Metals"****	
Emissions/Renewable		Emissions/Renewable	
	Blue Source Emission Credits		Carbon Credits
	Ercot Renewable Certificate		CER (Certified Emission Reductions)
	EU Scheme Emission Certificates		ERU (Emission Reduction Units)
	Kyoto Emission Credit		EUA (European Union Allowances)
	PJM Renewable Energy Cert		LEC (Levy Exemption Certificates)
	Rgnl Greenhouse Gas Init Emissns		Nox (Nitrogen Oxide)
	VER (Voluntary Emission Reductions)		ROCS (Renewable Obligation Cert)
			Sox (Sulfur Dioxide)
			VER (Voluntary Emission Reductions)
Energies		Energies	
	Butane		Bunker Fuel
	Coal	Coal	Coal
Condensate	Condensate	Crude Oil	Crude Oil
Crude Oil	Crude Oil	Diesel	Diesel
	Diesel	Electricity	Electricity
Electricity**	Electricity		Ethanol
	Freight	Freight	Freight
Fuel Oil	Fuel Oil	Fuel Oil	Fuel Oil
Gasoil	Gasoil	Heating Oil	Heating Oil
Heating Oil	Heating Oil	Jet Fuel	Jet Fuel
Jet Fuel	Jet Fuel		LNG
	LNG		MTBE
Naptha	Naptha		Naptha
Natural Gas	Natural Gas	Natural Gas	Natural Gas
	Palm Oil		Natural Gas Liquids
	Propane		RBOB
	Temperature		Residual Fuel
Unleaded Gasoline	Unleaded Gasoline	Unleaded Gasoline	Unleaded Gasoline
	Uranium		
Total: 18	Total: 52	Total: 11	Total: 48
	Difference: 35		Difference: 37
* The status of trading in these commodities as of 1997 was not reported by the firm, however they are bank eligible commodities.** Pursuant to the PBSA with Constellation Energy.		*** The status of trading in these commodities as of 1997 was not reported by the firm, however they are bank eligible commodities.**** The firm's submission only stated "base metals."	

SOURCE: Chart Prepared by the Federal Reserve, FRB-PSI-200428, at 433.

Goldman has cited the grandfather clause as its authority to own and trade uranium²⁷⁰ and own coal mines,²⁷¹ two activities that it initiated for the first time after converting to a bank holding company. Similarly, Morgan Stanley has cited the grandfather clause as authority for its ownership of a global network of oil and natural gas storage facilities and pipelines; leasing over 100 oil tankers, LNG transport barges, and other ships; and recent plans to construct and operate compressed natural gas facilities in Texas and Georgia.²⁷² Both cite the grandfather clause as legal authority for engaging in physical commodity activities which are significantly broader than otherwise permitted for financial holding companies.²⁷³

Federal Reserve analyses have noted that the banks' expansive interpretation of the grandfather clause has not only enabled them to conduct new, high risk physical commodity activities not otherwise permitted by law,²⁷⁴ but also created a competitive disparity between Goldman Sachs and Morgan Stanley, on the one hand, and financial holding companies on the other hand that cannot invoke the grandfather clause.²⁷⁵ In a 2012 internal analysis, the Federal Reserve staff wrote:

²⁷⁰ See 2012 Firmwide Presentation, FRB-PSI-200984 - 1043, at 1000 (listing Nucor as an asset acquired under Section 4(o)).

²⁷¹ See Report of Changes in Organizational Structure, FR-Y-10, Goldman Sachs Group, Inc. (4/14/2010), GSPSICOMMODS00046301 - 317 (indicating its coal mine investment was "permissible under [Bank Holding Company Act Section] 4(o), but investment complies with the Merchant Banking regulations"); 5/26/2011 Response from Goldman Sachs to the Federal Reserve, FRB-PSI-200600 - 610, at 602. But see 2012 Firmwide Presentation, FRB-PSI-200984 - 201043, at 1000 (indicating CNR, owner of one coal mine, as a merchant banking investment, rather than grandfathered asset).

²⁷² See, e.g., 9/18/2012 "Morgan Stanley request for a third extension of time to divest or conform nonbanking activities pursuant to section 4(a)(2) of the BHC Act," internal memorandum prepared by the Federal Reserve, FRB-PSI-304905 - 913, at 910 (Morgan Stanley "continues to engage in commodities-related activities and hold commodities-related investments that are generally not permissible under section 4 of the BHC Act, such as owning and managing power plants and owning storage facilities. MS has requested that the Board determine certain of these activities and investments are permissible under section 4(o)'s permanent grandfather authority. This request remains under consideration by the Legal Division.") [footnote omitted] [sealed exhibit]; 9/19/2011 "Morgan Stanley request for a second extension of time to divest or conform nonbanking activities pursuant to section 4(a)(2) of the BHC Act," internal memorandum prepared by the Federal Reserve, at 7, FRB-PSI-304896 - 904 [sealed exhibit]; 9/12/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-11-000001 - 008, at 004, 006.

²⁷³ See, e.g., 2011 FRBNY Commodities Team Work Plan, FRB-PSI-200455, at 459 (stating that the complementary orders given to the banks would not have allowed them to "own, operate, or invest in facilities for the extraction, transportation, storage, or distribution" of commodities, nor could a financial holding company "process, refine, or otherwise alter" commodities) [sealed exhibit].

²⁷⁴ See undated but likely early 2011 "Comparison of Risks of Commodity Activities at Morgan Stanley and Goldman Sachs between 1997 to Present," prepared by Federal Reserve, FRB-PSI-200428 [sealed exhibit].

²⁷⁵ See 6/21/2011 "Section 4(o) of the Bank Holding Company Act – Commodity-related Activities of Morgan Stanley and Goldman Sachs," prepared by the Federal Reserve, FRB-PSI-200936 - 941, at 940 [sealed exhibit].

“[Goldman] continues to engage in commodities-related activities and hold commodities-related investments that are generally not permissible under section 4 of the BHC [Bank Holding Company] Act, such as owning and managing power plants and owning storage facilities. GS has requested that the Board determine certain of these activities and investments are permissible under section 4(o)’s permanent grandfather authority. This request remains under consideration by the Legal Division.”²⁷⁶

At the time the Federal Reserve wrote that analysis, questions about the proper scope of the grandfather clause with respect to Goldman and Morgan Stanley had already been pending for four years, without resolution.

The Bank Holding Company Act of 1956 gives the Federal Reserve general authority to interpret and administer the Act, including Sec. 4(o). In particular, Section 5(b) of the Banking Holding Company Act grants the Federal Reserve broad authority to issue orders and regulations necessary to carry out the purposes of the Act and prevent evasions of it.²⁷⁷ That broad grant of authority provides ample legal foundation for the Federal Reserve to issue regulations or orders delineating the scope of the grandfather clause, including narrowing its interpretation to support the purposes of Act, which have been described as seeking to “limit the comingling of banking and commerce,” and “prevent situations where risk-taking by nonbanking affiliates erodes the stability of the bank’s core financial activities.”²⁷⁸ Financial holding companies that disagreed with the Federal Reserve’s interpretation would have an opportunity to challenge it in court under the Chevron standard requiring deference to administrative determinations.²⁷⁹

²⁷⁶ 9/19/2012 “Goldman Sachs’ request for a third extension of time to divest or conform nonbanking activities pursuant to section 4(a)(2) of the BHC Act,” internal memorandum prepared by the Federal Reserve, FRB-PSI-304868 - 875, at 872 [footnote omitted][sealed exhibit]. See also 9/20/2011 “Goldman Sachs’ request for a second extension of time to divest or conform nonbanking activities pursuant to section 4(a)(2) of the BHC Act,” internal memorandum prepared by the Federal Reserve, FRB-PSI-304860 - 867, at 866 [sealed exhibit]; 7/25/2012 “Presentation to Firmwide Client and Business Standards Committee: Global Commodities,” (hereinafter “2012 Firmwide Presentation”), prepared by Goldman Commodities group, FRB-PSI-200984, at 1000 (listing Cogentrix and Nucor as assets acquired under Section 4(o)).

²⁷⁷ Section 5(b) states: “The Board is authorized to issue such regulations and orders ... as may be necessary to enable it to administer and carry out the purposes of this Act and prevent evasions thereof.” Bank Holding Company Act of 1956, P.L. 84-511, codified at 12 U.S. Code §1844.

²⁷⁸ “A Structural View of U.S. Bank Holding Companies,” Dafna Avraham, Patricia Selvaggi, and James Vickery of the Federal Reserve Bank of New York, FRBNY Economic Policy Review (7/2012), at 3; <http://www.newyorkfed.org/research/epr/12v18n2/1207avra.pdf> [footnotes omitted].

²⁷⁹ Chevron U.S.A., Inc. v. Natural Resources Defense Council, Inc., 467 U.S. 837, 842 - 843 (1984) (creating a two-part analysis for reviewing an agency interpretation of a statute: “First, always, is the question whether Congress has directly spoken to the precise question at issue. If the intent of Congress is clear, that is the end of the matter; for the court as well as the agency,

Despite the two banks' growing investment in otherwise impermissible commodity activities and the growing disparity between them and other banks from 2008 to 2014, the Federal Reserve has repeatedly indicated that the permissibility of their activities under the grandfather clause remains an open and pending issue, while also permitting both financial institutions to continue and even expand the commodity activities in question.²⁸⁰ By failing to provide a timely interpretation delineating how the grandfather clause should be applied, the Federal Reserve effectively enabled both bank holding companies to deepen their involvement in otherwise unallowable physical commodity activities for more than six years.

In addition, unlike the actions it took to implement the Gramm-Leach-Bliley provision on complementary authority, the Federal Reserve has failed to impose any regulatory safety and soundness-based limitations on the volume of activities that may be conducted under the grandfathering clause.²⁸¹ Currently, the only limit on the amount of grandfathered activities is the statutory requirement that they not exceed 5% of the financial holding company's "total consolidated assets."²⁸² Given the size of Goldman and Morgan Stanley's assets, that limit is set so high as to not function as a restriction at all. In contrast, activities authorized under the complementary authority may not exceed 5% of the firm's Tier 1 capital, while the Volcker Rule limits investments to not more than 3% of a firm's Tier 1 capital, restrictions which result in much lower dollar limits on the activities. Under the Federal Reserve's current practice, a financial holding company could engage in physical commodity activities under the grandfather clause that could be orders of magnitude larger than those authorized under the complementary authority and could even exceed its total Tier 1 capital.

In January 2014, the Federal Reserve solicited public comment on whether it should issue a rulemaking to impose "additional prudential requirements" on financial holding companies to ensure commodity activities conducted under the grandfather clause "do not pose undue risks" to the holding company, an insured bank, or U.S. financial

must give effect to the unambiguously expressed intent of Congress. ... If, however, the Court determines Congress has not directly addressed the precise question at issue, the court does not simply impose its own construction of the statute. ... Rather, if the statute is silent or ambiguous with respect to the specific issue, the issue for the court is whether the agency's answer is based on a permissible construction of the statute.").

²⁸⁰ See, e.g., 9/19/2012 "Goldman Sachs' request for a third extension of time to divest or conform nonbanking activities pursuant to section 4(a)(2) of the BHC Act," internal memorandum prepared by the Federal Reserve, at 5, FRB-PSI-304868 – 875, at 872 [sealed exhibit]; 9/18/2012 "Morgan Stanley request for a third extension of time to divest or conform nonbanking activities pursuant to section 4(a)(2) of the BHC Act," internal memorandum prepared by the Federal Reserve, FRB-PSI-304905, at 910 [sealed exhibit].

²⁸¹ For more information, see discussion of JPMorgan's involvement with size limits, below.

²⁸² 12 U.S.C. §1843(o)(2).

stability.²⁸³ The Federal Reserve asked, in particular, for suggestions on appropriate “safety and soundness, capital, liquidity, reporting, or disclosure requirements” for grandfathered activities.²⁸⁴ Despite passage of nearly a year, however, the Federal Reserve has taken no further action on this rulemaking effort to curb risks associated with grandfathered commodity activities not otherwise permitted by law.

(4) Allowing Expansive Interpretations of Merchant Banking

A fourth legal basis for financial holding companies engaging in physical commodity activities involves the Gramm-Leach-Bliley Act’s merchant banking authority. As with the grandfather authority, the Federal Reserve has allowed financial holding companies to engage in an increasing array of commodity-related merchant banking investments.

As explained earlier, the Gramm-Leach-Bliley Act permitted financial holding companies to purchase up to a 100% ownership interest in non-financial commercial enterprises for a limited period of time, subject to certain limitations.²⁸⁵ In 2001, the Federal Reserve and Treasury adopted the “Merchant Banking Rule” to spell out some of the parameters of this authority.²⁸⁶ To limit the risks associated with merchant banking investments, the Federal Reserve initially imposed a size limit on those investments, generally prohibiting merchant banking assets from exceeding 30% of the financial holding company’s Tier 1 capital,²⁸⁷ but that size limit was removed in 2002.²⁸⁸

Qualifying Investments. Neither the Gramm-Leach-Bliley Act nor the Merchant Banking Rule explicitly defines the term “merchant

²⁸³“Complementary Activities, Merchant Banking Activities, and Other Activities of Financial Holding Companies Related to Physical Commodities,” 79 Fed. Reg. 13, 3329, 3336 and Question 23, (daily ed. Jan. 21, 2014).

²⁸⁴ *Id.*

²⁸⁵ Gramm-Leach-Bliley Act, Section 4(k)(4)(H); 12 U.S.C. §1843(k)(4)(H). See also “Merchant Banking: Mixing Banking and Commerce Under the Gramm-Leach-Bliley Act,” Congressional Research Service, No. RS21134 (10/22/2004), at 1 (“Before [the Gramm-Leach-Bliley Act], banking companies could use equity-investing authority only through Small Business Investment Companies (SBICs) and other limited powers. Bank holding companies could own [only] noncontrolling interests in nonfinancial companies: not more than 5% to 10% of voting securities. [The Gramm-Leach-Bliley Act] allows [financial holding companies] into the high-risk, high-reward private equity market.”).

²⁸⁶ See Merchant Banking Rule, 66 Fed. Reg. 8466 (1/31/2001), codified at 12 C.F.R. Part 225, Subpart J, 225.170 et seq.

²⁸⁷ See 12 C.F.R. §225.174 (restricting merchant banking investments to no more than 30% of the financial holding company’s Tier 1 capital, or 20% of its Tier 1 capital after excluding private equity funds); “Capital; Leverage and Risk-Based Capital Guidelines; Capital Adequacy Guidelines; Capital Maintenance: Nonfinancial Equity Investments,” 67 Fed. Reg. 3784 (1/25/2002) (adopting a final rule that ended the size limit while imposing specific capital requirements for merchant banking investments).

²⁸⁸ See 67 Federal Register 3786 (2002). The Federal Reserve terminated the size limit after imposing specific capital requirements for merchant banking investments.

banking.”²⁸⁹ Instead, both focus on “qualifying investments.” To qualify as a merchant banking investment under the law and the Merchant Banking Rule, an investment must meet a number of requirements, including the following:

- the investment must not be made or held, directly or indirectly, by a U.S. depository institution;²⁹⁰
- the investment must be “part of a bona fide ... merchant or investment banking activity,” including investments made for the “purpose of appreciation and ultimate resale”;²⁹¹
- the financial holding company must use a securities affiliate or an insurance affiliate with a registered investment adviser affiliate to make the investment;²⁹²
- the investment must be held on a temporary basis, “only for a period of time to enable the sale or disposition thereof on a reasonable basis”²⁹³ and generally for no longer than ten years;²⁹⁴ and
- the financial holding company generally must not “routinely manage or operate” the company in which it has made the investment.²⁹⁵

Financial holding companies can make qualifying investments as the principal or on behalf of clients.²⁹⁶ And, in contrast to the complementary powers provision, financial holding companies generally do not have to obtain prior approval by the Federal Reserve before making a merchant banking investment.²⁹⁷

Investment Gains Versus Operational Revenues. The Merchant Banking Rule does not expressly limit the scope of investments that meet the above criteria. The preamble to the Rule took the position, however, that the merchant banking authority was not intended to mix

²⁸⁹ The Merchant Banking Rule simply stated that merchant banking activities were “those not otherwise authorized” under Section 4 of the Bank Holding Company Act. 12 C.F.R. §225.170. See also “Merchant Banking: Mixing Banking and Commerce Under the Gramm-Leach-Bliley Act,” Congressional Research Service, No. RS21134 (10/22/2004), at 1 (“Merchant banking mixes banking with commerce. The term comes from European practices, in which *bankers* financed foreign trade and other high risk ventures undertaken by *merchants* such as ship owners and importers for a share of the profits, rather than receiving interest returns from lending. Taking a stake in a venture made it merchant banking.”)(emphasis in original).

²⁹⁰ 12 U.S.C. §1843(k)(4)(H)(i); 12 C.F.R. §225.170(d).

²⁹¹ 12 U.S.C. §1843(k)(4)(H)(ii); 12 C.F.R. §225.170(b).

²⁹² 12 U.S.C. §1843(k)(4)(H)(ii); 12 C.F.R. §225.170(f). A bank can also use a private equity fund that meets certain requirements to make the merchant banking investment. 12 C.F.R. §225.173.

²⁹³ 12 U.S.C. §1843(k)(4)(H)(iii); 12 C.F.R. §225.172(a).

²⁹⁴ 12 C.F.R. §225.172(b)(1).

²⁹⁵ 12 U.S.C. §1843(k)(4)(H)(iv); 12 C.F.R. §225.171(a) and (b)(e).

²⁹⁶ 12 U.S.C. §1843(k)(4)(H); 12 C.F.R. §225.170(a).

²⁹⁷ See 12 C.F.R. §225.174(a). However, prior approval may be needed if the proposed investment would cause the aggregate carrying value of all of its merchant banking investments to exceed the 5% cap.

banking and commerce, but to allow financial holding companies to make purely financial investments. It states that, to “preserv[e] the financial nature” of the merchant banking investment and “maintai[n] the separation of banking and commerce,” the principal purpose of the investment must be to make a profit for the financial holding company from the resale or disposition of its ownership stake and not from the operational revenues derived from running the nonfinancial business.²⁹⁸

According to the Congressional Research Service, the Gramm-Leach-Bliley Act effectively “allows [financial holding companies] into the high-risk, high-reward private equity market.”²⁹⁹ Another expert has described the Gramm-Leach-Bliley merchant banking authority as intended to enable banks to compete with securities firms and venture capital funds in investing in start-up companies.³⁰⁰

Routine Management. One key set of issues affecting merchant banking activities under the Gramm-Leach-Bliley Act involves the extent to which a financial holding company may exercise control over a business acquired as a merchant banking investment. Those acquired businesses are referred to in the Merchant Banking Rule as “portfolio companies,” since they reside within the investment portfolio of the financial holding company.

The Gramm-Leach-Bliley Act states that a financial holding company may not “routinely manage or operate” a portfolio company. Nevertheless, financial holding companies have long sought to exercise varied degrees of control over their portfolio companies. Examples include requiring the portfolio company to first seek the financial holding company’s approval before issuing securities, declaring dividends, or taking other actions deemed “outside the ordinary course of business.”³⁰¹

The extent of control that can be appropriately exercised by a financial holding company over a portfolio company remains unclear. Generally speaking, from 1999 to 2009, the Federal Reserve permitted financial holding companies to place a significant number of controls over a portfolio company related to the governance and funding of the company, without running afoul of the limitation that the financial holding company may not “routinely manage or operate” that

²⁹⁸ Merchant Banking Rule, 66 Fed. Reg. at 8469 (1/31/2001).

²⁹⁹ “Merchant Banking: Mixing Banking and Commerce Under the Gramm-Leach-Bliley Act,” Congressional Research Service, No. RS21134 (10/22/2004), at 1.

³⁰⁰ See, e.g., Omarova Testimony, at 3; *The Merchants of Wall Street*, at 281.

³⁰¹ See, e.g., 12/21/2001 letter from Federal Reserve to Credit Suisse First Boston, FRB-PSI-301593 - 601, at 599 [sealed exhibit] (outlining several types of covenants imposed by a financial holding company that restrict the financing or operations of a portfolio company).

company.³⁰² More recently, as explained below, the Federal Reserve has begun to take a more restrictive approach.

Currently, the extent of control that a financial holding company may appropriately exercise over a portfolio company is not spelled out in a rule, but is instead set forth largely in a 2001 letter from the Federal Reserve's then-General Counsel to Credit Suisse First Boston.³⁰³ Some of guidance provided in that letter relates to the overall structure and funding of the portfolio company. For example, the letter indicated that a bank engaged in merchant banking may restrict the ability of a portfolio company to issue debt or equity securities,³⁰⁴ redeem securities,³⁰⁵ or amend the terms of securities.³⁰⁶ The letter also indicated the bank could require the portfolio company to obtain prior approval by the financial holding company before declaring dividends "outside the ordinary course of business."³⁰⁷ Other types of control delve more deeply into the portfolio company's business operations. For example, the Federal Reserve letter indicated that a bank may place restrictions on a portfolio company's ability to hire or fire executives,³⁰⁸ "[e]nte[r] into a contractual arrangement (including a property lease or consulting agreement) that imposes significant financial obligations on the portfolio company,"³⁰⁹ sell significant assets,³¹⁰ adopt or modify a budget for compensation,³¹¹ "[c]reate, incur, assume, guarantee, refinance or prepay any indebtedness" outside the ordinary course of business,³¹² or "[m]ake, or commit to make, any capital expenditure" outside the ordinary course of business.³¹³

By allowing financial holding companies engaged in merchant banking to impose those types of restrictions on their portfolio companies, the Federal Reserve signaled that the financial holding companies could exercise significant control over their portfolio companies, so long as the controls related to activities "outside of the ordinary course of business." More recently, the Federal Reserve has begun to reject financial holding company reliance on merchant banking authority to justify certain commodity activities when confronted by evidence that the activities were conducted by portfolio companies

³⁰² Id.

³⁰³ Id.

³⁰⁴ Id. at 596.

³⁰⁵ Id.

³⁰⁶ Id. at 597.

³⁰⁷ Id. at 595.

³⁰⁸ Id. at 598.

³⁰⁹ Id.

³¹⁰ Id.

³¹¹ Id.

³¹² 12/21/2001 letter from Federal Reserve to Credit Suisse First Boston, FRB-PSI-301593 - 601, at 597 [sealed exhibit].

³¹³ Id.

whose day-to-day operations were subject to the control of the financial holding company.

One example involves JPMorgan which, as part of a larger acquisition in 2010, acquired ownership of Henry Bath & Sons, a company that owns a global network of metals warehouses. JPMorgan applied to operate the business as a complementary activity.³¹⁴ The Federal Reserve denied the application.³¹⁵ JPMorgan then sought to hold the asset under its merchant banking authority.³¹⁶ In 2013, the Federal Reserve informed the bank that its merchant banking authority did not cover the Henry Bath acquisition, and that the bank would have to divest the holding,³¹⁷ which JPMorgan has since done.³¹⁸ Although it did not provide a written explanation of its reasoning for rejecting JPMorgan's reliance on its merchant banking authority, the Federal Reserve told the Subcommittee³¹⁹ that it had based its decision on two factors: (1) JPMorgan's active integration of the warehouse services into its other commodity activities and routine advertisement of the warehouse services to its clients; and (2) JPMorgan's dominant use of the warehouses, citing information provided by JPMorgan that about 75% of the commodities stored in the Henry Bath warehouses belonged to JPMorgan or a JPMorgan client.³²⁰ JPMorgan told the Subcommittee that in addition to those reasons, the Federal Reserve had communicated its view that the warehouses were "not a passive investment" being held by JPMorgan.³²¹

In another instance, the Federal Reserve has pressed JPMorgan to sell three power plants in which it owns 100% of the shares and is currently holding under its merchant banking authority.³²² JPMorgan originally acquired the power plants as part of larger acquisitions related

³¹⁴ See 6/8/2011 "Notice to the Board of Governors of the Federal Reserve System by JPMorgan Chase & Co. Pursuant to Section 4(k)(1)(B) of the Bank Holding Company Act of 1956," (hereinafter "2011 Notice to the Board") FRB-PSI-300977 - 1052, at 1001 (JPMorgan application to hold Henry Bath metals storage facility as complementary activity).

³¹⁵ See 10/3/2012 "Physical Commodity Activities at SIFIs," prepared by Federal Reserve Bank of New York Commodities Team, (hereinafter "2012 Summary Report"), FRB-PSI-200477 - 510, at 505 [sealed exhibit]; Subcommittee briefing by JPMorgan (4/23/2014) (stating that the Federal Reserve rejected the complementary request related to Henry Bath during a telephone call and never provided a written explanation).

³¹⁶ See undated "Merchant Banking Investment in Henry Bath," prepared by JPMorgan for the Federal Reserve, FRB-PSI-000580 - 582; Subcommittee briefing by the Federal Reserve (11/27/2013).

³¹⁷ 2012 Summary Report, at 505; undated but likely 2013 "Commodities Focused Regulatory Work at JPM," prepared by Federal Reserve, FRB-PSI-300299 - 302, at 300 [sealed exhibits].

³¹⁸ JPMorgan sold Henry Bath and its warehouses to the Mercuria Group, a commodities and energy company based in Switzerland in 2014. Subcommittee briefing by Mercuria (9/12/2014).

³¹⁹ Subcommittee briefing by the Federal Reserve (11/27/2013).

³²⁰ See 2011 Notice to the Board, FRB-PSI-300977 - 1052, at 1001.

³²¹ Subcommittee briefing by JPMorgan (4/23/2014).

³²² For more information about the power plants, see discussion of JPMorgan's involvement with electricity, below.

to Bear Stearns in 2008 and RBS Semptra in 2010.³²³ JPMorgan first approached the Federal Reserve about holding all three power plants under the Gramm-Leach-Bliley complementary authority.³²⁴ After the Federal Reserve staff indicated that complementary authority did not include direct ownership of power plants, the bank invoked its merchant banking authority to continue its ownership stake in the power plants.³²⁵ While the Federal Reserve continued to press the bank to sell the power plants, it did not explicitly disallow JPMorgan's reliance on its merchant banking authority to own them. As of October 2014, JPMorgan was attempting to sell all three.³²⁶

These and other examples of commodity-related merchant banking activities discussed below indicate that financial holding companies still do not have clear guidance on when it is appropriate to rely on merchant banking authority to own commodity-related businesses, nor are they clear about what controls may be asserted over their portfolio companies.

Still another issue raised in an internal Federal Reserve report is "the extent to which banks can engage in commercial/physical commodity activities breaches the separation of banking and commerce and places industrial activities within the federal safety net."³²⁷ In other words, merchant banking losses incurred by banks and their holding companies are effectively being subsidized by the government and could end up being subsidized by taxpayers through Federal Reserve loans, FDIC insurance, or other types of federally-financed assistance. Despite identifying this problem, it is unclear what steps the Federal Reserve has taken to address it.

Growth in Merchant Banking Activities. Since 2001, under the auspices of the Gramm-Leach-Bliley Act, the volume and nature of "merchant banking" activities at financial holding companies, including physical commodity activities, have continued to expand.

³²³ See 5/26/2011 "Summary of outstanding legal/commodities issues as of March 2011," prepared by JP Morgan, FRB-PSI-304601 - 604, at 602. For more information about these power plants, see discussion of JPMorgan's involvement with electricity, below.

³²⁴ See 3/3/2011 "Outstanding Issues," prepared by Federal Reserve examiners, FRB-PSI-304602 - 604, at 602 [sealed exhibit].

³²⁵ Id. Three months later, energy traders at JPMorgan initiated a scheme to manipulate energy prices in California and the Midwest, using some of the power plants acquired from Bear Stearns. The bank ultimately paid \$410 million to settle charges by the Federal Energy Regulatory Commission (FERC) that it had gained \$125 million in unjust profits at the expense of businesses and families who used power in those regions. 7/30/2013 FERC press release, "JP Morgan Unit Agree to \$410 Million in Penalties, Disgorgement to Ratepayers," <http://www.ferc.gov/media/news-releases/2013/2013-3/07-30-13.asp#.VFUkvvF9u0>.

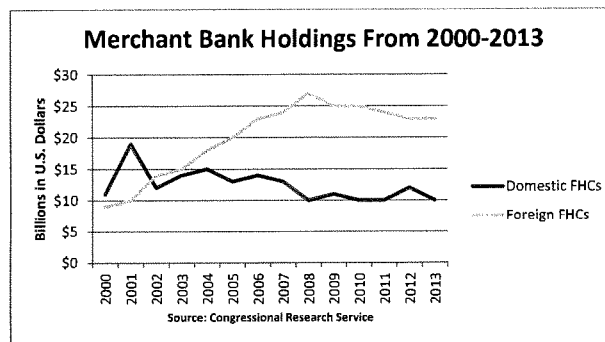
³²⁶ For more information about the current status of these power plants, see discussion of JPMorgan's involvement with electricity, below.

³²⁷ 2012 Summary Report, FRB-PSI-200477 - 510, at 482.

According to the Congressional Research Service (CRS), from 2000 to 2013, financial holding companies have increased their merchant banking holdings from \$9.5 billion to \$46.2 billion, a fivefold increase.³²⁸ The following charts, prepared with data gathered by CRS at the Subcommittee's request, show a steady growth in merchant banking activities over the last ten years, with twice as many foreign banks as domestic banks participating in merchant banking activity.³²⁹

Number and Dollar Value of Merchant Banking Assets of Financial Holding Companies, 2000-2013			
Number of Financial Holding Companies			
	Domestic	Foreign	
Year			Assets Reported (in U.S. billions)
2000	11	9	\$9.5
2001	19	10	\$8.3
2002	12	14	\$9.1
2003	14	15	\$10.7
2004	15	18	\$12.0
2005	13	20	\$15.50
2006	14	23	\$19.90
2007	13	24	\$27.10
2008	10	27	\$22.60
2009	11	25	\$34.00
2010	10	25	\$54.00
2011	10	24	\$48.50
2012	12	23	\$49.40
2013	10	23	\$46.20

Source: Congressional Research Service



Because the Federal Reserve does not require financial holding companies to report with specificity on their merchant banking

³²⁸ 12/20/2013 "Merchant Banking Assets of Financial Holding Companies," memorandum by CRS, at 5, Tables 1 and 2 (using data provided by the Federal Reserve).

³²⁹ Id.

activities, neither the Federal Reserve nor CRS was able to indicate what portion of the financial holding companies' growing merchant banking assets was tied to commodities versus other types of businesses. It is also unclear the extent to which the reported data includes all merchant banking activities undertaken by financial holding companies. When the Subcommittee reviewed the annual reports that the Federal Reserve requires financial holding companies to file on their merchant banking activities, the reports contained only aggregate data on such matters as the acquisition costs, unrealized gains, carrying values, and publicly quoted values of the merchant banking investments, but no list of individual projects.³³⁰ The lack of specific information meant the Subcommittee could not determine whether the data included all of an institution's commodities-related merchant banking activities. The lack of data also makes it difficult for regulators or others to monitor the extent to which financial holding companies are accurately disclosing their merchant banking investments and complying with the requirements for those activities.

Case Studies. Each of the banks examined by the Subcommittee relied on their merchant banking authority to conduct at least some commodity activities that might otherwise be unallowable under the law. Goldman Sachs, for example, cited merchant banking authority as the legal basis for its ownership of Metro International's global network of warehouses, as well as its acquisition of companies that own multiple coal mines and related infrastructure in Colombia.³³¹ As explained above, JPMorgan cited merchant banking authority for its ownership of three power plants and attempted to use that authority for the Henry Bath network of warehouses.³³² Morgan Stanley cited reliance on merchant banking authority for its acquisition of Southern Star, a natural gas pipeline company, discussed further below.³³³

³³⁰ See 6/30/2014 "Consolidated Holding Company Report of Equity Investments in Nonfinancial Companies – FR Y-12," submitted to the Federal Reserve by JPMorgan, FRB-PSI-800005 - 008; Morgan Stanley, FRB-PSI-800009 - 012; and Goldman, FRB-PSI-800013 - 016.

³³¹ See 2012 Firmwide Presentation, FRB-PSI-200984 - 1043, at 1000 (listing Metro and CNR as merchant banking investments). For more information about these merchant banking activities, see below. Goldman has also asserted that its investment in Colombian mines was authorized pursuant to the Gramm-Leach-Bliley "grandfather" authority. See Report of Changes in Organizational Structure, FR-Y-10, Goldman Sachs Group, Inc. (4/14/2010), GSPSICOMMODS00046301 - 317 (indicating its coal mine investment was "permissible under [Bank Holding Company Act Section] 4(o), but investment complies with the Merchant Banking regulations").

³³² See 2012 Summary Report, FRB-PSI-200477-510, at 505; 3/3/2011 "Outstanding Issues," prepared by Federal Reserve examiners, FRB-PSI-304602 - 604, at 602 [sealed exhibit].

³³³ Subcommittee briefing by Morgan Stanley (9/8/2014); Morgan Stanley Investment Management portfolio list, Morgan Stanley website, http://www.morganstanley.com/institutional/invest_management/private_equity/portfolio.html (including Triana Energy, a natural gas exploration and production company; Trinity, a carbon dioxide pipeline company; and Sterling Energy, a natural gas gathering, processing and marketing company).

Each of the banks conducted their commodity-related merchant banking activities both within and outside of their commodities divisions. Morgan Stanley, for example, engaged in merchant banking investments involving natural gas, not only through its commodities division, but also through the Morgan Stanley Infrastructure Partnership and Morgan Stanley Global Private Equity Partnership, both of which operate through its Investment Division.³³⁴ Goldman made merchant banking investments through its commodities group as well as a “Merchant Banking Division” that was completely outside of the commodities group.³³⁵ Similarly, JPMorgan made merchant banking investments through a “Global Real Assets” section of its Asset Management business segment.³³⁶ The evidence indicated that commodities-related merchant banking investments were being made by multiple, unrelated units throughout each financial holding company.

Ongoing merchant banking issues at the financial holding companies include whether their physical commodity activities qualify as merchant banking investments or improperly mix banking with commerce; and ensuring that financial holding companies’ merchant banking activities do not undermine the safety and soundness of the firms.

(5) Narrowly Enforcing Prudential Limits

Still another key regulatory issue has to do with enforcing the statutory, regulatory, and company-specific prudential limits created to restrict the overall size of a bank’s physical commodity activities and reduce the related risks. The Gramm-Leach-Bliley Act, its implementing regulations, and the grants of complementary authority issued by the Federal Reserve all contain prudential limits on the volume of a holding company’s physical commodity activities. However, those prudential limits, which generally seek to place a cap on the investments as a percentage of the firm’s assets or capital, have implementation and enforcement issues that have not been resolved.

The only statutory limit is in the Gramm-Leach-Bliley Act’s grandfather clause which provides that the dollar value of the physical commodity activities engaged in by the financial holding company’s subsidiaries under the clause cannot exceed 5% of the subsidiaries’ “aggregate consolidated assets” or 5% of the financial holding company

³³⁴ Subcommittee briefing by Morgan Stanley (9/8/2014); discussion of Morgan Stanley’s merchant banking activities in that financial holding company’s overview, below.

³³⁵ See, e.g., undated organizational chart prepared by Goldman for the Subcommittee, PSI-Goldman-10-000001 - 002.

³³⁶ See, e.g., 10/21/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-15-000001 - 008, at 003 - 004.

parent's "total consolidated assets," unless the Federal Reserve increases the cap.³³⁷

The Gramm-Leach-Bliley Act does not place any statutory limit on activities that may be conducted under its complementary authority. Nevertheless, the Federal Reserve has conditioned its approval of complementary activities on a commitment by the relevant financial holding company that the dollar value of its physical commodity holdings will not exceed 5% of the financial holding company's consolidated Tier 1 capital.³³⁸ The Federal Reserve also initially restricted merchant banking investments to generally no more than 30% of financial holding company's Tier 1 capital, but removed that cap in 2002.³³⁹

The two 5% limits on grandfathered and complementary activities apply to different attributes (assets versus capital) and are applied and enforced separately.³⁴⁰ Both limits raise multiple enforcement concerns. One issue is whether financial holding companies are excluding major categories of assets.³⁴¹ For example, a report prepared by the Federal Reserve staff found that financial holding companies included the dollar value of leases on power plants when calculating covered assets for purposes of the 5% Tier 1 capital cap, but excluded leases on infrastructure, such as oil and gas storage facilities.³⁴² Another tactic used by one financial holding company was to exclude the physical commodities held by its bank when calculating the financial holding company's physical commodity assets subject to the Federal Reserve's 5% complementary limit.³⁴³

A second concern involves how the financial holding companies are valuing their physical commodity assets for purposes of calculating the limits. During its recent review of bank involvement with physical commodities, the Federal Reserve uncovered and disallowed several valuation practices, such as a dubious netting of income from tolling agreements.³⁴⁴

³³⁷ See Section 103(a) of the Gramm-Leach-Bliley Act, P.L. 106-102, codified at 12 U.S.C. §1811.

³³⁸ See, e.g., 11/18/2005 "Order Approving Notice to Engage in Activities Complementary to a Financial Activity," prepared by Federal Reserve, <http://www.federalreserve.gov/boarddocs/press/orders/2005/20051118/attachment.pdf>.

³³⁹ See 12 C.F.R. §225.174 (restricting merchant banking investments to no more than 30% of the financial holding company's Tier 1 capital, or 20% of its Tier 1 capital after excluding private equity funds); 10/22/2004 "Merchant Banking: Mixing Banking and Commerce Under the Gramm-Leach-Bliley Act," prepared by the Congressional Research Service, at 4; 67 Federal Register 3786 (2002). The Federal Reserve terminated the size limit after imposing specific capital requirements for merchant banking investments.

³⁴⁰ Federal Reserve briefing of the Subcommittee (12/13/2013).

³⁴¹ See discussion of JPMorgan involvement with size limits, below.

³⁴² 2012 Summary Report, FRB-PSI-200477 - 510, at 506.

³⁴³ Id. For more information, see discussion of JPMorgan involvement with size limits, below.

³⁴⁴ For more information, see discussion of JPMorgan involvement with size limits, below.

Still another issue is whether, given the enormous size of the financial holding companies involved with physical commodities, the 5% limits provide sufficient protection from financial risk for both the firms and the commodities markets.³⁴⁵ As of March 2014, the six largest bank holding companies reported aggregated assets of nearly \$10 trillion.³⁴⁶ The enormous value of their assets means that even a rigorous 5% Tier 1 capital limit – as opposed to the current porous one – would permit multi-billion-dollar physical commodity activities which, in the event of losses, could impact both the financial institutions and the markets. In addition, those limits fail to prevent massive inflows of capital into the relatively small commodities markets, under the control of a relatively small number of financial holding companies, raising concerns about undue economic concentration and market manipulation.³⁴⁷

Since enactment of the Gramm-Leach-Bliley Act in 1999, a handful of financial holding companies have significantly expanded their involvement with physical commodities. They have done so despite prudential limits designed to constrain that growth and the attendant risks. Loopholes and inappropriate interpretations have rendered the limits largely ineffective and in need of clarification and renewal.

B. Reviewing Bank Involvement with Physical Commodities, 2009-2013

After the financial crisis of 2008, the Federal Reserve, as well as other U.S. bank regulators, undertook new efforts to identify hidden or under-appreciated risks in the U.S. banking system. As part of that effort, the Federal Reserve identified financial holding company involvement with physical commodities as creating risks requiring a special review. The resulting special review, which spanned three years, not only surveyed the financial holding companies' physical commodity activities, but also identified numerous risks associated with those activities, including operational risks, inadequate risk management, insufficient capital, and ineffective regulatory safeguards. It offered multiple recommendations to reduce financial holding company involvement with physical commodities and ameliorate the associated risks.

³⁴⁵ See, e.g., Rosner Testimony, at 6.

³⁴⁶ See "Holding Companies with Assets Greater Than \$10 Billion," (as of 6/30/2014), Federal Reserve System, National Information Center, [http://www.ffiec.gov/nicpubweb/nicweb/Top50Form.aspx_\(reflecting the aggregated assets of the six largest U.S. banks at \\$9.8 trillion\).](http://www.ffiec.gov/nicpubweb/nicweb/Top50Form.aspx_(reflecting the aggregated assets of the six largest U.S. banks at $9.8 trillion).)

³⁴⁷ In evaluating requests for complementary authority, the Federal Reserve is statutorily required to consider "undue concentration of resources." 12 U.S.C. §1843(j)(2)(A).

(1) Initiating the Special Physical Commodities Review

After the 2008 financial crisis disclosed vulnerabilities in federal oversight of the largest banks, the Federal Reserve revamped its risk governance system. In 2009, the Federal Reserve replaced its Large Financial Institutions section with the Large Institution Supervision Coordinating Committee (LISCC), headed by senior Federal Reserve personnel.³⁴⁸

The Inspector General for the Federal Reserve System has explained that LISCC was created to:

“provide strategic and policy direction for supervisory activities across the Federal Reserve System, improve the consistency and quality of supervision, incorporate systemic risk considerations, and monitor the execution of the resulting supervisory program.”³⁴⁹

In addition to supervisory personnel, LISCC was staffed with economists, quantitative analysts, payment system specialists, and other experts to enable it to take a multidisciplinary approach to identifying and analyzing risks affecting systemically important financial institutions (SIFIs) and the global banking system.³⁵⁰

In 2009, LISCC established an Operating Committee composed of senior regulatory officials to develop prudential standards for and oversee the largest SIFIs within its jurisdiction, generally those whose assets exceeded \$50 billion.³⁵¹ To carry out its oversight obligations, the Operating Committee established several subgroups, including a Risk Secretariat charged with identifying key risks affecting the SIFIs, setting priorities for investigating those risks, and providing the resources needed to conduct the risk investigations.³⁵²

In 2009, after weighing investigative priorities and its limited resources, the Risk Secretariat identified bank involvement with physical commodities as a major emerging risk and approved a special review of

³⁴⁸ 5/23/2012 Federal Reserve Office of Inspector General letter, at 3, http://oig.federalreserve.gov/reports/BOG_enhanced_prudential_standards_progress_May2012.pdf.

³⁴⁹ *Id.* at 4.

³⁵⁰ Subcommittee briefing by the Federal Reserve (12/13/2013).

³⁵¹ 5/23/2012 Federal Reserve Office of Inspector General letter, at 3, http://oig.federalreserve.gov/reports/BOG_enhanced_prudential_standards_progress_May2012.pdf. In 2012, those SIFIs included eight domestic and four foreign-owned firms, the majority of which were financial holding companies of major banks. *Id.*

³⁵² Subcommittee briefing by the Federal Reserve (12/13/2013). Other subgroups created by the Operating Committee include the Capital Performance Secretariat, the Data Team, Products and Processes, the Tactical Action Group, and Vetting. 5/23/2012 Federal Reserve Office of Inspector General letter, at 4, http://oig.federalreserve.gov/reports/BOG_enhanced_prudential_standards_progress_May2012.pdf.

those activities.³⁵³ Dan Sullivan, then Assistant Vice President and Department Head of Market Risk at the Federal Reserve Bank of New York (FRBNY), submitted the proposal for a comprehensive review of physical commodity activities, explained why it should be approved on a priority basis, and agreed to “sponsor” the investigative effort, if approved.³⁵⁴

In early 2010, the Risk Secretariat agreed to provide sufficient resources for an in-depth, multi-firm, multi-year review of the physical commodity activities at financial holding companies. The special review was designed to accomplish the following objectives:

- “Deepen our understanding of the scope of commodity trading at SIFIs and assess the inherent risks, the quality of risk reporting and controls, and capital methodologies with an emphasis on the physical industrial commodity activities. Lead efforts to develop a complete assessment of risk in commodity related industrial activities across risk disciplines.
- Assess the broader implications of SIFIs in the commodity markets along with non-financial traditional firms and the impact on markets.
- Provide product knowledge expertise and analysis in support for NY Banking Applications and the Legal divisions in NY and the Board on physical commodity applications (under complementary authority).”³⁵⁵

(2) Conducting the Special Review

After approving the special review, LISCC’s Risk Secretariat directed formation of a Commodities Team to perform the work. To gather and analyze information, the Commodities Team drew from past and ongoing commodities examinations, and conducted its own investigative work. In October 2012, the team concluded the special review with a private presentation to Federal Reserve supervisors summarizing its overall findings and recommendations.³⁵⁶ The Commodities Team then ceased its active investigation but continued in

³⁵³ Subcommittee briefing by the Federal Reserve (12/13/2013). The Risk Secretariat has also approved other horizontal, multi-firm investigations including those related to capital stress testing and capital adequacy. See, e.g., “Implementing Wall Street Reform: Enhancing Bank Supervision and Reducing Systemic Risk,” hearing before the U.S. Senate Committee on Banking, Housing, and Urban Affairs, S. Hrg. 112-714 (6/6/2012), at 47, prepared statement of Daniel K. Tarullo, Federal Reserve Governor, <http://www.gpo.gov/fdsys/pkg/CHRG-112shrg78813/html/CHRG-112shrg78813.htm>.

³⁵⁴ Subcommittee briefing by the Federal Reserve (12/13/2013). See also 2011 FRBNY Commodities Team Work Plan, FRB-PSI-200455, at 467 [sealed exhibit].

³⁵⁵ See 2011 FRBNY Commodities Team Work Plan, FRB-PSI-200455, at 468.

³⁵⁶ See 2012 Summary Report, FRB-PSI-200477 - 510 [sealed exhibit].

existence for nearly a year, assisting Federal Reserve personnel with a variety of physical commodity issues until dissolving in 2013.³⁵⁷

Creating the Commodities Team. In the first quarter of 2010, the Risk Secretariat directed formation of the Commodities Team to conduct the special review.³⁵⁸ To ensure that the team had the necessary expertise in physical commodities, risk management, capital planning, insurance, and related issues, personnel for the Commodities Team were drawn from Federal Reserve supervisory ranks and new hires from industry. The Commodities Team had about a half dozen members at any one time.³⁵⁹ From the team's inception, the Project Manager was Wai Wong, a senior Federal Reserve regulator with expertise in capital markets risk.³⁶⁰

The team was based in New York, and was housed and supported by the Federal Reserve Bank of New York (FRBNY). It also worked closely with and received assistance from the Federal Reserve examination teams assigned to the institutions being examined, as well as Federal Reserve personnel in Washington, D.C., Richmond, and New York.³⁶¹ From 2010 to 2012, the Commodities Team members spent the bulk of their time conducting the commodities review.³⁶²

Developing a Work Plan. To accomplish their work, the Commodities Team drew on a "discovery review" that had been conducted prior to the team's formation to justify the larger investigation,³⁶³ as well as earlier targeted examinations.³⁶⁴ Those past

³⁵⁷ Subcommittee briefing by the Federal Reserve (12/13/2013).

³⁵⁸ *Id.*

³⁵⁹ *Id.* In addition to Msrs. Sullivan and Wong, over time other team members and persons associated with the Commodities Team included Xiaobin Cai, Eric Caban, Philip Etherton, Nathan Fujiki, Irina Gvozdz, David Gross, Lyon Hardgrave, Sarah Jackson, and Michael Nelson. See, e.g., 2012 Summary Report, at FRB-PSI-200477 [sealed exhibit].

³⁶⁰ *Id.* See also 2011 FRBNY Commodities Team Work Plan, at FRB-PSI-200467. In May 2013, shortly before the team's dissolution, he was replaced by Nathan Fujiki, another Commodities Team member. Subcommittee briefing by the Federal Reserve (12/13/2013).

³⁶¹ *Id.*

³⁶² *Id.*

³⁶³ See undated, but likely 2009 "Scope Discovery Review Memo[.] Goldman Sachs Group Commodities," prepared by Federal Reserve Bank New York examiners, FRB-PSI-200511 - 515 [sealed exhibit]; 4/8/2010 "Discovery Review Product Memo[.] Goldman Sachs Global Commodities," prepared by the Federal Reserve Commodities Team, FRB-PSI-303698 - 767 [sealed exhibit]; 5/11/2010 "Goldman Sachs Commodities[.] Discovery Review Product Memo Vetting Presentation," prepared by Federal Reserve Commodities Team, FRB-PSI-200586-599 [sealed exhibit].

³⁶⁴ See, e.g., 5/11/2009 "Federal Reserve Bank of New York Product Memo Goldman Sachs Group (GS) Market Risk Amendment," prepared by FRBNY examiners, FRB-PSI-304941 - 959, at 942 (identifying concerns with VAR modeling used for commodities) [sealed exhibit]; 3/20/2009 letter from Federal Reserve to Morgan Stanley, FRB-PSI-304613 - 672, at 613 (announcing "target review of Morgan Stanley's commodities business for six weeks" at its offices in New York); 10/5/2009 letter from Federal Reserve to Morgan Stanley, FRB-PSI-304620 - 626, at 620 (announcing "target review of Morgan Stanley's commodities business for approximately four weeks" at its offices in London); 10/19/2009 "Scope Memorandum[.] Morgan Stanley Euro Commodities, Control Validation Target Exam," prepared by FRBNY

efforts helped the team gain a greater understanding of the commodities, products, operations, and risks involved in the banks' physical commodity activities.

In 2011, the Commodities Team drew up its own work plan.³⁶⁵ One part of the 2011 Work Plan, entitled: "Why is this a priority," gave five key reasons for the special review of financial holding company involvement with physical commodities:

- "Key business targeted for expansion and growth
- Size and complexity of the business
- Weaknesses in Risk Management and Valuation
- Raises issues regarding Commerce vs. Banking
- Capital measures low relative to non-banking players"³⁶⁶

On the first two points, the 2011 Work Plan noted that "SIFIs exposures are growing and cover a broad range of commodity physical industrial activities."³⁶⁷ It also observed that several large financial institutions:

"continue to expand in the physical commodities markets, with an emphasis on leasing and owning assets such as power plants, oil and natural gas storage facilities, and transportation assets (e.g. oil tankers or product pipelines). MS has \$13.1 billion in commodity assets, and Goldman Sachs as \$26 billion."³⁶⁸

On the third point, the 2011 Work Plan noted that "the Management framework used by banks for physical assets is the same framework used for financial derivatives products,"³⁶⁹ and that "most risk measures such as [Value-at-Risk] do not capture many risk components to physical commodities."³⁷⁰ These concerns about risk management weaknesses built upon an earlier Federal Reserve memorandum finding significant "limitations with VaR calculations due to the large number of proxies used, unstable correlations and issues with seasonality and manual processes."³⁷¹

examiners, FRB-PSI-304665 - 672 [sealed exhibit]; 5/24/2010 letter from Federal Reserve to Morgan Stanley, "Global Oil Trading Review beginning June 22, 2010," FRB-PSI-304673 - 677, at 673 (announcing "a control validation review of Morgan Stanley's global oil trading desks for approximately six weeks" at its offices in New York).

³⁶⁵ See 2011 Work Plan, FRB-PSI-200455, at 472; and 2012 Summary Report, FRB-PSI-200477, at 480.

³⁶⁶ 2011 Work Plan, at FRB-PSI-200471.

³⁶⁷ Id. at 464.

³⁶⁸ Id. at 465 (emphasis omitted).

³⁶⁹ Id. at 466.

³⁷⁰ Id. at 465.

³⁷¹ Undated "Update on Trading in Commodities," memorandum prepared by the Federal Reserve, FRB-PSI-200419 - 423, at 419 [sealed exhibit].

On the fourth point, the Commodities Team was concerned that, by buying, selling and maintaining ownership interests in physical commodities, banks appeared to be engaging in commercial activities in direct competition with non-banking firms, contrary to longstanding principles against mixing banking with commerce.³⁷²

As to the fifth and final point, the Commodities Team was concerned that financial firms were inadequately prepared for possible losses associated with their physical commodity activities. In particular, preliminary research had shown that commercial firms engaged in the same activities retained capital in amounts several times greater than those of banks engaged in them, raising concerns that banks were not fully protected from financial loss in the case of an operational failure or catastrophic event.³⁷³

Conducting Examinations. Over the next two years, the Commodities Team conducted an extensive review of physical commodity activities at ten SIFIs.³⁷⁴ Goldman Sachs, JPMorgan, and Morgan Stanley received the most attention due to their having the most extensive commodity holdings and activities. The other seven firms, Bank of America, Barclays Capital, BNP Paribas, Citi, Credit Suisse, Deutsche Bank, and GE Capital, received relatively less scrutiny because they had less extensive physical commodity activities.

To conduct the review, the Commodities Team used a mix of targeted and routine examinations and continuous monitoring reviews to collect and analyze needed information.³⁷⁵ The Team eventually conducted targeted examinations exploring specific commodities issues at four financial holding companies, JPMorgan, Morgan Stanley, Bank of America, and Barclays.³⁷⁶ It collected additional information about physical commodity activities at Goldman Sachs, Citigroup, GE Capital, and Deutsche Bank using routine examinations and ongoing, continuous monitoring reviews.³⁷⁷

Issuing Reports. In connection with its work, the Commodities Team produced numerous interim examination reports, memoranda, and analyses documenting various aspects of financial holding company involvement with physical commodities. These internal reports were made available to Federal Reserve personnel, but not to the public.

A number of the reports examined the banks selected as case studies for this Report. For example, a Commodities Team analysis of

³⁷² Subcommittee briefing by Federal Reserve (12/13/2013).

³⁷³ Id.

³⁷⁴ Id.; 2012 Summary Report, at FRB-PSI-200480 [sealed exhibit].

³⁷⁵ Id.

³⁷⁶ Id.

³⁷⁷ Id.

JPMorgan reported that its “Global Commodities Group is a strategic priority for the firm, and includes financial and physical capabilities across oil, gas, power, metals, agriculturals, plastics, environmental markets, and weather.”³⁷⁸ The Commodities Team wrote: “Since 2006 the firm [JPMorgan] has significantly grown its physical activities, largely through acquisition, and has joined the top tier (along with [Morgan Stanley] and [Goldman Sachs]) among banks in commodities.” A 2009 analysis found that:

“[Goldman Sachs] is one of the largest players in the commodities market and the business has been a material driver of revenue for the firm. ... Goldman’s commodities business is active in the physical markets, in terms of trading, transporting, and storing physical commodities as well as owning power generation and other physical assets.”³⁷⁹

A 2011 targeted examination of Morgan Stanley focused on its power plant activities in Europe, the Middle East, and Africa (EMEA), and provided in-depth reviews of its insurance arrangements, operational risk management, regulatory compliance procedures, vendor management, and internal audit coverage.³⁸⁰ Among other problems, the examination found that Morgan Stanley’s operational risk capital calculations improperly excluded key activities, and that Morgan Stanley had valuation issues, an incomplete database of operational and environmental incidents, poor vendor management, and insufficient insurance.

Still another set of reports, prepared by the Commodities Team in connection with an analysis of the Gramm-Leach-Bliley grandfather clause, provided detailed information about the commodity activities at Goldman Sachs and Morgan Stanley prior to 1997 and more recently.³⁸¹

Ultimately, in October 2012, the Commodities Team produced a Summary Report highlighting key supervisory concerns and offering recommendations to reduce the attendant risks.³⁸² This report was

³⁷⁸ Undated but likely 2013 “Commodities Focused Regulatory Work at JPM,” prepared by FRBNY Commodities Team, FRB-PSI-300299 - 302, at 300 [sealed exhibit].

³⁷⁹ Undated but likely 2009 “Scope Discovery Review Memo[.] Goldman Sachs Group Commodities,” prepared by FRBNY examiners, FRB-PSI-200511 - 515 [sealed exhibit].

³⁸⁰ See 10/30/2011 “Supervisory Assessment – Multiple Exams Product Memo[.] Morgan Stanley Commodities,” prepared by FRBNY examiners, FRB-PSI-304747 - 797 [sealed exhibit].

³⁸¹ See, e.g., undated but likely 2011 “Comparison of Risks of Commodity Activities at Morgan Stanley and Goldman Sachs between 1997 to Present,” prepared by FRBNY, FRB-PSI-200428-454 [sealed exhibit]; 4/19/2011 “Commodities Activities at Goldman Sachs and Morgan Stanley[.] 4(o) permissibility analysis overlaid on GS and MS activities,” prepared by Federal Reserve, FRB-PSI-200944 - 959 [sealed exhibit].

³⁸² 2012 Summary Report, at FRB-PSI-200477 - 510. [sealed exhibit]

presented to Federal Reserve senior management, but not to any Federal Reserve Governors or the public.³⁸³

(3) Documenting Extensive, High Risk Commodity Activities

The written materials produced by the Commodities Team painted a detailed picture of the rapidly expanding, complex physical commodity activities underway at major bank holding companies from the mid-2000s to 2012. The special review documented an unprecedented level of bank involvement in the energy, metal, and agricultural commodity markets, as well as a wide range of troubling risks and inadequate risk management practices.

(a) Summarizing Banks' Physical Commodities Activities

In its 2012 report summarizing the special review, the Commodities Team concluded that the ten financial holding companies it had examined had “significant footprints in physical commodity activities.”³⁸⁴ To provide an overview of the physical commodity activities involved, the report provided a two-page list of representative bank activities in oil and gas storage and transport, electrical power generation, shipping, metal warehousing, and coal and uranium mining.

Oil and Gas. The 2012 Summary Report found that Morgan Stanley then held “operating leases on over 100 oil storage tank field[s] with 58 million barrels of storage capacity globally and 18 natural gas storage facilities in US and Europe.”³⁸⁵ It reported that JPMorgan had a “significant global oil storage portfolio (25 [million barrel] capacity) ... along with 19 Natural Gas storage facilities on lease.”³⁸⁶ And it noted that Bank of America had “23 oil storage facilities and 54 natural gas facilities ... leased for storage.”³⁸⁷

Power Generation. The 2012 Summary Report found that JPMorgan had “14 tolling agreements (operating lease[s] on power plants) of which one is for a power plant that generates 6% of the maximum total output of the California Electricity grid, and potentially up to 12% of average electricity demand.”³⁸⁸ It indicated that JPMorgan had also bought and sold over \$1 billion worth of power plants over the prior three years. In addition, the 2012 Summary Report found that Morgan Stanley owned 6 domestic and international power plants; Bank

³⁸³ Subcommittee briefing by the Federal Reserve (10/8/2014).

³⁸⁴ 2012 Summary Report, at FRB-PSI-200485 [sealed exhibit].

³⁸⁵ Id.

³⁸⁶ Id.

³⁸⁷ Id.

³⁸⁸ Id.

of America could make contingent power purchases from several nuclear power plants; and Goldman Sachs had four tolling agreements and a wholly-owned subsidiary, Cogentrix, with ownership interests in over 30 power plants.³⁸⁹

Shipping. The 2012 Summary Report found that Morgan Stanley had “over 100 ships under time charters or voyages for movement of oil product, and was ranked 9th globally in shipping oil distillates in 2009.”³⁹⁰ It also noted that Morgan Stanley was “[c]urrently growing its ability to ship Liquefied Natural Gas.” In addition, the Summary Report observed that JPMorgan and Goldman Sachs had a “total of 20-25 ships under time charters or voyages transporting oil [and] Liquefied Natural Gas.”³⁹¹

Metals. The 2012 Summary Report found that Goldman Sachs owned “Metro Warehouse which controls 84 metal warehouse/storage facilities globally” and qualified as a London Metals Exchange storage provider.³⁹² It also reported that JPMorgan had acquired “Henry [B]ath metals warehouse (LME certified base metals warehousing/storage worldwide),” and that JPMorgan’s “total base metal inventory was as high as \$8 [billion]” during the first quarter of 2012.³⁹³

Coal. The 2012 Summary Report found that all of the financial holding companies reviewed conducted “physical coal trading involv[ing the] shipment of coals.”³⁹⁴ It also noted that Goldman Sachs had acquired a Colombian coal mine valued at \$204 million, which had also included associated rail transportation for the coal.³⁹⁵

Uranium. The 2012 Summary Report also found that Goldman Sachs had conducted “a uranium trading business that engages in the trading of the underlying commodity.”³⁹⁶

Altogether, the 2012 Summary Report showed how, in the space of one decade, large U.S. bank holding companies had developed and expanded multi-billion-dollar commodity activities involving energy, critical metals, and associated storage and transport functions vital to U.S. commerce and defense.

³⁸⁹ Id.

³⁹⁰ Id. at 486.

³⁹¹ Id.

³⁹² Id.

³⁹³ Id.

³⁹⁴ Id.

³⁹⁵ Id.

³⁹⁶ Id. While the assessment referred to trading “fully enriched uranium,” Goldman told the Subcommittee that it has not traded any enriched uranium. Subcommittee briefing by Goldman Sachs (9/5/2014).

(b) Identifying Multiple Risks

In addition to describing the physical commodity activities underway at ten large financial holding companies, the special review conducted by the Commodities Team catalogued, investigated, and analyzed numerous risks and related issues of concern associated with those activities. Problems included multiple operational risks, weaknesses in risk management, weak valuation practices, market manipulation concerns, reputational risks, insufficient capital, and ineffective limits.

The Commodities Team observed that one of the central challenges facing financial holding companies engaging in physical commodities activities is that the risk management techniques applicable to the financial world may not translate well to the physical world. Mining coal, producing electric power, transporting and storing oil and gas, storing uranium, operating a natural gas compression facility, and owning gasoline stations are all complex businesses with multiple risks varying from the commonplace to unexpected disasters. Customers can dry up. Labor can go on strike. Equipment can break down. Inventories can be too high or too low. Vendors can cause problems. Prices may spike or fall. Regulations can change. Transportation can become difficult. There can be an environmental, health, or safety event. Some of these commercial operational risks may be small, while others may be catastrophic.

Rather than survey all of these types of operational risks, the Federal Reserve's review focused on the direct risks associated with the storage, transport, production, and supply of physical commodities. They included the risks associated with a catastrophic event, including costs not covered by insurance; market and valuation risks including valuation problems leading to insufficient capital or insurance; and reputational risks such as allegations of price manipulation or pressures to pay unanticipated costs associated with an affiliate.

Catastrophic Event Risks. One of the greatest challenges in the commodities business is dealing with the risk of a catastrophic event, such as an oil spill or gas explosion. Identifying and quantifying those event risks are difficult tasks.³⁹⁷ In particular, a lack of data on infrequent events makes it extraordinarily difficult to predict with any accuracy whether, when, and to what degree they may occur.³⁹⁸

³⁹⁷ See "Complementary Activities, Merchant Banking Activities, and Other Activities of Financial Holding Companies Related to Physical Commodities," prepared by Federal Reserve, 79 Fed. Reg. 13, 3329 (daily ed. Jan. 21, 2014).

³⁹⁸ These prediction challenges are not isolated to the financial world. For example, in the aftermath of the Challenger shuttle disaster, Nobel Laureate Richard Feynman famously challenged NASA's probability of total failure of a space shuttle mission, which was purportedly 1 in 100,000. While challenging the mathematical rigor of that determination, he noted that

The 2012 Summary Report found that building risk models for “very infrequent, but high impact events is very much an art,”³⁹⁹ and that financial holding companies had very different approaches to quantifying those risks.⁴⁰⁰ According to the special review, for example, both Morgan Stanley and JPMorgan assumed that the maximum dollar loss for a power plant that experienced a catastrophic event was simply the value of the facility itself, without adding in costs reflecting such factors as loss of life, property damage, or legal expenses.⁴⁰¹ The special review determined that Goldman Sachs had developed a power plant destruction loss model, but it, too, had an upper bound limited to the current value of its most valuable power plant. The special review noted that Bank of America had no total loss model for its commodity activities at all.⁴⁰²

In addition to upper bounds that were set too low, the special review found that financial holding company model assumptions tended to be “aggressive” and resulted in “lower capital levels than would be for a stand alone entity.”⁴⁰³ For example, the review found that JPMorgan had determined that an oil spill into water would cause the largest potential single loss to the firm of all of its physical commodities businesses, and estimated that the maximum oil spill loss would be \$497 million.⁴⁰⁴ According to the special review, JPMorgan then applied “diversification benefits” and other assumptions to reduce its estimated capital exposure from \$497 million to about \$50 million.⁴⁰⁵ The final capital calculation was, thus, one tenth of the original loss estimate. In another case involving Bank of America, the special review found that its stand alone capital for its commodity activities was approximately \$208 million, with no capital at all allocated for a catastrophic loss.⁴⁰⁶

The 2012 Summary Report summarized the problems with managing catastrophic risks as follows:

“Modeling for the tail risk or maximum loss for a broad range of physical commodities activities such as power generation, transportation and refining are difficult to measure and potentially

some engineers had numbers suggesting failure rates more along the lines of 1 in 200. “Personal observations on the reliability of the shuttle,” Richard Feynman, (6/6/1986), <http://science.ksc.nasa.gov/shuttle/missions/51-l/docs/rogers-commission/Appendix-F.txt>.

³⁹⁹ 2012 Summary Report, FRB-PSI-200493 [sealed exhibit].

⁴⁰⁰ Id.

⁴⁰¹ Id.

⁴⁰² Id.

⁴⁰³ Id..

⁴⁰⁴ Id. at 494.

⁴⁰⁵ Id. at 493. This \$50 million figure stands in sharp contrast to the over \$40 billion in losses suffered by BP as a result of the Deepwater Horizon oil spill. See 2013 “Annual Report and Form 20-F 2013,” prepared by BP, BP website, http://www.bp.com/content/dam/bp/pdf/investors/BP_Annual_Report_and_Form_20F_2013.pdf.

⁴⁰⁶ 2012 Summary Report, at FRB-PSI-200493 [sealed exhibit].

inadequately capitalized under current framework. Practices for measuring stress loss are highly disparate [a]cross firms. Use of traditional BHC [Bank Holding Company] financial risk measure processes and techniques do not appear to be appropriate for Physical Commodity Activities.”⁴⁰⁷

In short, the report found that financial holding companies were not identifying or quantifying catastrophic event risks in a standard or appropriate way, and most were clearly underappreciating such risks.

Market and Valuation Risks. The Commodities Team found similar problems with how financial holding companies valued their physical commodities and associated facilities for purposes of calculating their market risk. Market risk is the “risk due to factors that affect the overall performance of the financial markets.”⁴⁰⁸ It depends upon accurate asset valuations, which are central to calculating appropriate levels of insurance and capital. The 2012 Summary Report determined that the financial holding companies were using a variety of valuation methods, many of which contained significant flaws.

The 2012 Summary Report found, for example, that the financial holding companies were using different valuation methods in different settings for the same physical commodity assets, leading to the use of one valuation method for the company’s internal metrics, another for their capital calculations, and perhaps another for their public reporting. The report determined that the different valuation methods could lead to profit and loss figures that varied significantly from revenues reported to the public under Generally Accepted Accounting Principles (GAAP).⁴⁰⁹ The 2012 Summary Report found that, in some cases, this variance exceeded \$1 billion.⁴¹⁰

The 2012 Summary Report provided an example involving oil cargoes. It found that, for its internal performance metrics, Morgan Stanley valued its oil cargoes at the highest price available at any port in the world minus the transportation cost of getting it to its final destination.⁴¹¹ By contrast, the report found that, under GAAP, the bank was required to value its oil cargoes using spot market prices.⁴¹² The Summary Report noted that JPMorgan took a more conservative approach, valuing its oil cargoes at the lowest observed destination price for its internal performance metrics, and using the lower of cost or market prices for its financial reporting under GAAP.⁴¹³ These different

⁴⁰⁷ Id. at 481.

⁴⁰⁸ 2014 “Market Risk,” Investopedia website, <http://www.investopedia.com/terms/m/marketrisk.asp>.

⁴⁰⁹ 2012 Summary Report, FRB-PSI-200501 - 502 [sealed exhibit].

⁴¹⁰ Id. at 495.

⁴¹¹ Id.

⁴¹² Id.

⁴¹³ Id.

approaches led to very different cargo values for purposes of calculating capital and market risk, with lower cargo values resulting in less capital.

Similarly, when looking at how the banks valued oil when held in storage, the 2012 Summary Report found very different approaches. It determined that Morgan Stanley used a basket of calendar spread options to calculate the value of its stored oil; JPMorgan used a model based on the intrinsic value of the highest calendar spread for the oil; and Bank of America used a Monte Carlo simulation of an option.⁴¹⁴ Again, the three approaches produced different dollar values, with different consequences for capital and market risk management calculations.

In a third analysis, the 2012 Summary Report found that the financial holding companies varied somewhat in how they valued physical equipment, such as power plants. It determined that most held the plants on their books as an investment at cost, and used tolling agreements to capture the ongoing economic value. Tolling agreements typically capture the value of the spread between a plant's output (electricity) and its fuel inputs (coal or gas). The 2012 Summary Report determined that, while this approach provided a liquid derivative representation of an illiquid, hard-to-value asset, this method of valuation also had weaknesses that would not be reflected in stress tests.⁴¹⁵ For example, depending upon how a tolling agreement is worded, a bank may have to make payments to buy output from a power plant that isn't producing any power, or have to buy all of the production of a facility whose output is no longer valuable. In addition, the derivatives-based valuation models might not accurately reflect the nature of the market risks and price variability associated with specific physical commodity activities.

Placing accurate values on power plants, tolling agreements, and lease arrangements are critical to financial holding companies setting adequate insurance and capital levels. The 2012 Summary Report warned, however, that the valuation techniques being used by financial holding companies for their physical commodity activities were not consistent, comprehensive, or reliable.

Reputational Risk. In addition to catastrophic, market, and valuation risks, the Commodities Team examined reputational risks associated with physical commodity activities. The 2012 Summary Report identified two types of reputational risks associated with physical commodities activities, those associated with allegations of price manipulation and those associated with being pressured to pay for an affiliate's losses.

⁴¹⁴ Id. at 496.

⁴¹⁵ Id. at 493, 496.

The first type of reputation risk involved the risk of being accused of misusing physical commodity activities to engage in price manipulation:

“Having access to physical markets gives the firms access to supply/demand information that is reportedly vital to running a profitable global commodities business. Many of these physical activities involve warehousing and storing commodity products, and therefore the control of the supply of certain commodities in specific geographic regions, which raises the potential for price manipulation issues.”⁴¹⁶

The report stated: “In the past few years, all the banks involved in these markets have been accused and/or charged of manipulating markets.”⁴¹⁷

The report’s analysis indicated that financial holding companies conducting physical commodity activities opened themselves up to charges of being engaged in market or price manipulation. Banks that avoided physical commodity activities were less vulnerable to those types of allegations. The analysis also identified two different aspects of price manipulation allegations, accusations regarding misusing inside information to make profitable trades, and accusations regarding the improper manipulation of supplies to affect commodity prices.

Suspicious related to misuse of non-public information arise from the fact that financial holding companies conducting commodity trades are simultaneously privy to commodity decisions being made by numerous clients, some of which may be important market participants. In addition, financial holding companies operating warehouses, pipelines, or shipping businesses gain access to non-public information that can be used to make profitable trading decisions. While commodity laws traditionally have not barred the use of non-public information in the same way as securities laws, concerns about unfair trading advantages deepen when the trader is a large financial institution with access to non-public information about numerous clients as well as its own extensive commodity activities.

A related concern is when financial holding companies operate businesses that can directly affect market supplies at the same time they are trading commodity-related financial instruments on exchanges or over the counter. Cancelling warrants that lengthen a warehouse queue, causing congestion in electricity markets, or supplying copper to an

⁴¹⁶ Id. at 492.

⁴¹⁷ Id.

exchange traded fund are actions that can and have elicited charges of market manipulation.⁴¹⁸

In recent years, banks and their holding companies have settled allegations of price manipulation by paying substantial fines and legal fees. For example, in July 2013, JPMorgan paid \$410 million to settle charges by the Federal Energy Regulatory Commission (FERC) that the bank had manipulated electricity markets in California and the Midwest, as further described below.⁴¹⁹ In January 2013, Deutsche Bank paid \$1.6 million to settle FERC price manipulation charges that, in 2010, it had “engag[ed] in a scheme in which [the bank] entered into physical transactions to benefit its financial position,” including by making physical electricity trades to offset losses in electricity-related financial instruments held by the bank.⁴²⁰ Also in 2013, Barclays Bank contested charges by FERC imposing a \$453 million civil penalty on the bank for “manipulating electric energy prices in California and other western markets between November 2006 and December 2008.”⁴²¹ Banks have also been accused by regulators⁴²² and plaintiffs⁴²³ of rigging metals markets as well.

The 2012 Summary Report warned: “Reputational risks can be significant with frequent occurrences and accusations of pricing manipulation.”⁴²⁴ What the Summary Report failed also to acknowledge is that price manipulation is not just a matter of reputational risk, but an increasing area of actual misconduct by bank holding companies leading to civil and criminal proceedings, violations of law, substantial fines, and enormous legal fees. The Summary Report contained little analysis and no recommendations on how regulators should oversee or manage the conflicts of interest inherent in a financial holding company that

⁴¹⁸ See, e.g., *In re Deutsche Bank Energy Trading, LLC*, FERC Case No. IN12-4-000, Order Approving Stipulation and Consent Agreement, (1/22/2013), 142 FERC at ¶ 61,056, <http://www.ferc.gov/EventCalendar/Files/20130122124910-IN12-4-000.pdf>; *Superior Extrusion v. Goldman Sachs*, (USDC ED Mich.), Complaint, (8/1/2013), at ¶¶ 3, 6, 11.

⁴¹⁹ 7/30/2013 FERC press release, “JP Morgan Unit Agree to \$410 Million in Penalties, Disgorgement to Ratepayers,” <http://www.ferc.gov/media/news-releases/2013/2013-3/07-30-13.asp#.VDVXWKPD9aQ>.

⁴²⁰ 1/22/2013 FERC press release, “FERC Approves Market Manipulation Settlement with Deutsche Bank,” <http://www.ferc.gov/media/news-releases/2013/2013-1/01-22-13.asp>; *In re Deutsche Bank Energy Trading, LLC*, FERC Case No. IN12-4-000, Order Approving Stipulation and Consent Agreement, (1/22/2013), 142 FERC at ¶ 61,056, <http://www.ferc.gov/EventCalendar/Files/20130122124910-IN12-4-000.pdf>.

⁴²¹ 7/16/2013 FERC press release, “FERC Orders \$453 Million in Penalties for Western Power Market Manipulation,” <http://www.ferc.gov/media/news-releases/2013/2013-3/07-16-13.asp#.VDFvelfdVu0>.

⁴²² See, e.g., “Metals, Currency Rigging Is Worse Than Libor, Bafin Says,” Bloomberg, Karin Matussek and Oliver Suess, (1/17/2014), <http://www.bloomberg.com/news/2014-01-16/metals-currency-rigging-worse-than-libor-bafin-s-koenig-says.html>. (quoting Elke Koenig, the top financial regulator in Germany).

⁴²³ See, e.g., *Nicholson v. The Bank of Nova Scotia et al*, Case No. 14cv05682 (USDC SD NY), (7/25/2014).

⁴²⁴ 2012 Summary Report, FRB-PSI-200477-510, at 482 [sealed exhibit].

engages simultaneously in commodities trading and physical commodity activities like storing, transporting, or supplying commodities.

The 2012 Summary Report identified a second, very different type of reputational risk that arises when a financial holding company comes under pressure, for reputational reasons, to provide financial support for an affiliate or other party that has suffered significant losses or is suspected of misconduct. The 2012 Summary Report highlighted as an example BP's decision to pay damages associated with the Deepwater Horizon oil spill.⁴²⁵ The same risk was evident in the financial crisis when, for reputational reasons, firms like Bear Stearns and State Street Bank assumed significant financial obligations incurred by hedge funds with which they were associated but had no direct legal responsibility.⁴²⁶

The 2012 Summary Report expressed the opinion that financial holding companies did not adequately appreciate the reputational risks arising from their involvement with physical commodity activities.⁴²⁷

(c) Evaluating Risk Management and Mitigation Practices

After identifying multiple risks associated with physical commodity activities, the 2012 Summary Report discussed ways in which some financial holding companies attempted to manage and mitigate those risks. The analysis focused in particular on legal structures, use of third-party vendors, insurance, and capital buffers.

Legal Structures. The 2012 Summary Report found that one of the primary ways that financial holding companies sought to limit their risk for physical commodity activities was by creating separate legal structures to conduct the activities.⁴²⁸ For example, the report found that Goldman Sachs typically purchased companies that engaged in power generation, rather than purchased the physical power generation assets directly, in part to shield itself from liability for activities at the power plant.⁴²⁹ Similarly, the report found that Goldman Sachs avoided "overt control of its coal mine business," by using a subsidiary as the direct

⁴²⁵ Id. at 482, 492.

⁴²⁶ See 1/2011 "Crisis Inquiry Report: Final Report of the National Commission on the Causes of the Financial and Economic Crisis in the United States," prepared by the Financial Crisis Inquiry Commission, at 286, http://cybercemetery.unt.edu/archive/fcic/20110310173545/http://c0182732.cdn1.cloudfiles.rackspacelcloud.com/fcic_final_report_full.pdf (explaining how the failure of two Bear Stearns funds led to the government bailout of the firm itself). See also "Test Case on the Charles," Raj Date, Cambridge Winter Center for Financial Institutions Policy (6/12/2010), http://www.cambridgewinter.org/Cambridge_Winter/Archives/Entries/2010/6/12_TEST_CASE_ON_THE_CHARLES_files/state%20street%20volcker%20061210.pdf (explaining how State Street bailed out funds that it managed, but then itself needed aid via several taxpayer-backed programs).

⁴²⁷ 2012 Summary Report, at FRB-PSI-200492.

⁴²⁸ Id. at 488.

⁴²⁹ Id. at 489.

owner and by not hedging its underlying coal exposures, in an attempt to demonstrate the legal distinction between the financial holding company and its affiliate.⁴³⁰

The 2012 Summary Report raised a number of questions about the effectiveness of this approach. It stated:

“There is no available historical precedent to support ... the effectiveness of the ‘legal structure’ mitigation strategy, rather there have been cases where a company using third part[y] vendors was itself held liable for environmental damage.

There have been cases where firms, due for example to action of their employees which damaged legal protections, have been held legally liable for fines and damages (e.g. the firm Total was held responsible for the spill of oil on a ship it did not own due to not following internal policies). ...

The integrity of legal structures cannot be guaranteed as firms could be compelled for reputational or other reasons to cover damages from an event such as in the Deepwater Horizon incident when BP incurred losses even though they were not the operator.”⁴³¹

In addition, financial holding companies using subsidiaries to conduct physical commodity activities are exposed to a “Catch-22” legal problem.⁴³² On the one hand, if the firm seeks to actively mitigate the risks associated with the physical commodity activities by exerting control over the subsidiary’s management or operations, its actions will increase the connections between the parent and the subsidiary and increase the likelihood that any future liability incurred by the subsidiary will be imputed to the parent, facilitating the piercing of the legal distinctions between the two corporate entities. On the other hand, if the firm does not exert control over the subsidiary’s management or operations, then its subsidiary may incur greater risk, which may or may not ultimately flow back as liabilities to the parent.⁴³³

⁴³⁰ Id.

⁴³¹ Id.

⁴³² “Catch -22,” Merriam-Webster Online Dictionary, <http://www.merriam-webster.com/dictionary/catch-22>, (defines “catch-22” as “a problematic situation for which the only solution is denied by a circumstance inherent in the problem or by a rule”). The term was first introduced in a book entitled, *Catch-22*, written by Joseph Heller.

⁴³³ As the Federal Reserve’s recent rulemaking action examining bank involvement with physical commodity activities put it: “[C]urrent management techniques designed to mitigate risks, such as frequent monitoring of risk, requirements to restrict the age of transport vessels, and review of disaster plans of third-party transporters, may have the unintended effect of increasing the potential that the [financial holding company] may become enmeshed in or liable to some degree from a catastrophic event.” “Complementary Activities, Merchant Banking Activities, and Other Activities of Financial Holding Companies Related to Physical Commodities,” 79 Fed. Reg. 13, 3329, 3332, prepared by the Federal Reserve, (daily ed. Jan. 21, 2014).

This tension may be further exacerbated if the subsidiary is held as a merchant banking investment, which bars the financial company from routinely managing the portfolio company.⁴³⁴

While creating separate legal structures may help minimize some of the risks that could flow back to a financial holding company or its other affiliates, the 2012 Summary Report found that strategy did not ensure financial holding companies would be protected from risk.⁴³⁵

Third Party Operators. A related mitigation strategy used by some financial holding companies to avoid potential liabilities involved outsourcing key functions in physical commodities activities to unrelated third parties. This strategy included, for example, hiring a third party contractor to run a power plant or operate an oil tanker. The 2012 Summary Report raised questions about the efficacy of this strategy, noting that “there have been cases where a company using third part[y] vendors was itself held liable for environmental damage.”⁴³⁶ The report also observed that BP was found responsible for the Deepwater Horizon oil spill despite the fact that BP was not the legal operator of the oil rig and had hired a third party to run it.⁴³⁷ The report further noted that some financial holding companies exercised ongoing oversight of their third party vendors, raising the same concerns associated with a subsidiary – that extensive oversight could also lead to greater liability in the event of a disaster or misconduct.

The 2012 Summary Report concluded: “Vendor Management practices for physical commodities need[] to be improved.”⁴³⁸ After describing several problems, the Summary Report noted: “Current corporate policies do not readily address the unique relationship and dependency of physical commodities activities with vendors.”⁴³⁹

Insurance. Another mitigation strategy examined by the 2012 Summary Report was the use of different types and levels of insurance by the financial holding companies. The 2012 Summary Report questioned the usefulness of this mitigation strategy, after its research determined that “[i]nsurance companies reportedly will not insure the full event loss due to their inability to measure the maximum potential loss.”⁴⁴⁰

⁴³⁴ Merchant Banking Rule, 66 Fed. Reg. 8466 (1/31/2001), codified at 12 C.F.R. Part 225, Subpart J.

⁴³⁵ 2012 Summary Report, at FRB-PSI-200489 [sealed exhibit]. See also “Complementary Activities, Merchant Banking Activities, and Other Activities of Financial Holding Companies Related to Physical Commodities,” prepared by Federal Reserve, 79 Fed. Reg. 13, 3329 (daily ed. Jan. 21, 2014).

⁴³⁶ 2012 Summary Report, at FRB-PSI-200489 [sealed exhibit].

⁴³⁷ *Id.*

⁴³⁸ *Id.* at 490.

⁴³⁹ *Id.*

⁴⁴⁰ *Id.* at 481.

The 2012 Summary Report found that all financial companies retained some form of insurance for their physical commodity activities and that “[i]nsurance practices [we]re generally similar among firms.”⁴⁴¹ At the same time, of the institutions whose insurance was reviewed, Bank of America, Barclays, Goldman Sachs, JPMorgan, and Morgan Stanley, the Summary Report found significant variations in the levels of insurance coverage obtained for commodity-related activities.⁴⁴²

In addition, the 2012 Summary Report found that the insurance coverage at the financial holding companies examined appeared to be insufficient. It noted that “[p]hysical commodities is a notoriously fat-tailed business with [the] insurer only covering limited losses for some risks.”⁴⁴³ The 2012 Summary Report found that “[i]n all cases ... insurance for ... catastrophic events is capped at a certain level (typically US \$1 billion) and firms cannot cover any amount beyond the cap through insurance.”⁴⁴⁴ It also noted that the financial holding companies used “aggressive assumptions” to minimize estimated losses from a catastrophic event,⁴⁴⁵ and found that, when comparing capital and insurance reserves against estimated costs associated with “extreme loss scenarios,” “the potential loss exceeds capital and insurance” by billions of dollars.⁴⁴⁶

The 2012 Summary Report concluded that, in the event of a multi-billion-dollar catastrophe such as a major oil spill, insurance would not protect a financial holding company from significant costs.

Capital. A final mitigation strategy examined by the 2012 Summary Report was the extent to which financial holding companies conducting physical commodity activities held additional capital to cover potential losses stemming from those activities. The Summary Report noted that capital can provide significant loss absorption capacity and is a critical component in risk mitigation and bank regulation, but also concluded that “current levels of capital appear insufficient to protect against a maximum loss potential.”⁴⁴⁷

Federal regulations establish several methods for financial holding companies to calculate the amount of capital they need, with the amount based in part on the value and riskiness of the activities it undertakes.⁴⁴⁸

⁴⁴¹ Id. at 491.

⁴⁴² Id.

⁴⁴³ Id. at 509. See also id. at 500 (noting that insurance companies “do not have comfortable ways to assess the tail risk and thus avoid insuring the tails” for catastrophic events, such as multi-billion dollar oil spills).

⁴⁴⁴ Id. at 491.

⁴⁴⁵ Id. at 493 - 494.

⁴⁴⁶ Id. at 498, 509. The 2012 Summary Report also noted that commercial firms engaged in oil and gas businesses had a capital ratio of 42%, while bank holding company subsidiaries had a capital ratio of, on average, 8% to 10%. Id. at 499.

⁴⁴⁷ Id. at 481.

⁴⁴⁸ See, e.g., 77 Fed. Reg. 53059 (2012).

The 2012 Summary Report raised concerns about how assets were being valued for capital calculation purposes, whether some assets were being excluded, and how the capital rules were being applied. The report noted, for example, that “applying capital allocation methods that are based on financial mark-to-market methodologies to physical activities leads to considerably lower capital ratios than methods used by non-financial firms engaged in the same businesses.”⁴⁴⁹ The Commodities Team also noted that non-financial firms engaged in similar physical commodity activities were funded with a capital ratio of about 42%, whereas the subsidiaries of financial holding companies engaged in those activities had a capital ratio of roughly 8-10%.⁴⁵⁰ This wide disparity was found to exist across multiple physical commodity activities including liquid pipelines, natural gas facilities, and electrical power operations.⁴⁵¹

The 2012 Summary Report also highlighted weaknesses in the capital allocations for certain physical commodities activities. After examining how oil and gas were valued during storage and transportation, as well as how transportation, storage, and power generation facilities themselves were valued, the Commodities Team found inappropriate valuation methods and significant gaps in capital charges. For example, the report noted that, while commodity-related hedges may show up in Value-at-Risk measures, underlying leases or tolling agreements may incur no capital charge at all.⁴⁵²

The 2012 Summary Report concluded: “Current levels of capital appear insufficient to protect against a maximum loss potential – on a stand alone basis.”⁴⁵³ In addition, it found that four major financial holding companies, Bank of America, Goldman Sachs, JPMorgan, and Morgan Stanley, had insufficient capital, even when enhanced with insurance, to cover losses associated with an extreme loss scenario, such as the Exxon Valdez oil spill, the Environmental Protection Agency’s Oil Spill Loss Model, or the Deepwater Horizon oil spill event.⁴⁵⁴ Put another way, the report determined that the financial holding companies could incur significant net losses far in excess of their insurance and capital loss absorption capabilities in the event of a catastrophic event.

Prudential Limits. One mitigation strategy discussed in the Summary Report involves financial holding company compliance with the prudential limits put in place by regulators to restrict the size of their physical commodity activities. As discussed earlier, the Federal Reserve granted complementary authority to financial holding companies

⁴⁴⁹ 2012 Summary Report, at FRB-PSI-200499.

⁴⁵⁰ Id. at 499, 507.

⁴⁵¹ Id. at 499.

⁴⁵² Id. at 501 - 502.

⁴⁵³ Id. at 481.

⁴⁵⁴ Id. at 498.

conditioned upon their limiting the resulting physical commodity activities to less than 5% of their Tier 1 capital. The Gramm-Leach-Bliley Act imposed a cap on grandfathered activities, using a much higher limit equal to 5% of the financial holding company's consolidated assets. Separately, the Office of the Comptroller of the Currency imposed caps on the amount of certain physical commodities that can be held in a national bank.

As more fully explained below, those limits have been subject to various interpretations that have undermined their collective ability to ensure the safety and soundness of the banks and holding companies engaged in the physical commodity activities. One key problem is that the limits have not been considered, applied, or enforced in an integrated fashion.⁴⁵⁵ In addition, some financial holding companies have excluded major categories of commodity-related assets or used dubious valuation methods when calculating compliance with some of the limits.⁴⁵⁶ The 2012 Summary Report noted, for example, that JPMorgan had booked "significant amounts of base metals in the national bank entity," and did not include those holdings when calculating the financial holding company's compliance with the 5% limit on its complementary activities, noting that, in September 2012, the financial holding company hit "an all time high in physical holdings."⁴⁵⁷

In response, the 2012 Summary Report indicated that work was being done to develop a standard approach for valuing assets and called for better disclosures by financial holding companies to track compliance with the size limits.⁴⁵⁸ At the same time, the Summary Report failed to discuss better integration or enforcement of existing size limits, or whether the limits themselves needed to be improved.

(d) Recommendations

In addition to identifying key risks and evaluating mitigation strategies, the 2012 Summary Report offered a number of recommendations to strengthen Federal Reserve oversight of financial holding company involvement with physical commodities. Those recommendations were as follows:

“—While action on the 4o authority is still open, BHCs [bank holding companies] will be able to conduct physical commodity

⁴⁵⁵ See 4/16/2014 comment letter from Subcommittee Chairman Carl Levin to Federal Reserve, “Advanced Notice of Proposed Rulemaking Related to Physical Commodities Docket No. 1479 and RIN 7100 AE-10,” (hereinafter “Senator Levin Comment Letter”), http://www.federalreserve.gov/SECRS/2014/April/20140417/R-1479/R-1479_041614_124566_481901422162_1.pdf.

⁴⁵⁶ See discussion of JPMorgan involvement with size limits, below.

⁴⁵⁷ 2012 Summary Report, at FRB-PSI-200506.

⁴⁵⁸ *Id.* at 484.

activities under the 4k permissibility/authority and Merchant Banking.

- Action points include closer monitoring, strengthen the 4k through the applications process, higher capital.
- Commodity businesses should be looked at in a stand-alone capacity, capital levels should be aligned to cover maximum potential loss with a buffer.
- If it was not part of the BHC what amount of capital would be needed as a viable entity. ...
- Firms are utilizing operating leases to extract economic value with minimal capital charge – propose a way to capitalize these leasing arrangement[s] as would be if treated under capital leasing[.]
- Increase capital requirement for physical commodities activity – which could include[:]
- o Eliminate the diversification benefit for ops risk capital and assign a loss probability equal to the term of the lease and not a one year period or longer.
- o Add a specific risk charge – account for the unique nature of these assets[.]
- o Treat operating leases as capital lease[s] and back ‘on the balance sheet[.]’
- Improve corporate risk governance on physical commodities activities and strengthen stress testing practices[.]
- Require formal reporting of physical commodities exposures such as 9YC, 15A and 14Q and 5% tier 1 capital limit[.]
- Greater definition of regulatory permissibility.”⁴⁵⁹

The Federal Reserve told the Subcommittee that these recommendations were reviewed by senior Federal Reserve managers, but were not submitted directly to any member of the Federal Reserve Board of Governors.⁴⁶⁰ According to Federal Reserve representatives, the recommendations were “integral” to the Federal Reserve Board’s decision to reconsider its position on financial holding company involvement with physical commodities and one of many factors that led to its decision to request public comment on whether new regulations

⁴⁵⁹ Id. at 483 - 484.

⁴⁶⁰ Subcommittee briefing by the Federal Reserve (10/8/2014).

should be issued.⁴⁶¹ Two years after the recommendations were made, however, the Federal Reserve declined to identify for the Subcommittee any that had actually been implemented.⁴⁶²

C. Taking Steps to Limit Physical Commodity Activities, 2009-Present

Since 2008, instead of allowing financial holding companies to continue to expand their involvement with physical commodities, the Federal Reserve has begun to take steps to curb high risk physical commodity activities at financial holding companies, including by halting previously permitted activities, denying or delaying requests for expanded activities, and adopting changes to capital rules that increase protections against commodities-related risks. In addition, earlier this year, the Federal Reserve sought public comment on whether it should propose new regulatory limits on banks' physical commodities activities.⁴⁶³

(1) Denying Applications

After ten years of granting financial holding company applications to engage in an increasingly broad range of physical commodity activities, beginning in 2010, the Federal Reserve began to deny some requests for expanded commodity activities.

Illiquid Oil Products. One of the first examples of this shift involved the Federal Reserve's denial of a request by JPMorgan to trade certain oil-based products known as asphalt, Canadian or CAD condensate, cutter stock, straight run fuel oil, and marine diesel.⁴⁶⁴ These oil products, which are distilled from crude oil at refineries, are traded in relatively small volumes in less liquid markets, compared to crude oil.⁴⁶⁵ JPMorgan had acquired small stocks of them when, in 2010, it acquired physical commodity assets from RBS Semptra, a joint venture between the Royal Bank of Scotland (RBS) and a U.S. company known as Semptra Energy.⁴⁶⁶ At the request of RBS, the Federal Reserve had issued a 2008 complementary order allowing RBS and RBS

⁴⁶¹ Id.

⁴⁶² Id.

⁴⁶³ See "Complementary Activities, Merchant Banking Activities, and Other Activities of Financial Holding Companies Related to Physical Commodities," prepared by Federal Reserve, 79 Fed. Reg. 13, 3329 (daily ed. Jan. 21, 2014).

⁴⁶⁴ 2012 Summary Report, at FRB-PSI-200505.

⁴⁶⁵ See 4/18/2011 memorandum by the Federal Reserve Commodities Team, "JPMC Asphalt, Cutter Stock, Fuel [O]il, Marine Diesel and CAD Condensate Trading Approval Application," FRB-PSI-300323 - 325, at 324.

⁴⁶⁶ See 7/1/2010 JPMorgan press release, "J.P. Morgan completes commodities acquisition from RBS Semptra," https://www.jpmorgan.com/cm/cs?pagename=JPM_redesign/JPM_Content_C/Generic_Detail_Page_Template&cid=1277505237241.

Sempra Commodities to buy and sell those oil products, even though they were not approved by the CFTC for trading on an exchange.⁴⁶⁷

In August 2010, JPMorgan filed an application with the Federal Reserve for permission to trade the same oil products as RBS Sempra Commodities.⁴⁶⁸ To support its request, JPMorgan stated in its filing that it “incorporate[d] herein by reference the considerations that the Board cited in the RBS Order with respect to the Proposed Commodities.”⁴⁶⁹ In October 2010, the Federal Reserve asked JPMorgan to provide additional information demonstrating that the oil products retained the “attributes of price transparency, fungibility, and liquidity” that they possessed in 2008, including information about where and how the commodities were traded.⁴⁷⁰ JPMorgan responded ten days later.⁴⁷¹ In April 2011, the Federal Reserve Commodities Team conducting the special review of financial holding company involvement with physical commodities provided an analysis indicating that only one of the oil products, CAD condensate, had “all of the necessary characteristics for permissibility.”⁴⁷² It recommended against approving the trading of the other oil products, due to their illiquidity and lack of a futures market, and recommended maintaining the same limit on CAD condensate trading that already applied to JPMorgan’s affiliate JPMC Energy Ventures.⁴⁷³ After that analysis, the Federal Reserve sought and received additional information from JPMorgan regarding each of the oil products.⁴⁷⁴ In August 2012, after it had become clear that the Federal Reserve would deny the request, JPMorgan withdrew its application to trade the oil products.⁴⁷⁵

The decision of the Federal Reserve not to approve JPMorgan’s trading request, which took two years to finalize, is one of the first instances of the Federal Reserve reversing an earlier grant of authority to engage in an otherwise impermissible commodity activity.

⁴⁶⁷ RBS Order, at C60.

⁴⁶⁸ 8/18/2010 “Notice to the Board of Governors of the Federal Reserve System by JPMorgan Chase & Co. Pursuant to Section 4(k)(1)(B) of the Bank Holding Company Act of 1956, as amended, and 12 C.F.R. §225.89,” FRB-PSI-301641 - 644, at 641.

⁴⁶⁹ *Id.* at 643.

⁴⁷⁰ 10/18/2010 letter from the Federal Reserve Bank of New York to JPMorgan, FRB-PSI-301650 - 651 [sealed exhibit].

⁴⁷¹ 10/28/2010 letter from JPMorgan to the Federal Reserve Bank of New York, “JPM Chase Request for Additional Information,” FRB-PSI-301653 - 663.

⁴⁷² 4/18/2011 memorandum by the Federal Reserve Commodities Team, “JPMC Asphalt, Cutter Stock, Fuel [O]il, Marine Diesel and CAD Condensate Trading Approval Application,” FRB-PSI-300323 - 325.

⁴⁷³ *Id.* at 325.

⁴⁷⁴ See, e.g., 12/2/2011 email from JPMorgan to the Federal Reserve, with attachment, “Additional Commodities,” FRB-PSI-301666 - 670; undated submission from JPMorgan to the Federal Reserve, “Responses to Requests for Additional Information,” FRB-PSI-300311 - 313.

⁴⁷⁵ 8/7/2012 letter from JPMorgan to the Federal Reserve Bank of New York, “Notice Regarding Application for Relief in Connection with Complementary Authority,” FRB-PSI-301056; 8/9/2012 letter from the Federal Reserve Bank of New York to JPMorgan, FRB-PSI-301676; Subcommittee briefing by the Federal Reserve (12/13/2013).

Warehouse Business. A second example of the Federal Reserve's shift to a more restrictive interpretation of permissible commodities activities involves the Federal Reserve's review of JPMorgan's request to own and operate Henry Bath & Son Ltd. Henry Bath is a U.K. company that operates a global network of warehouses that store commodities traded on the London Metal Exchange (LME), including copper, aluminum, nickel, tin, lead, zinc and steel billet.⁴⁷⁶ Its operations include warehouse services for commodities traded on the LME, NYSE Liffe or ICE Futures US,⁴⁷⁷ as well as off-warrant stocks.⁴⁷⁸

As explained earlier, on July 1, 2010, as part of a larger acquisition from RBS Semptra, JPMorgan acquired Henry Bath. Under the Bank Holding Company Act, JPMorgan then had a two-year grace period to: (1) divest its ownership, (2) obtain a "complementary" order, or (3) conform the investment to comply with merchant banking restrictions.⁴⁷⁹ At first, JPMorgan sought a complementary order to own and operate the Henry Bath warehouses,⁴⁸⁰ but in 2011, the Federal Reserve indicated it would deny the request,⁴⁸¹ and JPMorgan withdrew it.⁴⁸² On June 29, 2012, the day before its grace period lapsed, the bank sought a one-year extension from the Federal Reserve so that it could bring the investment into compliance with its merchant banking authority.⁴⁸³ Several months later, the Federal Reserve indicated that JPMorgan could not hold Henry Bath as a merchant banking investment,⁴⁸⁴ and gave JPMorgan a one-year extension to July 2013, on the understanding that JPMorgan would use the time to sell the company.⁴⁸⁵ In May 2013,

⁴⁷⁶ 9/10/2013 letter from JPMorgan legal counsel to the Subcommittee, "JPMorgan Chase & Co's Sixth Response to January 11, 2013 Questionnaire," PSI-JPMorganChase-06-000001 - 013, at 005.

⁴⁷⁷ *Id.*

⁴⁷⁸ *Id.*

⁴⁷⁹ See undated "Merchant Banking Investment in Henry Bath," prepared by JPMorgan for the Federal Reserve, FRB-PSI-000580 - 582, at 580.

⁴⁸⁰ 6/8/2011 letter from JPMorgan legal counsel to Federal Reserve Bank of New York, FRB-PSI-300977 - 1052.

⁴⁸¹ See 2012 Summary Report, at FRB-PSI-200505 (stating the Federal Reserve "[r]ejected" the JPMorgan application "to hold Henry Bath metals storage facility as 4(k) complementary activity"); Subcommittee briefing by JPMorgan (4/23/2014).

⁴⁸² 10/26/2011 letter from JPMorgan legal counsel to Federal Reserve Bank of New York, "Notice Regarding LME Metals Warehousing," FRB-PSI-301636 - 637 (withdrawing request).

⁴⁸³ 6/29/2012 letter from JPMorgan to Federal Reserve Bank of New York, FRB-PSI-301061-062. In August, JPMorgan replaced that request with one for a three-year extension. 8/16/2012 letter from JPMorgan to Federal Reserve Bank of New York, FRB-PSI-300358 - 359. See also undated "Merchant Banking Investment in Henry Bath," prepared by JPMorgan for the Federal Reserve, FRB-PSI-000580 - 582.

⁴⁸⁴ See 10/3/2012 Summary Report, at FRB-PSI-200505 (stating the Federal Reserve had "[r]ejected" the JPMorgan application to hold Henry Bath metals storage facility "under Merchant Banking Authority"); Subcommittee briefing by Federal Reserve (11/27/2013).

⁴⁸⁵ 11/16/2012 letter from Federal Reserve to JPMorgan, FRB-PSI-300338 - 340 (granting extension to 7/1/2013); 10/31/2012 Federal Reserve memorandum, "Request by JPMorgan Chase & Company for an extension of time to divest or conform nonbanking activities," FRB-PSI-301525 - 531.

JPMorgan made a request for yet another year, and based upon its good faith efforts to sell the company, the Federal Reserve gave JPMorgan another year to divest the holding.⁴⁸⁶ In March 2014, JPMorgan reached an agreement to sell certain physical commodities assets, including Henry Bath, to the Swiss-based commodities and energy firm, Mercuria.⁴⁸⁷ That acquisition was finalized in October 2014.⁴⁸⁸

Other Requests. The Federal Reserve's new reluctance to approve expanded physical commodities activities was not confined to JPMorgan. It also rejected applications by Goldman Sachs and Morgan Stanley to trade physical iron ore.⁴⁸⁹ It also denied an application by Goldman Sachs for a joint venture sugar plant in Brazil.⁴⁹⁰

In addition, the Federal Reserve delayed making a decision on applications requesting approval of new physical commodity activities as complementary activities. Bank of America, for example, has had a complementary application pending since 2010.⁴⁹¹ In 2012, Toronto Dominion Bank submitted an application for complementary authority to engage in certain physical commodity activities involving natural gas, but withdrew it in 2014.⁴⁹²

More broadly, in July 2013, the Federal Reserve issued a public statement that it was reconsidering its previously permissive view of "complementary" orders: "The Federal Reserve regularly monitors the commodity activities of supervised firms and is reviewing the 2003 determination that certain commodity activities are complementary to financial activities and thus permissible for bank holding companies."⁴⁹³ That announcement, now over a year old, has not yet resulted in a

⁴⁸⁶ 7/11/2013 letter from the Federal Reserve to JPMorgan, FRB-PSI-301069 - 071.

⁴⁸⁷ Subcommittee briefing by Mercuria (9/12/2014). See also "JPMorgan sells physical commodities unit to Mercuria for \$3.5 billion," Reuters, Dmitry Zhdannikov and Chris Peters (3/19/2014), <http://www.reuters.com/article/2014/03/19/us-jpmorgan-mercuria-idUSBREA2I0LG20140319>.

⁴⁸⁸ See 10/3/2014 JPMorgan press release, "J.P. Morgan Completes Sales of Physical Commodities Assets,"

<http://investor.shareholder.com/jpmorganchase/releasedetail.cfm?ReleaseID=874514>.

⁴⁸⁹ 2012 Summary Report, at FRB-PSI-200505.

⁴⁹⁰ Id.

⁴⁹¹ 5/4/2010 letter from Bank of America legal counsel to Federal Reserve, "Section 4(k)(l)(B) Notification by Bank of America Corporation of Its Intention to Continue to Engage in Certain Physically-Settled Commodity Trading Activities and Related Activities, Engage in Energy Tolling Activities and Continue to Provide Certain Asset and Energy Management Services, through Certain Affiliates," FRB-PSI-500001 - 218 (providing notice of the bank's intent to engage in an expanded set of physical commodity activities as a result of its acquisition of Merrill Lynch); Subcommittee briefing by Federal Reserve (12/13/2013); 11/17/2014 email from Federal Reserve to Subcommittee, PSI-FRB-21-000001 - 002, at 001.

⁴⁹² 10/2/2012 letter from Toronto Dominion Bank legal counsel to Federal Reserve, "Notice by The Toronto-Dominion Bank to Engage in Commodity Trading Activities," FRB-PSI-500219 - 231; Subcommittee briefing by Federal Reserve (12/13/2013); 11/17/2014 email from Federal Reserve to Subcommittee, PSI-FRB-21-000001 - 002, at 001.

⁴⁹³ Federal Reserve statement to the *New York Times* (7/19/2013), copy provided by the Federal Reserve to the Subcommittee.

broader policy statement or regulatory proposals on how the Federal Reserve intends to interpret the Gramm-Leach-Bliley complementary authority.

(2) Using Other Means to Reconsider Physical Commodity Activities

In addition to taking a more restrictive approach to applications for expanded physical commodity activities, the Federal Reserve has signaled its intention to reconsider financial holding company involvement with physical commodities using other mechanisms to restrain physical commodity activities or reduce their attendant risks to the financial system, including through an ongoing study and regulatory actions.

Section 620 Study. In 2010, Congress enacted the Dodd-Frank Wall Street Reform and Consumer Protection Act. Section 620 of that Act, which was added to the legislation in an amendment sponsored by Senators Jeff Merkley and Carl Levin, requires federal banking regulators to conduct a review and prepare a report on “the activities that a banking entity may engage in under Federal and State law, including activities authorized by statute and by order, interpretation and guidance.”⁴⁹⁴ That study, which is ongoing, offers another mechanism to reconsider financial holding company involvement with physical commodities.

The sponsors of the Section 620 study have explained that it was intended to “address the risks to the banking system arising from ... longer-term instruments and related trading.”⁴⁹⁵ Specifically, Section 620:

“directs Federal banking regulators to sift through the assets, trading strategies, and other investments of banking entities to identify assets or activities that pose unacceptable risks to banks, even when held in longer-term accounts. Regulators are expected to apply the lessons of that analysis to tighten the range of investments and activities permissible for banking entities, whether they are at the insured depository institution or at an affiliate or subsidiary, and whether they are short or long term in nature.”⁴⁹⁶

It also directs the banking regulators to focus on “any financial, operational, managerial, or reputation risks associated with or presented

⁴⁹⁴ Section 620(a), Dodd-Frank Wall Street Reform and Consumer Protection Act, P.L. 111-203, codified at 12 U.S.C. §5301.

⁴⁹⁵ 156 Congressional Record S5870, S5895 (daily ed. July 15, 2010) (statement of Sen. Merkley).

⁴⁹⁶ *Id.*

as a result of the banking entity engaged in the activity or making the investment.”⁴⁹⁷

The 2012 Summary Report explicitly points to the Section 620 report as a possible mechanism for clarifying appropriate commodity-related activities for banks and financial holding companies.⁴⁹⁸ Other federal banking regulators have also indicated that physical commodities activities would be an appropriate topic for the Section 620 study and report. The report could be used by the Federal Reserve and OCC, for example, to coordinate their interpretations of permissible physical commodity activities, as well as appropriate safeguards to reduce risks, including their respective 5% limits on the size of physical commodity holdings. However, the report is nearly 3 years overdue,⁴⁹⁹ and there is no sign of when it may be completed.

(3) Changing the Rules

In addition to reconsidering financial holding company involvement with physical commodities by reconsidering its complementary orders and using the ongoing Section 620 study, the Federal Reserve is also making use of its regulatory authority. Recently, together with other federal regulators, the Federal Reserve issued new capital rules that, in part, addressed commodity-related concerns. In early 2014, the Federal Reserve also issued an advanced notice of proposed rulemaking soliciting public comment on whether it should take regulatory action to address a number of commodity-related issues.

Revising the Capital Rules. In December 2010, the Basel Committee on Banking Supervision proposed significant revisions to the international framework for regulating bank capital, often referred to as the Basel III proposal.⁵⁰⁰ The Basel III framework revised many of the mechanisms and criteria used to determine appropriate levels of capital for financial holding companies, including their commodities activities.⁵⁰¹ On July 2, 2013, the Federal Reserve adopted rules to implement the Basel III framework, and on July 9, 2013, the Office of

⁴⁹⁷ Section 620(a)(2)(B), Dodd-Frank Wall Street Reform and Consumer Protection Act, P.L. 111-203, codified at 12 U.S.C. §5301.

⁴⁹⁸ See 2012 Summary Report, at FRB-PSI-200506.

⁴⁹⁹ See Section 620(a)(1) of the Dodd-Frank Wall Street Reform and Consumer Protection Act, P.L. 111-203, codified at 12 U.S.C. 5301 (indicating study was to be finished in December 2011).

⁵⁰⁰ See 12/2010 Basel Committee on Banking Supervision report “Basel III: International framework for liquidity risk measurement, standards and monitoring,” <http://www.bis.org/publ/bcbis188.pdf>.

⁵⁰¹ See 12/2010 (revised 6/2011) Basel Committee on Banking Supervision report “Basel III: A global regulatory framework for more resilient banks and banking systems”, at 15, <http://www.bis.org/publ/bcbis189.pdf>.

the Comptroller of the Currency (OCC) and the Federal Deposit Insurance Corporation (FDIC) followed suit.⁵⁰²

The new capital rules directly affect how financial holding companies must account for their physical commodity activities. First, the Basel III framework made a number of changes to the risk weightings and capital calculations for assets held in a trading book. These changes, which were implemented in the new federal capital rules, generally can be viewed as marginally increasing capital requirements for both financial and physical commodity positions held as trading assets.⁵⁰³

The Basel III framework, and the corresponding U.S. implementing regulations, also require financial holding companies to maintain added capital to absorb the risk of counterparty defaults on a portfolio of OTC derivatives by requiring financial holding companies to make a credit valuation adjustment on a portfolio basis when calculating their capital requirements.⁵⁰⁴ This additional capital requirement may reduce the extent to which financial holding companies use OTC derivatives in their commodity activities.

In addition, the Basel III framework increased the risk weights for merchant banking equity exposures, imposing risk weights of 300%, 400%, or 600% on those holdings, depending in part upon whether the acquired equity was publicly traded and whether the portfolio company qualifies as an “investment firm.”⁵⁰⁵ The capital charges focus on the fact that the financial holding company’s direct investment is an equity; it does not take into account any risks related to the portfolio company’s underlying activities. The result is that the merchant banking capital charge for acquiring a company engaged in trading uranium versus a company operating a small grocery may be the same, despite the likely significant variance in the risks between those two investments. In the view of the capital rule, it is the equity holding of the bank that counts, not the activities of the portfolio company. While the new merchant banking capital rules do not reflect the risks associated with the underlying portfolio companies, the increased capital charge for equity investments may lead to reduced merchant banking positions held by

⁵⁰² “Regulatory Capital Rules: Regulatory Capital, Implementation of Basel III, Capital Adequacy, Transition Provisions, Prompt Corrective Action, Standardized Approach for Risk-weighted Assets, Market Discipline and Disclosure Requirements, Advanced Approaches Risk-Based Capital Rule, and Market Risk Capital Rule; Final Rule”, 78 Fed. Reg., 62018, 62021-62022 (daily ed. Oct. 11, 2013, <http://www.gpo.gov/fdsys/pkg/FR-2013-10-11/pdf/2013-21653.pdf>).

⁵⁰³ See, e.g., 77 Fed. Reg. 53059 (2012).

⁵⁰⁴ Id.

⁵⁰⁵ 1/1/2014 “Summary of Capital Requirements Applicable to Merchant Banking Investments, Commodities, and Related Items under the Federal Reserve’s Regulations as of January 1, 2014,” memorandum prepared by the Federal Reserve, FRB-PSI-708382-385, at 384 [sealed exhibit].

financial holding companies, including merchant banking investments involving physical commodity activities.

Collectively, these changes in how banks calculate capital to insulate against financial risks have put some downward pressure on banks' commodity-related activities,⁵⁰⁶ including their physical commodity activities. Although the new capital rules have yet to fully take effect, some banks have already initiated compliance, resulting in increased capital. Critics note that, while the new rules have increased capital requirements for commodity-related assets and merchant banking investments, the new rules still fail to fully protect against the potential monetary risks associated with physical commodity activities, including the risks associated with catastrophic events, market valuation problems, and other operational and reputational issues.⁵⁰⁷

Proposing New Rules for Physical Commodity Activities. On January 21, 2014, the Federal Reserve issued a notice which outlined the current regulatory landscape governing financial holding company involvement with physical commodities activities, identified potential risks and regulatory weaknesses, and requested public comment on whether new regulatory limits were needed. The notice requested public comment:

“on all aspects of physical commodities activities of BHCs [Bank Holding Companies] and banks and invites comments on the risks and benefits of allowing ... these activities as well as ways in which risks to the safety and soundness of a FHC [Financial Holding Company] and ... to the financial system can be contained or limited.”⁵⁰⁸

In its wide-ranging advanced notice of proposed rulemaking, the Federal Reserve noted the significant increase in physical commodity activities by financial holding companies since 2007, and suggested a fundamental re-thinking of the Federal Reserve's previously expansive interpretations of the laws allowing those activities. The notice invited public comment on twenty-four separate questions.⁵⁰⁹

Assessing Risks and Risk Mitigation. In the notice, the Federal Reserve highlighted the potential danger posed to banks by “tail risks,” such as environmental disasters or other catastrophic events that affect

⁵⁰⁶ See, e.g., “Basel III part of ‘double whammy’ hitting bank commodity trade,” Independent Chemical Information Service, Seth Freedman, (1/1/2012), <http://www.icis.com/resources/news/2012/01/10/9522349/basel-iii-part-of-double-whammy-hitting-bank-commodity-trade/>.

⁵⁰⁷ Subcommittee briefing by the FDIC (9/3/2014).

⁵⁰⁸ “Complementary Activities, Merchant Banking Activities, and Other Activities of Financial Holding Companies Related to Physical Commodities,” 79 Fed. Reg. 3329 (daily ed. Jan. 21, 2014).

⁵⁰⁹ *Id.*

physical commodity activities. The notice discussed, for example, such recent catastrophic events as the Deepwater Horizon oil spill in the Gulf of Mexico (which killed 11 people and has cost BP over \$42 billion in losses); a natural gas pipeline rupture in San Bruno, California (which killed 8 people and will likely cost billions of dollars in damages); a natural gas power plant explosion in Middletown, Connecticut (which killed 6 people); the Fukushima Daiichi nuclear power plant meltdown in Tohoku, Japan; and the crash and explosion of a crude oil-laden railway train in Quebec, Canada (which killed 47 people), as evidence that the “risks of catastrophic events continue.”⁵¹⁰ The notice stated that these “recent catastrophes suggest that the cost of preventing accidents are high and the costs and liability related to physical commodity activities can be difficult to limit and higher than expected.”⁵¹¹

The notice connected these catastrophic event risks to the recent financial crisis, which exposed the negative consequences of underappreciated tail risks combined with contagion.⁵¹² It explained that if a financial holding company owned “physical commodities that are part of a catastrophic event[,] it could suddenly and severely undermine public confidence in the [financial holding company] or its insured depository institution and undermine their access to funding markets.”⁵¹³ The notice raised the concern that, in the case of a large financial institution denied access to funding markets, the resulting financial problems, if severe enough, could spread beyond the institution to damage its counterparties and even the broader U.S. financial system.

The Federal Reserve also observed that “current risk management techniques designed to mitigate risks, such as frequent monitoring of risk, requirements to restrict the age of transport vessels, and review of disaster plans of third-party transporters, may [have] the unintended effect of increasing the potential that the [financial holding company] may become enmeshed in or liable to some degree from a catastrophic event.”⁵¹⁴

While the notice focused on risks associated with catastrophic environmental disasters, it did not discuss in detail other risks that also affect many physical commodity businesses. For example, it did not address the risk of changing regulations or technologies which may render a physical commodity operation significantly more or less valuable over a short period of time. In the United States, for example, a combination of market forces and emissions rules has dramatically altered the fuel source for power generation. While coal used to provide more than half of U.S. power generation, it is now down to just over

⁵¹⁰ Id. at 3331

⁵¹¹ Id. at 3329, 3331.

⁵¹² Id.

⁵¹³ Id. at 3329, 3332.

⁵¹⁴ Id.

one-third, with natural gas largely filling the void.⁵¹⁵ This dramatic shift has altered world-wide demand for coal and the value of coal-related commodity activities. Similarly, the Fukushima Daiichi nuclear disaster in Japan had a dramatic chilling effect on the nuclear power industry, lowering the value of uranium-related commodity activities.⁵¹⁶ The notice similarly did not examine other types of risks that may materially impact a commodity-related business, such as labor unrest or political upheaval.⁵¹⁷ Instead, the notice solicited public comment on the nature and types of risks posed by physical commodity activities, how they were addressed by financial holding companies, and how the Federal Reserve could enhance protections by further mitigating such risks or limiting activities.

Assessing Authority. The notice also posed questions regarding the appropriate application of the Gramm-Leach-Bliley complementary, merchant banking, and grandfather authorities in the context of physical commodities. The proposal sought comment on whether complementary commodities activities should be subjected to: (i) increased insurance requirements, (ii) enhanced capital requirements; or (iii) “absolute dollar limits and caps based on a percentage of the [financial holding company’s] regulatory capital or revenue.”⁵¹⁸ With respect to merchant banking authority, it questioned whether merchant banking investments should be subject to: (i) increased capital requirements; (ii) caps on the total dollar amount of such investments; or (iii) enhanced restrictions on the routine management of merchant banking portfolio companies.⁵¹⁹ With respect to the grandfather clause, the notice asked about its necessity 15 years after enactment of the law, as well as whether any additional requirements or limits should be imposed, and how it might be reconciled with the other authorities for competitiveness reasons, since most financial holding companies cannot invoke the grandfather clause to authorize additional physical commodity activities.⁵²⁰

Current Status. The initial comment period for the notice ended April 16, 2014, with over 17,000 comments having been filed with the Federal Reserve.⁵²¹ Comments came from small business owners,

⁵¹⁵ See, e.g., “Natural Gas Dethrones King Coal As Power Companies Look To Future,” National Public Radio, Christopher Joyce (3/1/2013), <http://www.npr.org/2013/03/01/173258342/natural-gas-dethrones-king-coal-as-power-companies-look-to-future>.

⁵¹⁶ See, e.g., “Fukushima, 3 Years Later: Disaster Still Lingers,” Mashable, Andrew Freedman (3/11/2014), <http://mashable.com/2014/03/11/three-years-after-fukushima/>; “The Impact of Fukushima Daiichi Nuclear Accident on People’s Attitudes Toward Nuclear Energy Policy: Silent Movement,” XVIII ISA World Congress of Sociology, Noriko Iwai and Kuniaki Shishido (7/19/2014), <https://isaconf.confex.com/isaconf/wc2014/webprogram/Paper53522.html>.

⁵¹⁷ See, e.g., discussion of how these issues affected Goldman’s involvement with coal, below.

⁵¹⁸ 79 Fed. Reg. at 3333 - 334.

⁵¹⁹ Id. at 3334 - 335.

⁵²⁰ Id. at 3335 - 336.

⁵²¹ See 2/24/2012 “Complementary Activities, Merchant Banking Activities, and Other Activities of Financial Holding Companies related to Physical Commodities [R-1479],” Federal Reserve

commodity markets participants, public interest groups, financial holding companies, members of Congress, legal experts, and concerned members of the public.⁵²² The vast majority were letters submitted by members of the public expressing support for increased restrictions on financial holding company involvement with commodity activities. Other letters generally supported some or all of the activities of financial holding companies in the commodity markets, including their roles as financiers of physical inventories for producers or consumers.⁵²³ Still others expressed concerns with the risks posed by physical commodity activities to the financial holding companies, U.S. markets, and U.S. economy, and urged additional restrictions on the financial holding companies conducting those activities.⁵²⁴ While the Federal Reserve has not yet taken further action based on the notice, its issuance of the notice indicates the regulator is considering taking regulatory action to restrict financial company involvement with physical commodities and reduce the attendant risks.

D. Analysis

Federal law gives the Federal Reserve key authority to determine financial holding company involvement with physical commodities. For nine years, from 2000 to 2008, the Federal Reserve used that authority generally to facilitate financial holding company expansion into physical commodity activities. In response, large financial holding companies like Goldman, Morgan Stanley, and JPMorgan expanded their commodity activities and asserted control over vast physical commodity holdings and operations involving the storage, transport, production, refinement, and trading of oil, natural gas, aluminum, copper, coal, electricity, and other commodities.

After the financial crisis and a special review conducted by the Federal Reserve raised concerns about the operational, catastrophic event, valuation, reputational, and systemic risks posed by physical commodity activities, the Federal Reserve began to reconsider its role.

website, http://www.federalreserve.gov/apps/foia/ViewAllComments.aspx?doc_id=R-1479&doc_ver=1.

⁵²² Id.

⁵²³ See, e.g., 4/16/2014 letter from Securities Industry and Financial Markets Association, American Bankers Association, et al to the Federal Reserve, "Comment Letter on the Advance Notice of Proposed Rulemaking on Complementary Activities, Merchant Banking Activities, and Other Activities of Financial Holding Companies Related to Physical Commodities (Docket No. R-1479; RJN 7100 AE-10)," Federal Reserve website, http://www.federalreserve.gov/SECRS/2014/April/20140424/R-1479/R-1479_041614_124557_481903450084_1.pdf.

⁵²⁴ Id. See also, e.g., 4/16/2014 comment letter from Subcommittee Chairman Levin, Federal Reserve website, http://www.federalreserve.gov/SECRS/2014/April/20140417/R-1479/R-1479_041614_124566_481901422162_1.pdf; 4/16/2014 comment letter from Senators Sherrod Brown and Elizabeth Warren, Federal Reserve website, http://www.federalreserve.gov/SECRS/2014/April/20140417/R-1479/R-1479_041614_124552_376253020070_1.pdf; 4/16/2014 comment letter from Americans for Financial Reform, Federal Reserve website, http://www.federalreserve.gov/SECRS/2014/April/20140417/R-1479/R-1479_041614_124629_505856748926_1.pdf.

Beginning in 2010, the Federal Reserve took some initial steps to restrict and reduce financial holding company involvement with physical commodities. At the same time, the Federal Reserve failed to resolve ongoing, basic questions about the scope of the Gramm-Leach-Bliley complementary, grandfather, and merchant banking authorities, thereby enabling large financial holding companies to continue to deepen their involvement with physical commodities. In early 2014, the Federal Reserve announced it was considering issuing new regulations on financial holding company involvement with physical commodity activities, but nearly a year later has yet to propose new rules. The Federal Reserve's failure to resolve key issues related to bank involvement with physical commodities has weakened longstanding American barriers against the mixing of banking and commerce as well as longstanding safeguards protecting the U.S. financial system and economy against undue risk. The following chapters illustrate some of the consequences.

IV. GOLDMAN SACHS

The Goldman Sachs Group, Inc., a financial holding company since 2008, has described commodities as one of its core businesses. It currently conducts billions of dollars in physical commodity activities involving energy, metals, and related businesses, and has expressed a commitment to continuing in the physical commodities field. This case study examines just three examples of its physical commodities activities, involving the trading of physical uranium, the operation of coal mines in Colombia, and possession of a global metals warehousing business.

A. Overview of Goldman Sachs

The Goldman Sachs Group, Inc. is a global financial services firm incorporated under Delaware law and headquartered in New York City.⁵²⁵ It is listed on the New York Stock Exchange (NYSE) under the ticker symbol “GS.”⁵²⁶ In addition to being one of the largest financial holding companies in the United States, Goldman Sachs conducts operations in more than 30 countries, has over 32,000 employees, has a market capitalization of \$77 billion, and manages assets of more than \$938 billion.⁵²⁷ In 2013, it reported total consolidated assets of \$912 billion,⁵²⁸ net revenues of \$34.2 billion, and net earnings of \$8 billion.⁵²⁹

Goldman Leadership. The Chairman of the Board and Chief Executive Officer of Goldman Sachs Group, Inc. is Lloyd Blankfein, who has held that post since 2006.⁵³⁰ The President and Chief Operating Officer is Gary Cohn, and the Chief Financial Officer is Harvey Schwartz. All three executives started their careers in the firm at its J.

⁵²⁵ 7/16/2013 Form 8-K, The Goldman Sachs Group, Inc., at cover page [hereinafter 7/16/2013 Goldman Form 8-K], <http://www.goldmansachs.com/investor-relations/financials/archived/8k/pdf-attachments/8k-7-16-13.pdf>; see also “Top Fifty Holding Companies (HC) as of 6/30/2013,” Federal Reserve System, National Information Center, <http://www.ffiec.gov/nicpubweb/nicweb/Top50Form.aspx>.

⁵²⁶ Undated “Stock Chart,” Goldman website, <http://www.goldmansachs.com/investor-relations/stock-chart/index.html>.

⁵²⁷ See undated “Governance at Goldman Sachs[.]Key Facts,” Goldman website, <http://www.goldmansachs.com/investor-relations/corporate-governance/corporate-governance-documents/key-facts.pdf>; 9/27/2013 “The Goldman Sachs Group, Inc. Global Resolution Plan,” at 3, <http://www.federalreserve.gov/bankinfo/reg/resolution-plans/goldman-sachs-1g-20131001.pdf>; 2/28/2013 Form 10-K, The Goldman Sachs Group, Inc., at 70 (hereinafter, “2/28/2013 Goldman Form 10-K”), <http://www.goldmansachs.com/investor-relations/financials/archived/10k/docs/2012-10-K.pdf>; “Top Fifty Holding Companies (HC) as of 6/30/2013,” Federal Reserve System, National Information Center, <http://www.ffiec.gov/nicpubweb/nicweb/Top50Form.aspx>.

⁵²⁸ See 12/31/2013 “Consolidated Financial Statements for Holding Companies,” Form FR Y-9C, filed by Goldman Sachs with the Federal Reserve.

⁵²⁹ Undated “Governance at Goldman Sachs: Key Facts,” Goldman website, <http://www.goldmansachs.com/investor-relations/corporate-governance/corporate-governance-documents/key-facts.pdf>.

⁵³⁰ Undated Goldman biography of Lloyd Blankfein, Goldman website, <http://www.goldmansachs.com/who-we-are/leadership/executive-officers/lloyd-c-blankfein.html>.

Aron & Co. commodities subsidiary, described below.⁵³¹ The Global Head of Commodities, from 2007 to 2012, was Isabelle Ealet.⁵³² The current Global Co-Heads of Commodities are Greg Agran and Guy Saidenberg.⁵³³ The head of Global Commodities Principal Investments is Jacques Gabillon.⁵³⁴ The head of J. Aron & Co. is Ashok Varadhan.⁵³⁵

(1) Background

Goldman Sachs was formed by Marcus Goldman in 1869, as a small commercial paper company.⁵³⁶ It eventually turned to investment banking, specializing in underwriting Initial Public Offerings for corporations offering stock to the public.⁵³⁷ After the company lost heavily in the stock market crash of 1929, it slowly rebuilt its business as a securities firm, providing investment advice to corporate clients, arranging and executing mergers and acquisitions, and arranging financing for clients through stock and bond offerings.⁵³⁸ In 1979, Goldman obtained a license to trade commodities and, in 1981, launched a major expansion of its commodity activities.⁵³⁹ In 1999, Goldman converted from a private partnership to a publicly traded corporation.⁵⁴⁰

Bank Holding Company. In September 2008, in the midst of the financial crisis, Goldman submitted,⁵⁴¹ and the Federal Reserve approved on the same day,⁵⁴² an application for it to become a bank

⁵³¹ See, e.g., “The J. Aron Takeover of Goldman Sachs,” *New York Times*, Susanne Craig (10/1/2012), http://dealbook.nytimes.com/2012/10/01/the-j-aron-takeover-of-goldman-sachs/?_php=true&_type=blogs&_r=0.

⁵³² Undated Goldman biography of Isabelle Ealet, Goldman website, <http://www.goldmansachs.com/who-we-are/leadership/management-committee/isabelle-ealet.html>; “Commodities trading loses its Goldman queen,” *Financial Times*, Javier Blas (1/12/2012), <http://www.ft.com/intl/cms/s/0/ec8af7f0-3d02-11e1-ae07-00144feabdc0.html#axzz3FUdL9Mxe>. In 2012, Ms. Ealet was appointed Co-Head of the Securities Division at Goldman.

⁵³³ Subcommittee interview of Greg Agran (10/10/2014).

⁵³⁴ *Id.*

⁵³⁵ 10/8/2014 letter from Goldman legal counsel to Subcommittee, “Follow-Up Requests,” PSI-GoldmanSachs-19-000001 - 009, at 008.

⁵³⁶ “A Brief History of Goldman Sachs,” *WSJ.com*, http://online.wsj.com/article/SB1000142405274870_4671904575193780425970078.html.

⁵³⁷ *Id.*

⁵³⁸ *Id.*

⁵³⁹ See Goldman Sachs & Co. FCM information, National Futures Association (NFA) Background Affiliation Status Information Center (BASIC) website, <http://www.nfa.futures.org/basicnet/Details.aspx?entityid=uZSsBZcBKLE%3d&rn=Y>.

⁵⁴⁰ “Undated “Governance at Goldman Sachs[.] Key Facts,” Goldman website, <http://www.goldmansachs.com/investor-relations/corporate-governance/corporate-governance-documents/key-facts.pdf>.

⁵⁴¹ See 9/21/2008 “Confidential Application to the Board of Governors of the Federal Reserve System by The Goldman Sachs Group, Inc. and Goldman Sachs Bank USA Holdings LLC,” FRB-PSI-303638 - 662 (applying to become banking holding companies).

⁵⁴² See 9/21/2008 “Order Approving Formation of Bank Holding Companies,” prepared by the Federal Reserve, <http://www.federalreserve.gov/newsevents/press/orders/orders20080922a1.pdf>; 9/21/2008 Goldman Sachs press release, “Goldman Sachs to Become Fourth Largest Bank Holding Company,” <http://www.goldmansachs.com/media-relations/press->

holding company with access to Federal Reserve lending programs. At the same time, Goldman converted an industrial bank it held in Utah into a state-chartered bank.⁵⁴³ Goldman also elected to become a financial holding company.⁵⁴⁴ Goldman has one U.S. depository and lending bank, Goldman Sachs Bank USA, which is chartered in New York and insured by the FDIC.⁵⁴⁵ One business unit of the bank is called “GS Private Bank,” which serves high-net worth individuals and families.⁵⁴⁶ The bank is also a registered swap dealer.⁵⁴⁷ Goldman also owns several banks outside of the United States, including Goldman Sachs International Bank of the United Kingdom.⁵⁴⁸ As of December 31, 2013, Goldman Sachs Bank USA and Goldman Sachs International Bank reported a total of about \$70 billion in savings, demand, and time deposits.⁵⁴⁹

Key Subsidiaries. In addition to its banks, other key U.S. subsidiaries of The Goldman Sachs Group, Inc. include Goldman Sachs & Co., which is registered as a U.S. broker-dealer, futures commission merchant, and swap dealer; Goldman Sachs Asset Management LP, a U.S. investment advisor; and J. Aron & Co., a swap dealer and authorized electrical power marketer.⁵⁵⁰ Two key U.K. subsidiaries are Goldman Sachs International, a U.K. broker-dealer and swaps dealer; and Goldman Sachs Asset Management International, a U.K. investment advisor.⁵⁵¹

releases/archived/2008/bank-holding-co.html. See also “Shift for Goldman and Morgan Marks the End of an Era,” *New York Times*, Andrew Ross Sorkin and Vikas Bajaj (9/21/2008), <http://www.nytimes.com/2008/09/22/business/22bank.html>.

⁵⁴³ See 9/21/2008 “Order Approving Formation of Bank Holding Companies,” prepared by the Federal Reserve, <http://www.federalreserve.gov/newsevents/press/orders/orders20080922a1.pdf>. The name of the Utah bank was Goldman Sachs Bank USA. *Id.*

⁵⁴⁴ See undated “Financial Holding Companies,” Federal Reserve, <http://www.federalreserve.gov/bankinfo/fhc.htm>.

⁵⁴⁵ See undated “Banking,” Goldman website, <http://www.goldmansachs.com/what-we-do/investing-and-lending/banking/>. Goldman also has a U.K. bank, Goldman Sachs International Bank, and an Irish bank, GS Bank Europe. See 6/27/2014 “The Goldman Sachs Group, Inc. Global Resolution Plan,” at 2, <http://www.federalreserve.gov/bankinfo/resolution-plans/goldman-sachs-1g-20140701.pdf>.

⁵⁴⁶ See undated “Private Wealth Management Services—United States,” Goldman website, <http://www.goldmansachs.com/what-we-do/investment-management/private-wealth-management/services/united-states.html>.

⁵⁴⁷ See 6/27/2014 “The Goldman Sachs Group, Inc. Global Resolution Plan,” at 22, <http://www.federalreserve.gov/bankinfo/resolution-plans/goldman-sachs-1g-20140701.pdf>; undated “Banking,” Goldman website, <http://www.goldmansachs.com/what-we-do/investing-and-lending/banking/>.

⁵⁴⁸ See 6/27/2014 “The Goldman Sachs Group, Inc. Global Resolution Plan,” at 2, <http://www.federalreserve.gov/bankinfo/resolution-plans/goldman-sachs-1g-20140701.pdf>.

⁵⁴⁹ *Id.* at 15; undated “Banking,” Goldman website, <http://www.goldmansachs.com/what-we-do/investing-and-lending/banking/>; undated “Private Wealth Management Services—United States,” Goldman website, <http://www.goldmansachs.com/what-we-do/investment-management/private-wealth-management/services/united-states.html>.

⁵⁵⁰ See 6/27/2014 “The Goldman Sachs Group, Inc. Global Resolution Plan,” at 2, 22, <http://www.federalreserve.gov/bankinfo/resolution-plans/goldman-sachs-1g-20140701.pdf>.

⁵⁵¹ *Id.*

Major Business Lines. According to Goldman, it has four key business segments: (1) Investment Banking, which includes work related to mergers and acquisitions, restructurings and spin-offs, debt and equity underwriting, and derivatives transactions; (2) Institutional Client Services, which facilitates client transactions primarily for corporations, financial institutions, investment funds, and governments in fixed income, equity, currency and commodity products; provides financing, securities lending, and other prime brokerage services; and makes markets and clears client transactions on major stock, options and futures exchanges worldwide; (3) Investing & Lending, which invests in and originates loans to clients; and (4) Investment Management, which provides investment management and brokerage services, investment products, and wealth advisory services to high net worth individuals.⁵⁵²

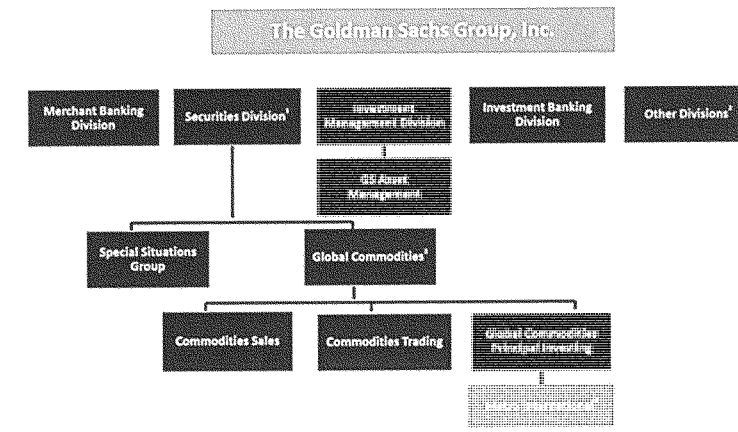
Commodities. The Institutional Client Services business segment includes Global Commodities, also referred to by Goldman as “GS Commodities,” which is Goldman’s leading commodities-related business unit. In 2013, GS Commodities had a total of about 235 employees.⁵⁵³ According to Goldman, GS Commodities “provides financial and physical risk management solutions to a wide range of global clients, including utilities, producers, industrial users, sovereigns, state owned entities, and financial institutions.”⁵⁵⁴ In addition, “GS Commodities invests in commodity-related businesses to generate returns and to create synergies within the franchise.”⁵⁵⁵ The following chart shows how GS Commodities fits within the holding company’s organizational structure and its own three main subdivisions:

⁵⁵² Undated “At a Glance,” Goldman website, <http://www.goldmansachs.com/who-we-are/at-a-glance/index.html>; 6/27/2014 “The Goldman Sachs Group, Inc. Global Resolution Plan,” at 3, <http://www.federalreserve.gov/bankinforeg/resolution-plans/goldman-sachs-1g-20140701.pdf>.

⁵⁵³ 9/2013 “Global Commodities & Global Special Situations Group[.] Presentation to the Board of Directors of the The Goldman Sachs Group, Inc.,” prepared by Goldman, FRB-PSI-400077 - 098, at 078.

⁵⁵⁴ 10/28/2011 “Global Commodities[.] Presentation to the Board of Directors of The Goldman Sachs Group, Inc.,” prepared by Goldman, FRB-PSI-700011 - 030, at 015.

⁵⁵⁵ *Id.*



Source: Organizational chart prepared by Goldman Sachs, PSI-Goldman-10-000002.

One of the subdivisions within GS Commodities is Global Commodities Principal Investing (GCPI) which “invests as principal in companies/assets linked to the global commodities trade.”⁵⁵⁶ Goldman has described GCPI to its Board of Directors as an entity that “seeks attractive risk-adjusted returns ... [and] focuse[s] on private companies / assets which are then held under the Merchant Banking Exemption.”⁵⁵⁷ GCPI has sponsored a number of investment funds which appear to be financed solely by Goldman, with no inclusion of funds from third party investors. According to Goldman, GCPI investment professionals “do not operate the businesses in the Group’s portfolio but rather employ experienced management teams for portfolio companies and supervis[e] investments at [the] board level.”⁵⁵⁸ In 2010, GCPI’s portfolio of investments included 16 projects.⁵⁵⁹

According to Goldman, GCPI’s key investments over the years have included an Australian coal mine, an oil and gas exploration company, a natural gas production company in the former Soviet Union,

⁵⁵⁶ 3/2010 “Global Commodities Principal Investments[.] Commodities Private Equity Presentation to the Federal Reserve,” prepared by Goldman, FRB-PSI-602243 - 274, at 246. See also 9/2013 “Global Commodities & Global Special Situations Group Presentation to the Board of Directors of The Goldman Sachs Group, Inc.,” prepared by Goldman, FRB-PSI400077 - 098, at 087.

⁵⁵⁷ 9/2013 “Global Commodities & Global Special Situations Group[.] Presentation to the Board of Directors of The Goldman Sachs Group, Inc.,” prepared by Goldman, FRB-PSI400077 - 098, at 087. In addition, at times, Goldman also asserted grandfather authority, discussed below, as another potential basis for holding some of the GCPI investments. See, e.g., 4/14/2010 “Report of Changes in Organizational Structure,” Form FR Y-10 filed by The Goldman Sachs Group, Inc. with the Federal Reserve, GSPSICOMMODS00046301 - 317, at 303 (stating that the investment was “permissible under [Bank Holding Company Act Section] 4(o), but investment complies with the Merchant Banking regulations.”).

⁵⁵⁸ 3/2010 “Global Commodities Principal Investments[.] Commodities Private Equity Presentation to the Federal Reserve,” prepared by Goldman, FRB-PSI-602243 - 274, at 246.

⁵⁵⁹ Id. at 265 - 272.

a sugar-based ethanol production company in Brazil, and two bulk carrier shipping joint ventures.⁵⁶⁰ Additional key GCPI investments include the Colombian coal mines and Metro warehousing business, discussed below.⁵⁶¹ GCPI also contributed analysis to Goldman's purchase of Nufcor's uranium trading business, also discussed below.

The key legal entity executing the majority of Goldman's commodity activities is J. Aron & Co., a commodities trading firm purchased by Goldman in 1981.⁵⁶² GS Commodities books, for example, the majority of its commodity-related trades, including futures, swaps, options, and forward transactions, through J. Aron & Co.⁵⁶³ J. Aron & Co. also acts as "the primary, but not exclusive, legal entity that engages in market making in commodities and commodity derivative products" for GS Commodities.⁵⁶⁴ In addition, J. Aron & Co. performs some physical commodity activities, such as selling coal produced by Goldman's coal mines.⁵⁶⁵ J. Aron & Co. is authorized to act as a swap dealer and electrical power marketer.⁵⁶⁶ It currently has about 33 employees who work out of various Goldman offices; J. Aron & Co. has no separate offices of its own.⁵⁶⁷

Commodities-Related Merchant Banking. Goldman also engages in commodity-related activities through certain investment funds maintained by its Merchant Banking Division, depicted on the chart above. Goldman describes the Merchant Banking Division as "the primary center for Goldman Sachs' long term principal investing activity ... across corporate, real estate and infrastructure strategies."⁵⁶⁸ The Merchant Banking Division houses, for example, GS Infrastructure

⁵⁶⁰ Id. at 247; 9/2013 "Global Commodities & Global Special Situations Group[:] Presentation to the Board of Directors of The Goldman Sachs Group, Inc.," prepared by Goldman, FRB-PSI400077 - 098, at 087. See also 3/31/2013 "Commodity, Energy, E&P, Renewable Energy Equity Investments," chart prepared by Goldman, FRB-PSI-400065 - 070.

⁵⁶¹ See 3/2010 "Global Commodities Principal Investments[:] Commodities Private Equity Presentation to the Federal Reserve," prepared by Goldman, FRB-PSI-602243 - 274, at 265; 9/2013 "Global Commodities & Global Special Situations Group[:] Presentation to the Board of Directors of The Goldman Sachs Group, Inc.," prepared by Goldman, FRB-PSI400077 - 098, at 087.

⁵⁶² 10/8/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-GoldmanSachs-19-000001 - 009, at 008; 10/28/2011 "Global Commodities[:] Presentation to the Board of Directors of The Goldman Sachs Group, Inc.," prepared by Goldman, FRB-PSI-700011 - 030, at 013.

⁵⁶³ 10/8/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-GoldmanSachs-19-000001 - 009, at 008.

⁵⁶⁴ 8/8/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-Goldman-11-000001-011, at 002.

⁵⁶⁵ See discussion, below, on Goldman's involvement with coal.

⁵⁶⁶ See 6/27/2014 "The Goldman Sachs Group, Inc. Global Resolution Plan," at 2, 22, <http://www.federalreserve.gov/bankinforeg/resolution-plans/goldman-sachs-1g-20140701.pdf>.

⁵⁶⁷ 10/8/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-GoldmanSachs-19-000001 - 009, at 008; Subcommittee briefing by Goldman legal counsel (10/7/2014).

⁵⁶⁸ Undated "Direct Private Investing," Goldman website, <http://www.goldmansachs.com/what-we-do/investing-and-lending/direct-private-investing/index.html>.

Partners, a subsidiary which Goldman established in 2006, to sponsor a private equity fund focused on infrastructure projects, including ventures involving electricity, natural gas, and power generation.⁵⁶⁹ GS Infrastructure Partners sponsored a \$6.5 billion fund in 2006; and a second \$3.1 billion fund in 2010.⁵⁷⁰ Its projects have included, for example, a 2014 investment of more than \$1 billion to acquire an 18% stake in Dong Energy, the largest utility in Denmark, which explores for energy and constructs and operates power plants;⁵⁷¹ an investment in an electricity distribution network in Finland, Elenia Oy;⁵⁷² solar and wind generation projects in Japan;⁵⁷³ and 100% ownership of a natural gas transmission and distribution company in Spain, Endesa Gas.⁵⁷⁴ The Merchant Banking Division also houses GS Capital Partners, a much larger private equity fund used by Goldman to invest in such commodity-related ventures as the \$22 billion buyout of Kinder Morgan Inc., a pipeline company.⁵⁷⁵

Still another business unit with commodity-related merchant banking investments, also depicted in the above chart, is the Special Situations Group. Goldman described this group to its Board of Directors as “specializ[ing] in lending to and investing in middle market companies on a risk-adjusted return basis. Equity investments are held under the merchant banking exemption.”⁵⁷⁶ As of September 2013, the Global Special Situations Group held “19 investments in commodities assets totaling a current book value of \$683 [million] vs. a \$13 [billion] total portfolio.”⁵⁷⁷ They included a U.S. geothermal energy provider, a wind power company, a solar power plant, a company involved with

⁵⁶⁹ See “Direct Private Investing Equity - GS Infrastructure Partners,” Goldman website, <http://www.goldmansachs.com/what-we-do/investing-and-lending/direct-private-investing/equity-folder/gi-infrastructure-partners.html>.

⁵⁷⁰ *Id.*

⁵⁷¹ Goldman’s investment in the largely state-owned utility, when announced to the public, sparked widespread opposition in Denmark, but was nevertheless completed. See, e.g., “A closer look at a Goldman Sachs deal many in Denmark find rotten,” *Financial Times*, Richard Milne (1/31/2014), <http://www.ft.com/intl/cms/s/0/92816e68-8a6e-11e3-9c29-00144feab7de.html#axzz3EdqllSm5>; “Goldman Deal Threatens Danish Government,” *New York Times*, Danny Hakim (1/30/2014), <http://dealbook.nytimes.com/2014/01/30/goldman-deal-threatens-danish-government/>.

⁵⁷² See, e.g., 3/31/2013 “Commodity, Energy, E&P, Renewable Energy Equity Investments,” chart prepared by Goldman, FRB-PSI-400065 - 070, at 065.

⁵⁷³ *Id.* at 066.

⁵⁷⁴ See, e.g., “Goldman Sachs Infrastructure funds acquire remaining 20 % stake in Endesa Gas,” *InfraPPP* (11/8/2013), <http://infrappworld.com/2013/11/goldman-sachs-infrastructure-funds-acquire-remaining-20-stake-in-endesa-gas.html>.

⁵⁷⁵ See “Direct Private Investing Equity-GS Capital Partners,” Goldman website, <http://www.goldmansachs.com/what-we-do/investing-and-lending/direct-private-investing/equity-folder/gi-capital-partners.html>. See also “Kinder Morgan Accepts \$15 Billion Buyout Offer,” *New York Times*, Jad Mouawad (8/28/2006), http://www.nytimes.com/2006/08/28/business/29kinderend.html?_r=1&.

⁵⁷⁶ 9/2013 “Global Commodities & Global Special Situations Group[.] Presentation to the Board of Directors of The Goldman Sachs Group, Inc.,” prepared by Goldman, FRB-PSI-400077 - 098, at 093.

⁵⁷⁷ *Id.*

residential rooftop solar systems, oil and gas exploration and drilling companies, and coal facilities.⁵⁷⁸

In June 2014, Goldman reported to the Federal Reserve that it held merchant banking investments with a total value of about \$15 billion, but it is unclear how many of those were commodity related. It is also unclear whether the total included all of Goldman's various commodity-related merchant banking investments, including those made through the Global Commodities Principal Investing unit, Merchant Banking Division, and Special Situations Group.⁵⁷⁹

Commodities Trading. At the same time it conducts a wide range of physical commodity activities, Goldman trades commodities-related financial instruments, including futures, swaps, and options, involving billions of dollars each day. Goldman is among the ten largest financial institutions in the United States trading financial commodity instruments, according to Coalition Ltd., a company that collects commodity trading statistics.⁵⁸⁰ Data compiled by the Office of the Comptroller of the Currency (OCC), which applies to national banks and does not include their holding companies, indicates Goldman is one of the four largest banks trading commodity-related derivatives.⁵⁸¹

Commodity Revenues. In a 2011 presentation prepared for its Board of Directors, Goldman stated: "Over the last 5 years, GS Commodities has generated more than \$10 [billion] of pre-tax earnings, with an average margin of ~60%."⁵⁸² The presentation also noted: "In the last 2 years, margins and market share have declined dramatically as a result of increased competition from both financial and non financial institutions."⁵⁸³ A 2013 presentation to the Board of Directors included a chart tracing Goldman's commodity-related revenues over 30 years. The chart showed that commodity revenues were generally under \$500 million from 1981 until 2000, and then began to climb, producing four years of relatively high revenues, from 2006 until 2009, before they once more began to decline. The chart included the following figures:

⁵⁷⁸ Id. at 093 - 094.

⁵⁷⁹ See 6/30/2014 "Consolidated Holding Company Report of Equity Investments in Nonfinancial Companies – FR Y-12," filed by Goldman, FRB-PSI-800013 - 016.

⁵⁸⁰ See 3/2014 "Global & Regional Investment Bank League Tables – FY2013", Coalition, Ltd., PSI-Coalition-01-000018, at 14, 16.

⁵⁸¹ 2013 "OCC Quarterly Report on Bank Trading and Derivatives Activity Fourth Quarter 2013," at Tables 1 and 2, <http://www.occ.gov/topics/capital-markets/financial-markets/trading/derivatives/dq413.pdf>.

⁵⁸² 10/28/2011 "Global Commodities[:] Presentation to the Board of Directors of The Goldman Sachs Group, Inc.," prepared by Goldman, FRB-PSI-700011 - 030, at 013.

⁵⁸³ Id. Goldman identified its key financial competitors as Morgan Stanley, JPMorgan, Barclays, and Deutsche Bank, while its non-financial competitors were Glencore, Vitol, Mercuria, BP, certain large utilities, and certain private equity funds. Id. at 016.

**Global Commodities Revenues
Including Franchise and Principal Investments**

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Revenues	\$1.4 billion	\$3.1 billion	\$2.9 billion	\$3.3 billion	\$3.4 billion	\$2.2 billion	\$2.0 billion	\$1.0 billion	\$1.3 billion*

*Partial year amount.

Source: 9/2013 “Global Commodities & Global Special Situations Group Presentation to the Board of Directors of The Goldman Sachs Group, Inc.,” prepared by Goldman, FRB-PSI400077 - 098, at 078.

The 2011 presentation stated that as of October 28, 2011: “Physical business now accounts for approximately 15-20% of total Franchise Revenues and is expected to increase.”⁵⁸⁴ The 2013 presentation stated: “Physical activity represents 6 - 17% of our 2012 global franchise revenues.”⁵⁸⁵

(2) Historical Overview of Involvement with Commodities

Goldman first became involved with commodities when, in 1979, it registered with the CFTC as a “Futures Commission Merchant” (FCM) and received authorization to buy and sell futures and options on regulated exchanges.⁵⁸⁶ Two years later, in 1981, it purchased J. Aron & Co., a commodities trading company that then specialized in precious metals and coffee, but soon began trading interest rate, foreign currency, and crude oil futures and options.⁵⁸⁷ In 1991, Goldman Sachs launched the Goldman Sachs Commodity Index (GSCI), a mathematical construct that reflects the dollar value of a diversified basket of commodity

⁵⁸⁴ 9/2013 presentation, “Global Commodities & Global Special Situations Group,” prepared by Goldman Sachs, FRB-PSI-624274 - 295, at 279.

⁵⁸⁵ 9/2013 “Global Commodities & Global Special Situations Group[.] Presentation to the Board of Directors of The Goldman Sachs Group, Inc.,” prepared by Goldman, FRB-PSI400077 - 098, at 082.

⁵⁸⁶ See Goldman Sachs & Co. FCM information, National Futures Association (NFA) Background Affiliation Status Information Center (BASIC) website, <http://www.nfa.futures.org/basicnet/Details.aspx?entityid=uZSsBZcBKLE%3d&rn=Y>. For more information on Futures Commission Merchants, see NFA “Glossary,” <http://www.nfa.futures.org/basicnet/glossary.aspx?term=futures+commission+merchant> (defining FCM as “[a]n individual or organization which solicits or accepts orders to buy or sell futures or options contracts and accepts money or other assets from customers in connection with such orders. Must be registered with the Commodity Futures Trading Commission.”). The OCC authorized banks to become commodity exchange members as early as 1975, according to an unpublished letter cited in OCC Interpretative Letter No. 380 (12/29/1986), reprinted in Banking L. Rep. CCH ¶ 85, 604, PSI-OCC-01-000046-061. See also 4/12/2010 Permissible Securities Activities of Commercial Banks Under the Glass-Steagall Act (GSA) and the Gramm-Leach-Bliley Act (GLBA),” prepared by Congressional Research Service, at 10-11, footnote 54, http://assets.opencrs.com/rpts/R41181_20100412.pdf.

⁵⁸⁷ See also 10/28/2011 “Global Commodities[.] Presentation to the Board of Directors of The Goldman Sachs Group, Inc.,” prepared by Goldman, FRB-PSI-700011 - 030, at 013. See also 6/18/2009 “Goldman Sachs Permissibility Study Follow-Up-Commodities,” FRB-PSI-200961-979, at 962 (explaining that J. Aron & Co. is registered with FERC to sell power at market based rates).

futures, and allows investors to invest in commodities by buying and selling financial instruments whose values are linked to the index.⁵⁸⁸ The Goldman Sachs Commodity Index led to an explosion in commodity index trading as well as increased futures trading.⁵⁸⁹

According to Goldman, by 1997, operating as a securities and commodities firm and not as a bank, it was trading in physically settled contracts in base metals, such as aluminum, lead, nickel, and zinc.⁵⁹⁰ Goldman reported to the Federal Reserve that it was doing the same for contracts involving energy commodities, including crude oil, natural gas, gasoline, heating oil, and jet fuel;⁵⁹¹ and for agricultural products, including wheat, corn, coffee, cocoa, soybeans, and sugar.⁵⁹² In addition, Goldman indicated that it was engaging in physically settled trades in “power” through a “joint venture with Constellation Energy.”⁵⁹³ Goldman also told the Federal Reserve that, by 1997, it had owned or operated an oil refinery with related pipeline and storage infrastructure, an oil and gas marketing and distribution company, an upstream oil and gas producer, and a fertilizer producer.⁵⁹⁴

Cogentrix Acquisition. In 2003, Goldman purchased Cogentrix Energy, a company which developed and operated power plants and had ownership interests in 24 different power related facilities.⁵⁹⁵ That acquisition represented one of Goldman’s earliest forays into electrical power generation.⁵⁹⁶ By 2011, Goldman had sold 80% of the Cogentrix portfolio for a gain of more than \$1.6 billion.⁵⁹⁷ But it still retained two coal fired power plants in Florida and Virginia; and a natural gas burning plant in San Diego.⁵⁹⁸ In addition, it had diversified into renewable energy, taking ownership interests in eight hydroelectric and two wind generation facilities in Turkey, a solar power plant in California, and a photovoltaic solar power facility under construction in Colorado.⁵⁹⁹

⁵⁸⁸ See, e.g., “A Brief History Of Commodities Indexes,” ETF.com, Adam Dunsby and Kurt Nelson (4/12/2010), <http://www.etf.com/publications/journalofindexes/joi-articles/7451-a-brief-history-of-commodities-indexes.html>.

⁵⁸⁹ In 2007, Goldman sold the index to Standard & Poors, and it is now known as the S&P GSCI. See, e.g., “Goldman Sachs selling popular commodity index,” Market Watch, (2/6/2007), <http://www.marketwatch.com/story/goldman-sachs-selling-popular-commodity-index-to-sp>.

⁵⁹⁰ 5/26/2011 “Questions from the Federal Reserve on 4(o) Commodities Activities,” prepared by Goldman, at FRB-PSI-200600 - 610.

⁵⁹¹ Id. at 600.

⁵⁹² Id. at 601.

⁵⁹³ Id.

⁵⁹⁴ Id.

⁵⁹⁵ 10/20/2003 Goldman Sachs press release, “Goldman Sachs to Purchase 100% of Cogentrix,” <http://www.goldmansachs.com/media-relations/press-releases/archived/2003/2003-10-20.html>.

⁵⁹⁶ Subcommittee briefing by Goldman (9/5/2014).

⁵⁹⁷ 10/28/2011 “Global Commodities[:] Presentation to the Board of Directors of The Goldman Sachs Group, Inc.,” prepared by Goldman, FRB-PSI-700011 - 030, at 029.

⁵⁹⁸ Id.

⁵⁹⁹ Id.

By 2008, Goldman had expanded its commodities activities still further. In a list prepared for the Federal Reserve, Goldman indicated that, in 2008, it owned or operated a carbon aggregator, bio-diesel refinery, ethanol producer, and liquefied natural gas developer.⁶⁰⁰ It had also become engaged in shipping vessels and mining coal.⁶⁰¹ In addition, Goldman began trading aluminum alloy, steel, coal, and liquefied natural gas.⁶⁰²

Bank Holding Company Status. As indicated earlier, in September 2008, in the midst of the financial crisis, Goldman became a bank holding company. In its expedited application filed with the Federal Reserve, Goldman explicitly invoked Section 4(o) of the Gramm-Leach-Bliley Act as legal authority to “grandfather” its existing commodities activities, that otherwise would not be permitted for a financial holding company.⁶⁰³

Constellation Acquisition. After its conversion to a bank holding company, Goldman continued to expand its physical commodity activities.⁶⁰⁴ In 2009, according to a Goldman presentation to the Federal Reserve, Goldman purchased over 3,000 trading assets involving U.K., French, and German power and U.K. natural gas; as well as about 60 coal contracts, 20 time and voyage freight agreements, and 900,000 pounds of uranium ore from Constellation Energy, a U.S. utility and trading business.⁶⁰⁵ Included in that acquisition was Nufcor International, a uranium trading company which stored and traded uranium ore in various stages of enrichment, as further described below. A later Federal Reserve examination report noted that, by the end of 2009, Goldman’s physical commodity inventories included \$258 million

⁶⁰⁰ 5/26/2011 “Questions from the Federal Reserve on 4(o) Commodities Activities,” prepared by Goldman, at FRB-PSI-200600 - 610, at 601.

⁶⁰¹ *Id.*

⁶⁰² *Id.* at 600.

⁶⁰³ 9/21/2008 “Confidential Application to the Board of Governors of the Federal Reserve System by The Goldman Sachs Group, Inc. and Goldman Sachs Bank USA Holdings LLC,” FRB-PSI-303638 - 662, at 649, 661. Goldman wrote: “[A]fter becoming an FHC [financial holding company], Goldman will continue to operate its existing commodity trading business pursuant to the grandfather exception in Section 4(o) Goldman Sachs understands Section 4(o) to permit it to retain all its existing commodity-related businesses and activities because Goldman Sachs was engaged, prior to September 30, 1997, in the trading, sale, and investment in commodities and underlying physical properties that were not permissible for BHCs [bank holding companies] on that date. The Section 4(o) exemption does not require that a company have been engaged prior to September 30, 1997 in all the activities that it seeks to grandfather under Section 4(o) at the time the company becomes an FHC; rather, it only requires that the company have been engaged prior to that date in commodity-related activities that were not permissible for a BHC in the United States on that date. Goldman meets this test, as well as the 5% of total consolidated assets test in Section 4(o)(2).” *Id.* at 648 - 649.

⁶⁰⁴ See 3/2010 “Global Commodities Principal Investments[.] Commodities Principal Investments,” FRB-PSI-602243 - 274.

⁶⁰⁵ See 2/2010 “Federal Reserve Bank of New York Discovery Review: Global Commodities” prepared by Goldman, FRB-PSI-601685 - 713, at 698.

in oil products, \$207 million in natural gas, \$140 million in coal, and \$3 billion in metals.⁶⁰⁶

As the Federal Reserve began to consider whether it should take a closer look at financial holding company involvement with physical commodities, an initial analysis contained this depiction of Goldman:

“[Goldman Sachs] is one of the largest players in the commodities market and the business has been a material driver of revenue for the firm. ... Goldman’s commodities business is active in the physical markets, in terms of trading, transporting, and storing physical commodities as well as owning power generation and other physical assets.”⁶⁰⁷

Additional Acquisitions. Goldman continued to expand its physical commodity activities throughout 2010. One of its acquisitions was Metro International Trade Services, the global metals warehousing business discussed further below.⁶⁰⁸ Another was its purchase of a natural gas trading book from Nexen Inc., a Canadian natural gas business that reportedly bought and sold about 6 billion cubic feet of gas per day and managed more than 50 billion cubic feet of gas storage capacity.⁶⁰⁹ A third acquisition was taking ownership of a coal mine and related assets in Colombia, as discussed in more detail below.⁶¹⁰

Goldman disclosed to the Federal Reserve that, by 2010, Goldman’s holdings included crude oil and natural gas exploration and production efforts in the North Sea, Central Asia, and North Africa; bulk carrier shipping through a joint-venture headquartered in Europe and another in Japan; and a coal mine in Australia.⁶¹¹ According to Goldman, by then it was also trading physical palm oil, rubber, and asphalt.⁶¹²

⁶⁰⁶ 4/8/2010 “Global Commodities Discovery Review,” FRB-PSI-200516-585, at 523.

⁶⁰⁷ Undated but likely 2010 “Scope Discovery Review Memo[.] Goldman Sachs Group Commodities,” prepared by FRBNY examiners, FRB-PSI-200511 - 515, at 511 [sealed exhibit].

⁶⁰⁸ See 10/28/2011 “Global Commodities[.] Presentation to the Board of Directors of The Goldman Sachs Group, Inc.,” prepared by Goldman, FRB-PSI-700011 - 030, at 014, 027.

⁶⁰⁹ Id. at 014, 022. See also, e.g., “Goldman expands in commod with Nexen unit buy,” Reuters, Joe Silha and Jeff Jones (5/14/2010), <http://www.reuters.com/article/2010/05/14/us-goldman-nexen-naturalgas-idUSTRE64D53120100514>.

⁶¹⁰ See 10/28/2011 “Global Commodities[.] Presentation to the Board of Directors of The Goldman Sachs Group, Inc.,” prepared by Goldman, FRB-PSI-700011 - 030, at 028.

⁶¹¹ 3/2010 “Global Commodities Principal Investments[.] Commodities Private Equity Presentation to the Federal Reserve,” prepared by Goldman, FRB-PSI-602243 - 274, at 247. See also “A Shuffle of Aluminum, but to Banks, Pure Gold,” *New York Times*, David Kocieniewski (7/20/2013), <http://www.nytimes.com/2013/07/21/business/a-shuffle-of-aluminum-but-to-banks-pure-gold.html?ref=business>; 07/23/2013 Goldman Sachs press release, “Goldman Sachs on Aluminum and Physical Commodities,” <http://www.goldmansachs.com/media-relations/in-the-news/archive/goldman-sachs-physical-commodities-7-23-13.html>.

⁶¹² 5/26/2011 “Questions from the Federal Reserve on 4(o) Commodities Activities,” FRB-PSI-200600 - 610, at 600.

A 2011 presentation by Goldman to its Board of Directors provided these “[e]xamples of physical client activity”: supplying jet fuel to Delta and Qatar airlines; supplying crude oil feedstock to Independent Refiner Alon and then purchasing the refined products; and supplying coal to Utility Drax.⁶¹³ It also stated: “We expect a larger increase in Physical activity in Growth Markets relative to Developed Markets.”⁶¹⁴ The last page of the presentation stated that Goldman would be able to attribute a high valuation to GS Commodities “if the business was able to grow physical activities, unconstrained by regulation and integrated with the financial activities.”⁶¹⁵

In 2011, Goldman also reported to the Federal Reserve that it provided risk management services to clients involving various types of commodities, including crude oil and refined products, power and natural gas, coal, freight, emissions and iron ore, base and precious metals, index products, and agricultural products.⁶¹⁶ Goldman indicated that, in November 2011, it had over 1,000 active clients in its commodities business.⁶¹⁷ Those clients included producers, consumers, industrial users, central banks, pension funds, wealth managers, and other financial institutions,⁶¹⁸ with corporate clients accounting for about 45% of its global commodities clients.⁶¹⁹ In 2011, the Federal Reserve estimated that Goldman had physical commodity assets worth \$26 billion.⁶²⁰

(3) Current Status

When the Federal Reserve initiated its special review of financial holding company involvement with physical commodities in 2010, Goldman was one of the ten banks it examined in detail. Goldman was also featured in the internal Summary Report prepared by the Federal Reserve’s Commodities Team summarizing the findings of the special review.⁶²¹

The nonpublic 2012 Summary Report described Goldman’s wide-ranging physical commodity activities. They included Goldman’s acquisition of Cogentrix, with its ownership interests in over 30 power plants;⁶²² direct ownership of four tolling agreements with other power

⁶¹³ 10/28/2011 “Global Commodities[:] Presentation to the Board of Directors of The Goldman Sachs Group, Inc.,” prepared by Goldman, FRB-PSI-700011 - 030, at 019.

⁶¹⁴ *Id.* at 021.

⁶¹⁵ *Id.* at 030.

⁶¹⁶ 11/2011 “Global Commodities Business Overview,” FRB-PSI-201176 - I89, at 177.

⁶¹⁷ *Id.*

⁶¹⁸ *Id.*

⁶¹⁹ *Id.* at 862.

⁶²⁰ 2011 “Work Plan for Commodity Activities at SIFIs,” prepared by FRBNY Commodities Team, FRB-PSI-200465 - 476, at 465 [sealed exhibit].

⁶²¹ See 10/3/2012 “Physical Commodity Activities at SIFIs,” prepared by FRBNY Commodities Team (hereinafter, “2012 Summary Report”), FRB-PSI-200477 - 510 [sealed exhibit].

⁶²² *Id.* at 485.

plants;⁶²³ direct ownership of Metro, with 84 metal warehouses around the world;⁶²⁴ the Colombian coal mines and related assets;⁶²⁵ as well as the uranium trading business.⁶²⁶ The 2012 Summary Report also noted that Goldman and JPMorgan together had a “total of 20-25 ships under time charters or voyages transporting oil [and] Liquefied Natural Gas.”⁶²⁷

In addition to surveying the extent of Goldman’s physical commodity activities, the 2012 Summary Report by the Federal Reserve Commodities Team identified multiple concerns with those activities. One concern was that Goldman had insufficient capital and insurance to cover potential losses from a catastrophic event. The report noted at one point that Goldman’s catastrophic risk valuation methodology for its power plants was to use “simply the current value of its most valuable power plant,” with no provision for potential expenses stemming from loss of life, worker disability, facility replacement, or a “failure to deliver electricity under contract.”⁶²⁸ At another point, the 2012 Summary Report compared the level of Goldman’s capital and insurance reserves against estimated costs associated with “extreme loss scenarios,” and found that “the potential loss exceeds capital and insurance” by \$1 to \$15 billion.⁶²⁹ If Goldman were to incur losses from its physical commodity activities while maintaining insufficient capital and insurance protections, the Federal Reserve, and ultimately U.S. taxpayers, could be asked to rescue the firm.

In 2013, when the Subcommittee asked Goldman about its physical commodity activities, the financial holding company provided information that, consistent with the Summary Report, illustrated its far-reaching commodity operations. Goldman reported trading in the physical commodities of aluminum, copper, gold, lead, nickel, palladium, platinum, silver, tin, zinc, coal, crude oil, heating oil, gasoline, jet kerosene, and natural gas.⁶³⁰ Goldman also reported maintaining substantial inventories of many physical commodities. At the end of 2011 (the latest year in which complete data was provided to the Subcommittee), those inventories included approximately 231,000 metric tons of aluminum, 37,000 metric tons of copper, 3,000 metric tons of nickel, 2.2 million barrels of crude oil, 245,000 barrels of heating oil, 2 million barrels of jet kerosene, and 106.5 million BTUs of natural

⁶²³ Id.

⁶²⁴ Id. at 486.

⁶²⁵ Id.

⁶²⁶ Id.

⁶²⁷ Id.

⁶²⁸ Id. at 494.

⁶²⁹ Id. at 498, 509. The 2012 Summary Report also noted that commercial firms engaged in oil and gas businesses had a capital ratio of 42%, while bank holding company subsidiaries had a capital ratio of, on average, 8% to 10%. Id. at 499.

⁶³⁰ 2/12/2013 Goldman Response to Subcommittee Questionnaire, GSPSICOMMODS00000001-R - 003-R.

gas.⁶³¹ In addition, Goldman has continued to own and operate coal mines in Colombia, supply uranium to power plants, and operate a global metals warehouse business.⁶³²

Continuing Physical Commodities. Although several other bank holding companies have begun to exit their physical commodity activities, Goldman executives have indicated that Goldman remains committed to commodities as a core business.⁶³³ In September 2013, Goldman CEO Lloyd Blankfein described commodities as a “core, strategic business” for the bank.⁶³⁴ In an October 2013 earnings conference call, in response to questions from analysts, Goldman’s Chief Financial Officer Harvey Schwartz described commodities as an “essential business for our clients,” and stated: “We have no intention of selling our [commodities] business.”⁶³⁵

Despite those public statements, in the last two years, Goldman has sold or attempted to sell certain commodity assets. In 2012, it sold Cogentrix Energy and essentially exited the business of operating power plants.⁶³⁶ In 2013, it signaled that Metro International and its warehouses were up for sale, although it has yet to conclude a transaction.⁶³⁷ In 2014, Goldman announced that Nufcor and its uranium trading business were for sale.⁶³⁸ Goldman told the Subcommittee that it has yet to receive an acceptable bid for Nufcor and has decided instead to wind down the business which, due to long-term uranium supply contracts, will require Goldman to continue supplying uranium to one power plant until 2018.⁶³⁹ Goldman told the

⁶³¹ See 2/12/2013 Goldman Response to Subcommittee Questionnaire, GSPSICOMMODS00000001-R - 003-R, at 003-R.

⁶³² See discussion below.

⁶³³ See “Goldman Sachs Stands Firm as Banks Exit Commodity Trading,” Bloomberg, Ambereen Choudhury (4/22/2014), <http://www.bloomberg.com/news/2014-04-22/goldman-sachs-stands-firm-as-banks-exit-commodity-trading.html>.

⁶³⁴ “As rivals fade, Goldman Sachs stands firm on commodities,” Reuters, Jonathan Leff and Dmitry Zhdannikov, (12/6/2013), <http://www.reuters.com/article/2013/12/06/us-banks-commodities-idUSBRE9B50S720131206>. See also “Goldman Serves Crucial Physical Commodities Role, Blankfein Says,” Bloomberg, Michael J. Moore (9/18/2013), <http://www.bloomberg.com/news/2013-09-18/goldman-serves-crucial-physical-commodities-role-blankfein-says.html>.

⁶³⁵ “Goldman Q3 commodity revenue down ‘significantly’ on Q2” (10/17/2013), Reuters, <http://www.reuters.com/article/2013/10/17/goldman-results-commodities-idUSL1N0I70OD20131017>.

⁶³⁶ 9/6/2012 Carlyle Group press release, “The Carlyle Group to Acquire Cogentrix Energy Assets and Power Project Development and Acquisition Platform,” <http://www.carlyle.com/news-room/news-release-archive/carlyle-group-acquire-cogentrix-energy-assets-and-power-project-devel>.

⁶³⁷ Subcommittee briefing by Goldman (7/17/2014); “Goldman explores sale of Metro metals warehouse business,” Reuters, Josephine Mason and David Sheppard (4/11/2013), <http://www.reuters.com/article/2013/04/11/us-goldman-metro-idUSBRE93A0IO20130411>.

⁶³⁸ “Goldman puts ‘for sale’ sign on Iran’s old uranium supplier,” Reuters, David Sheppard (2/11/2014), <http://www.reuters.com/article/2014/02/11/us-goldman-uranium-insight-idUSBREA1A0RX20140211>.

⁶³⁹ Subcommittee briefing by Goldman (9/5/2014).

Subcommittee it is also considering selling its Colombian coal mines.⁶⁴⁰
Despite those statements and actions to sell or shut down certain aspects
of its physical commodity activities, Goldman informed the
Subcommittee that it intended to remain active in the commodities
business and will seek to continue its physical commodity activities.⁶⁴¹

⁶⁴⁰ Id.

⁶⁴¹ Id.

B. Goldman Involvement with Uranium

For the past five years, Goldman Sachs has owned, marketed, and traded physical uranium and related financial instruments. Goldman initiated its physical and financial trading of uranium in 2009, a year after it became a bank holding company, by acquiring a longtime industry leader in the uranium markets, Nufcor International Ltd. Goldman claimed that it had legal authority to engage in uranium trading under the Gramm-Leach-Bliley “grandfather” clause. Since no Nufcor employees came to Goldman as part of the sale, Goldman employees ran the business. Within three years of purchase, Goldman increased the volume of Nufcor’s uranium trading tenfold, from an annualized amount of about 1.3 million pounds to 13 million pounds, and increased its long-term uranium supply contracts from two to nine utilities with nuclear power plants. Goldman stored its physical uranium in at least six storage facilities in the United States and abroad, owned by unrelated parties.

Goldman’s uranium-related activities, which are expected to continue until at least 2018, raise multiple concerns, including insufficient capital and insurance to protect against a catastrophic event, unfair competition, and conflicts of interest arising from controlling physical uranium supplies while trading uranium financial instruments.

(1) Background on Uranium

Uranium (U) is a dense, weakly radioactive, naturally occurring metal⁶⁴² that is most commonly used for power generation and nuclear weapons. It is found in rocks and ores that make up approximately three percent of the earth’s crust, and so is not considered a rare metal.⁶⁴³

In its natural form, uranium is found in three different isotopes: Uranium-238, Uranium-235, and Uranium-234, with U-235, the isotope used for nuclear enrichment, comprising only about 0.7 percent of natural uranium.⁶⁴⁴ To be useful for power generation or military purposes, the percentage of U-235 in a given sample needs to be increased significantly. Power plants need uranium to contain about 5%

⁶⁴² 10/1/2012 “Radiation Protection[.] Uranium,” U.S. Environmental Protection Agency website, <http://www.epa.gov/radiation/radionuclides/uranium.html>.

⁶⁴³ 12/2008 “New Product Memorandum [.] Uranium Trading,” prepared by Goldman, FRB-PSI-400039 - 052, at 049 (hereinafter “12/2008 Goldman New Product Memorandum on Uranium Trading”); *Being Nuclear: Africans and the Global Uranium Trade*, (The MIT Press, 2012) (hereinafter, “*Being Nuclear*”), Gabrielle Hecht, at 51 (“[U]ranium wasn’t confined to particular geological formations or geographical locations. The stuff was everywhere.”).

⁶⁴⁴ 10/1/2012 “Radiation Protection[.] Uranium,” U.S. Environmental Protection Agency website, <http://www.epa.gov/radiation/radionuclides/uranium.html>.

U-235,⁶⁴⁵ while military weapons require uranium to contain at least 90%.⁶⁴⁶

To increase the concentration of U-235, uranium must go through a fuel processing cycle. The process begins when the uranium ore is refined and processed to generate triuranium octaoxide (U_3O_8 or U_3O_8), otherwise known as “yellowcake.”⁶⁴⁷ U_3O_8 is “an inert, stable, insoluble oxide.”⁶⁴⁸ In the next step of the fuel processing cycle, by removing impurities and combining it with fluorine, the U_3O_8 is converted into uranium hexafluoride (UF_6 or UF_6). The only conversion plant currently operating in the United States is located in Metropolis, Illinois.⁶⁴⁹

In the next step in the process, the UF_6 is enriched to increase the level of U-235.⁶⁵⁰ The enriched UF_6 is then solidified and processed into uranium oxide (UO_2), which can be used to manufacture nuclear fuel rods for power plants.⁶⁵¹ This multi-step enrichment process was depicted in the following chart included in a Goldman internal memorandum advocating the financial holding company’s involvement with uranium trading:

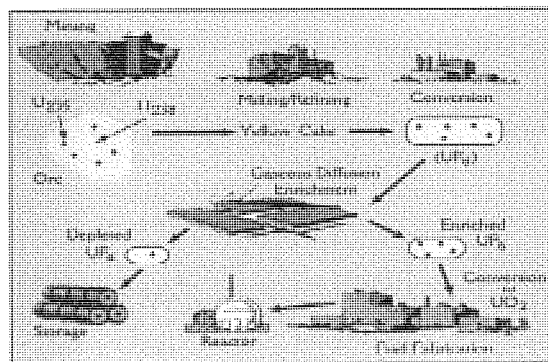


Figure 1. The Uranium Fuel Processing Cycle.⁶⁵²

⁶⁴⁵ See 10/1/2014 “Uranium Enrichment,” U.S. Nuclear Regulatory Commission website, <http://www.nrc.gov/materials/fuel-cycle-fac/ur-enrichment.html>; See also 3/2014 “What is Uranium? How Does it Work?,” World Nuclear Association website, <http://www.world-nuclear.org/info/Nuclear-fuel-cycle/introduction/what-is-Uranium--How-Does-it-Work-/>.

⁶⁴⁶ See 3/2014 “What is Uranium? How Does it Work?,” World Nuclear Association website, <http://www.world-nuclear.org/info/Nuclear-fuel-cycle/introduction/what-is-Uranium--How-Does-it-Work-/>.

⁶⁴⁷ 12/2008 “New Product Memorandum,” prepared by Goldman, FRB-PSI-400039 - 052, at

049.

⁶⁴⁸ *Id.*

⁶⁴⁹ *Id.* (noting other conversion plants in Canada, France, United Kingdom, China, and Russia).

⁶⁵⁰ *Id.*

⁶⁵¹ *Id.*

⁶⁵² *Id.*

Health Risks. The health-related risks of uranium itself as well as from the fuel processing cycle can be significant. While uranium in its natural form is not considered a harmfully radioactive substance, it is toxic after processing.⁶⁵³ Exposure to too much uranium has been found to increase cancer risk and cause liver damage.⁶⁵⁴ Further, various stages of uranium processing involve strong acids and produce extremely corrosive chemicals that could cause fires or explosions.⁶⁵⁵

Regulatory Framework. The regulatory landscape for owning and processing uranium varies as uranium is enriched and moves closer to useable form for fuel or weapons. In the United States, a person may not take title to or possession of, or import or export uranium, without obtaining a general or specific license from the U.S. Nuclear Regulatory Commission (NRC).⁶⁵⁶ In 1980, the NRC issued a regulation which automatically grants a “general” license, without any application requirement, to any U3O8 or un-enriched UF6 title holder who does not physically possess, move, or process the uranium.⁶⁵⁷ That regulation effectively allows uranium owners to buy and sell the uranium without having to obtain a specific U.S. license, so long as they do not take physical possession of the metal. At the same time, the NRC has imposed significant licensing requirements on parties involved with the physical transport, handling, and processing of uranium.⁶⁵⁸

Other countries have different regulatory requirements regarding the storage, transport, enrichment, and trading of uranium. An ongoing regulatory issue is whether uranium should be treated as nuclear material requiring careful monitoring and trading restrictions, or a profit-generating commodity freely transferable among parties interested in buying and selling it.⁶⁵⁹

Uranium Markets. According to the World Nuclear Association, over 400 nuclear power plants scattered over 30 countries use uranium

⁶⁵³ Id. at 050.

⁶⁵⁴ 10/1/2012 “Radiation Protection[:] Uranium,” U.S. Environmental Protection Agency website, <http://www.epa.gov/radiation/radionuclides/uranium.html>.

⁶⁵⁵ 5/21/2014 “Uranium Conversion,” U.S. Nuclear Regulatory Commission website, <http://www.nrc.gov/materials/fuel-cycle-fac/ur-conversion.html>.

⁶⁵⁶ See Section 62 of the Atomic Energy Act of 1954, P.L. 83-703, codified at 42 U.S.C. §2011 (“Unless authorized by a general or specific license issued by the Commission, which the Commission is hereby authorized to issue, no person may transfer or receive in interstate commerce, transfer, deliver, receive possession of or title to, or import into or export from the United States any source material after removal from its place of deposit in nature ...”).

⁶⁵⁷ 10 C.F.R. §40.21, 45 Fed. Reg. 65531, (Oct. 3, 1980) (“A general license is hereby issued authorizing the receipt of title to source or byproduct material, as defined in this part, without regard to quantity. This general license does not authorize any person to receive, possess, deliver, use, or transfer source or byproduct material.”).

⁶⁵⁸ Subcommittee briefing by the Nuclear Regulatory Commission (9/23/2014).

⁶⁵⁹ See, e.g., *Being Nuclear: Africans and the Global Uranium Trade*, (The MIT Press, 2012) (hereinafter, “*Being Nuclear*”), Gabrielle Hecht, at 31-36, 56-57.

to generate about 12% of the world's power supply.⁶⁶⁰ Those nuclear power plants have created a market for about 160-170 million pounds of uranium oxide concentrate per year.⁶⁶¹ To meet that demand, uranium is usually purchased by utilities or power plants directly from the producers using long term supply contracts.⁶⁶² The prices for those contracted deliveries are usually linked to the spot prices of uranium at the time of delivery.⁶⁶³

Uranium-related trading can occur in a number of ways, including trading in: (1) physical uranium at various stages of its life cycle; (2) uranium financial instruments, including futures, forwards, options, or swaps; (3) certain rights related to uranium, such as "Conversion Service Certificates" or "Separative Work Units"; and (4) shares of uranium-related companies or an index that tracks uranium-related companies' stock prices.⁶⁶⁴

Uranium is commonly traded as a physical commodity at two stages in its life cycle: U3O8 (triuranium octoxide) and as UF6 (uranium hexafluoride).⁶⁶⁵ The total volume of those two physical markets is relatively small.

With respect to uranium financial instruments, CME Group Inc. lists a standardized uranium-related futures contract for 250 pounds of U3O8.⁶⁶⁶ This financially settled contract is traded on the CME Globex and CME ClearPort trading platforms, and is linked to prices provided by Ux Consulting Company, LLC.⁶⁶⁷ It was established and began trading for the first time on May 6, 2007.⁶⁶⁸ In recent years, the uranium futures market has had relatively few participants, the U3O8

⁶⁶⁰ 3/2014 "What is Uranium? How Does it Work?," World Nuclear Association website, <http://www.world-nuclear.org/info/Nuclear-fuel-cycle/introduction/what-is-Uranium--How-Does-it-Work-/>.

⁶⁶¹ 4/2014 "Uranium Markets," World Nuclear Association website, <http://www.world-nuclear.org/info/nuclear-fuel-cycle/uranium-resources/uranium-markets/> (stating 170 million pounds).

⁶⁶² *Id.*

⁶⁶³ *Id.* Because of the extensive amount of processing required to make uranium useful, only about one third of the cost of nuclear fuel for a power plant is the cost of the original uranium. *Id.* Further, the "spot" prices for uranium are not based on actual transactions, but are instead published by survey services that are integrally involved in these markets. See 12/2008 Goldman New Product Memorandum on Uranium Trading, FRB-PSI-400039 - 052, at 052.

⁶⁶⁴ 12/2008 Goldman New Product Memorandum on Uranium Trading, FRB-PSI-400039 - 052, at 030 - 040.

⁶⁶⁵ *Id.*

⁶⁶⁶ See "UxC Uranium U3O8 Futures Contract Specs," CME Group website, http://www.cmegroup.com/trading/metals/other/uranium_contract_specifications.html.

⁶⁶⁷ *Id.*

⁶⁶⁸ When it first began trading, the futures contract was on the New York Mercantile Exchange (NYMEX) Clear Port and CME Globex platforms. See "CME/NYMEX Uranium Futures (UX) Contract[.]" CME/NYMEX Partners with Ux Consulting to Offer Uranium Futures Contracts," Ux Consulting Company, LLC website, <http://www.uxc.com/data/nymex/NymexOverview.aspx>.

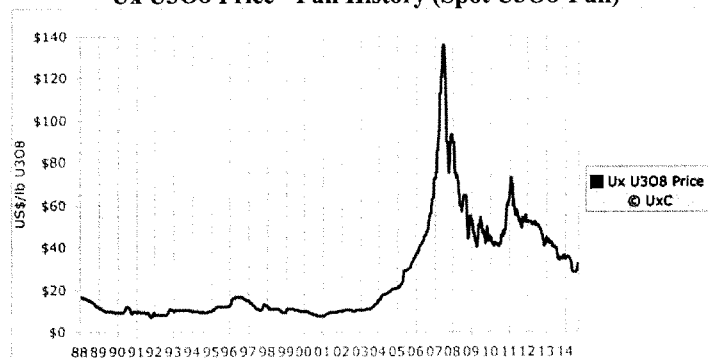
contract has rarely traded, and open interest has generally remained relatively low.⁶⁶⁹

Uranium can also be traded through two unique financial instruments tied to its processing cycle. The right to “convert” U3O8 into UF6, represented by a U3O8 “Conversion Services Certificate,” can be traded on an over-the-counter basis.⁶⁷⁰ These certificates grant the holder a place in line to convert U3O8 to UF6 at a conversion facility.⁶⁷¹ Similarly, a “Separative Work Unit,” representing the “right” to enrich uranium at a particular enrichment facility by a particular amount, can also be traded over the counter.⁶⁷²

Finally, although more removed, investors seeking to profit from changes in uranium prices may invest in a company engaged in the uranium business or in one or more exchange traded funds that track stocks of companies involved in uranium.⁶⁷³

In recent years, the uranium market has experienced significant price fluctuations, based on massive swings in market sentiment towards nuclear power and technology changes for alternative sources of energy. Price swings in the U3O8 spot market illustrate the price variance and increased volatility in recent years.

Ux U3O8 Price - Full History (Spot U3O8-Full)



*Chart prepared by Ux Consulting Company, LLC.⁶⁷⁴

⁶⁶⁹ There are frequently zero reported trades per day. For example, for the week of September 9-16, 2014, only one trade was reported, involving 50 contracts. See “UxC Uranium U3O8 Volume,” CME Group website, http://www.cmegroup.com/trading/metals/other/uranium_quotes_volume_voi.html.

⁶⁷⁰ Subcommittee briefing by Goldman Sachs (9/5/2014).

⁶⁷¹ Id.

⁶⁷² Id.

⁶⁷³ Id.

⁶⁷⁴ For example, an investor could invest in the Global X Uranium ETF, which tracks the Solactive Global Uranium Index and is traded on NYSE Arca under symbol URA. See “Global X Uranium ETF,” Global X Funds website, <http://www.globalxfunds.com/URA>.

⁶⁷⁵ Ux Consulting Company, LLC, <http://www.uxc.com/review/UxCPriceChart.aspx?chart=spot-u3o8-full>.

This price history reflects fundamental changes in the uranium market. In particular, in the mid-2000s, a renewed focus on global warming⁶⁷⁵ led to widespread speculation that nuclear power would expand, leading to an increase in uranium prices. U3O8 spot market prices peaked at about \$135 per pound, at nearly the same time as the U3O8 futures product began trading for the first time in May 2007.⁶⁷⁶ Demand for nuclear power sources then waned, as huge stores of relatively inexpensive natural gas became available as an alternative energy source. Just as prices began to recover amid a renewed push for low carbon dioxide emission energy sources to counter global warming, the nuclear disaster occurred at the Fukushima Daiichi nuclear power plant in Japan in March 2011. “The accident ... called nuclear power’s prospects into question and the spot price [of U3O8] has declined dramatically since that time.”⁶⁷⁷ Governments shut down nuclear power plants,⁶⁷⁸ postponed plans for new ones, and began to shift to other power sources.⁶⁷⁹ From a peak of about \$135 per pound in 2007, U3O8 spot market prices have since fallen to about \$40 today.

Because the uranium market is volatile and has relatively few participants, it poses significant risks for those who trade in it. As one website discussing uranium investments warned: “Uranium futures carry a double whammy of being thinly traded and very volatile.”⁶⁸⁰

(2) Background on Nufcor

The Nuclear Fuels Corporation of South Africa (Nufcor), the predecessor to Nufcor International Ltd., was formed by South African gold mining companies in the 1960s, to process and market uranium to the nascent nuclear power industry.⁶⁸¹ The companies had previously

⁶⁷⁵ In May 2006, the movie, “An Inconvenient Truth” was released, for example, which significantly raised awareness of global warming. See “‘An Inconvenient Truth’: Al Gore’s Fight Against Global Warming,” *New York Times*, Andrew Revkin (5/22/2006), <http://www.nytimes.com/2006/05/22/movies/22gore.html?pagewanted=all>.

⁶⁷⁶ See, e.g., “Uranium stocks rally in advance of NYMEX futures trading,” U3O8.biz, Robert Simpson (5/3/2007), http://www.u3o8.biz/s/MarketCommentary.asp?ReportID=184497&_Title=Uranium-stocks-rally-in-advance-of-NYMEX-futures-trading (“The NYMEX will list a uranium futures contract on Monday, May 7, as the energy and metals exchange looks to capitalize on surging interest in the nuclear fuel.”); *Being Nuclear*, at 329.

⁶⁷⁷ 2014 Review, prepared by Energy Resources International, Inc. for the U.S. Department of Energy Office of Nuclear Energy, at 5, <http://www.energy.gov/sites/prod/files/2014/05/f15/ERI%20Market%20Analysis.pdf>.

⁶⁷⁸ *Id.* at 4 (noting Japan temporarily shut down some nuclear facilities while Germany permanently shut facilities).

⁶⁷⁹ See, e.g., “Uranium Market,” Uranium Participation Corporation website, http://www.uraniumparticipation.com/s/Uranium_Market.asp (explaining current lower uranium prices).

⁶⁸⁰ 10/2/2014 “How to Invest in Uranium,” Demand Media, Karen Rogers, <http://finance.zacks.com/invest-uranium-5543.html>.

⁶⁸¹ “Goldman puts ‘for sale’ sign on Iran’s old uranium supplier,” Reuters, David Sheppard (2/11/2014), <http://www.reuters.com/article/2014/02/11/us-goldman-uranium-insight-idUSBREA1A0RX20140211>.

sold the bulk of the uranium obtained as a byproduct of their gold mining to the United States and United Kingdom for military purposes.⁶⁸²

The creation of Nufcor marked a significant shift in market focus away from military sales towards commercial power plants, and Nufcor became a supplier of uranium products used to produce nuclear fuel rods for nuclear power plants around the world.⁶⁸³ Among other countries, in the 1970s, Nufcor sold enriched uranium to Iran.⁶⁸⁴

In 1999, Nufcor incorporated a new subsidiary in London, Nufcor International Ltd., to undertake trading in nuclear fuel cycle products and services. Nufcor also created an investment adviser, Nufcor Capital Ltd., which managed an investment fund, Nufcor Uranium Ltd., for uranium-related investments.⁶⁸⁵ By the mid-2000s, Nufcor and its related affiliates were actively engaged in owning physical uranium, trading financial products related to uranium, and advising investors on uranium-related investments.⁶⁸⁶

On June 26, 2008, Nufcor was bought by the Constellation Energy Group, a U.S. firm that operated several nuclear power plants, for about \$103 million.⁶⁸⁷

(3) Goldman Involvement with Physical Uranium

Goldman's involvement with physical uranium began with a 2008 proposal by GS Commodities to get into the business of trading physical and financial uranium products and processing rights.⁶⁸⁸ In 2009, Goldman purchased Nufcor, and expanded its business over the next five years, resulting in Goldman's buying millions of pounds of uranium, controlling inventories of physical uranium at storage facilities in the United States and Europe, and becoming a long term supplier of physical uranium to nine utilities with nuclear power plants. Because no

⁶⁸² See *Being Nuclear: Africans and the Global Uranium Trade*, (The MIT Press, 2012) (hereinafter, "*Being Nuclear*"), Gabrielle Hecht, at 68, 89.

⁶⁸³ See *Being Nuclear*, at 68 - 69, 72.

⁶⁸⁴ 11/16/2014 email from Professor Gabrielle Hecht to Subcommittee; "Goldman puts 'or sale' sign on Iran's old uranium supplier," Reuters, David Sheppard (2/11/2014), <http://www.reuters.com/article/2014/02/11/goldman-uranium-idUSL2N0LC0ZV20140211>.

⁶⁸⁵ 9/19/2014 letter from Goldman Sachs legal counsel to Subcommittee, "Follow-Up Requests," PSI-GoldmanSachs-16-000001 - 006, Exhibit A, at GSPSICOMMODS00046240.

⁶⁸⁶ See 2008 Form 10-K for Constellation Energy Group, Inc., filed with the SEC on 2/27/09, at 152 - 153, <http://www.sec.gov/Archives/edgar/data/9466/000104746909002000/a2190570z10-k.htm>.

⁶⁸⁷ *Id.* at 1, 152. The two owners of Nufcor at the time were AngloGold Ashanti and FirstRand International. Constellation Energy's purchase of Nufcor led to speculation in the press that it "could trigger a trend where utilities start to trade uranium as a commodity." "Constellation poised to buy Nufcor Intl.," *Mineweb*, Anna Stablum (5/7/2008), <http://www.mineweb.com/mineweb/content/en/mineweb-fast-news?oid=52522&sn=Detail>.

⁶⁸⁸ 12/2008 Goldman New Product Memorandum on Uranium Trading, FRB-PSI-400039 - 052, at 039.

employees who conducted Nufcor's business joined Goldman after the sale, Goldman employees ran the business. In 2014, for a variety of reasons, Goldman decided it would sell Nufcor or wind it down. It currently has contractual obligations to supply physical uranium to one nuclear power plant until 2018.

(a) Proposing Physical Uranium Activities

In December 2008, three months after Goldman became a bank holding company, Goldman's commodities group, GS Commodities, sought approval from senior Goldman management to expand its physical commodity activities to include "trading physical and financial Uranium products and processing rights."⁶⁸⁹ As a way of initiating this activity, GS Commodities advocated acquiring Nufcor International Ltd., which was "a recognized name in the uranium industry,"⁶⁹⁰ and which was then owned by Constellation Energy Group.⁶⁹¹

The proposal, which was sponsored by Goldman's Global Head of Commodities, Isabelle Ealet, was memorialized in a 2008 "New Product Memorandum."⁶⁹² The memorandum was submitted to Goldman's European Federation New Products Committee for approval.⁶⁹³ The New Products Committee, which included approximately a dozen Goldman executives, focused on ensuring that Goldman had the ability to support the proposed new activities from compliance, legal, tax, and operational perspectives.⁶⁹⁴ The New Product Memorandum detailed Goldman's understanding of Nufcor's business activities, highlighted some of the associated risks, and ultimately recommended purchasing the company.⁶⁹⁵

Describing Nufcor's Business. According to the Goldman analysis in the New Product Memorandum, Nufcor's business model was focused around four distinct activities involving the trading of physical and financial uranium products, the marketing of uranium ore supplied by two mining companies, and advising on uranium-related

⁶⁸⁹ Id. Goldman told the Subcommittee that while it may have previously traded in uranium to a minimal degree, creating a dedicated business line to conduct uranium transactions in the financial and physical markets was a major change in the nature, scope, and volume of its uranium activities, and necessitated a new product presentation and approval. Subcommittee briefing by Goldman Sachs (9/5/2014).

⁶⁹⁰ 12/2008 Goldman New Product Memorandum on Uranium Trading, FRB-PSI-400039 - 052, at 039.

⁶⁹¹ Constellation Energy is a longtime operator of nuclear power plants in the United States. See 2008 Form 10-K for Constellation Energy Group, Inc., filed with the SEC on 2/27/09, <http://www.sec.gov/Archives/edgar/data/9466/000104746909002000/a2190570z10-k.htm>.

⁶⁹² 12/2008 Goldman New Product Memorandum on Uranium Trading, FRB-PSI-400039 - 052, at 039.

⁶⁹³ Id.

⁶⁹⁴ Subcommittee briefing by Goldman Sachs (9/5/2014).

⁶⁹⁵ See 12/2008 Goldman New Product Memorandum on Uranium Trading, FRB-PSI-400039 - 052.

investments.⁶⁹⁶ Goldman described the four business activities as follows:

- (1) “Arbitrage across elements and processes in the uranium fuel cycle including time-spreads and inventory carry trades to capture contango differentials”;⁶⁹⁷
- (2) “Speculation on individual elements and processes in the fuel cycle”;⁶⁹⁸
- (3) “Fulfilment of Agency Agreements with two mining companies for the marketing and sale of U3O8”;⁶⁹⁹ and
- (4) “Provision of Advisory and Custodian services to Nufcor Capital Ltd, a closed-ended investment fund that buys and holds UF6 & U3O8.”⁷⁰⁰

The Goldman analysis found that Nufcor International Ltd. traded a significant volume of physical and financial uranium-related products. Its trading activity included:

- 3.6 million pounds of physical U3O8 during 2008;
- 460,000 kilograms of physical UF6 during 2008;
- 1.3 million pounds of U3O8, using exchange based products and bilateral swap agreements during 2008;
- 760,000 kilograms of uranium in Conversion Service Credits (rights to convert U3O8 to UF6) during 2007; and
- 500,000 kilograms of uranium in Separative Work Units (rights to enrich UF6).⁷⁰¹

In addition, the December 2008 Goldman analysis noted that Nufcor possessed a large inventory of physical uranium products which, in 2008, included:

- 1.15 million pounds of U3O8;⁷⁰²

⁶⁹⁶ Id.

⁶⁹⁷ Id. at 040. See also “Arbitrage,” Investopedia.com, <http://www.investopedia.com/terms/a/arbitrage.asp> (“The simultaneous purchase and sale of an asset in order to profit from a difference in the price.”).

⁶⁹⁸ Id. According to the Goldman analysis, Nufcor then held inventories of U3O8 and UF₆, as well as uranium Conversion Service Credits which had been loaned to Honeywell, but were due to return to Nufcor in 2009. Id.

⁶⁹⁹ Id. According to the Goldman analysis, Nufcor then had annual retainer and sales commission arrangements with Uranium One and with AngloGold Ashanti Ltd., the South African gold mining consortium. Id.

⁷⁰⁰ Id.

⁷⁰¹ 12/2008 Goldman New Product Memorandum on Uranium Trading, FRB-PSI-400039 - 052, at 040.

⁷⁰² Id. This figure of 1.15 million pounds of U3O8 was contradicted a few pages later, at FRB-PSI-400046, where Goldman indicated that Nufcor had only about 623,000 pounds of U3O8, nearly 500,000 fewer pounds than first indicated at FRB-PSI-400040 in the same memorandum.

- 200,000 kilograms of UF₆; and
- Conversion Service Credits representing 770,000 kilograms of uranium.⁷⁰³

The Goldman analysis valued the entire portfolio at \$47 million dollars, which included a physical uranium inventory worth \$90 million, but also certain uranium forward positions that were then out of the money by \$55 million.⁷⁰⁴

Identifying Key Nufcor Risks. In addition to describing Nufcor's business activities and current uranium holdings, the New Product Memorandum identified and analyzed a number of risks associated with taking on Nufcor's uranium-related activities.⁷⁰⁵ They included valuation and market risks, liquidity risks, catastrophic event liability issues, compliance issues, regulatory risks, credit risks, inventory management concerns, trade reporting issues, and tax considerations.⁷⁰⁶ The description of those risks informed senior Goldman management that the proposed uranium-related activities were high-risk. The key risks included the following.

Valuation Risks and Market Risks. A significant portion of the analysis in the New Product Memorandum focused on trade-related risks, including valuation risks, market risks, and the consequences of declining uranium prices.

The Goldman analysis warned that obtaining accurate valuations for uranium had a number of challenges. It stated that there was "no spot market or spot price marker" that an owner of uranium could use to determine daily uranium prices.⁷⁰⁷ Instead, it found that weekly "spot" prices were published by two consulting firms based on "market sentiment and qualifying bids," rather than completed transactions.⁷⁰⁸ The Goldman analysis stated that Goldman had not yet tested the "rigor/robustness" of those weekly price markers.⁷⁰⁹ The Goldman analysis also found that there was "no exchange-traded commodity

⁷⁰³ Id.

⁷⁰⁴ Id. A few pages later, however, the memorandum indicated that Nufcor had only about 623,000 pounds of U₃O₈, and its total physical uranium portfolio had an estimated value of only about \$64 million. Id. at 046.

⁷⁰⁵ Id. at 042.

⁷⁰⁶ Id. at 043 - 048.

⁷⁰⁷ Id. at 042.

⁷⁰⁸ Id. Reliance on bids rather than completed transactions can result in inaccurate pricing and even abusive practices. For example, widespread manipulation of the London Interbank Offered Rates (LIBOR), benchmarks underpinning trillions of dollars in derivatives, was achieved in part through submissions of inaccurate and misleading bids, as opposed to actual transactions. See, e.g., 2/6/2013 U.S. Department of Justice press release, "RBS Securities Japan Limited Agrees to Plead Guilty in Connection with Long-Running Manipulation of LIBOR Benchmark Interest Rates," http://www.justice.gov/atr/public/press_releases/2013/292421.htm.

⁷⁰⁹ 12/2008 Goldman New Product Memorandum on Uranium Trading, at FRB-PSI-400039 - 052, at 042.

market for physical uranium products.”⁷¹⁰ The absence of an active physical exchange market, again, made valuing uranium products more difficult than for other commodities, adding to the risk of holding the assets.

With respect to market risks, the Goldman analysis highlighted uranium’s volatile prices. It stated that the “disconnect between [fair value] of physical inventory and the lack of [mark-to-market] on the forward positions may result in [profit and loss] volatility for the Uranium portfolio.”⁷¹¹ The Goldman analysis also highlighted Nufcor’s then out-of-the-money net short position in uranium forwards, concluding that it could give rise to further losses if uranium prices declined.⁷¹² Those financial instrument losses would be in addition to losses from the declining value of the physical uranium Nufcor also held.

Operational Risks. In addition to price volatility and valuation issues, the Goldman analysis identified a number of operational concerns related to physical uranium. One key issue was whether Goldman’s existing systems could accurately track physical and financial uranium transactions, given the absence of standardized uranium trade documentation.⁷¹³ The memorandum indicated that trade capturing and reporting mechanisms would need to be developed so that uranium transactions could utilize Goldman’s existing confirmation, settlement, and operations systems.⁷¹⁴ The Goldman analysis also noted that personnel would be needed to manage Nufcor’s physical inventories.⁷¹⁵

Another key issue raised in the memorandum was ensuring that Goldman could manage its positions through effective hedging. The Goldman analysis indicated that it might be difficult to hedge particular uranium positions due to the lack of robust trading in the futures market. For example, the analysis noted that uranium futures were so thinly-traded that Nufcor’s 2008 open interest of 139,000 pounds of U3O8 futures was about 20% of the overall open interest in the product.⁷¹⁶ The memorandum warned that hedging significant exposures would be difficult due to the lack of many counterparties in the market, adding to the risk of holding uranium assets.

⁷¹⁰ Id.

⁷¹¹ Id. at 047.

⁷¹² Id. at 045.

⁷¹³ Id.

⁷¹⁴ 12/2008 Goldman New Product Memorandum on Uranium Trading, FRB-PSI-400039 - 052, at 047 - 048.

⁷¹⁵ Id. at 047. The memorandum observed that Goldman already had “experience of managing physical unallocated products for metals and coal,” as well as products with different quality levels, such as coal with different sulfur content, suggesting that Goldman should also be able to manage the physical uranium inventory. Id.

⁷¹⁶ Id. at 042.

The New Product Memorandum also noted that the market was characterized by “long-term physical participants trading with each other,” which could lead to significant informational disadvantages for new entrants, like Goldman.⁷¹⁷ Put another way, the memorandum indicated that it might be difficult for Goldman to fully understand the market at a given time, and that it could be more readily taken advantage of by other market participants with more experience trading uranium.

Credit Risks. In contrast to the operational risks, Goldman found that the counterparty credit risks arising from a Nufcor acquisition were not significant.⁷¹⁸ The Goldman analysis noted that many of the counterparties in the uranium market were large multinational corporations or government-related entities, and tended to have strong credit.⁷¹⁹

Goldman also evaluated the credit risks of the third party facilities where Nufcor stored its uranium.⁷²⁰ The memorandum examined five companies with storage facilities: Cameco Corp.;⁷²¹ Comurhex;⁷²² ConverDyn;⁷²³ EURODIF S.A.;⁷²⁴ and USEC, Inc.⁷²⁵ The memorandum expressed concern about USEC’s credit profile,⁷²⁶ and noted that Goldman would not want to add to that credit exposure if it were to acquire Nufcor.⁷²⁷

⁷¹⁷ Id.

⁷¹⁸ Id. at 045.

⁷¹⁹ Id.

⁷²⁰ Id. at 046.

⁷²¹ Cameco Corp. is the largest U.S. uranium producer with mines in Wyoming and Nebraska. See “About,” Cameco Corp. website, <http://www.cameco.com/usa/>.

⁷²² Comurhex is a subsidiary of AREVA, a French multinational group that specializes in nuclear power plants and owns a uranium conversion facility in France. See “The History of Comurhex Pierrelatte,” AREVA website, <http://www.aveva.com/EN/operations-811/the-history-of-comurhex-pierrelatte-from-1959-to-the-comurhex-ii-project.html>.

⁷²³ ConverDyn is a partnership between affiliates of Honeywell and General Atomics, and has uranium storage facilities in Illinois. See “Our Business,” ConverDyn website, <http://www.converdynam.com/business/index.html>; 10/2/2014 letter from Goldman Sachs legal counsel to Subcommittee, “Follow-Up Requests,” at PSI-GoldmanSachs-21-000001 - 010.

⁷²⁴ EURODIF S.A. is another AREVA subsidiary and owns a uranium enrichment facility in France. See AREVA website, “EURODIF S.A.: Uranium Enrichment,” <http://www.aveva.com/EN/operations-792/eurodif-s-a-georges-besse-plant-uranium-enrichment.html>. The U.S. Government and the United States Enrichment Corporation previously brought actions against EURODIF S.A. for “dumping” Separative Work Units in the United States. See *United States v. EURODIF S.A.*, Case No. 07-1059 (U.S.), Opinion (1/26/2009), <http://www.supremecourt.gov/opinions/08pdf/07-1059.pdf>.

⁷²⁵ USEC, Inc. which was created by the U.S. Congress in the Energy Policy Act of 1992, later became a publicly-traded corporation. See “History,” USEC website, <http://www.centrusenergy.com/company/history>.

⁷²⁶ 12/2008 Goldman New Product Memorandum on Uranium Trading, FRB-PSI-400039 - 052, at 046.

⁷²⁷ Id. Goldman’s assessment of USEC’s credit risk proved accurate, as USEC ultimately declared a Chapter 11 bankruptcy in early 2014. It is expected to emerge from that bankruptcy as a reorganized company under the name Centrus Energy Corp. in September 2014. See 9/5/2014 USEC press release, “Court Confirms USEC Inc. Plan of Reorganization,” <http://www.usec.com/news/court-confirms-usec-inc-plan-reorganization>.

Regulatory Risks. Goldman next assessed the regulatory risks associated with an acquisition of Nufcor. The memorandum framed the issue as whether Nufcor's uranium activities: (1) were consistent with the laws governing all persons regarding uranium, and (2) would be permitted by its banking regulators.

The New Product Memorandum noted that "[u]ranium processing and storage (in all forms) is heavily regulated."⁷²⁸ It briefly analyzed regulatory issues in the primary jurisdictions where Nufcor operated: the United States, Canada, France, and the United Kingdom, while also recognizing a need to analyze regulatory requirements in Germany and Sweden.⁷²⁹ With respect to the United States, the memorandum stated that "holders of legal title to uranium ore concentrates and UF₆ are required to be licensed,"⁷³⁰ while also noting that, if Goldman were to conduct the business so that Goldman would not come into physical possession of uranium, own any storage facility, or transport any uranium, licensing would likely not be a problem.⁷³¹

On the issue of whether Goldman would be permitted by its U.S. and U.K. banking regulators to engage in uranium-related trading, the memorandum concluded that, in the United States, the acquisition of Nufcor was "consistent" with the activities in which the firm was engaged at the time it became a bank holding company, and thus would be eligible for grandfathering under the Gramm-Leach-Bliley Act.⁷³² Goldman determined that it could treat physical uranium activities as a "grandfathered" activity despite having never before engaged in it. With respect to the United Kingdom, the Goldman analysis stated that the proposed uranium activities gave rise to no additional registration requirements with the U.K. Financial Services Authority.⁷³³

Catastrophic Event Liability Risks. Still another set of key risks identified and discussed in the New Product Memorandum involved potential liability risks for Goldman in connection with a health, safety, or environmental disaster arising from the proposed uranium activities. The New Product Memorandum included a lengthy legal analysis focused on the potential liability of facility owners, facility operators, and the title holders of uranium.⁷³⁴ It discussed the applicability of the

⁷²⁸ 12/2008 Goldman New Product Memorandum on Uranium Trading, FRB-PSI-400039 - 052, at 042.

⁷²⁹ Id. at 043 - 044.

⁷³⁰ Id. at 043.

⁷³¹ Id. at 045. Goldman told the Subcommittee that it has not been required to obtain any specific license to engage in uranium trading or take ownership of physical uranium. Subcommittee briefing by Goldman Sachs (9/5/2014).

⁷³² 12/2008 Goldman New Product Memorandum on Uranium Trading, FRB-PSI-400039 - 052, at 044. The Goldman analysis also noted that uranium trading was "of a type" authorized by the Federal Reserve, since U3O₈ futures contract had been approved by the CFTC for trading on exchanges. Id.

⁷³³ Id. at 045.

⁷³⁴ Id. at 043 - 044.

Price Andersen Act which is triggered by the occurrence of a “nuclear incident,” meaning nuclear material is released from a facility’s boundaries.⁷³⁵ It also discussed the possibility of lawsuits being brought in federal versus state courts. After enumerating a number of potential liability risks, the New Product Memorandum expressed confidence that Goldman would not be held liable in the event of a uranium-related event, so long as it was not the operator of any storage or transport facility involved and did not dictate how the facility should be operated.⁷³⁶

The New Product Memorandum’s long list of the risks involved with buying and selling physical uranium – including valuation, market, operational, credit, regulatory, and catastrophic event risks – showed it was a high risk business. Despite the risks, a lack of prior uranium activities, its status as a bank holding company, and public pressure for banks to reduce risks to avoid taxpayer bailouts, Goldman made the decision to expand into physical uranium activities.

(b) Operating a Physical Uranium Business

On June 30, 2009, as part of a larger commodities acquisition from the Constellation Energy Group, Goldman purchased 100% of the shares of Nufcor International Ltd. and Nufcor Capital Ltd., as well as an 8% ownership stake in the Nufcor Uranium Ltd. investment fund.⁷³⁷ Goldman relied on the Gramm-Leach-Bliley grandfather clause as its legal authority to purchase Nufcor.⁷³⁸

Nufcor is a U.K. corporation, and its immediate owner is Goldman Sachs Group UK Limited, a London-based affiliate of the Goldman

⁷³⁵ Id.

⁷³⁶ Id.

⁷³⁷ 10/2/2014 letter from Goldman legal counsel to Subcommittee, “Follow-Up Requests,” PSI-GoldmanSachs-21-000001 - 010, at 002-003.

⁷³⁸ Subcommittee briefing by Goldman Sachs (9/5/2014); 7/25/2012 “Presentation to Firmwide Client and Business Standards Committee: Global Commodities,” (hereinafter “2012 Firmwide Presentation”), prepared by Goldman, FRB-PSI-200984 - 1043, at 1000 (indicating Nufcor was “owned under 4(o),” the grandfather clause). Although Goldman ultimately relied on the Gramm-Leach-Bliley grandfather authority, several facts suggest that Goldman may have considered holding Nufcor under its merchant banking authority. For example, Goldman placed Jacques Gabillon on the Nufcor Board of Directors; he was from the Goldman Commodities Principal Investments group, which oversaw Goldman’s commodities-related merchant banking activities. In addition, Goldman’s New Products Memorandum stated that Nufcor’s uranium-related “positions will not be [m]arked to market and hence will sit out of VaR,” a comment which implies that the plan was to hold Nufcor as a merchant banking portfolio company whose assets would not be valued on a daily basis in Goldman’s trading books, but would instead be held by Goldman as a separate merchant banking investment. See 12/2008 Goldman New Product Memorandum on Uranium Trading, at FRB-PSI-400039 - 052, at 048. In the end, however, Goldman relied on the grandfathering authority as the legal basis for its physical uranium activities and completely integrated Nufcor’s assets and trading into its own trading operations.

holding company.⁷³⁹ Goldman explained to the Subcommittee that no employees conducting Nufcor's business stayed on after Goldman acquired it, and as a result, Goldman employees in the GS Commodities group took on management of Nufcor's operations.⁷⁴⁰ As a result, Nufcor International Ltd. became a shell company whose business activities were conducted exclusively by Goldman employees.⁷⁴¹ As one Goldman document put it, Nufcor's uranium activities were "treated as [the] firm's own activities."⁷⁴² Goldman explained that it also shuttered Nufcor Capital Ltd., which was already in the course of being wound down at the time of its sale to Goldman.⁷⁴³ In addition, Goldman stated that Nufcor Uranium, Ltd., the investment fund which had been organized as a Guernsey investment company, was later merged into the Uranium Participation Corporation, which is listed on the Toronto Stock Exchange.⁷⁴⁴

Since acquiring Nufcor in 2009, Goldman has used Nufcor International Ltd. to engage in a wide array of uranium-related activities.⁷⁴⁵ The activities included buying and selling physical U3O8 and physical UF6 on the spot markets; forward contracts to buy and sell physical U3O8 and UF6; options on U3O8 and UF6; uranium futures contracts; and Conversion Service Credits.⁷⁴⁶ Goldman also took ownership of hundreds of thousands of pounds of physical uranium, and became a supplier of uranium to utilities with nuclear power plants.⁷⁴⁷

⁷³⁹ 9/19/2014 letter from Goldman legal counsel to Subcommittee, at Exhibit A, GSPSICOMMODS00046240.

⁷⁴⁰ Subcommittee briefing by Goldman Sachs (9/5/2014).

⁷⁴¹ Id.

⁷⁴² 2012 Firmwide Presentation, FRB-PSI-200984 - 1043, at 1000 ("Portfolio companies owned under 4(o) include Cogentrix and Nufcor – treated as firm's own activities.").

⁷⁴³ Id. See also 12/31/2011 "Director's Report and Financial Statements," prepared by Nufcor International Ltd., GSPSICOMMODS00046281 - 290 at 282 (noting that the company had not traded in 2010 or 2011, had terminated its advisory agreement with its key client, and had also deregistered with the U.K. FSA).

⁷⁴⁴ Id. On its website, the Uranium Participation Corporation describes itself as "focused solely on investing in uranium concentrates," such as U3O8 and UF6, "with the primary investment objective of achieving appreciation in the value of its uranium holdings through increases in the uranium price." Uranium Participation Corporation website, <http://www.uraniumparticipation.com/s/Home.asp>.

⁷⁴⁵ 5/17/2013 "Physical Commodity Review Committee: Meeting Minutes," prepared by Goldman, FRB-PSI-400053 - 055.

⁷⁴⁶ Subcommittee briefing by Goldman Sachs (9/5/2014). Although Nufcor also previously traded Separative Work Units, Goldman has not traded them since the acquisition. 9/19/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-GoldmanSachs-16-000001 - 006, at 002.

⁷⁴⁷ 10/2/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-GoldmanSachs-21-000001 - 010, at Exhibit B, GSPSICOMMODS00046532 - 533.

After acquiring Nufcor, Goldman quickly increased the volume of its uranium trading, eventually surpassing Nufcor's 2009 benchmark by tenfold, going from an annualized 1.3 million pounds to nearly 13 million pounds in uranium trading per year from 2009 through 2013:

**Goldman's Uranium Trading
2009 - 2013**

Year	U3O8 Traded (Pounds)
2009 (annualized)	1.3 million
2010	4.7 million
2011	8.2 million
2012	13.7 million
2013	12.8 million

Source: 10/2/2014 letter from Goldman Sachs legal counsel to Subcommittee, "Follow-Up Requests," PSI-GoldmanSachs-21-000001 - 010, at 004.

The value of Goldman's physical uranium inventory also grew steadily, from an estimated \$90 million in 2008 to more than \$240 million in 2013, even as uranium prices fell:

**Goldman's Physical Uranium Inventory
2010 - 2013**

Date	Dollar Value
December 31, 2010	\$112.8 million
December 31, 2011	\$157.8 million
December 31, 2012	\$230.3 million
December 31, 2013	\$241.8 million

Source: Nufcor International Ltd. Notes to the Financial Statements, for 12/31/2011, at GSPSICOMMODS00046251; Nufcor International Ltd. Notes to the Financial Statements, for 12/31/2012, at GSPSICOMMODS00046264; Nufcor International Ltd. Notes to the Financial Statements, for 12/31/2013, at GSPSICOMMODS00046278.

In addition, Goldman significantly expanded Nufcor's uranium supply contracts with utilities. At the time of acquisition in 2009, through Nufcor International, Ltd., Goldman became a supplier of uranium to two utilities with nuclear power plants.⁷⁴⁸ As of June 30, 2014, it had supply contracts with nine utilities located in Florida, New Hampshire, Virginia, North Carolina, Washington state, Wisconsin, and elsewhere.⁷⁴⁹ The longest of those supply contracts required Goldman to deliver uranium to the utility through 2018.⁷⁵⁰

⁷⁴⁸ Id. at Exhibit B, GSPSICOMMODS00046532, 533.

⁷⁴⁹ Id.

⁷⁵⁰ 9/19/2014 letter from Goldman Sachs legal counsel to Subcommittee, "Follow-Up Requests," PSI-GoldmanSachs-16-000001 - 006, at 002.

Goldman told the Subcommittee that it is also holding a substantial inventory of forward contracts to buy or deliver over 3 million pounds of uranium over the next four years.⁷⁵¹ In addition, it is holding U3O8 future positions that mature in each of the next several years, involving hundreds of thousands of pounds of uranium.⁷⁵² Most of Nufcor's positions are held on a mark-to-market basis, pursuant to Goldman's valuation policy, and so are subject to daily price fluctuations.⁷⁵³

Goldman told the Subcommittee that, in connection with its physical uranium activities through Nufcor, it has stored U3O8 at three locations: ConverDyn facility in Illinois; Cameco facility in Canada; and Comurhex facility in France.⁷⁵⁴ Each of those facilities converts U3O8 into UF6. In addition, Goldman has stored UF6 at three other locations: Louisiana Energy Services facility in New Mexico;⁷⁵⁵ EURODIF S.A. facility in France; and URENCO facility in the Netherlands.⁷⁵⁶ Each of those facilities enrich UF6.

When asked to summarize its physical uranium activities, Goldman described them as buying uranium from mining companies, storing it, and providing the uranium to utilities when they wanted to process more fuel for their nuclear power plants.⁷⁵⁷ Goldman indicated that it was, essentially, financing the storage of the uranium until its buyers were ready to purchase it. Goldman said that it hedged its physical positions primarily by selling the physical supply through forward contracts.⁷⁵⁸ At the same time Goldman acted as a supplier for the utilities, it was also speculating on uranium prices by trading uranium futures and other financial products.

Goldman documentation indicates that, in 2012, Goldman briefly considered expanding its physical uranium activities still further, by getting involved with transporting uranium, but decided not to go forward.⁷⁵⁹ In 2013, GS Commodities personnel proposed expanding Goldman's physical uranium trading activities by including enriched uranium products. In May 2013, Goldman's Physical Commodity

⁷⁵¹ Subcommittee briefing by Goldman Sachs (9/5/2014).

⁷⁵² Id.

⁷⁵³ See 10/8/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-GoldmanSachs-19-000001 - 009, at 008 (noting that "all physical uranium futures, forwards, swaps and options are fair valued," other than UF6 forwards contracts which are treated as executory contracts and conversion credits are treated as intangibles); Subcommittee briefing by Goldman (9/5/2014).

⁷⁵⁴ Subcommittee briefing by Goldman Sachs (9/5/2014).

⁷⁵⁵ The facility is run by URENCO USA, Inc., a subsidiary of URENCO LTD. See "Company Structure," URENCO website, <http://www.urengo.com/about-us/company-structure/>.

⁷⁵⁶ Subcommittee briefing by Goldman Sachs (9/5/2014).

⁷⁵⁷ Id.

⁷⁵⁸ Id.

⁷⁵⁹ See 2012 Firmwide Presentation, FRB-PSI-200984 - 1043, at 1006 (indicating that, on 5/31/2012, a presentation was made to start a new activity, "Physical vessel transportation of Uranium (U3O8)," that review of that proposal was then underway); Subcommittee briefing by Goldman Sachs (9/5/2014).

Review Committee met to consider the proposal, which involved buying and selling physical UF₆ with enrichment levels up to five percent.⁷⁶⁰ The proposal stated that the enriched uranium would be stored at a Global Nuclear Fuel facility in North Carolina.⁷⁶¹ Ultimately, Goldman decided against the proposal. Goldman explained to the Subcommittee that the decision was due, in part, to the departure of a key Goldman employee who had been a strong proponent of the physical uranium trading business.⁷⁶²

In 2014, Goldman put Nufcor up for sale.⁷⁶³ Goldman told the Subcommittee that because it did not receive an acceptable bid for the business, Goldman was in the process of winding down Nufcor over the next several years.⁷⁶⁴ Goldman told the Subcommittee that, as part of the wind down, it has stopped building its inventory of physical uranium and expects its physical and financial uranium positions to steadily decrease over the next few years.⁷⁶⁵ Goldman explained that it currently has one uranium supply contract that continues until 2018,⁷⁶⁶ and expects to complete that contract.⁷⁶⁷ When asked why Goldman is exiting the uranium trading business, a Goldman representative replied that it was because the physical uranium business was “easy to misunderstand.”⁷⁶⁸ Additional possible reasons include lower uranium prices since the Fukushima Daiichi nuclear event in Japan, and pressure from the Federal Reserve regarding the risks of its physical commodity activities.

(4) Issues Raised by Goldman’s Physical Uranium Activities

Goldman’s uranium-related activities, which are expected to continue until at least 2018, raise multiple concerns, including insufficient capital and insurance to protect against a catastrophic event, unfair competition, conflicts of interest arising from controlling uranium supplies while trading uranium financial instruments, and inadequate safeguards.

⁷⁶⁰ See 5/17/2013 “Physical Commodity Review Committee: Meeting Minutes,” prepared by Goldman, FRB-PSI-400053 - 055.

⁷⁶¹ Id.

⁷⁶² Subcommittee briefing by Goldman Sachs (9/5/2014).

⁷⁶³ Subcommittee briefing by Goldman Sachs (9/5/2014). See also “Goldman puts ‘for sale’ sign on Iran’s old uranium supplier,” Reuters, David Sheppard (2/11/2014), <http://www.reuters.com/article/2014/02/11/us-goldman-uranium-insight-idUSBREA1A0RX20140211>.

⁷⁶⁴ Subcommittee briefing by Goldman Sachs (9/5/2014).

⁷⁶⁵ Id.

⁷⁶⁶ 9/19/2014 letter from Goldman legal counsel to Subcommittee, “Follow-Up Requests,” PSI-GoldmanSachs-16-000001 - 006, at 002.

⁷⁶⁷ 10/2/2014 letter from Goldman legal counsel to Subcommittee, “Follow-Up Requests,” PSI-GoldmanSachs-21-000001 - 010, at 005.

⁷⁶⁸ Subcommittee briefing by Goldman Sachs (9/5/2014).

(a) Catastrophic Event Liability Risks

One of the troublesome aspects of Goldman's involvement with physical uranium trading is the risk that if a catastrophic event were to occur involving the release of uranium from a storage facility, it could cause such severe financial damage to the financial holding company that the Federal Reserve, and ultimately taxpayers, might be called upon to rescue it. While such an event is highly unlikely, history has shown that nuclear accidents do occur, and the nature and extent of liabilities in connection with such an accident are uncertain.⁷⁶⁹

(i) Denying Liability

Goldman strenuously denies that its physical uranium activities create a substantial risk of additional liability for the financial holding company. Goldman recently discussed the liability issue generally in a publicly-available memorandum that it submitted to the Federal Reserve in response to a Federal Reserve request for public comment on whether it should impose new regulatory constraints on financial holding companies conducting physical commodity activities.⁷⁷⁰ In its public comment, Goldman took the position that its liability for a commodities-related catastrophic event was limited, making three arguments:

- Most of its commodities pose no risk to the environment;
- Even the commodities that do pose a risk to the environment will not impose liability on Goldman, because Goldman does not operate the facilities used to store, ship, or process them; and
- Even if Goldman were assessed "some liability" for an environmental event, it would not be in an amount large enough to hurt the financial holding company.⁷⁷¹

This generalized analysis differs from an internal analysis contained in Goldman's 2008 New Products Memorandum on trading uranium, which identified several ways in which Goldman might, in fact, incur liability as a result of a nuclear-related event. Also omitted from the public comment letter is Goldman's decision, in late 2011, to

⁷⁶⁹ The Fukushima Daiichi nuclear power plant disaster is a recent example of a nuclear disaster that was highly unlikely but did occur. Improbable events involving low level nuclear materials have also taken place. See, e.g., "Mexico's Stolen Radiation Source: It Could Happen Here," *Bulletin of the Atomic Scientists*, Tom Bielefeld (1/23/2014), <http://thebulletin.org/mexico%E2%80%99s-stolen-radiation-source-it-could-happen-here> (discussing instances in which low level nuclear materials were stolen while in transit).

⁷⁷⁰ See 4/16/2014 letter from Goldman Sachs Group, Inc. to the Federal Reserve, "Comment Letter on the Advance Notice of Proposed Rulemaking on Complementary Activities, Merchant Banking Activities, and Other Activities of Financial Holding Companies Related to Physical Commodities (Docket No. R-1479: RIN 7100 AE-10)," Federal Reserve website, http://www.federalreserve.gov/SECRES/2014/May/20140506/R-1479/R-1479_041614_124563_481901890144_1.pdf (hereinafter "2014 Goldman Comment Letter").

⁷⁷¹ *Id.* at 4, 13-19.

implement an additional layer of insurance for “contingent, third-party environmental/pollution liability coverage for risks that could emanate from either our physical trading activities or our investing activities.”⁷⁷² While most insurance policies contain an exclusion for nuclear-related events,⁷⁷³ Goldman’s insurance policy included a specific amount of coverage that was not subject to an exclusion for a nuclear incident involving unenriched uranium.⁷⁷⁴

Despite purchasing insurance to help protect it against liability arising from a nuclear incident or other uranium-related environmental event, Goldman has continued to take the position that the possibility of incurring that liability is “rare” and that any such liability would not be “on a scale that could threaten the viability” of the financial holding company.⁷⁷⁵

Goldman has publicly pointed out that the “general approach” of most federal environmental law is to place liability for environmental damages on the owners and operators of the facilities responsible for the damages.⁷⁷⁶ Goldman has publicly argued that it “will not be subject to liability under well-settled law” for its physical commodity activities, because it avoids being an “owner” or “operator” of facilities that store or transport commodities.⁷⁷⁷ Goldman appears to have taken explicit steps to “avoid[] operator status” and instead “select[] qualified operators,”⁷⁷⁸ such as third party vendors to own and operate the storage facilities for its uranium. Goldman’s legal position appears to rely, in particular, on *Bestfoods*, a Supreme Court case delineating when a parent corporation can be held liable for pollution damages caused by a subsidiary.⁷⁷⁹

The legal liability of owners and operators of facilities does not, in and of itself, however, preclude others from also being found to have liability for environmental damages. In the recent Deepwater Horizon oil spill case, BP “neither owned the rigs ... nor ‘operated’ them in the normal sense of the word.”⁷⁸⁰ Nevertheless, by the end of 2013, BP had

⁷⁷² 7/9/2013 memorandum from Goldman to Federal Reserve, FRB-PSI-201245 - 268, at 252.

⁷⁷³ *Id.* at 253.

⁷⁷⁴ 10/2/2014 letter from Goldman legal counsel to Subcommittee, “Follow-Up Requests,” PSI-GoldmanSachs-21-000001 - 010, at 005.

⁷⁷⁵ 2014 Goldman Comment Letter, http://www.federalreserve.gov/SECRS/2014/May/20140506/R-1479/R-1479_041614_124563_481901890144_1.pdf, at 4.

⁷⁷⁶ *Id.* at 14.

⁷⁷⁷ *Id.* at 4; 14-16.

⁷⁷⁸ *Id.* at 15-16; Subcommittee briefing by Goldman Sachs (9/5/2014).

⁷⁷⁹ See *United States v. Bestfoods*, 524 U.S. 51 (1998).

⁷⁸⁰ “National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, Chief Counsel’s Report,” at 30, http://www.eoearth.org/files/164401_164500/164423/full.pdf. (noting that BP personnel did, however, specify how the well was to be drilled).

recognized over \$42 billion in losses from the event.⁷⁸¹ In addition, in September 2014, after a bench trial, a U.S. court found BP to be “grossly negligent” for its role in the disaster, opening the door to as much as \$18 billion in additional damages.⁷⁸²

Federal environmental laws do not preclude lawsuits being filed against the holders of legal title to a commodity like uranium if that uranium were to be involved in a catastrophic event. As the Federal Reserve has pointed out: “liability may attach to [financial holding companies] that own physical commodities involved in catastrophic events even if the [financial holding companies] hire third parties to store and transport the commodities.”⁷⁸³ There is no dispute that Nufcor, a wholly owned subsidiary of Goldman, is the direct owner of its uranium. In addition, since Nufcor has no employees of its own, having become a shell entity, Goldman employees directly manage its business, including dealing directly with Nufcor’s vendors. The level of Goldman’s direct involvement in Nufcor’s daily operations increases Goldman’s potential liability for Nufcor’s actions. As a result, if a catastrophic event were to occur involving uranium owned by Nufcor, at a minimum, Goldman could have to defend itself against claims in courts here or abroad, under the distinct laws in each jurisdiction.

In addition, as Goldman has recognized, under U.S. law, “a party that knowingly entrusts a hazardous material to an incompetent operator may be held liable.”⁷⁸⁴ A joint memorandum of law submitted in support of Goldman’s submission to the Federal Reserve explicitly acknowledged that an owner of environmentally hazardous commodities could be held liable for negligently entrusting those commodities to an incompetent transportation or storage operator.⁷⁸⁵ Case law includes a number of instances in which, in some jurisdictions, an owner may incur

⁷⁸¹ 2013-2014 Annual Report, BP plc, at 9,

http://www.bp.com/content/dam/bp/pdf/investors/BP_Annual_Report_and_Form_20F_2013.pdf.

⁷⁸² “BP May Be Fined Up to \$18 Billion for Spill in Gulf,” Campbell Robertson and Clifford Krauss, *New York Times*, (Sept. 4, 2014), http://www.nytimes.com/2014/09/05/business/bp-negligent-in-2010-oil-spill-us-judge-rules.html?_r=1.

⁷⁸³ “Complementary Activities, Merchant Banking Activities, and Other Activities of Financial Holding Companies Related to Physical Commodities,” 79 Fed.Reg. 3329, at 3332 (Jan. 21, 2014), <http://www.gpo.gov/fdsys/pkg/FR-2014-01-21/pdf/2014-00996.pdf>.

⁷⁸⁴ 2014 Goldman Comment Letter,

http://www.federalreserve.gov/SECRS/2014/May/20140506/R-1479/R-1479_041614_124563_481901890144_1.pdf, at 15.

⁷⁸⁵ See undated, but likely 4/2014 “Joint Memorandum of Law Prepared for SIFMA In Response to the Advance Notice of Proposed Rulemaking on Complementary Activities, Merchant Banking Activities, and Other Activities of Financial Holding Company Groups Related to Physical Commodities (DOCKET NO. R-1479; RIN 7100AE-10),” at 30, submitted on behalf of SIFMA by Covington & Burling LLP, Davis Polk & Wardwell LLP, Sullivan & Cromwell LLP and Vinson & Elkins LLP, <http://www.sifma.org/issues/item.aspx?id=8589948617> (click on download to access Joint Memorandum of Law).

liability if it entrusts “a dangerous instrumentality” to a party that the owner knew or should have known was incompetent.⁷⁸⁶

To help address those risks, Goldman “maintain[s] an integrated risk management program of policies, procedures, diligence practices, governance arrangements, approval processes and insurance coverage.”⁷⁸⁷ Goldman also “maintain[s] ‘emergency or event response’ policies and procedures that are designed to address a situation in which a commodity that [it] own[s] becomes involved in an accident.”⁷⁸⁸ In addition, Goldman has a sophisticated vendor oversight system to evaluate, among other factors, a vendor’s financial condition, insurance, and safety record.⁷⁸⁹ As Goldman explained to the Federal Reserve in its public comment letter, it performs those basic checks to gain “confidence that the operator has the requisite expertise and capabilities to safely handle, store or transport [its] commodities” and provide a “basis to defeat claims that [it] knowingly entrusted [its] commodities to an incompetent operator.”⁷⁹⁰ Of course, a failure to follow those policies, procedures, and practices could increase the liability risk for Goldman.

The extent to which Goldman exercises oversight of the third party vendors for its uranium activities and requires them to meet Goldman’s standards for reliability and competence is unclear. Rather than

⁷⁸⁶ See, e.g., *Zokas v. Friend*, 134 Mich. App. 437, 443 (Mich. App. Mar. 9, 1984) (noting that, “an owner or lender who entrusts a person with a dangerous instrumentality may be held liable to a third party who is injured by the negligent act of the trustee, where the owner or lender knew, or could have reasonably been expected to know, that the person entrusted was incompetent”); *Allstate Ins. Co. v. Freeman*, 160 Mich. App. 349, 357 (Mich. App. May 19, 1987) (recognizing negligent entrustment where (1) the entrustor negligently entrusts the instrumentality to the trustee, and (2) the trustee negligently or recklessly misuses the instrumentality); RESTATEMENT (SECOND) OF TORTS §390 (1965); *Shaffer v. Maier*, Nos. C-900573, C-900600, 1991 WL 256493, at *8 (Ct. App. Ohio Dec. 4, 1991) (finding that liability can attach when there is entrustment of a chattel, inexperience or incompetence on the part of the trustee, and actual or implied knowledge of that inexperience or incompetence on the part of the entrustor).

⁷⁸⁷ 2014 Goldman Comment Letter, at 13, http://www.federalreserve.gov/SECRS/2014/May/20140506/R-1479/R-1479_041614_124563_481901890144_1.pdf .3.

⁷⁸⁸ *Id.* at 15.

⁷⁸⁹ Subcommittee briefing by Goldman Sachs (9/5/2014); 2014 Goldman Comment Letter, at 16, http://www.federalreserve.gov/SECRS/2014/May/20140506/R-1479/R-1479_041614_124563_481901890144_1.pdf. See also 9/2013 “Global Commodities & Global Special Situations Group Presentation to the Board of Directors of The Goldman Sachs Group, Inc.,” prepared by Goldman, FRB-PSI400077 - 098, at 085 (“Business Intelligence Group (“BIG”) & GS Logistics team in Commodities Operations conduct diligence and vendor suitability checks on all providers, such as pipeline operators, in line with the firm’s wider Vendor Management Policy. ... Instituted best-in-class shipping, rail and pipeline transportation policies, enforced by GS Logistics team, include Critical Event Management Policy[.] Periodic review and enhancement of policies based on industry related ‘events’ e.g.: Quebec rail[.] ... Engagement of Internal Audit and third parties to audit storage, transportation and delivery practices[.] Vendor management review of service providers including health & safety, environmental and OFAC.”).

⁷⁹⁰ 2014 Goldman Comment Letter, at 16, http://www.federalreserve.gov/SECRS/2014/May/20140506/R-1479/R-1479_041614_124563_481901890144_1.pdf.

evaluating third parties to assess the competency of its uranium vendors, as it does with other commodity vendors, Goldman appears to have relied exclusively on the licenses obtained by the uranium storage and processing facilities it used.⁷⁹¹ Goldman's vendor oversight activities, if found insufficient, might cause a state, U.S. federal, or foreign court to attach some degree of liability to Goldman. For that reason, Goldman could find itself litigating, on a case-by-case basis, whether it took adequate steps to prevent its commodities from being given to an incompetent vendor.

Still another set of concerns involves the potential financial impact that a catastrophic event could have on Goldman even if it were eventually proved correct in court that it had no legal liability for damages. As the financial crisis demonstrated, parties viewed by the public as being potentially liable for damages may be shunned by customers as well as potential counterparties. In the aftermath of a catastrophic event linked to a financial holding company, market participants could react by withdrawing funds from the holding company or its banks, refraining from doing business with them, or demanding increased compensation to continue being exposed to their credit risk. It is not inconceivable that the ability of a financial holding company to conduct its day-to-day businesses could be threatened as business partners seek to lessen their financial exposure to the potentially risky party. That type of reaction could worsen over time if the publicity and magnitude of an event increase.

This aspect of catastrophic event risk means that, even if as a legal matter, Goldman were found not to be liable for damages arising from a nuclear incident or other uranium-related event, market participants' fears that Goldman might incur liability might nevertheless lead to financial difficulties and even losses for the financial institution.

The likelihood of a nuclear-related event is, of course, remote. However, while Goldman has publicly dismissed the risk of such an event, that risk may be much greater than Goldman has, to date, planned for.

(ii) Allocating Insufficient Capital and Insurance

A related issue involves the amount of capital and insurance coverage Goldman has allocated to protect against potential losses associated with a catastrophic event arising from its physical uranium activities. Adequate capital and insurance are the key financial safeguards to prevent a Federal Reserve or taxpayer bailout in the event

⁷⁹¹ See 10/8/2014 letter from Goldman legal counsel to Subcommittee, "Follow-up Requests," PSI-GoldmanSachs-19-000001 - 009, at 002 - 003.

of substantial losses arising from a catastrophic event. In part because Goldman has concluded that it has essentially no potential liability for losses arising from a catastrophic event, and in part due to lax regulatory requirements, Goldman's allocations for capital and insurance coverage appear to be inadequate.

In its recent public filing seeking comment on whether it should impose new regulatory constraints on financial holding companies conducting physical commodity activities, the Federal Reserve made the following observation:

"Recent disasters involving physical commodities demonstrate that the risks associated with these activities are unique in type, scope and size. In particular, catastrophes involving environmentally sensitive commodities may cause fatalities and economic damages well in excess of the market value of the commodities involved or the committed capital and insurance policies of market participants."⁷⁹²

Consistent with that observation, the facts suggest that financial losses arising from a uranium-related catastrophe could far exceed all of the capital allocated by Goldman for its entire commodities business plus any applicable insurance.

Goldman's capital for its entire commodities portfolio, as of March 2013, was about \$3.4 billion, of which the "operational risk" component was about \$400 million.⁷⁹³ In a 2013 memorandum sent by Goldman to the Federal Reserve, Goldman admitted that its capital allocations included "no explicit scenario for environmental/catastrophic damage for any business line."⁷⁹⁴ In other words, Goldman apparently holds no added capital to cover the risk to its commodities business arising from any environmental disaster or catastrophic event, including one related to its uranium holdings.

In addition, Goldman has apparently calculated its "operational" risk of loss related to the storage and transportation of all of its physical commodities by selecting a figure equal to the dollar value of those assets alone, and nothing more.⁷⁹⁵ In particular, Goldman has calculated its operational risk capital so that it corresponds to the "highest dollar value of inventory at a single location."⁷⁹⁶ That means, for example, if a catastrophic event were to take place involving oil or uranium, Goldman

⁷⁹² "Complementary Activities, Merchant Banking Activities, and Other Activities of Financial Holding Companies Related to Physical Commodities," 79 Fed. Reg. 3329, at 3331 (Jan. 21, 2014), <http://www.gpo.gov/fdsys/pkg/FR-2014-01-21/pdf/2014-00996.pdf>.

⁷⁹³ 7/9/2013 memorandum from Goldman Sachs to Federal Reserve, FRB-PSI-201245 - 268, at 248.

⁷⁹⁴ Id. at 250.

⁷⁹⁵ Id.

⁷⁹⁶ Id. at 251.

has calculated that its maximum loss would equal the lost value of the oil or uranium itself. It did not include additional costs arising from, for example, loss of life, property damage, pollution cleanup, legal expenses, or the failure to honor any existing contracts to deliver oil or uranium.⁷⁹⁷ In its 2012 Summary Report, the Federal Reserve Commodity Team noted that Goldman's catastrophic risk valuation methodology for its power plants was to use "simply the current value of its most valuable power plant," with no provision for potential expenses stemming from loss of life, worker disability, facility replacement, or a "failure to deliver electricity under contract."⁷⁹⁸

In light of the financial consequences of recent disasters ranging from oil spills to nuclear meltdowns to power plant explosions, that approach appears highly unrealistic, and produces capital allocations far below what is needed to safeguard taxpayers. The latest example is BP, which has already recognized losses over \$42 billion as a result of Deepwater Horizon – an amount well in excess of the dollar value of the physical oil that was lost.⁷⁹⁹

Additionally, many environmental laws, which are intended to protect clean air and water, for example, are intended to have significant deterrent effects, and thus provide for treble or even greater penalties for violations. In the event that Goldman were to find itself with liability under U.S. or foreign environmental laws, Goldman's liabilities could end up being many multiples of the damages suffered, as may happen in the BP oil spill case where the court's finding of "gross negligence" and "reckless" conduct may produce a fine equal to as much as \$4,300 per barrel for the spill, exceeding the cost of both the spilled oil and the cleanup.⁸⁰⁰ Such findings could also trigger exclusions under established insurance policies, making the insurance payments unavailable.⁸⁰¹

When the Federal Reserve's Commodities Team concluded its special review of financial holding company involvement with physical commodities, it expressed concern that all of the financial holding companies it examined, including Goldman, had insufficient capital and insurance coverage to cover potential losses from a catastrophic event.⁸⁰²

⁷⁹⁷ 10/3/2012 "Physical Commodity Activities at SIFIs," prepared by FRBNY Commodity Team, (hereinafter, "2012 Summary Report"), FRB-PSI-200477 - 510, at 498 [sealed exhibit].

⁷⁹⁸ Id. at 494.

⁷⁹⁹ 2013 "Annual Report and Form 20-F 2013," prepared by BP p.l.c., BP p.l.c. website, at 9, http://www.bp.com/content/dam/bp/pdf/investors/BP_Annual_Report_and_Form_20F_2013.pdf.

⁸⁰⁰ See *In re Oil Spill by Oil Rig Deepwater Horizon in Gulf of Mexico, on April 20, 2010*, 2014 WL 4375933 (E.D. La. Sept. 4, 2014); see also "BP's 'gross negligence' caused Gulf oil spill, federal judge rules," *The Washington Post*, Steve Mufson (9/4/2014), http://www.washingtonpost.com/business/economy/bps-gross-negligence-caused-gulf-oil-spill-federal-judge-rules/2014/09/04/3e2b9452-3445-11e4-9e92-0899b306bba_story.html.

⁸⁰¹ Subcommittee briefing by Chiara Trabucchi, an expert in financial economics and environmental risk management (10/7/2014).

⁸⁰² See 2012 Summary Report, FRB-PSI-200477 - 510, at 498.

The 2012 Summary Report prepared a chart comparing the level of capital and insurance coverage at four financial holding companies against estimated costs associated with “extreme loss scenarios.” It found that at each institution, including Goldman, “the potential loss exceed[ed] capital and insurance” by \$1 billion to \$15 billion.⁸⁰³ Insufficient capital and insurance coverage increases the risk of a Federal Reserve or taxpayer bailout were a catastrophic event to occur.

(b) Unfair Competition

A completely different set of concerns raised by Goldman’s physical uranium activities involves issues related to unfair competition. When Goldman acquired Nufcor in 2008, it was a leading uranium company that had been in business for 40 years.⁸⁰⁴ Goldman’s analysis indicated Nufcor then had a portfolio of physical and financial uranium holdings worth about \$47 million and an annualized trading volume involving about 1.3 million pounds of uranium.⁸⁰⁵

Within one year, Goldman more than tripled Nufcor’s trading volume and increased the value of its inventory by about 40%.⁸⁰⁶ Within five years, Goldman had increased Nufcor’s trading volume by tenfold, increased its physical uranium inventory so that its dollar value more than doubled despite falling uranium prices, and increased the number of its supply contracts from two to nine major utilities.⁸⁰⁷ By 2013, Goldman controlled millions of pounds of uranium in storage facilities in the United States and Europe.

This rapid expansion of Nufcor’s uranium activities is attributable, not just to Goldman’s business acumen, but possibly also to inherent advantages that financial holding companies have when competing against businesses that are not affiliated with banks. First, a holding company has access to inexpensive credit from its subsidiary bank, enabling its borrowing costs to nearly always undercut those of a nonbank corporation. Another advantage is the financial holding company’s relatively low capital requirements. The Federal Reserve determined that corporations engaged in oil and gas businesses typically

⁸⁰³ Id. at 498, 509. The 2012 Summary Report also noted that commercial firms engaged in oil and gas businesses had a capital ratio of 42%, while bank holding company subsidiaries had a capital ratio of, on average, 8% to 10%. Id. at 499. The recent decision in the BP oil spill case suggests that the “extreme loss” scenarios may entail expenses beyond those contemplated as recently as 2012.

⁸⁰⁴ 12/2008 Goldman New Product Memorandum on Uranium Trading, FRB-PSI-400039 - 052, at 039.

⁸⁰⁵ Id. at 040.

⁸⁰⁶ See 10/2/2014 letter from Goldman legal counsel to Subcommittee, “Follow-Up Requests,” PSI-GoldmanSachs-21-000001 - 010, at 004; see also Nufcor International Ltd. Notes to the Financial Statements, for 12/31/2011, at GSPSICOMMODS00046251; Nufcor International Ltd. Notes to the Financial Statements, for 12/31/2012, at GSPSICOMMODS00046264 (reflecting an increase in uranium inventory holdings from \$112.8 million to \$157.8 million).

⁸⁰⁷ See discussion above.

had a capital ratio of 42% to cover potential losses, while bank holding company subsidiaries had a capital ratio of, on average, 8% to 10%, making it much easier for them to invest corporate funds in their business operations.⁸⁰⁸ Less expensive financing and lower capital requirements are the types of inherent bank advantages that contribute to the traditional U.S. ban on mixing banking with commerce.

(c) Conflicts of Interest

Still another set of issues raised by Goldman's uranium activities involves conflicts of interest. The conflicts arise from the fact that Goldman was trading uranium-related financial products at the same time it was intimately involved with an array of physical uranium activities. Goldman's conduct raises two sets of conflict of interest concerns, one involving non-public information and the other involving physical uranium supplies.

Because Nufcor had no employees of its own, Goldman employees conducted all of its business activities and were necessarily privy to all of its non-public information. While commodities laws traditionally have not barred the use of non-public information by traders in the same way as securities laws, concerns about unfair trading advantages deepen when the commodities trader is a major financial institution that can influence a small and volatile market like uranium. Goldman's acquisition of Nufcor gave it access to a substantial amount of commercially valuable, non-public information about the uranium market. First, Goldman gained insight into Nufcor's own physical and financial uranium inventories and trading patterns. According to Goldman's analysis, for example, in 2008, Nufcor had 20% of the open interest for uranium futures,⁸⁰⁹ a sizeable market position. Second, by acquiring Nufcor, Goldman gained information about the mining companies that supplied it with physical uranium as well as the uranium needs of major utilities. Goldman also gained information about the timing, locations, and nature of the transport of millions of pounds of uranium, as well as the scheduling and operations of six major uranium storage facilities and processing centers.

Goldman's access to that non-public data about physical uranium would have provided useful market intelligence that Goldman employees could have used to benefit Goldman's trading in the physical and financial uranium markets. Non-public information about a uranium transport delay, processing schedules, or utility shutdowns could have been used to short futures or make profitable trades on forwards. As shown earlier, after acquiring Nufcor, Goldman expanded its uranium

⁸⁰⁸ 2012 Summary Report, FRB-PSI-200477 - 510, at 499.

⁸⁰⁹ 12/2008 Goldman New Product Memorandum on Uranium Trading, FRB-PSI-400039 - 052, at 042.

trading volume tenfold, becoming a more significant market participant. A major concern is whether Goldman used any non-public information to gain a trading advantage over other market participants.

A second conflict of interest issue is whether Goldman's increasing control over uranium supplies created opportunities for unfair trading advantages or price manipulation. Goldman expanded Nufcor's physical uranium inventory over time until, by 2013, Goldman controlled millions of pounds of uranium in storage facilities in the United States and Europe. Goldman also increased the number of its supply contracts from two to nine major utilities across the United States, Canada, and Europe. Its increased ability to make decisions over the amount and timing of physical uranium deliveries created market manipulation opportunities that could have been used to benefit Goldman's trading activities in the small and volatile uranium market or in affected electricity markets. Historically, banks and bank holding companies have not exerted that extent of control over a physical market and have not raised the same type of market manipulation concerns.

(d) Inadequate Safeguards

A final set of issues involves a lack of regulatory safeguards related to financial holding company involvement with a high risk physical commodity activity like uranium. Physical uranium becomes increasingly toxic as it is enriched, is subject to complex regulatory regimes related to its storage, handling, and transit, and trades in a small, volatile market. It imposes, not only the catastrophic event risks discussed above, but also financial risks due to volatile prices and limited counterparties.

Although Goldman had not engaged in physical uranium activities prior to becoming a bank holding company, it claimed it could do so under the grandfather clause in the Gramm-Leach-Bliley Act for authority. The Federal Reserve has never ruled on whether Goldman's entry into the physical uranium market was an appropriate exercise of the grandfather clause, nor has it issued general guidance on the proper scope of the grandfather authority.⁸¹⁰ Additionally, because Goldman relied on the grandfather clause to authorize its uranium activities, those

⁸¹⁰ The Bank Holding Company Act of 1956 gives the Federal Reserve broad authority to issue orders and regulations necessary to carry out the purposes of the Act and prevent evasions of it. See, e.g., Bank Holding Company Act of 1956, P.L. 84-511, §5(b), codified at 12 U.S. Code §1844. That broad grant of authority provides the legal foundation for the Federal Reserve to issue regulations or orders interpreting the scope of the grandfather clause and setting limits on the size of grandfathered activities to support the purposes of Act, which have been described as seeking to "limit the comingling of banking and commerce," and "prevent situations where risk-taking by nonbanking affiliates erodes the stability of the bank's core financial activities." "A Structural View of U.S. Bank Holding Companies," Dafna Avraham, Patricia Selvaggi, and James Vickery of the Federal Reserve Bank of New York, *FRBNY Economic Policy Review* (7/2012), at 3; <http://www.newyorkfed.org/research/epr/12v18n2/1207avra.pdf> [footnotes omitted].

activities were not subject to the prudential size limit imposed by the Federal Reserve on complementary activities which, were it to apply, would prohibit physical commodity activities from exceeding 5% of the financial holding company's Tier 1 capital. The only cap on the size of Goldman's uranium activities was the statutory prohibition that its grandfathering activities not exceed 5% of Goldman's consolidated assets of \$912 billion,⁸¹¹ a limit set so high as to be no meaningful restriction at all.

A final consideration is whether financial holding companies should be allowed to trade in such a limited and volatile market as that represented by uranium. The Federal Reserve has generally allowed financial holding companies to trade in any commodity that the CFTC has approved for trading on an exchange. It has not required that the commodities reach a particular volume of trading or other measure of liquidity. While U3O8 futures are traded on a CFTC-regulated exchange, uranium is not a robust market, and often has zero contracts traded in a day. The illiquid state of the uranium market illustrates the dangers of relying solely on the exchange-trading requirement to approve financial holding company trading in a particular commodity.

(5) Analysis

Since acquiring Nufcor in 2009, Goldman has owned and traded millions of pounds of uranium and millions of dollars of uranium-related financial products. The risks attached to those activities continue to be significant, and Goldman's efforts to address and mitigate them have fallen short of what the Federal Reserve has indicated is necessary.

Goldman is not the only financial holding company to have engaged in physical uranium activities. Deutsche Bank has been another key player in uranium,⁸¹² and JPMorgan has considered initiating physical uranium activities.⁸¹³ It is past time for the Federal Reserve to enforce needed safeguards on this high risk physical commodity activity.

⁸¹¹ See 12/31/2013 "Consolidated Financial Statements for Holding Companies," Form FR Y-9C, filed by Goldman with the Federal Reserve, at 13, http://www.ffiec.gov/nicpubweb/NICDataCache/FRY9C/FRY9C_2380443_20121231.PDF.

⁸¹² See, e.g., "Goldman puts 'for sale' sign on Iran's old uranium supplier," Reuters, David Sheppard (2/11/2014), <http://www.reuters.com/article/2014/02/11/us-goldman-uranium-insight-idUSBREA1A0RX20140211> (discussing Deutsche Bank's involvement in uranium activities).

⁸¹³ See, e.g., 9/28/2009 "[Global Commodities] BCC Agenda," prepared by JPMorgan, FRB-PSI-304493-520, at Appendix 5, FRB-PSI-304520; 2/11/2011 Global Commodities Group Operating Risk Committee Meeting Agenda, including attachment entitled, "Marketing of Physical Uranium NBIA: Overview of Transaction," FRB-PSI-302581 - 587, at 584 - 585.

C. Goldman Involvement with Coal

For many years, including prior to its 2008 conversion to a bank holding company, Goldman traded coal futures and other coal-related financial products, as well as arranged for the shipping and storage of coal for customers such as coal producers, coal traders, and coal-fired power plants. In 2010, Goldman dramatically expanded its physical coal activities by purchasing an open pit coal mine in Colombia with related railroad and port assets. In 2012, Goldman purchased a second coal mine next to the first. Today, in addition to its longstanding coal trading operations, Goldman is involved with producing, storing, transporting, selling, and supplying physical coal.

Tracing Goldman's four-year Colombian coal venture illustrates the many risks involved with getting into a complex area like coal mining, including operational problems, regulatory challenges, and environmental and catastrophic event risks. It also demonstrates how the mines' merchant banking status – an investment that must be sold within ten years – creates a disincentive for Goldman to make the necessary investments to operate the mines in a safe and environmentally sound manner, exacerbating its operational and catastrophic event risks. Additional concerns involve Goldman's legal authority to get into the coal mining business in the first place, and the conflicts of interest that arise when a Goldman subsidiary conducts coal supplies and transport activities, while also trading coal-related financial instruments.

(1) Background on Coal

Coal is a naturally occurring fossil fuel formed from compressed and pressurized plant matter, found mainly in deposits beneath the earth's crust.⁸¹⁴ It has been used across the world as a source of energy for hundreds of years.⁸¹⁵ Today, coal is predominantly used to generate electricity, produce iron and steel, manufacture cement, and provide a liquid fuel.⁸¹⁶ In 2013, for example, about 39% of the electricity generated in the United States came from coal-fueled power plants.⁸¹⁷ The world's supply of coal is finite, and expert opinions differ as to how much longer global coal reserves will last.⁸¹⁸

⁸¹⁴ "The Coal Resource: A Comprehensive Overview of Coal," World Coal Institute (3/6/2009), at 2, [http://www.worldcoal.org/bin/pdf/original_pdf_file/coal_resource_overview_of_coal_report\(03_06_2009\).pdf](http://www.worldcoal.org/bin/pdf/original_pdf_file/coal_resource_overview_of_coal_report(03_06_2009).pdf).

⁸¹⁵ *Id.* at 19.

⁸¹⁶ *Id.* at 20-24.

⁸¹⁷ "Electricity in the United States," U.S. Energy Information Administration (8/12/2014), http://www.eia.gov/energyexplained/index.cfm?page=electricity_in_the_united_states.

⁸¹⁸ "How Much Coal is Left," U.S. Energy Information Administration (7/3/2014), http://www.eia.gov/energyexplained/index.cfm?page=coal_reserves.

Coal Production. Coal “production” refers to the process by which coal is extracted from the earth and prepared for commercial use. It typically involves mining the coal from the ground and treating it to achieve a consistent level of quality for end users.⁸¹⁹ Depending upon the geology of the coal deposit, extraction of the coal may be accomplished through surface mining (also called “open pit” mining), underground mining, strip mining, or mountain top removal.⁸²⁰

The United States is currently the world’s second-largest coal producer, following China.⁸²¹ In 2012, 1.02 billion tons of coal were produced in the United States, making up nearly 12% of the coal produced worldwide.⁸²² Other major coal producers include India, Indonesia, and Australia.⁸²³ In 2012, Colombia was the world’s eleventh largest producer of coal,⁸²⁴ but exported more coal to the United States than any other country, providing about 74% of total U.S. coal imports in 2013.⁸²⁵ The majority of the time, coal is used in the country in which it was produced; only about 18% of the world’s hard coal production reaches the international market.⁸²⁶

Coal Infrastructure. Moving coal from a production site to a end-user requires a complex infrastructure. Coal transport may be via truck, rail, or shipping vessel. Within the United States, for short distances, coal is typically transferred via conveyor or truck; for longer distances, rail or barge transport is common.⁸²⁷ Although less common, coal can also be mixed with water and transported by pipeline.⁸²⁸ In addition to transportation infrastructure, after being mined, coal requires treatment at a coal preparation plant, where impurities are removed to

⁸¹⁹ “The Coal Resource: A Comprehensive Overview of Coal,” World Coal Institute (3/6/2009), at 7-8, [http://www.worldcoal.org/bin/pdf/original_pdf_file/coal_resource_overview_of_coal_report\(03_06_2009\).pdf](http://www.worldcoal.org/bin/pdf/original_pdf_file/coal_resource_overview_of_coal_report(03_06_2009).pdf).

⁸²⁰ See 2012 memorandum, “Metals & Mining: Background to Environmental and Social Due Diligence,” prepared by Goldman, FRB-PSI-300221 - 230, at 223.

⁸²¹ “International Energy Statistics: Total Primary Coal Production (Thousand Short Tons),” U.S. Energy Information Administration, <http://www.eia.gov/cfapps/ipdbproject/IEDIndex3.cfm?tid=1&pid=7&aid=1>.

⁸²² *Id.*

⁸²³ *Id.*

⁸²⁴ *Id.*

⁸²⁵ See “Frequently Asked Questions: From what country does the U.S. import the most coal?,” U.S. Energy Information Administration (6/13/2014),

<http://www.eia.gov/tools/faqs/faq.cfm?id=67&t=2>. Colombian coal imports can outcompete coal produced domestically in the United States. See, e.g., “Coal imports add stress to U.S. glut,” Pittsburgh Post-Gazette, Anya Litvak (11/9/2014), <http://powersource.post-gazette.com/powersource/companies-powersource/2014/11/09/Coal-imports-add-stress-to-U-S-glut/stories/201411090069>.

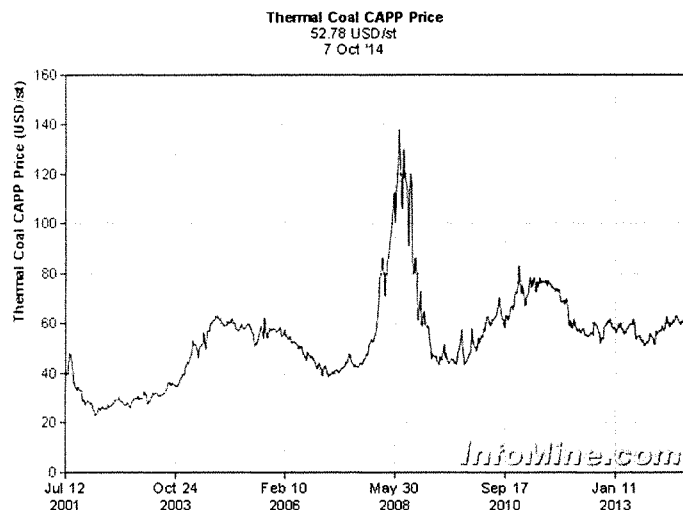
⁸²⁶ “The Coal Resource: A Comprehensive Overview of Coal,” World Coal Institute (3/6/2009), at 13, [http://www.worldcoal.org/bin/pdf/original_pdf_file/coal_resource_overview_of_coal_report\(03_06_2009\).pdf](http://www.worldcoal.org/bin/pdf/original_pdf_file/coal_resource_overview_of_coal_report(03_06_2009).pdf).

⁸²⁷ *Id.* at 9.

⁸²⁸ *Id.*

improve the coal's quality and value.⁸²⁹ The level of treatment varies depending upon the coal's content and intended use. Coal storage facilities are also often needed and can be found, for example, at mining sites, ports, and end-users such as utilities. Coal-fired power plants may also construct containment facilities for spent coal ash, including coal slurry ponds.⁸³⁰

Coal Markets. Coal trades in both physical and financial markets. In the physical market, coal prices are typically determined through bilateral contracts, including “direct supplier-consumer transactions and third-party transactions, and on bids and offers, whether via traders, brokers, the over-the-counter market, or secondary deals among consumers.”⁸³¹ As indicated in the following chart, over the last ten years, coal prices have been volatile:



Source: “Historical Coal Prices and Price Chart,” InfoMine Inc.,
<http://www.infomine.com/investment/metal-prices/coal/all/>.

In 2008, coal prices spiked, in particular for “thermal coal” used to fuel electrical power plants. This price spike took place around the same time that oil prices unexpectedly jumped and then declined. Since then, coal prices have not returned to their 2008 peak, but have remained

⁸²⁹ Id. at 8.

⁸³⁰ “Preventing Breakthroughs of Impounded-Coal-Waste-Slurry Into Underground Mines,” Office of Surface Mining Reclamation and Enforcement, Peter R. Michael, Michael W. Richmond, David L. Lane, & Michael J. Superfiesky (2013), at 2, <http://wvmdtaskforce.com/proceedings/13/Michael-Paper.pdf>.

⁸³¹ See “Methodology and Specifications Guide: Coal,” Platts (9/2014), at 3, <http://www.platts.com/IM.Platts.Content/methodologyreferences/methodologyspecs/coalmethodology.pdf>.

somewhat volatile. While U.S. power generation is shifting away from reliance on coal as a fuel source, worldwide demand for coal has nevertheless risen due in part to increasing energy demand from developing countries.⁸³² Key market participants include coal mines and distributors, as well as commercial and industrial users such as power plants.

In addition to the physical market, coal is traded in the financial markets using a variety of financial products, including futures, options, and swaps. The New York Mercantile Exchange (NYMEX), for example, began offering futures in North American coal in 2001.⁸³³ One of the more commonly traded coal contracts, the Central Appalachian Futures Contract, tracks prices for 1,550 tons of coal and is available for trading on CME Globex, CME ClearPort, and by open outcry.⁸³⁴ A number of coal-related financial products are also available on the Intercontinental Exchange.⁸³⁵

Coal Mining Incidents. Coal mining is an inherently dangerous process with significant occupational hazards. For example, in the week ending October 31, 2014, a coal mining accident in China claimed at least 16 lives,⁸³⁶ and at least 18 people were still trapped in a flooding coal mine in Turkey.⁸³⁷

Colombia, in particular, has experienced several deadly mining incidents in recent years. In 2010, for example, an explosion at a coal mine in Amaga, Colombia, trapped scores of miners underground,⁸³⁸ reportedly killing 73 people.⁸³⁹ A flood in that same mine a few years earlier killed five miners.⁸⁴⁰ On January 26, 2011, a gas explosion at the La Preciosa mine in Sardinata, Colombia, killed 21 miners and seriously

⁸³² "The Coal Resource: A Comprehensive Overview of Coal," World Coal Institute (3/6/2009), at 39, [http://www.worldcoal.org/bin/pdf/original_pdf_file/coal_resource_overview_of_coal_report\(03_06_2009\).pdf](http://www.worldcoal.org/bin/pdf/original_pdf_file/coal_resource_overview_of_coal_report(03_06_2009).pdf).

⁸³³ See "NYMEX Coal Futures Near-Month Contract Final Settlement Price 2014," Energy Information Administration (10/14/2014), <http://www.eia.gov/coal/nymcx/>.

⁸³⁴ See contract specifications for the "Central Appalachian Coal Futures Contract," CME website, http://www.cmegroup.com/trading/energy/coal/central-appalachian-coal_contract_specifications.html.

⁸³⁵ See coal listings on the IntercontinentalExchange website, <https://www.theice.com/products/Futures-Options/Energy/Coal>.

⁸³⁶ "Coal mine accident in far west China kills 16: Xinhua," Reuters, Kazunori Takada (10/25/2014), <http://www.reuters.com/article/2014/10/25/us-china-coal-accident-idUSKCN0IE03320141025>.

⁸³⁷ "18 miners trapped in coal mine accident in Turkey," Associated Press (10/28/2014), <http://www.nydailynews.com/news/world/18-miners-trapped-coal-accident-turkey-article-1.1989940>.

⁸³⁸ "Colombian Coal Mine Blast Kills at Least 18," New York Times, Simon Romero (6/17/2010), <http://www.nytimes.com/2010/06/18/world/americas/18colombia.html>.

⁸³⁹ "73 Killed in Coal Mine Blast, Colombian Authorities Say," Latin American Herald Tribune, <http://www.laht.com/article.asp?ArticleId=359210&CategoryId=12393>.

⁸⁴⁰ "Colombian Coal Mine Blast Kills at Least 18," New York Times, Simon Romero (6/17/2010), <http://www.nytimes.com/2010/06/18/world/americas/18colombia.html>.

injured six others.⁸⁴¹ Investigators found that the explosion was likely due to a buildup of methane gas ignited during a shift change in the mine.⁸⁴² A similar incident took the lives of 32 employees in that same mine in 2007.⁸⁴³

In addition to mining disasters, coal mining has produced air and water pollution in the surrounding communities. In Colombia, the government recently ordered several towns in the Cesar region to be relocated due to mining-related air pollution.⁸⁴⁴

(2) Goldman Involvement with Coal

While Goldman has traded coal in financial and physical markets for years, Goldman fundamentally expanded its physical coal activities by purchasing an open pit coal mine in Colombia in 2010, and a neighboring open pit coal mine in 2012. Goldman formed a number of Colombian entities to function as the mine owners, including CNR, while its primary commodities trading arm, J. Aron & Co., became the mines' exclusive coal marketing and sales agent.⁸⁴⁵ From 2010 to 2012, Goldman increased the mines' coal exports, while J. Aron & Co. purchased about 20% of the output for Goldman's own activities and sold the remaining 80% to third parties.

Beginning in 2012, a litany of operational and environmental problems reduced the mines' coal exports and revenues. They included mine and railway closures, contractor disputes, labor unrest, pollution concerns, regulatory limits on mining activities, port access problems, flooding, and declining coal prices. Despite those problems, Goldman was able to offset losses through a short coal hedge that, in 2013, produced a nearly \$250 million gain.⁸⁴⁶ In 2014, due to ongoing port access problems, the mines did not export any coal.

⁸⁴¹ "Colombia Searches for Answers in Mine Blast," *Wall Street Journal*, Dan Molinski (1/28/2011),

<http://online.wsj.com/articles/SB10001424052748704680604576110044086058786>.

⁸⁴² *Id.* Methane buildup is not a problem specific to mines in Colombia; coal mine methane has been identified as a serious issue in the United States, China, and India as well. 2012 memorandum, "Metals & Mining: Background to Environmental and Social Due Diligence," prepared by Goldman Sachs, FRB-PSI-300221 - 230, at 223.

⁸⁴³ "Colombia Searches for Answers in Mine Blast," *Wall Street Journal*, Dan Molinski (1/28/2011),

<http://online.wsj.com/articles/SB10001424052748704680604576110044086058786>.

⁸⁴⁴ See 8/5/2010 Resolution No. 1525, Colombian Ministry of the Environment, Housing and Territorial Development, GSPSICOMMODS00047335 - 341 (translation provided by Goldman).

⁸⁴⁵ 11/4/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-25-000001 - 003 at 001.

⁸⁴⁶ 9/2013 "Global Commodities & Goldman Special Situations Group Presentation to the Board of Directors of The Goldman Sachs Group, Inc.," prepared by Goldman, FRB-PSI-400077 - 098, at 091.

(a) Trading Coal

Goldman told the Subcommittee that it has traded coal-related financial instruments as well as physical coal for many years.⁸⁴⁷ Its financial trading has included coal-related futures, swaps, options, forwards and other instruments, both on-exchange and over-the-counter. Its physical coal activities have included storing, transporting, and supplying physical coal to various customers, including coal-fired power plants.

Coal trading at Goldman is conducted within the GS Commodities group, by the “U.S. Natural Gas & Power” unit which, among other activities, operates a coal trading desk.⁸⁴⁸ Most of the trades are booked through J. Aron & Co., Goldman’s leading commodities trading arm.⁸⁴⁹ According to Goldman, in its 2009 fiscal year, it bought financially settled coal financial instruments representing 159 million metric tons of coal and sold 121 million metric tons, of which Goldman took physical delivery in about 4% of the trades, resulting in deliveries of about 5.2 million metric tons of coal.⁸⁵⁰

With respect to its physical coal activities, Goldman informed the Subcommittee that, during the five year period from 2008 to 2012, it bought and sold millions of metric tons of coal.⁸⁵¹ For example, in 2008, it purchased about 2 million metric tons and sold about 300,000 metric tons. In 2011, it purchased about 16 million metric tons and sold nearly 18 million metric tons.⁸⁵² It also stored and transported millions of metric tons of coal.⁸⁵³ For example, in 2008, it transported about 2 million metric tons, while in 2011 it transported nearly 9 million metric tons of coal.⁸⁵⁴ Goldman indicated that, in 2012, it stored coal at facilities in Alabama, Florida, Illinois, Louisiana, and Virginia within the United States, as well as at locations in Colombia, Europe, and Australia.⁸⁵⁵

⁸⁴⁷ Subcommittee briefing by Goldman (9/5/2014). In materials submitted to the Federal Reserve, Goldman indicated that it began trading coal sometime after 1997. See 5/26/2011 “Questions from the Federal Reserve on 4(o) Commodities Activities,” prepared by Goldman, FRB-PSI-200600 - 610, at 600.

⁸⁴⁸ See 3/2010 “Federal Reserve Bank of New York Discovery Review: Global Commodities – US Natural Gas & Power,” prepared by Goldman, FRB-PSI-400006 - 015, at 007.

⁸⁴⁹ 10/8/2014 letter from Goldman legal counsel to Subcommittee, “Follow-Up Requests,” PSI-GoldmanSachs-19-000001 - 009, at 008.

⁸⁵⁰ 3/2010 “Federal Reserve Bank of New York Discovery Review: Global Commodities – US Natural Gas & Power,” prepared by Goldman, FRB-PSI-400006 - 015, at 008.

⁸⁵¹ 4/30/12 Goldman response to Subcommittee Questionnaire, GSPSICOMMODS000000005 - 007.

⁸⁵² *Id.*

⁸⁵³ *Id.* at 006.

⁸⁵⁴ *Id.*

⁸⁵⁵ 4/30/12 Goldman response to Subcommittee Questionnaire, GSPSICOMMODS000000008 - 014.

One reason Goldman deepened its involvement with physical coal was its increasing involvement with coal-fired power plants. From 1997 to 2001, Goldman entered into a joint venture with Constellation Energy Commodities Group, Inc. (Constellation Energy) to “create an arrangement for [the] trading of physically-settled power transactions.”⁸⁵⁶ In 1998, as part of that effort, they jointly formed Orion Energy, a company which purchased power plants across the country, including plants fueled with coal.⁸⁵⁷ In 2002, Orion Energy went public.⁸⁵⁸

In 2003, Goldman purchased 100% of Cogentrix Energy LLC, a U.S. company that developed, owned, and operated power plants.⁸⁵⁹ At the time of the acquisition, Cogentrix owned 24 power plants, 14 of which were coal-fired; over the next ten years, it bought and sold those and other plants.⁸⁶⁰ Cogentrix managed some of the plants’ fuel procurement needs, including by arranging long term coal supply contracts.⁸⁶¹ According to Goldman, Cogentrix sold 80% of its ownership interests in a portfolio of power plants to funds managed by Energy Investors Funds in 2007, and sold the remaining 20% interest in that portfolio in 2011.⁸⁶² Even after that sale, in October 2012, the Federal Reserve Bank of New York Commodities Team wrote that Goldman had tolling agreements with four power plants, while its wholly-owned subsidiary, Cogentrix, owned 30 power plants in the United States and abroad.⁸⁶³ According to Goldman, in December 2012, Cogentrix sold its ownership interests in all of its remaining power plants to funds managed by the Carlyle Group.⁸⁶⁴

Goldman records also show that, in 2007, its Global Commodities Principal Investing (GCPI) group purchased an ownership interest in an Australian coal mine owned by Syntech Resources for about \$195 million.⁸⁶⁵ Goldman held the mine as a merchant banking investment until it sold the mine four years later in 2011.⁸⁶⁶ Goldman also

⁸⁵⁶ 3/26/2011 “Questions from the Federal Reserve on 4(o) Commodities Activities,” prepared by Goldman, FRB-PSI-200600 - 610, at 608 (discussing Goldman’s joint venture with Constellation Energy).

⁸⁵⁷ *Id.* at 610.

⁸⁵⁸ *Id.* See also, e.g., “Nice work[:]: How to make a fortune from a utility,” *The Economist* (11/22/2001), <http://www.economist.com/node/877192>.

⁸⁵⁹ See 9/19/2014 letter from Goldman legal counsel to the Subcommittee, PSI-GoldmanSachs-16-000001 - 006, at 003.

⁸⁶⁰ *Id.*

⁸⁶¹ *Id.*

⁸⁶² *Id.*

⁸⁶³ 2012 Summary Report, at FRB-PSI-200477 - 510, at 485.

⁸⁶⁴ *Id.*

⁸⁶⁵ See 9/2013 “Global Commodities & Global Special Situations Group Presentation to the Board of Directors of The Goldman Sachs Group, Inc.,” prepared by Goldman, FRB-PSI400077 - 098, at 087; 1/29/2010 “Global Commodities Principal Investments: Portfolio Snapshot,” prepared by Goldman, FRB-PSI-602255.

⁸⁶⁶ *Id.* See also 8/2/2011 “Yancoal Acquires 100% of Syntech Resources,” Yancoal press release,

purchased from Constellation Energy, in 2009, a book of commodities assets which included a number of coal-related assets.⁸⁶⁷

(b) Acquiring the First Colombian Coal Mine

Goldman's foray into Colombian coal mining had its roots in Goldman's 2009 acquisition from Constellation Energy.⁸⁶⁸ Goldman told the Subcommittee that, as part of that Constellation Energy transaction, it acquired an array of coal-related assets, including nearly 700 coal swaps, 58 contracts to buy or sell physical coal, inventories of physical coal, port access agreements related to coal, and four ship charters related to the shipment of coal.⁸⁶⁹ Goldman told the Subcommittee that one of the coal-related assets was a coal supply contract that Constellation Energy had with Coalcorp Mining, Inc., a Canadian company that owned a Colombian coal mine.⁸⁷⁰ That contract required Coalcorp to supply Constellation Energy with 2.4 million metric tons of coal over a five-year period from 2009 to 2012, with an option for another year.⁸⁷¹ According to Goldman, as the successor to that contract, it became an unsecured creditor of Coalcorp, a company then in financial distress.⁸⁷²

According to information supplied by Coalcorp to its shareholders, Coalcorp discussed refinancing its debt with Goldman in September 2009, but the two were unable to reach an agreement on terms.⁸⁷³ Goldman told the Subcommittee that, to protect itself from the counterparty credit risk, it began to explore buying Coalcorp's key asset, the Colombian coal mine, as part of the consideration for restructuring

http://www.yancoal.com.au/icms_docs/122173_Yancoal_Acquires_100_of_Syntech_Resources.pdf; "China's Yanzhou Coal buys Aussie mine for \$202m," *The Australian*, Matt Chambers (8/3/2011), <http://www.theaustralian.com.au/business/news/chinas-yanzhou-coal-buys-aussie-mine-for-202m/story-e6frg906-1226106981679>.

⁸⁶⁷ See 1/20/2009 Constellation Energy press release, "Constellation Energy Enters into Definitive Agreement to Divest the Majority of its International Commodities Business," <http://www.constellation.com/documents/news/264949.pdf>.

⁸⁶⁸ Subcommittee briefing by Goldman Sachs (9/5/2014). Constellation Energy, a U.S. utility and trading business, sold Goldman "trading positions in gas, power, coal & freight." 11/2011 "Global Commodities Business Overview[:] Presentation to the Federal Reserve," prepared by Goldman, FRB-PSI-2011176 - 188, at 184.

⁸⁶⁹ Subcommittee briefing by Goldman Sachs (9/5/2014); 10/2/2014 chart on coal transactions associated with Constellation Energy, GSPSICOMMODS00046535.

⁸⁷⁰ Subcommittee briefing by Goldman Sachs (9/5/2014).

⁸⁷¹ Id.; 10/2/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-21-000001 - 010, at 006.

⁸⁷² Subcommittee briefing by Goldman Sachs (9/5/2014). See also, e.g., "Coalcorp fights to avoid forced bankruptcy," *National Post* (1/22/2010), http://www.canada.com/story_print.html?id=5bd85dd8-112f-4af4-883a-803594922cf3&sponsor=.

⁸⁷³ 1/19/2010 "Notice of Special Meeting of Shareholders to be Held on February 22, 2010 and Management Information Circular," prepared by Coalcorp Mining Inc. (hereinafter, "2010 Coalcorp Shareholder Notice"), PSI-CI-01-000001 - 030, at 026. See also, e.g., "Coalcorp fights to avoid forced bankruptcy," *National Post* (1/22/2010), http://www.canada.com/story_print.html?id=5bd85dd8-112f-4af4-883a-803594922cf3&sponsor=.

the coal supply contract.⁸⁷⁴ Goldman indicated that its Global Commodities Principal Investments group took the lead in examining the coal mine as a potential merchant banking investment.⁸⁷⁵

In January 2010, Goldman and Coalcorp publicly announced that Goldman would acquire Coalcorp's La Francia mine.⁸⁷⁶ The transaction was comprised of several parts.⁸⁷⁷ First, Goldman would acquire the open-pit mine as well as related mining concessions, infrastructure assets, and contractual rights. Second, Goldman would acquire a nearby undeveloped mine site that also had mining concessions. Third, Goldman would acquire Coalcorp's 8.43% ownership interest in Ferrocarriles Del Norte de Colombia (Fenoco), a company that operated a 226 km railway that transported coal from the Cesar mining region to the seaports over 100 miles away.⁸⁷⁸ Railway access was critical to exporting the coal. In addition, as part of the transaction, Coalcorp would assign to a new Goldman subsidiary the supply contract to deliver coal to Constellation Energy.⁸⁷⁹

On March 19, 2010, Coalcorp and Goldman completed the acquisition for about \$200 million.⁸⁸⁰ Goldman established several legal entities to own and operate the mines and related infrastructure.⁸⁸¹ The key Goldman entity was a Colombian corporation, Colombian Natural Resources I S.A.S. (CNR). CNR and other entities were set up as

⁸⁷⁴ Subcommittee briefing by Goldman Sachs (9/5/2014); 2010 Coalcorp Shareholder Notice, at PSI-CI-000020.

⁸⁷⁵ Subcommittee briefing by Goldman Sachs (9/5/2014).

⁸⁷⁶ See, e.g., 1/21/2010 "Coalcorp announces filing of Management Information Circular for the Special Meeting to vote on proposed transaction," Coalcorp press release, <http://www.newswire.ca/en/story/703837/coalcorp-announces-filing-of-management-information-circular-for-the-special-meeting-to-vote-on-proposed-transaction>; "Coalcorp agrees to sell La Francia coal mine to Goldman Sachs," Proactiveinvestors.com (1/7/2010), <http://www.proactiveinvestors.com/companies/news/3506/coalcorp-agrees-to-sell-la-francia-coal-mine-to-goldman-sachs-3506.html>.

⁸⁷⁷ See 2010 Coalcorp Shareholder Notice, at PSI-CI-000001 - 030, at 019 - 020, 026.

⁸⁷⁸ See "Management and Discussion Analysis, 2010," prepared by Coalcorp Mining Inc. (hereinafter, "2010 Coalcorp MDA"), at 4, <http://www.meliorresources.com/uploads/documents/annualreports/2010%20Annual%20MD&A.pdf> (stating Coalcorp sold its 8.43% stake in Fenoco to Goldman as part of the La Francia transaction in March 2010).

⁸⁷⁹ See 2010 Coalcorp Shareholder Notice, PSI-CI-000001 - 030, at 020; 10/2/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-21-000001 - 010, at 006. See also 10/28/2011 "Global Commodities Review of Acquisitions: Colombian Natural Resources," part of a presentation by Goldman for the Goldman Board of Directors, FRB-PSI-700011 - 030, at 028 (valuing the contract at about \$50 million); "Coalcorp agrees to sell La Francia coal mine to Goldman Sachs," Proactiveinvestors.com (1/7/2010), <http://www.proactiveinvestors.com/companies/news/3506/coalcorp-agrees-to-sell-la-francia-coal-mine-to-goldman-sachs-3506.html>.

⁸⁸⁰ "Management and Discussion Analysis, 2011," prepared by Melior Resources Inc. (formerly Coalcorp Mining Inc.) (hereinafter, "2011 Melior MDA"), at 3-4, <http://www.meliorresources.com/uploads/documents/annualreports/Melior-MDA-2011.pdf>; 1/29/2010 "Global Commodities Principal Investments: Portfolio Snapshot," prepared by Goldman, FRB-PSI-602254 - 255.

⁸⁸¹ Subcommittee briefing by Goldman Sachs (9/5/2014). See also undated "CNR Structure Chart," prepared by Goldman at the Subcommittee's request, GSPSICOMMODS00046318.

wholly owned subsidiaries that were ultimately owned by The Goldman Sachs Group, Inc. and Goldman Sachs & Co. LLC.⁸⁸² The Boards of Directors of the new entities were comprised exclusively of Goldman employees.⁸⁸³ Goldman told the Subcommittee that the coal mine was purchased as a merchant banking investment, and the vast majority of its internal documents also characterize the transactions in that manner, although forms filed with the Federal Reserve indicate that Goldman also asserted that its ownership of the Colombian mining operations was permissible under the Gramm-Leach-Bliley grandfather authority.⁸⁸⁴

Goldman told the Subcommittee that, at the time of the acquisition, Goldman intended to make minor changes to the mining operations and, within a short period of time, sell the entire project to Vale S.A., a Brazilian mining company that owned the neighboring El Hatillo mine.⁸⁸⁵ That planned sale did not take place.

(c) Operating the Mine

To operate the La Francia mine, CNR retained the same consortium of three companies, known as Consorcio Minero del Cesar S.A.S. (CMC), that Coalcorp had used.⁸⁸⁶ CMC was responsible for conducting the mining operations, including hiring the miners and other employees who worked on the site. Goldman also acquired rights to ship the coal out of a Colombian port known as Santa Marta.⁸⁸⁷

During its first two years of operation, the coal mine's exports and revenues increased rapidly. At year-end in 2010, CNR, the Goldman subsidiary that owned the La Francia mine, reported operational revenues from selling the coal at about \$66 million.⁸⁸⁸ By the end of the next year, 2011, CNR reported that the mine's operating revenues from selling coal had tripled to about \$200 million.⁸⁸⁹ CNR reported higher

⁸⁸² See undated "CNR Structure Chart," prepared by Goldman at the Subcommittee's request, GSPSICOMMODS00046318.

⁸⁸³ Subcommittee briefing by Goldman Sachs (9/5/2014).

⁸⁸⁴ See, e.g., 4/14/2010 "Report of Changes in Organizational Structure," Form FR Y-10, submitted to the Federal Reserve by Goldman Sachs Group, Inc., GSPSICOMMODS00046301 - 317, at 303 (reflecting that the investment was "permissible under [Bank Holding Company Act Section] 4(o), but investment complies with the Merchant Banking regulations.").

⁸⁸⁵ Subcommittee briefing by Goldman Sachs (9/5/2014).

⁸⁸⁶ See 12/31/11 and 12/31/2010, C.I. Colombian Natural Resources I S.A.S., Financial Statements (hereinafter "2011 and 2010 CNR Financial Statements"), GSPSICOMMODS00046319 - 365, at 343.

⁸⁸⁷ Goldman acquired those port access rights from Vitol in 2010. See "Vitol buys export space at Colombia Santa Marta port," Reuters, Jackie Cowhig (1/25/2010), <http://uk.reuters.com/article/2010/01/25/ac-coal-vitol-colombia-idUKLDE60O17F20100125>.

⁸⁸⁸ See 12/31/11 and 12/31/2010, C.I. Colombian Natural Resources I S.A.S., Financial Statements (hereinafter "2011 and 2010 CNR Financial Statements"), GSPSICOMMODS00046319 - 365, at 324 (applying 2010 US dollar exchange rate of .000522 as listed on X-rates.com, <http://www.x-rates.com/historical/?from=COP&amount=1&date=2010-12-31>).

⁸⁸⁹ Id. (applying 2011 U.S. dollar exchange rate of .000516 as listed on X-rates.com, <http://www.x-rates.com/historical/?from=COP&amount=1&date=2011-12-31>).

revenues even though it had lost its second and third-largest customers, Glencore and Electroandina S.A., which had collectively accounted for about one third of CNR's net operational revenues in 2010.⁸⁹⁰ CNR's financial statement showed that the lost revenues had been more than made up by its new and largest customer, Goldman's commodities subsidiary, J. Aron & Company, which accounted for about \$74 million of its operating revenues.⁸⁹¹

Exclusive Marketing Agreement. Once it acquired the mine, Goldman installed CNR as "the exclusive marketing and sales agent," although the terms of the agreement were not formalized until 2011.⁸⁹² In September 2011, CNR entered into a formal Marketing Agreement with J. Aron & Co., designating it as CNR's "exclusive agent"⁸⁹³ to perform the following services:

- "Marketing coal to prospective customers,"
- "negotiating the terms of sale and delivery of coal with prospective customers;"
- "procurement of port services;" and
- "procurement of blending coal."⁸⁹⁴

In other words, under the agreement, Goldman's key commodities trader became the coal mine's sole sales agent.

The next month, October 2011, in a presentation to the Goldman Board of Directors, Goldman's Global Commodities Group reported that, overall, CNR had "[r]amped up production / sales from 1 mt [million metric tons] in 2009 to 2.5 mt in 2011."⁸⁹⁵ The presentation stated that CNR had also "[i]nstalled J.Aron Coal Desk as marketing agent, increasing customer base from < 5 in 2009 to > 15 in 2011."⁸⁹⁶ The Global Commodities Group presentation also stated: "2011 projected to be the most profitable year since the assets went into production (2005), with revenues forecasted to be >\$65 [million]."⁸⁹⁷

Goldman told the Subcommittee that, after the acquisition, J. Aron & Co. purchased about 20% of CNR's coal for itself and sold the other

⁸⁹⁰ Id. at 345.

⁸⁹¹ Id.

⁸⁹² 11/4/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-25-000001- 003, at 001.

⁸⁹³ 9/26/2011 "Marketing Agreement" between C.I. Colombian Natural Resources I SAS and J. Aron & Company, GPSICOMMODS00046496 - 530, at 498.

⁸⁹⁴ Id. at 528.

⁸⁹⁵ 10/28/2011 "Global Commodities Review of Acquisitions: Colombian Natural Resources," part of a presentation prepared by Goldman for the Goldman Board of Directors, FRB-PSI-700011 - 030, at 028.

⁸⁹⁶ Id.

⁸⁹⁷ Id.

80% to unrelated third parties.⁸⁹⁸ Specifically, Goldman indicated that in 2011, J. Aron & Co. purchased about 710,000 metric tons from CNR for itself and sold about 1.6 million metric tons of CNR coal to third parties, for a total of about 2.3 million metric tons.⁸⁹⁹ In 2012, J. Aron & Co. purchased about 775,000 metric tons for itself and sold about 3.5 million metric tons of CNR coal to third parties, for a total of about 4.2 million metric tons.⁹⁰⁰ In 2013, the figures were 324,000 metric tons purchased by J. Aron & Co. and 3.4 million metric tons sold to third parties, for a total of about 3.7 million metric tons.⁹⁰¹

The Colombian coal mine gave Goldman control over a vertically integrated coal operation. Goldman entities mined the coal, transported it by a railway partly owned by Goldman, and delivered it to a port facility controlled by Goldman. Another Goldman entity, J. Aron & Co., negotiated and arranged for 100% of the coal sales. It either bought the coal itself and arranged for its shipment, or sold it to third parties. The coal purchased by J. Aron & Co. was transported on Goldman-chartered ships to either the United States or Europe.

Setbacks. Despite its increased coal production, customer base, and revenues, Goldman's coal mining operations during 2010 and 2011 also experienced some difficulties.⁹⁰² In November 2010, CNR sent Coalcorp a Notice of Claim for indemnification for an alleged \$37.4 million in losses from locomotives not being in working condition and from unpaid import value-added taxes.⁹⁰³ In December, CNR sent Coalcorp a second Notice of Claim for indemnification from \$1.1 million in alleged losses due to Coalcorp's failure to provide title to one third of the real property intended to be used for a rail spur.⁹⁰⁴ In March

⁸⁹⁸ 10/2/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-21-000001 - 010, at 008; Subcommittee briefing by Goldman Sachs (9/5/2014). CNR's financial statements indicate that, during 2012, J. Aron & Co. was slated to purchase closer to one-third of its coal. See 2011 and 2010 CNR Financial Statements, at Note 16, at GSPSICOMMODS00046342. In 2014, the amount of coal committed to J. Aron & Co. dropped dramatically to about 275,000 metric tons, likely due to the extended closure of the La Francia mine during 2013, and CNR's reduced production. See 12/31/2013 and 12/31/2012 C.I. Colombian Natural Resources I S.A.S., Financial Statements (hereinafter "2013 and 2012 CNR Financial Statements"), at Note 16, GSPSICOMMODS00046366 - 397, at 391.

⁸⁹⁹ 10/2/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-21-000001 - 010, at 008.

⁹⁰⁰ *Id.*

⁹⁰¹ *Id.*

⁹⁰² Goldman has confirmed that it "does not operate, possess or own on its balance sheet a major investment in any coal mine other than [its Colombian mining operations]." 9/19/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-16-000001 - 006, at 005.

⁹⁰³ See "Coalcorp Receives Notice of Claim," *Canada Newswire* (11/3/2010), <http://www.bloomberg.com/apps/news?pid=conewsstory&tkr=CCJ:CN&sid=azvtX.MEk4LY>.

⁹⁰⁴ See "Coalcorp Receives Notice of Claim," *Bloomberg* (12/3/2010), <http://www.bloomberg.com/apps/news?pid=newsarchive&sid=a0M6GkXe6jhc>.

2011, Coalcorp – renamed Melior Resources Inc. in 2011 – settled both claims by paying Goldman-related entities \$6.2 million.⁹⁰⁵

In May and August 2010, the Colombian Ministry of the Environment, Housing and Territorial Development issued resolutions recognizing coal-induced air pollution problems in the Cesar region and calling for the relocation of families living in certain areas contaminated by coal dust.⁹⁰⁶ Both resolutions explicitly named CNR, among other companies, as needing to reduce air pollution from its mining operations,⁹⁰⁷ and identifying it as one of four companies that would have to pay relocation expenses.⁹⁰⁸

In December 2011, the Colombian Ministry of the Environment and Sustainable Development adopted a resolution that suspended new coal mining activities in “high” pollution areas, including the Cesar region where Goldman’s coal mine was located, making expansion or sale of those mining operations more difficult.⁹⁰⁹

(d) Acquiring the Second Colombian Coal Mine

Despite those difficulties, in 2012, rather than sell its Colombian coal mining operation as planned, Goldman expanded its physical coal activities by purchasing a second coal mine. Goldman told the Subcommittee that before it could sell its mine to Vale S.A. as it had intended, Vale announced plans to sell its coal mine and exit Colombia altogether.⁹¹⁰ Goldman told the Subcommittee that because Vale’s mine was so close to the La Francia mine, it decided to purchase it and

⁹⁰⁵ See 9/19/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-16-000001 - 006, at 003 (“Coalcorp paid Goldman Sachs about \$6.2 million to settle certain claim relating to the La Francia mine purchase.”); Melior Resources Inc, FY 2012 Management and Discussion Analysis, Consolidated Financial Statements, at 5-6, <http://www.meliorresources.com/uploads/documents/annualreports/MLR-MDA-Oct16-2012-FINAL.pdf>.

⁹⁰⁶ See 5/20/2010 Resolution No. 0970, Colombian Ministry of the Environment, Housing and Territorial Development, GSPSICOMMODS00047330 - 334; and 8/5/2010 Resolution No. 1525, Colombian Ministry of the Environment, Housing and Territorial Development, GSPSICOMMODS00047335 - 341 (translations provided by Goldman); Subcommittee briefing by Goldman Sachs (9/5/2014). See also “Colombia: Coal producers feel out of favour,” *Mining Journal* (5/3/2013), http://www.mining-journal.com/reports/colombia-coal-producers-feel-out-of-favour?SQ_DESIGN_NAME=print_friendly (noting that the issue of “the re-location of three towns in Cesar away from the mining site – Plan Bonito, El Hatillo and El Boqueron” remains “unresolved”).

⁹⁰⁷ See 5/20/2010 Resolution No. 0970, Colombian Ministry of the Environment, Housing and Territorial Development, at GSPSICOMMODS00047330 - 334.

⁹⁰⁸ See 8/5/2010 Resolution No. 1525, Colombian Ministry of the Environment, Housing and Territorial Development, at GSPSICOMMODS00047335 - 341.

⁹⁰⁹ See 12/22/2011 Resolution No. 0335, Colombian Ministry of the Environment and Sustainable Development, Official Gazette No. 48.294 of 2011, GSPSICOMMODS00047310 - 329 (translation provided by Goldman).

⁹¹⁰ Subcommittee briefing by Goldman Sachs (9/5/2014).

combine the operations, with a view towards selling the integrated mining operations to a third party in the future.⁹¹¹

In May 2012, Vale announced the sales agreement, indicating it would sell Goldman an open-pit working mine, an undeveloped mine site, additional shares in the Fenoco railway, and a port terminal.⁹¹² The second coal mine was known as El Hatillo, and the new port was called Río Córdoba. Goldman's Global Commodities Principal Investments Group again took the lead on the transaction, forming new subsidiaries for the holdings, which were again set up as ultimately wholly owned by The Goldman Sachs Group, Inc. and The Goldman Sachs & Co LLC.⁹¹³ Goldman closed on the approximately \$400 million acquisition on June 22, 2012.⁹¹⁴

In 2013, Goldman's Global Commodities group reported to the Goldman Board of Directors that, together, the La Francia and El Hatillo holdings had total coal reserves of about 160 million metric tons and a total production capacity of about six million metric tons per annum.⁹¹⁵ It also informed the Board that CNR had "significant expansion plans," including plans to double the annual output of coal and expanding the site from "2 to 5 open pit operations over the next 4 years."⁹¹⁶

In the same presentation to the Board, however, the Global Commodities group also stated: "Certain operational issues have arisen."⁹¹⁷

Operational Issues. The September 2013 presentation identified two operational issues. The first was that, since the acquisition of the first mine, coal prices had declined from about \$113 per metric ton to \$90 per metric ton, a drop of 20%.⁹¹⁸ The presentation stated that an

⁹¹¹ Id.

⁹¹² See, e.g., "Vale Sells Colombia Coal Mines to GS-led Group," Reuters, Reese Ewing (5/28/2012), <http://www.reuters.com/article/2012/05/29/us-vale-coal-idUSBRE84S00N20120529>; "Goldman front-runner for Vale's Colombian coal ops," Reuters, Jack Kimball and Jacqueline Cowhig (2/14/2012), <http://www.reuters.com/article/2012/02/14/us-colombia-vale-coal-idUSTRE81D19620120214>.

⁹¹³ Subcommittee briefing by Goldman Sachs (9/5/2014); 3/31/2013 "Commodity, Energy, E&P, Renewable Energy Equity Investments," chart prepared by Goldman, FRB-PSI-400065 - 070, at 068.

⁹¹⁴ See undated report, "Report of Changes in Organizational Structure," Form FR-Y-10 filed by The Goldman Sachs Group, Inc. with the Federal Reserve, GSPSICOMMODS00046304 - 307 (reflecting the June 22, 2012 acquisition of Colombia Purchase Co., S.A.S. by GS Power Holdings LLC and Goldman Sachs Global Holdings LLC); 10/2/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-21-000001 - 010, at 008 (indicating the transaction was settled for "cash consideration of approximately \$400 million, subject to certain adjustments").

⁹¹⁵ 9/2013 "Global Commodities & Global Special Situations Group Presentation to the Board of Directors of The Goldman Sachs Group, Inc.," prepared by Goldman, FRB-PSI400077 - 098, at 090.

⁹¹⁶ Id.

⁹¹⁷ Id.

⁹¹⁸ Id. at 091.

additional drop of \$5 to \$7 per metric ton “may trigger a permanent impairment” of the value of the investment, which was then being carried on Goldman’s books at about \$590 million.⁹¹⁹

A second problem identified in the Board presentation involved a January 2013 shipping incident in which a barge owned by another, unaffiliated company released a large amount of coal into Colombian waters.⁹²⁰ As a result, the Colombian government announced that it would no longer delay compliance with a 2007 law requiring all Colombian ports to install equipment enabling coal to be loaded directly onto ocean-going vessels, without using a barge.⁹²¹ The procedure used at most Colombian ports was for coal to be loaded from a port terminal onto a barge, transported farther out to sea, and then transferred from the barge to a larger ship using cranes and open conveyor systems that produced coal dust and coal spills into the water during transfers. The Colombian government imposed a January 2014 deadline for all ports to install direct-loading equipment and stop using barges.⁹²² Goldman’s Commodities group reported to the Goldman Board of Directors that CNR currently “barges coal out to sea in order for it to be loaded onto vessels via floating cranes,” and that upgrading its port facilities with direct loading equipment would cost about \$220 million.⁹²³ The presentation indicated that CNR was “evaluating alternatives.”⁹²⁴

While the cost and port equipment issues were serious, additional operational problems affecting the Colombian mines were not mentioned in the Board presentation. For example, in 2010 and 2011, the Colombian government denied requests by CNR and other companies to increase coal mining in the Cesar region, limiting Goldman’s expansion plans.⁹²⁵ Similarly, in August 2012, the Fenoco railway, which transports the coal from Goldman’s mines to the ports

⁹¹⁹ *Id.*

⁹²⁰ *Id.*

⁹²¹ See 8/15/2007 Decree No. 3083, Colombian Transport Ministry, Official Gazette No. 46.721, GSPSICOMMODS00046536 - 537 (requiring compliance by 6/1/2010); 11/4/2009 Decree No. 4286, President of the Republic of Colombia, GSPSICOMMODS00046538 - 539 (requiring ports to file monthly progress reports); 3/5/2010 Decree No. 0700, Colombian Transport Ministry, GSPSICOMMODS00046540 - 541 (allowing delayed filing of progress reports) (translations provided by Goldman).

⁹²² See 2011 Law No. 1450, GSPSICOMMODS00046542 (translation provided by Goldman).

⁹²³ 9/2013 “Global Commodities & Global Special Situations Group Presentation to the Board of Directors of The Goldman Sachs Group, Inc.,” prepared by Goldman, FRB-PSI400077 - 098, at 090.

⁹²⁴ *Id.*

⁹²⁵ 10/8/2014 letter from Goldman Sachs legal counsel to Subcommittee, PSI-GoldmanSachs-19-000001 - 009, at 004; see also 12/22/2011 Resolution No. 0335, Colombian Ministry of the Environment and Sustainable Development, Official Gazette No. 48.294 of 2011, GSPSICOMMODS00047310 - 329 (translation provided by Goldman); 8/5/2010 Resolution No. 1525, Colombian Ministry of the Environment, Housing and Territorial Development, GSPSICOMMODS00047335 - 341 (translation provided by Goldman).

over 100 miles away, had been shut down for a month due to a pay dispute, slowing coal delivery.⁹²⁶

In addition, Goldman, through its subsidiary CNR, became embroiled in an ongoing dispute with the consortium that operated the mines, Consorcio Minero del Cesar (CMC). According to CNR, in November 2012, CMC “informed CNR” that it had assigned the operating contract to a related company, but CNR refused to “recognize the legality of that assignment,” rejected invoices from the new company, and essentially stopped paying for work under the contract.⁹²⁷ In addition, Goldman told the Subcommittee that CNR had become concerned about whether CMC was conducting the mining at the sites in accordance with approved plans or was mining them in a way that could significantly reduce the value of the mines.⁹²⁸

In January 2013, the consortium sent a letter declaring CNR in breach of the contract and suspended work at the mine.⁹²⁹ That same day, miners and other employees who worked for the consortium walked off the job, abandoning the mine and extensive mining equipment.⁹³⁰ CNR described the situation in its certified financial statement as follows:

“On the 21st of January of 2013, in a sudden manner, Consorcio Minero del Cesar S. A. S sent a letter announcing the unilateral termination of the La Francia Mine’s operation Contract, based on the alleged breach of the Company. In parallel, the mine’s activities were suspended on the same day and all the machinery of the consortium and of its members was abandoned on the field. During the next two weeks, the inventory of coal on the yards was shipped to the port, and from then onwards the mine’s activity was completely halted. On the 15th of April a group of women and children who [were] said to be relatives of the CMD’S employees blocked the access to the camp of the El Hatillo mine. In this way, the conflict at the La Francia mine irradiated also to that mine CNR I started several legal actions for the unblocking of the mine, including protection petitions and police proceedings filed with the mayor of El Paso, as well as a request of administrative protection before the National Mining Agency ANM. Likewise, a large number of letters was sent to request the intervention of police and

⁹²⁶ 10/8/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-19-000001 - 009, at 004. See also “Colombia’s Fenoco, Coal Railway Workers Agree on Pay Raise,” Reuters (9/18/2013), <http://www.reuters.com/article/2013/09/18/colombia-fenoco-pay-idUSL2N0HE2BB20130918>.

⁹²⁷ See 2013 and 2012 CNR Financial Statements, at Note 1, GSPSICOMMODS00046366 - 397, at 394.

⁹²⁸ Subcommittee briefing by Goldman Sachs (9/5/2014).

⁹²⁹ See 2013 and 2012 CNR Financial Statements, at Note 1, GSPSICOMMODS00046366 - 397, at 374.

⁹³⁰ Id.

military authorities, the Governor of Cesar, the office of the Attorney General and the People's Defender Office, as well as to the Mines and Interior Ministries, among others.”⁹³¹

CNR stated that the blockade of the mine continued, and the mine remained closed for the next nine months, until September 22, 2013:

“The total blockade of the La Francia mine lasted for 244 days, until the 22nd of September of 2013, and it was lifted thanks to a private agreement in which CNR I paid a cash bonus of \$20,000 to each one of the persons that were still protesting. Once CNR I resumed the control of the mine, the activities to recover the productive areas were started, particularly the pumping of water from the pit.”⁹³²

Goldman told the Subcommittee that the payments made by CNR to end the blockade were by check rather than in cash.⁹³³ Goldman further told the Subcommittee that 120 current or former employees received the USD \$10,000 checks.⁹³⁴ Shortly thereafter, CNR hired a new mine operator, Excavaciones y Proyectos de Colombia S.A.S. (EPSA).⁹³⁵

All told, as a result of the dispute with CMC, the La Francia mine produced no coal from January 21 through September 22, 2013.⁹³⁶ During the shutdown, Goldman used coal from an affiliate to meet CNR's coal supply contracts.⁹³⁷ When those supplies ran out, some supply contracts were cancelled or postponed.⁹³⁸ Still another supply contract required CNR to make a \$237,000 payment to settle the contract breach.⁹³⁹

Many of the operational problems with the mines were not identified in the 2013 presentation made by the GS Commodities Group to the Goldman Board of Directors, including the nine-month closure of one mine, the legal dispute with the mine operator, the mine blockade by women and children, the attempts to obtain police and military assistance, the payments to protestors, the cancellation, postponement, and settlement of coal supply contracts, and the associated legal

⁹³¹ Id.

⁹³² Id.

⁹³³ 10/30/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-24-000001 - 003, at 001 (explaining that the amount was in U.S. dollars, whereas the amount reflected in the certified financial statement was in thousands of Colombian pesos).

⁹³⁴ Id.

⁹³⁵ 2013 and 2012 CNR Financial Statements, at Note 1, GSPSICOMMODS00046366 - 397, at 375.

⁹³⁶ Id..

⁹³⁷ Id. at Note I.

⁹³⁸ Id.

⁹³⁹ Id.

expenses.⁹⁴⁰ At the same time, those developments increased the financial, operational, environmental, and catastrophic event risks associated with the mining venture, presenting issues that do not normally confront a bank or bank holding company.

(e) Current Status

Operational and environmental problems at the Colombian mines have continued throughout 2014. Coal prices have remained volatile. Even after the La Francia mine reopened, the labor dispute at the El Hatillo mine continued with a labor union representing about 40% of the employees.⁹⁴¹ After years of negotiations, “CNR has requested the Ministry of Labor of Colombia to convene an arbitration panel to decide the dispute.”⁹⁴² In January 2014, the Colombian environmental law precluding the use of barges to load coal onto ships took effect. Since then, Goldman has been precluded from using its port, which has no direct-loading equipment.⁹⁴³ Goldman told the Subcommittee that, as a result, “since January 1, 2014, CNR has not exported any coal it produced in Colombia.”⁹⁴⁴

According to CNR’s financial statement, during 2013, Goldman considered several alternatives to gain access to a port with a direct-loading system.⁹⁴⁵ CNR considered “the possibility to load its coal at Puerto Nuevo which, being a public port, had to offer access to third parties.”⁹⁴⁶ Just days before the law was to go into effect, however, the Puerto Nuevo port announced that it had established an application process which CNR would have to complete to use the port facilities.⁹⁴⁷ According to CNR, the new application process was inconsistent with Colombian law and effectively precluded CNR from being approved.⁹⁴⁸ CNR has not yet been permitted to use the public port. Goldman also entered into negotiations with Drummond Corp., a U.S. company with major coal operations in Colombia, over using its port for CNR coal exports, but no agreement has yet been reached.⁹⁴⁹ In addition, Goldman obtained government permission to upgrade its Río Córdoba

⁹⁴⁰ See 9/2013 “Global Commodities & Global Special Situations Group Presentation to the Board of Directors of The Goldman Sachs Group, Inc.,” prepared by Goldman, FRB-PSI400077 - 098, at 090 - 091.

⁹⁴¹ 10/8/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-19-000001 - 000009, at 004.

⁹⁴² *Id.*

⁹⁴³ Subcommittee briefing by Goldman Sachs (9/5/2014).

⁹⁴⁴ 9/19/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-16-000001 - 006, at 004.

⁹⁴⁵ 2013 and 2012 CNR Financial Statements, at Note 1, GSPSICOMMODS00046366 - 397, at 375.

⁹⁴⁶ *Id.*

⁹⁴⁷ *Id.*

⁹⁴⁸ *Id.*

⁹⁴⁹ *Id.*; 9/19/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-16-000001 - 006, at 004.

port with direct-loading equipment,⁹⁵⁰ but Goldman told the Subcommittee that the cost was too high to go forward.⁹⁵¹

Because CNR cannot currently export any coal, it has reduced its coal production to levels well below amounts established in CNR's agreement with the Colombian National Mining Agency.⁹⁵² While CNR has requested relief from its production obligation due to lack of port access, as of March 2014, the National Mining Agency had not yet agreed.⁹⁵³ If the Colombian government were to take action against CNR for underproduction of coal, Goldman could lose some or all of its mining rights. In the meantime, while Goldman continues to seek port access, its mines have been operating at reduced rates, and the coal has been accumulating on site.⁹⁵⁴ Goldman told the Subcommittee that CNR is storing the coal in the mine's yards.⁹⁵⁵

In 2013, CNR incurred losses due, in part, to the mine shutdown, reduced sales, and declining coal prices,⁹⁵⁶ but Goldman may not have lost money on its investment. In a September 2013 presentation to the Goldman Board of Directors, the Global Commodities Group reported that to offset declining coal prices and CNR's declining market value, it had entered into a "short coal hedge" which had to date produced "accounting gains" of \$246 million.⁹⁵⁷ Those gains may have more than offset the CNR losses. Goldman is also considering selling the mines.⁹⁵⁸

(3) Issues Raised by Goldman's Coal Mining Activities

Goldman's coal mining activities illustrate a number of concerns related to financial holding company involvement with complex physical commodity businesses. In just three years, Goldman's coal mines experienced contractor disputes, labor unrest, equipment issues, mine and railway shutdowns, and flooding, events in addition to the many operational, environmental, and catastrophic event risks inherent

⁹⁵⁰ Subcommittee briefing by Goldman Sachs (9/5/2014). See also "Colombia Oks Goldman Sachs' Direct Loading Coal Port Upgrade Works," *Platts Coal Trader International*, Jaime Concha (8/13/2013), PSI-PlattsGoldmanCoalStory(8-13-13)-000001.

⁹⁵¹ 10/2/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-21-000001 - 010, at 008; Subcommittee briefing by Goldman Sachs (9/5/2014).

⁹⁵² See 2013 and 2012 CNR Financial Statements, at Note 1, GSPSICOMMODS00046366 - 397, at 376.

⁹⁵³ *Id.*

⁹⁵⁴ Subcommittee briefing by Goldman Sachs (9/5/2014).

⁹⁵⁵ *Id.*; 2013 and 2012 CNR Financial Statements, at Note 1, GSPSICOMMODS00046366 - 397, at 376. See also "Goldman Sachs miner halts coal exports from Colombia," Reuters, Peter Murphy (1/9/2014), <http://finance.yahoo.com/news/exclusive-goldman-sachs-miner-halts-210300373.html>.

⁹⁵⁶ See, e.g., 2013 and 2012 CNR Financial Statements, Income Statement, GSPSICOMMODS00046366 - 397, at 369.

⁹⁵⁷ 9/2013 "Global Commodities & Global Special Situations Group Presentation to the Board of Directors of The Goldman Sachs Group, Inc.," prepared by Goldman, FRB-PSI-400077 - 098, at 091.

⁹⁵⁸ See "Mick the Miner in talks to buy Goldman's Colombian coal," *The Sunday Times*, Danny Fortson (8/17/2014), <http://www.thesundaytimes.co.uk/sto/business/Industry/article1447559.ece>.

in coal mining. Had those developments combined into a worst case scenario, they could have imposed severe financial consequences on Goldman – one that in an extreme case could have necessitated a Federal Reserve, or even U.S. taxpayer, rescue.

The Colombian coal venture also disclosed how the coal mines' merchant banking status – as a short-term investment that must be sold within ten years – created a disincentive for Goldman to pay for long-term infrastructure investments – such as direct-loading port facilities – needed to operate the mines in a safe and environmentally sound manner. Choosing not to make those infrastructure investments, in turn, deepened Goldman's risk of incurring an operational or environmental disaster in Colombia. Additional concerns illustrated by Goldman's coal mining venture involve its legal authority to enter the coal mining business to begin with, and the conflicts of interest that arise when a financial holding company controls coal supplies and transport, while trading coal-related financial instruments.

(a) Catastrophic Event Risks

Since acquiring its first Colombian coal mine in 2010, Goldman has incurred multiple operational, environmental, and catastrophic event risks that rarely confront traditional banks or financial holding companies. When asked by the Subcommittee to describe the types of risks that can affect coal operations, one Goldman representative summed it up by saying: "Everything that's happened to us."⁹⁵⁹

Operational, Environmental, and Catastrophic Event Risks.

Colombia's history is marked with mining collapses, mining fatalities, and a variety of coal-related incidents and accidents. In three years, Goldman's Colombian coal mining operations experienced operational problems that raised the risk of a similar mining mishap affecting the La Francia or El Hatillo mines, including disagreements with the mine operator over how to mine the coal, abandonment of mining equipment on site, an extended mine shutdown, water flooding the mines, and women and children blocking mine access. Dangerous conditions and contractor and labor disputes, by their nature, intensify the risk of a catastrophic event, although none has resulted to date.

Goldman's operational problems were in addition to ongoing environmental problems. Colombia has a long history of coal-related environmental problems, including air and water pollution. Goldman had already recognized that mining-related environmental issues require special attention, as indicated in an internal, non-public Goldman memorandum entitled, "Metals and Mining: Background to

⁹⁵⁹ Subcommittee briefing by Goldman Sachs (9/5/2014).

Environmental and Social Due Diligence.”⁹⁶⁰ The Goldman memorandum warned that, as a result of mining operations, “[l]egal claims against the company might include fines, penalties, prison sentences for staff (arising from pollution, compensation from communities that have lost land or assets), significant delays in construction/development of projects/ infrastructure, [and] impaired ability to access new assets based on previous performance.”⁹⁶¹

The La Francia and El Hatillo mines had already been identified as producing coal-related environmental problems before Goldman took ownership of them. As a result, a 2010 Colombian resolution explicitly named CNR, among other corporations, as having a responsibility to reduce the air pollution associated with its mining operations and to contribute to an ongoing effort to relocate three communities to a less polluted area.⁹⁶² In December 2011, the Colombian government identified the Cesar region, which is the region where the Goldman mines are located, as a “high pollution area,” and limited the expansion of coal mining operations there.⁹⁶³ Those actions by the Colombian government imposed additional costs and constraints on Goldman’s coal mining activities.

Another environmental development, involving water pollution, also dramatically impacted Goldman’s coal operations. In January 2013, an affiliate of Drummond Company Inc. was involved in a coal spill. Due to rough seas, a Drummond barge containing more than 1,800 tons of coal became partially submerged outside of the Drummond Port, and was towed to shallow water.⁹⁶⁴ In connection with its efforts to salvage the ship and its cargo, the crew released a large amount of coal into Colombian waters, an event that was caught on film.⁹⁶⁵ In response, the Colombian government suspended Drummond’s ship-loading license until it submitted an improved spill contingency plan.⁹⁶⁶ As a result,

⁹⁶⁰ See undated memorandum, “Metals and Mining: Background to Environmental and Social Due Diligence,” prepared by Goldman, FRB-PSI-300221 - 230.

⁹⁶¹ Id. at 225.

⁹⁶² See 5/20/2010 Resolution No. 0970, Colombian Ministry of the Environment, Housing and Territorial Development, GSPSICOMMODS00047330 - 334; and 8/5/2010 Resolution No. 1525, Colombian Ministry of the Environment, Housing and Territorial Development, GSPSICOMMODS00047335 - 341 (translations provided by Goldman).

⁹⁶³ See 12/22/2011 Resolution No. 0335, Colombian Ministry of the Environment and Sustainable Development, Official Gazette No. 48.294 of 2011, GSPSICOMMODS00047310 - 329 (translation provided by Goldman).

⁹⁶⁴ See 2012 “Statement by Drummond Ltd. – Barge Accident Internal Investigation Results,” prepared by Drummond Company Inc., <http://www.drummondco.com/barge-accident-internal-investigation-results/>.

⁹⁶⁵ See “Colombia Suspends Drummond’s Coal Ship-Loading License,” Bloomberg, Alex Emery & Oscar Medina (2/6/2013), <http://www.bloomberg.com/news/2013-02-06/colombia-suspends-drummond-ship-loading-license-agency-says.html>.

⁹⁶⁶ Subcommittee briefing by Drummond Company, Inc. (9/16/2014). See also “Colombia Lifts Drummond Coal Export Ban,” *Colombia Reports*, Joey O’Gorman (3/1/2013), <http://colombiareports.co/colombia-lifts-drummond-coal-export-ban/>; “The Colombian Mining Locomotive Has Halted,” *Environmental Justice Organisations, Liabilities and Trade*, Joan

Drummond lost significant revenues while also being required to pay at least \$3.6 million in fines.⁹⁶⁷ In addition, the Colombian government imposed the January 2014 deadline on port compliance with the 2007 direct-loading law that had not been enforced on a mandatory basis until then. In response, Drummond paid \$360 million to upgrade its port with direct-loading equipment.⁹⁶⁸ The 2013 Drummond shipping accident graphically demonstrated how environmental disasters can lead to regulatory actions, fines, legal expenses, lost profits, and reputational damage. The same types of environmental disasters create catastrophic event risks for Goldman's coal mining operations.

Still another category of catastrophic event risk confronting Goldman's mining operations involves the labor unrest at its mines. Labor relations in Colombia have long been volatile and politically sensitive, especially with respect to coal mining. In 2013, the months-long human blockade by women and children at the Goldman mines created a potentially explosive situation. During the dispute, CNR asked the mayor, police, military, and other Colombian authorities for assistance.⁹⁶⁹ Had those requests been granted, actions to end the blockade could have produced a worst case scenario involving arrests, injuries, and a political backlash that, potentially, could have led to condemnation of Goldman, not only in Colombia, but in other parts of the world.

Insufficient Capital and Insurance. While the risk that a catastrophic event will cause severe damages to Goldman's coal mines is remote, it must be addressed to protect U.S. taxpayers from being asked to step in after a disaster strikes. The primary tool used by financial holding companies to address catastrophic event risk is to allocate sufficient capital and insurance to cover potential losses. According to a 2012 Federal Reserve analysis, however, Goldman has failed to allocate sufficient capital or insurance to cover those potential losses.⁹⁷⁰

As indicated in the prior section, Goldman has strenuously denied any liability for costs associated with a catastrophic event involving its physical commodity activities, which may have contributed to its failure

Martínez-Alier (2/14/2013), <http://www.ejolt.org/2013/02/the-colombian-mining-locomotive-has-halted/>.

⁹⁶⁷ "Colombia Bans Coal Loading by 2nd-Biggest Producer Drummond," Bloomberg, Andrew Willis and Oscar Medina (1/14/2009), <http://www.bloomberg.com/news/2014-01-08/drummond-s-coal-loading-halted-as-colombia-pulls-port-license.html>.

⁹⁶⁸ See 3/31/2014 Drummond press release, "Drummond Restarts Port Operations with an Investment of US\$360 Million in a Modern Direct Ship Loading System," <http://www.drummondco.com/drummond-restarts-port-operations-with-an-investment-of-us360-million-in-a-modern-direct-ship-loading-system/>.

⁹⁶⁹ See 2013 and 2012 CNR Financial Statements, at Note 1, GSPSICOMMODS00046366 - 397, at 374.

⁹⁷⁰ See 2012 Summary Report, at FRB-PSI-200477 - 510, at 498, 509.

to allocate sufficient capital and insurance to cover potential losses.⁹⁷¹ As explained earlier, Goldman has attempted to limit its liability by structuring its physical commodity activities to take place through subsidiaries, but Goldman's reliance on legal structures provides no guaranteed shield from liability, lawsuits, or legal expense.⁹⁷² Moreover, Goldman has opened itself up to potential liability under a Bestfoods analysis⁹⁷³ by the extent of its involvement with CNR operations. Its key commodities subsidiary, J. Aron & Co., controls 100% of CNR's coal marketing and sales, manages its port procurements and coal blending operations, and is one of CNR's largest purchasers of coal.⁹⁷⁴ Goldman indicated to the Subcommittee that its dispute with CNR's mine operator, CMC, stemmed in part from its concern that CMC was not following a Goldman-approved plan regarding how the CNR mining operations should be conducted.⁹⁷⁵ Goldman also appears to have made the decision not to pay for direct-loading equipment at the primary port used to export the coal. Those and other actions suggest that Goldman personnel were involved with the day-to-day operations and management of the Colombian coal mining operations, increasing Goldman's potential liability in the event of a catastrophic event.

Because a court in the United States, Colombia, or another jurisdiction might hold Goldman liable for the actions of its mining-related entities and any disaster involving them, Goldman should, but has not, allocated sufficient capital and insurance to cover potential losses.⁹⁷⁶ According to a Federal Reserve analysis in 2012, as explained in the earlier section, the potential losses associated with an "extreme loss scenario" affecting Goldman or its peer institutions would exceed the capital and insurance coverage at each financial holding company by \$1 billion to \$15 billion.⁹⁷⁷ That shortfall leaves the Federal Reserve, and U.S. taxpayers, at risk of having to provide financial support to Goldman should a catastrophic event occur.

⁹⁷¹ See discussion in section on uranium, above.

⁹⁷² See *id.*, as well as the Federal Reserve's analysis in its Advanced Notice of Proposed Rulemaking, "Complementary Activities, Merchant Banking Activities, and Other Activities of Financial Holding Companies Related to Physical Commodities," 79 Fed. Reg. 3329, at 3331 (daily ed. Jan. 21, 2014) ("Recent disasters involving physical commodities demonstrate that the risks associated with these activities are unique in type, scope, and size. In particular, catastrophes involving environmentally sensitive commodities may cause fatalities and economic damages well in excess of the market value of the commodities involved or the committed capital and insurance policies of market participants."); 2012 Summary Report, at FRB-PSI-200477 – 510, at 489 (FRBNY Commodities Team wrote: "There is no available historical precedent to support . . . the effectiveness of the 'legal structure' mitigation strategy, rathe[r] there have been cases where a company using third part[y] vendors was itself held liable for environmental damage.").

⁹⁷³ See United States v. Bestfoods, 524 U.S. 51 (1998).

⁹⁷⁴ See 9/26/2011 "Marketing Agreement" between C.I. Colombian Natural Resources I SAS and J. Aron & Company, GSPSICOMMODS00046496 - 530, at 498.

⁹⁷⁵ Subcommittee briefing by Goldman Sachs (9/5/2014).

⁹⁷⁶ See prior analysis; 2012 Summary Report, at FRB-PSI-200477 - 510, at 498, 509.

⁹⁷⁷ *Id.*

Short Term Disincentive. Still another issue raised by Goldman's coal mining operations is the effect of its relatively short-term investment horizon. Goldman holds CNR and its other Colombian subsidiaries as a merchant banking investment that must be sold within ten years, which for the La Francia mine means by 2020. Currently, that is a six-year investment horizon. When the Colombian government required its ports to install direct-loading equipment to reduce coal-related pollution by January 2014, Drummond Inc., a U.S. company with a long history of coal mining in Colombia, spent \$360 million to upgrade its port.⁹⁷⁸ CNR did not, because as Goldman explained to the Subcommittee: "CNR evaluated the prospect of upgrading the Rio Cordoba port facilities to make them compliant with the direct-loading regulations but determined that it was not economically feasible to pursue such an initiative."⁹⁷⁹ Goldman calculated the cost of upgrading the port at about \$220 million.⁹⁸⁰ It decided spending that amount of money to upgrade the port in Colombia did not make economic sense.

According to an environmental risk management expert consulted by the Subcommittee, that type of financial calculus is representative of a broader phenomenon taking place across the United States and around the world.⁹⁸¹ A number of large financial holding companies have made merchant banking investments in industrial facilities, such as power plants, pipelines, natural gas facilities, and refineries, that may require expensive investments to operate in a safe and environmentally sound manner. To the degree the financial holding companies plan to hold those facilities for relatively short periods of time, they may be less inclined to dedicate the financial resources, time, and expertise needed for operational and environmental improvements. According to the expert, in general, the payback period for such improvements tends to be long term, which can be in direct tension with the financial holding company's goal of realizing short term profit targets and maximizing immediate investment returns.⁹⁸² The reluctance to make improvements places the financial holding companies at potentially greater risk of environmental and financial consequences should a mishap arise when compared to peers that upgrade their infrastructure.

⁹⁷⁸ See 3/31/2014 Drummond press release, "Drummond Restarts Port Operations with an Investment of US\$360 Million in a Modern Direct Ship Loading System," <http://www.drummondco.com/drummond-restarts-port-operations-with-an-investment-of-us360-million-in-a-modern-direct-ship-loading-system/>.

⁹⁷⁹ 10/2/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-21-000001 - 010, at 008.

⁹⁸⁰ See 9/2013 "Global Commodities & Global Special Situations Group Presentation to the Board of Directors of The Goldman Sachs Group, Inc.," prepared by Goldman, FRB-PSI400077 - 098, at 091.

⁹⁸¹ Subcommittee briefing by Chiara Trabucchi, Principal at Industrial Economics, Inc. an expert in financial economics and environmental risk management (10/6/2014).

⁹⁸² *Id.*

In the expert's view, the transitory nature of merchant banking investments suggests that the financial holding companies are betting on the probability that a facility in which they are invested will not face a financially material catastrophic event during the years in which that physical asset forms part of their portfolio.⁹⁸³ Of particular concern is whether, in so doing, the financial holding companies are actively limiting disclosure of the potential long-tailed environmental risk associated with their investments, and also failing to adequately hedge their financial responsibilities should an environmental event arise.⁹⁸⁴

The expert pointed out the existence of established case law that presumes a legal shield between a parent or holding company and its subsidiary facility. However, she also cautioned that recent events suggested a potentially shifting landscape with respect to the standards and conditions under which a corporate parent may be held financially responsible for the actions of its subsidiary following a catastrophic environmental event. This increased uncertainty calls into question reliance by the financial holding companies on a legal shield as a reasonable risk management strategy to hedge the consequences from a catastrophic environmental event. To the degree such a shield fails, and insufficient resources exist for the financial holding companies to meet their financial responsibilities, then the burden for responding to an environmental incident may well rest with U.S. taxpayers and the general public.⁹⁸⁵

Still another concern is whether financial holding companies that delay or avoid infrastructure investments may gain an unfair, short-term competitive advantage over market participants who do make long-term investments in infrastructure. Equally troubling is whether decisions by financial holding companies to delay or avoid infrastructure investments may pressure its competitors to delay or skimp on needed infrastructure as well.

If the bet by a financial holding company is lost and a catastrophic event were to take place, the affected financial holding company could be confronted with billions of dollars in damages. It could also start to lose customers and counterparties due to perceptions regarding its liability for those damages, or it could be forced to accept higher costs to convince third parties to bear the added credit risk of doing business with the financial holding company, its subsidiaries, and its bank. As the financial crisis demonstrated, even a large, well-capitalized financial institution can experience liquidity problems that it cannot overcome without financial assistance from the Federal Reserve or, ultimately, U.S. taxpayers.

⁹⁸³ Id.

⁹⁸⁴ Id.

⁹⁸⁵ Id.

In September 2013, Goldman's Global Commodities Group told the Goldman Board of Directors that CNR had "significant expansion plans" for Colombia, including plans to double the annual output of coal at the mines and expand from "2 to 5 open pit operations over the next 4 years."⁹⁸⁶ To protect U.S. taxpayers, the Federal Reserve should ensure Goldman allocates sufficient capital and insurance to cover potential losses from a catastrophic event affecting those coal mines in Colombia.

(b) Merchant Banking Authority

A second set of completely different issues goes to Goldman's legal authority to be in the coal mining business at all. Goldman has indicated that the legal foundation for its Colombian mine operations is the Gramm-Leach-Bliley merchant banking authority.⁹⁸⁷ Goldman's extensive relationships with its Colombian coal mining operations raise questions, however, about the extent to which they qualify as merchant banking investments.

The law does not require a financial holding company to notify or obtain prior approval from the Federal Reserve for a merchant banking investment.⁹⁸⁸ Rather, a company simply makes the investment, and asserts its authority to do so after the investment is made. If the Federal Reserve determines that the investment does not meet the qualifications for merchant banking authority, then the financial holding company may assert other authority for the investment.⁹⁸⁹ If the investment is viewed as not qualifying for any authority, then the Federal Reserve may force divestiture.⁹⁹⁰

In this case, Goldman told the Subcommittee that it did not notify or obtain prior permission from the Federal Reserve before buying the Coalcorp and Vale coal mining operations.⁹⁹¹ After making each of the two acquisitions, Goldman filed FR Y-10 forms with the Federal Reserve, which are used to alert the agency to changes in the financial

⁹⁸⁶ 9/2013 "Global Commodities & Global Special Situations Group Presentation to the Board of Directors of The Goldman Sachs Group, Inc.," prepared by Goldman, FRB-PSI400077 - 098, at 090.

⁹⁸⁷ Subcommittee briefing by Goldman Sachs (9/5/2014). See also, e.g., 7/25/2012 "Presentation to Firmwide Client and Business Standards Committee," (hereinafter 2012 Firmwide Presentation"), by Goldman Global Commodities group, FRB-PSI-200984 - 1043, at 1000 (indicating CNR investment was a merchant banking asset). Compare with 4/14/2010 "Report of Changes in Organizational Structure," Form FR Y-10 filed by The Goldman Sachs Group, Inc. with the Federal Reserve, GSPSICOMMODS00046301 - 317, at 303 (stating that the investment was "permissible under [Bank Holding Company Act Section] 4(o), but investment complies with the Merchant Banking regulations.").

⁹⁸⁸ Subcommittee briefing by the Federal Reserve (11/27/2013).

⁹⁸⁹ Id.

⁹⁹⁰ Id. See also earlier discussion in Chapter 3, for example, regarding JPMorgan's assertion of legal authority to retain Henry Bath & Sons, Inc.

⁹⁹¹ Subcommittee briefing by Goldman Sachs (9/5/2014).

holding company's organizational structure and, in this case, provided notice that Goldman had established new subsidiaries in Colombia.⁹⁹² Through the filing of the forms, Goldman alerted the Federal Reserve to its investments shortly after they were made. It appears, however, that the Federal Reserve examiners were likely unaware of the extent of Goldman's involvement with the day-to-day operations with its Colombian subsidiaries.

To qualify as a merchant banking investment, the investment must meet a number of criteria, including that the financial holding company must not "routinely manage or operate" the company in which it has made the investment.⁹⁹³ Goldman has acknowledged this limitation in internal materials.⁹⁹⁴ In this case, Goldman installed its own employees as the directors of the boards of its Colombian subsidiaries; no non-Goldman directors were selected. Goldman also ensured that it had a formal right to approve important decisions.⁹⁹⁵

In addition, Goldman's key commodities subsidiary, J. Aron & Co., became CNR's "exclusive" agent to market, negotiate the terms of sale, and arrange for the delivery of all of the coal produced in Colombia.⁹⁹⁶ Goldman reported to its Board of Directors in 2011, that J. Aron & Co. had increased CNR's customer base from less than five to more than fifteen customers.⁹⁹⁷ J. Aron & Co. was also given exclusive authority to procure "port services" for CNR – services critical to the export of CNR coal – as well as exclusive authority to procure "coal blending" services for CNR, which are critical to ensuring the quality of the coal to be sold.⁹⁹⁸ From at least 2011 to 2013, before CNR's exports stopped, J. Aron & Co. used its authority to exercise complete control

⁹⁹² See 4/14/2010 "Report of Changes in Organizational Structure," Form FR Y-10, filed by The Goldman Sachs Group, Inc. with the Federal Reserve, GSPSICOMMODS00046301-317 (reflecting the March 19, 2010 acquisition of Colombian Natural Resources I, S.A.S. by GS Power Holdings LLC); undated "Report of Changes in Organizational Structure," Form FR Y-10, filed by The Goldman Sachs Group, Inc. with the Federal Reserve, GSPSICOMMODS00046304 - 307 (reflecting the June 22, 2012 acquisition of Colombia Purchase Co., S.A.S. by GS Power Holdings LLC and Goldman Sachs Global Holdings LLC.).

⁹⁹³ 12 U.S.C. §1843(k)(4)(H)(iv); 12 C.F.R. §225.171 (a)-(b), (c).

⁹⁹⁴ See, e.g., 2012 Firmwide Presentation, FRB-PSI-200984 - 1043, at 1000 (identifying CNR as a merchant banking asset and noting that "Firm personnel not permitted to engage in 'routine management' absent extraordinary circumstances" and "Merchant Banking authority not available for investments that are extension of firm's own activities").

⁹⁹⁵ See 1/29/2010 "Global Commodities Principal Investments: Portfolio Snapshot," prepared by Goldman, FRB-PSI-602257.

⁹⁹⁶ See 9/26/2011 "Marketing Agreement" between C.I. Colombian Natural Resources I SAS and J. Aron & Company, GSPSICOMMODS00046496 - 530, at 498; see also 11/4/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-25-000001 - 003 at 001. Goldman has told the Subcommittee that it did not discuss with the Federal Reserve its "intention to act as CNR's agent/broker to market coal." 9/19/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-16-000001 - 006, at 005.

⁹⁹⁷ See 10/28/2011 "Global Commodities Review of Acquisitions: Colombian Natural Resources," part of a presentation prepared by Goldman for the Goldman Board of Directors, FRB-PSI-700011-030, at 028.

⁹⁹⁸ 9/26/2011 "Marketing Agreement" between C.I. Colombian Natural Resources I SAS and J. Aron & Company, GSPSICOMMODS00046496 - 530, at 500.

over CNR's mining output, buying about 20% of the coal for itself and negotiating and effectively controlling the sale of the other 80% as well.⁹⁹⁹ In addition, J. Aron & Co. appears to have arranged to buy coal at prices that were, at times, materially lower than the prices charged to unaffiliated customers.¹⁰⁰⁰

Another sign of Goldman's extensive involvement with CNR was the representation to the Subcommittee that part of CNR's dispute with its mining contractor, CMC, stemmed from a concern about whether CMC was implementing plans approved by Goldman on how the mining should be conducted to preserve the value of the sites.¹⁰⁰¹ Depending upon the extent to which Goldman's involved itself in the details of CNR's mining activities via Goldman-approved plans and CNR implementation of those plans, Goldman may have been exercising a level of control beyond what is permitted for a merchant banking portfolio company. Still another sign of Goldman's control over CNR was its role in deciding against spending \$220 million to upgrade CNR's port with direct-loading equipment. While that decision is not a routine management matter, its dramatic impact on CNR's day-to-day operations and the reality that Goldman was the only possible source of financing for that investment suggest Goldman was exercising significant influence over CNR's operations.

Still another piece of evidence of the close relationship between Goldman and CNR involves Goldman's hedging decisions. In its 2012 Summary Report, the FRBNY Commodities Team wrote: "Goldman avoids the appearance of overt control of its coal mine business by not hedging its underlying coal exposure to maintain legal protection."¹⁰⁰² In other words, Goldman had indicated to the Federal Reserve that it used a subsidiary as the direct owner of its coal mining operations and didn't hedge its coal exposures, as a way of demonstrating the legal distinction between the financial holding company and its affiliate.¹⁰⁰³ Internal Goldman documents indicate, however, that Goldman did, in fact, use hedging to offset its coal exposure and the reduced value of its CNR holdings.¹⁰⁰⁴ In a 2013 presentation to the Goldman Board of

⁹⁹⁹ 10/2/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-21-000001 - 010, at 008.

¹⁰⁰⁰ See discussion above. See 2011 and 2010 CNR Financial Statements, at Note 16, at GSPSICOMMODS00046342.

¹⁰⁰¹ Subcommittee briefing by Goldman Sachs (9/5/2014).

¹⁰⁰² 2012 Summary Report, at FRB-PSI-200477 - 510, at 489.

¹⁰⁰³ Id.

¹⁰⁰⁴ Goldman legal counsel told the Subcommittee that the hedge was consistent with "the shareholder of a portfolio company ... implement[ing] hedges to protect it against the possibility that the value of its investment may decline as a result of changes in the prices of commodities produced by the portfolio company." 11/4/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-25-000001 - 003, at 002. That said, the Goldman-prepared presentation noted that "[g]ains in coal prices would result in hedge losses but would not result in a mark up of the coal mine asset value." 9/2013 "Global Commodities & Global Special

Directors, the Goldman Global Commodities Group reported that it held a “short coal hedge” to offset declining coal prices and CNR’s declining market value, and that the hedge had produced “accounting gains” of \$246 million.¹⁰⁰⁵ Goldman’s coal-related hedge is one more sign of the close links between Goldman and CNR.

Goldman personnel appear to have been involved with CNR’s day-to-day marketing, sales negotiation, procurement of coal blending and port services, and export decisions, activities that appear to involve Goldman in the routine management of the company in the “ordinary course of business.” Drummond, Inc., a U.S. company that is Colombia’s second-largest producer of coal, told the Subcommittee that Drummond conducts its own marketing, sales, and shipping arrangements.¹⁰⁰⁶ When asked whether it ever outsourced those functions, Drummond representatives responded that producing, marketing, and selling coal was its business. Yet, Goldman’s wholly-owned portfolio companies in Colombia have “outsourced” 100% of those day-to-day functions to Goldman’s primary commodities trading subsidiary. Goldman further entwined itself with CNR by approving mining plans, controlling major investment decisions, and hedging its exposure to CNR’s declining market value.

The Federal Reserve has authorized financial holding companies, in connection with their merchant banking activities, to impose a limited set of restrictions on the portfolio companies in which they have invested, so long as the restrictions address matters that are outside the scope of ordinary business, such as restricting the portfolio company’s authority to fundamentally change its capital or debt structure, or fundamentally alter its business without the approval of the holding company.¹⁰⁰⁷ The Subcommittee is unaware of any Federal Reserve guidance, however, that would permit a financial holding company to control 100% of a portfolio company’s marketing and sales. To the contrary, when the Federal Reserve discovered that JPMorgan was marketing Henry Bath warehousing services to clients as an integral part of its overall commodity-related services, the Federal Reserve disallowed JPMorgan’s treatment of Henry Bath as a separate merchant

Situations Group Presentation to the Board of Directors of The Goldman Sachs Group, Inc.,” prepared by Goldman, FRB-PSI400077 - 098, at 091.

¹⁰⁰⁵ 9/2013 “Global Commodities & Global Special Situations Group Presentation to the Board of Directors of The Goldman Sachs Group, Inc.,” prepared by Goldman, FRB-PSI400077 - 098, at 091.

¹⁰⁰⁶ Subcommittee briefing by Drummond Company, Inc. (9/16/2014).

¹⁰⁰⁷ See earlier discussion in Chapter 3; 12/21/2001 letter from Federal Reserve to Credit Suisse First Boston, FRB-PSI-301593 - 601, at 596 - 597.

banking investment and required JPMorgan to divest itself of the holding.¹⁰⁰⁸

According to the Federal Reserve, in 2010 – more than a year before the formal marketing contract was signed between J. Aron & Co. and CNR – Goldman assured its examiners that it was taking care not to become involved in the daily management and operation of its portfolio companies, in connection with its efforts to use legal structures to shield the holding company from legal liability.¹⁰⁰⁹ Goldman's statements, however, appear inconsistent with the actual level of involvement of Goldman personnel in the day-to-day activities of CNR. To clarify the scope of the merchant banking authority, the Federal Reserve should analyze and determine whether Goldman's level of involvement with CNR, like JPMorgan's level of involvement with Henry Bath, disqualifies CNR as a merchant banking investment.

Should the Federal Reserve disallow CNR as a merchant banking investment, Goldman might try to assert that its coal mining activities are still permissible under the Gramm-Leach-Bliley grandfathering authority. But Goldman has already admitted that, prior to the statutory trigger date in 1997, it did not trade coal, either physically or financially. In light of that admission, and the fact that Goldman purchased the Colombian coal mines after it became a bank holding company, there should be no reason for the Federal Reserve to treat CNR as a grandfathered activity protected from divestment.

(c) Conflicts of Interest

A final set of issues involves potential conflicts of interest. Goldman trades coal in both the physical and financial markets at the same time, using the same traders sitting at the same coal trading desk, generally executing those trades through J. Aron & Co. CNR's activities provide those traders with access to commercially valuable, non-public information about coal operations in Colombia, the largest exporter of coal to the United States, including information about coal production, labor disputes, regulatory actions, port facilities, and coal shipments. The J. Aron traders handling CNR's marketing, sales, and shipments are also active in physical and financial coal markets. The fact that Goldman shorted coal in 2013, explained its actions internally as a response to declining coal prices and CNR's declining market value, and, by September 2013, booked accounting profits from that short position of nearly \$250 million, suggests a close connection between its financial trading and physical coal activities. That Goldman's coal

¹⁰⁰⁸ See discussion of Henry Bath warehouses in Chapter 3, above. See also 2012 Summary Report, at 505; undated but likely 2013 "Commodities Focused Regulatory Work at JPM," prepared by Federal Reserve, FRB-PSI-300299 - 302, at 300 [sealed exhibits].

¹⁰⁰⁹ See 3/17/2010 "Minutes of GS Commodities Review Legal Meeting," prepared by Federal Reserve Bank of New York, FRB-PSI-602360 - 370, at 361 [sealed exhibit].

traders may be in the position to use the non-public information obtained from CNR to inform their financial trades with counterparties lacking the same access is troubling.

(4) Analysis

All of the financial holding companies examined by the Subcommittee were heavily involved with coal trading, although not with coal mining. Goldman's four-year experience with investing in open-pit coal mines in Colombia exposed a litany of operational, environmental, and catastrophic event risks to the holding company, exacerbated by a mine shutdown, contractor disputes, abandoned mining equipment, flooded mines, labor unrest, environmental regulatory actions, port access problems, and declining coal prices. Goldman's control, through J. Aron & Co., over 100% of CNR's coal marketing, sales and deliveries, among other activities, increases the potential for Goldman to be held legally liable in the event of a catastrophic event and underscores the need for it to allocate increased capital and insurance to cover potential losses.

The same activities raise questions about whether Goldman is inappropriately relying on the Gramm-Leach-Bliley merchant banking authority to justify Goldman's entry into the coal mining business. Potential conflict of interest issues also call out for additional oversight and preventative safeguards. It is past time for the Federal Reserve to enforce needed safeguards on this high risk physical commodity activity.

D. Goldman Involvement with Aluminum

After it became a bank holding company in 2008, in addition to expanding its physical commodity activities involving uranium and coal, Goldman substantially increased its involvement with aluminum. In 2010, it purchased Metro International Trade Services LLC (Metro), owner of a global network of warehouses that store actual metal, including aluminum. Metro's warehouses are approved by the London Metal Exchange (LME) to store metals traded on its exchange. Under Goldman's ownership, Metro implemented practices to aggressively attract and retain aluminum in its Detroit warehouses.

Over the next few years, Metro loaded aluminum into its Detroit warehouses at an historic rate, building a virtual monopoly of the U.S. LME aluminum storage market. Metro attracted the aluminum in part by paying "freight incentives" to metal owners to store their metal in the Detroit warehouses. In addition, Metro entered into "merry-go-round" transactions with existing warehouse clients in which it paid them millions of dollars in incentives to join or stay in the exit line, known as the "queue," to load out metal, move the metal from one Metro warehouse into another, and then place it back on warrant. Those merry-go-round transactions lengthened the metal load out queue to exit the Metro warehouse system, blocked the exits for other metal owners seeking to leave the system, and helped ensure Metro maintained its aluminum stockpiles while earning a steady income. Metro's queue grew to an unprecedented length, forcing metal owners to wait, at times, up to nearly two years to get their metal out of storage in Detroit.

As the Detroit warehouse queue grew, so did the Midwest Aluminum Premium (Midwest Premium), a component of the aluminum price. Higher Midwest Premium prices increased aluminum costs for U.S. aluminum buyers and weakened their ability to hedge their price risks, affecting aluminum users in the defense, transportation, beverage, and construction sectors. Some industrial users of aluminum charged that the dysfunctional aluminum market inflated overall aluminum costs by \$3 billion. While long queues and increasing Midwest Premium prices were hurting aluminum users, the LME has said that the emergence of increasing premiums "convey[ed] an advantage to the expertise of merchants and brokers, who have built-up strong modelling capabilities around premiums and queues."¹⁰¹⁰

Goldman, through its control of the Metro Board of Directors, approved Metro practices that lengthened Metro's queue, at the same time Goldman was ramping up its own aluminum trading operations.

¹⁰¹⁰ 11/2013 "Summary Public Report of the LME Warehousing Consultation," prepared by LME, at 29, <https://www.lme.com/~media/Files/Warehousing/Warehouse%20consultation/Public%20Report%20of%20the%20LME%20Warehousing%20Consultation.pdf>.

Between 2010 and 2013, Goldman built up its physical aluminum stockpile from less than \$100 million in 2009, to more than \$3 billion in aluminum in 2012. At one point in 2012, Goldman owned about 1.5 million metric tons of aluminum, worth \$3.2 billion, more than 25% of annual North American aluminum consumption at the time. Goldman also engaged in massive aluminum transactions, acquiring hundreds of thousands of metric tons of metal in one series of transactions in 2012, and more than 1 million metric tons in another series of transactions later in the year. That same year, Goldman made large cancellations of warrants totaling about 300,000 metric tons of aluminum stored at Metro in Detroit, contributing to the lengthening of the queue.

The fact that Goldman engaged in extensive aluminum trading at the same time it was approving practices leading to a long warehouse queue has given rise to serious questions about the integrity of the aluminum market. Those doubts have been fueled, in part, by a perception that Goldman is benefiting financially from the longer queue and using non-public information gained through its ownership of Metro to benefit its trading activities. Metro and Goldman information barrier policies prohibit the sharing of confidential warehouse information with those engaged in aluminum trading.

(1) Background on Aluminum

Aluminum is one of the most actively traded base metals in the world, with complex physical and financial markets, and volatile prices that, at times, appear disconnected to fundamental forces of supply and demand.

Using Aluminum. Aluminum is a durable, versatile, light-weight base metal made by extracting aluminum oxide, commonly known as alumina, from bauxite ore. It is used in a wide variety of applications including in the transportation, construction, and consumer goods markets.¹⁰¹¹ General Motors Corp., for example, indicated that its 2012 U.S.-sold vehicles would contain an average of 370 pounds of aluminum, providing, among other applications, 90% of the engine block and all cylinder heads.¹⁰¹² Aluminum also plays an important role in the defense and aerospace industry and is a critical raw material for

¹⁰¹¹ See undated "Aluminum Consumption by Regions in 2013 and 2025" Rusal website, <http://www.rusal.ru/en/aluminium/consumers.aspx>; "Ford's Epic Gamble: The Inside Story," *Fortune*, Alex Taylor III (7/24/2014), <http://fortune.com/2014/07/24/f-150-fords-epic-gamble/> (Ford's new all-aluminum truck).

¹⁰¹² U.S. Geological Survey 2011 Yearbook on Aluminum, <http://minerals.usgs.gov/minerals/pubs/commodity/aluminum/myb1-2011-alumi.pdf>, citing "GM sees 2011 sales at 12-13 mil units," *Platts Metals Week*, v. 82, no. 38, (9/19/2011), at 15. See also "The Changing Demand for Aluminum in North America," *Open Markets*, a CME publication, Samantha Azzarello (3/18/2014), <http://openmarkets.cmegroup.com/7855/the-changing-demand-for-aluminum-in-north-america> (discussing rising aluminum demand in cars).

the production of military aircraft¹⁰¹³ and ships.¹⁰¹⁴ As of 2009, the most recent year for which figures were available, the U.S. Department of Defense consumed about 3% of annual U.S. aluminum production.¹⁰¹⁵

The United States is the world's fourth largest aluminum producer behind China, Russia, and Canada.¹⁰¹⁶ In 2013, U.S. primary aluminum production (as opposed to production from scrap aluminum) was more than 1.9 million metric tons.¹⁰¹⁷ North American aluminum consumption is expected to be about 6.4 million metric tons in 2014.¹⁰¹⁸

Aluminum Infrastructure. A complex infrastructure is required to produce useable aluminum. Bauxite mines produce bauxite ore, which must be ground, mixed with chemicals, and subjected to heat and pressure to extract the alumina.¹⁰¹⁹ The extracted alumina is then transformed into liquid aluminum through a smelting process.¹⁰²⁰ The liquid aluminum is mixed with other metals to form aluminum alloys which are molded or cast into ingots. Depending on the intended use, aluminum ingots can be fabricated into rolls or other shapes.¹⁰²¹ Aluminum is non-toxic and can be stored for years without problems.¹⁰²² Aluminum recycling provides another important source of the metal.¹⁰²³

Aluminum Markets. Aluminum is bought and sold in both physical and financial markets. Physical aluminum is typically sold directly from producers to industrial end users. Most aluminum produced by smelters is sold directly to companies that use the metal to

¹⁰¹³ See, e.g., undated "Defense[:] Military Aircraft," Kaiser Aluminum website, <http://www.kaiseraluminum.com/markets-we-serve/aerospace/defense/military-aircraft/>.

¹⁰¹⁴ One shipbuilding company, Austal USA, told the Subcommittee that it uses 2.5 million pounds of aluminum in each Joint High Speed Vessel it produces for the U.S. Navy and 3.5 million pounds in each Littoral Combat Ship. Subcommittee briefing by Austal USA. (10/30/2014).

¹⁰¹⁵ See 12/2005 "China's Impact on Metals Prices in Defense Aerospace," prepared by U.S. Department of Defense, at 1-2, http://www.acq.osd.mil/mibp/docs/china_impact_metal_study_12-2005.pdf; 1/25/2014 email from Office of the Secretary of Defense to Senate Armed Services Committee staff, "Aluminum," PSI-OSD-01-000001.

¹⁰¹⁶ 2/2014 "Aluminum Production," prepared by Mineral Resources Program, U.S. Geological Survey, <http://minerals.usgs.gov/minerals/pubs/commodity/aluminum/mcs-2014-alumi.pdf>.

¹⁰¹⁷ A metric ton is equal to 1000 kilograms or about 2,200 pounds. See 9/10/2014 "U.S. Primary Aluminum Production," prepared by The Aluminum Association, <http://www.aluminum.org/sites/default/files/USPrimaryProduction082014.pdf>.

¹⁰¹⁸ See undated "Capitalizing on Opportunities, Minimizing Risks," Alcoa website, http://www.alcoa.com/sustainability/en/info_page/vision_risks.asp.

¹⁰¹⁹ See undated "Adding Value From the Ground Up," Alcoa website (interactive webpage teaching the stages of making aluminum), http://www.alcoa.com/global/en/about_alcoa/dirt/addingvalue_2.htm. See also undated "How it's Made," Hydro website, <http://www.hydro.com/en/About-aluminium/How-its-made/> (webpage showing how aluminum is made from "bauxite, through production, use and recycling").

¹⁰²⁰ Id.

¹⁰²¹ Id.

¹⁰²² "Aluminum 101," The Aluminum Association website, <http://www.aluminum.org/aluminum-advantage/aluminum-101>.

¹⁰²³ Id.

make their products. Physical aluminum can be sold through long or short term supply contracts or through ad hoc purchases made on “spot” markets. Physical aluminum prices are typically established, in part, by referencing aluminum prices in the financial markets.

In the financial markets, aluminum can be sold using a variety of financial instruments, including futures, options, swaps, and forwards. Those financial instruments can be bought or sold on public commodities exchanges, like the London Metal Exchange (LME) or the Chicago Mercantile Exchange (CME), or through over-the-counter (OTC) transactions. Published aluminum prices on the exchanges, most commonly the LME’s “Official Price” for aluminum, play an important role as the reference price in contracts for physical aluminum.

Physical aluminum contracts typically establish the aluminum price using several pricing components which, when combined, produce an “all-in” aluminum price. One key component is the LME Official Price for aluminum as of a specific date or as an average over a specified period. That price is established through trading on the LME exchange and is generally recognized for aluminum as the “global reference for physical contracts.”¹⁰²⁴ The second key pricing component is a regional “premium,” which is intended to reflect the availability of aluminum in a particular geographic area and the cost of delivering aluminum there.¹⁰²⁵ The relevant premium for aluminum sold in the United States is the Midwest Aluminum Premium (Midwest Premium). Midwest Premium prices are published by a company called Platts, which derives it by conducting surveys of the contract prices between physical spot market aluminum buyers and sellers for delivery of the metal.¹⁰²⁶ Large aluminum users typically closely monitor the LME and Midwest Premium prices, since both prices will largely determine the all-in price they will pay for aluminum in contracts with aluminum producers.¹⁰²⁷

Aluminum Prices. Over the past five years, aluminum prices have been volatile, with all-in prices sometimes swinging by as much as

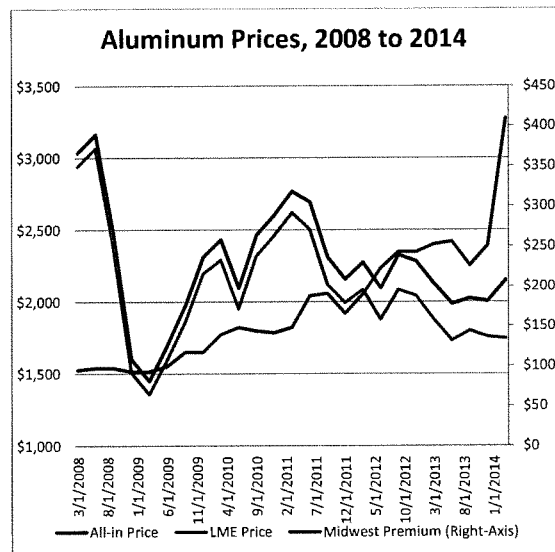
¹⁰²⁴ Undated “LME Official Price,” LME website, <http://www.lme.com/pricing-and-data/pricing/official-price/>.

¹⁰²⁵ A third pricing component in physical aluminum contracts may be the cost of producing for delivery a particular shape or aluminum alloy. So-called “product premiums” are not a focus of the Subcommittee’s Report. See 3/31/2014 Alcoa, Inc. Form 10-Q for the quarterly period ending March 31, 2014, at 45, <http://www.sec.gov/Archives/edgar/data/4281/000119312514157120/d701633d10q.htm>.

¹⁰²⁶ See 6/2014 “Methodology and Specifications Guide,” prepared by Platts, at 2, <https://www.platts.com/IM.Platts.Content/methodologyreferences/methodologyspecs/metals.pdf>.

¹⁰²⁷ See, e.g., Subcommittee briefing by Austal USA (10/30/2014). Austal told the Subcommittee that it purchases millions of pounds of aluminum each year to build ships for the U.S. Department of Defense (DOD). Austal explained that, under its DOD contract, any increase in the purchase price of physical aluminum was shared 50% by the company and 50% by DOD, which meant that increased aluminum costs required additional U.S. taxpayer dollars. Austal indicated that it continually monitors both the LME and Midwest Premium prices.

\$400 per metric ton within a month.¹⁰²⁸ The following graph depicts the aluminum all-in price, LME futures price, and Midwest Premium price from 2008 to 2014. The Midwest Premium price has climbed dramatically, both in dollar terms and as a percentage of the all-in price.



Source: Prepared by Subcommittee using data provided by Novelis.
See undated "LME Stocks 2014-05-06," prepared by Novelis, PSI-Novelis-01-000001.

For many years, the Midwest Premium was a relatively small portion of the all-in price for physical aluminum. In recent years, however, it has grown more volatile and has dramatically increased in both real dollar terms and as a proportion of the all-in price. That development has had an adverse impact on many industrial aluminum users who believe that higher Midwest Premium prices decrease their ability to hedge price swings and lead to higher all-in prices for aluminum.¹⁰²⁹

Aluminum Trading on the London Metal Exchange. The London Metal Exchange (LME) is the dominant market in the world for trading aluminum, copper, and other base metals. The exchange is physically located in London and falls within the jurisdiction of the United Kingdom's Financial Conduct Authority (FCA). The LME is empowered by the FCA to act as the primary regulator for its market.¹⁰³⁰

¹⁰²⁸ Subcommittee briefing by Austal USA (10/30/2014).

¹⁰²⁹ See, e.g., Subcommittee briefing by Novelis, (11/3/2014).

¹⁰³⁰ See undated "Regulation," LME website, <http://www.lme.com/regulation/>.

The LME is owned by London Metals Exchange, which is owned by LME Holdings Limited.¹⁰³¹ For many years, the LME was a member-owned organization, and several large banks, including Goldman, JPMorgan, Barclays, Deutsche Bank, and Citigroup, held its shares.¹⁰³² In late 2012, the LME shareholders sold 100% of their shares to Hong Kong Exchanges and Clearing Ltd., which is now the sole owner of the LME.¹⁰³³

The LME offers many types of financial products for trading on the exchange, including:

- Futures – contracts that obligate parties to buy or sell a specified amount and type of metal at a specified price on a specified future date; and
- Options – similar to futures contracts except that parties have the option rather than an obligation to buy or sell the metal at the specified date and price.¹⁰³⁴

Those financial products can be used to trade a variety of base metals on the LME, such as aluminum and copper.

Every day, the LME publishes official prices for each metal traded on the exchange. For aluminum, those include the “cash” price and a “three month” futures price. LME prices, especially the daily LME Official Price, have become benchmarks for aluminum physical contracts.¹⁰³⁵ Aluminum market participants also use LME futures to hedge their exposure to changes in aluminum prices,¹⁰³⁶ although, as shown in the chart above, over the last two years, there has been an increasing gap between the LME price and the all-in price consumers

¹⁰³¹ See 12/6/2012 Hong Kong Exchanges and Clearing Limited (HKEx) and LME Holdings Ltd. press release, “HKEx and LME Announce Completion of Transaction,” <http://www.lme.com/en-gb/news-and-events/press-releases/press-releases/2012/12/hkex-and-lme-announce-completion-of-transaction/>.

¹⁰³² Id.; “LME Shareholders OK HKEx Takeover Pact,” *Resource Investor*, Philip Burgert (7/25/2012), <http://www.resourceinvestor.com/2012/07/25/lme-shareholders-ok-hkex-takeover-pact>.

¹⁰³³ See 12/6/2012 Hong Kong Exchanges and Clearing Limited (HKEx) and LME Holdings Ltd. press release, “HKEx and LME Announce Completion of Transaction,” <http://www.lme.com/en-gb/news-and-events/press-releases/press-releases/2012/12/hkex-and-lme-announce-completion-of-transaction/>.

¹⁰³⁴ See undated “Trading[:] Contract Types,” LME website, <https://www.lme.com/trading/contract-types/>.

¹⁰³⁵ In many U.S. physical aluminum contracts, for example, the parties agree to deliver a specified amount of aluminum on a specified date at the then-prevailing LME Official Price, plus the Midwest Premium, plus other specified amounts such as a product premium or additional delivery charge.

¹⁰³⁶ While some aluminum users hedge their price risk using the LME futures market, several others told the Subcommittee that they typically do not hedge their positions on the LME itself, but instead engage in bilateral swap transactions with banks or other market participants to hedge aluminum prices. Even in those instances, however, the Subcommittee was told that the LME price is often the reference price in those swap agreements. See, e.g., Subcommittee briefing by Anheuser Busch (10/9/2014).

actually pay for aluminum. That growing difference between the LME price and the all-in aluminum price has made the LME price a less effective hedging tool.

LME Warrants. Parties trading LME futures contracts can generally settle those contracts in one of two ways. The first and most common method is called offsetting. Under that settlement method, a party's obligation to deliver or take delivery of metal under an LME futures contract can be negated by their entering into an equivalent but opposite transaction, such as buying a short to match a long position. This settlement method offers a purely financial option, since funds can be used to purchase the necessary offsetting positions.

The other way to settle an LME contract is to deliver or take delivery of LME "warrants," documents that convey actual legal title to specific lots of metal stored in LME-approved warehouses.¹⁰³⁷ This settlement option results in ownership of physical metal. In order for physical metal to be used to settle an LME trade, it must be "warranted" by the LME as meeting certain quality and quantity requirements and being maintained in a warehouse approved by the LME. In the case of aluminum, the LME warrant conveys title to a specific lot of 25 metric tons of "high grade primary aluminum" stored in an LME-approved warehouse.¹⁰³⁸

While physical settlement is relatively rare, the LME has emphasized its importance:

"This presence, or threat, of delivery has the result of constantly ensuring that the LME price is in line with the physical market price. It also enables industry to sell material via the Exchange delivery system in times of over supply, and use the LME as a source of material in times of extreme shortage."¹⁰³⁹

The LME warranting system has, for much of its history, enabled the LME to function as a market of last resort for market participants seeking to buy metal. Put simply, the owner of a future, through the

¹⁰³⁷ 11/2013 "Summary Public Report of the LME Warehousing Consultation," prepared by London Metal Exchange, at 7, <https://www.lme.com/~media/Files/Warehousing/Warehouse%20consultation/Public%20Report%20of%20the%20LME%20Warehousing%20Consultation.pdf> (One LME aluminum warrant equals 25 metric tons of the metal).

¹⁰³⁸ See "Futures Contract Specifications[.] LME Aluminum Futures," LME website, <http://www.lme.com/metals/non-ferrous/aluminium/contract-specifications/futures/> (reflecting a number of specifications regarding the appropriate volume and characteristics of the aluminum). The LME also has warrants for certain aluminum alloys that can be traded on the exchange; they convey title to a specific lot of 20 tons of A380.1, 226 or AD12.1 aluminum alloy. See "Futures Contract Specifications[.] LME Aluminum Alloy Futures," LME website, <http://www.lme.com/metals/non-ferrous/aluminium-alloy/contract-specifications/futures/>.

¹⁰³⁹ See undated "FAQ: Why is the physical delivery important for minor metals futures?" LME website, <http://www.lme.com/about-us/faqs/#>.

warrant settlement system, could expect to receive title to metal on a specific date at a specific price. In addition, the LME explained, the ownership of warrants could be utilized as a “backstop” for negotiations in a financial transaction.¹⁰⁴⁰

If an owner of metal under LME warrant decided to remove its aluminum from the LME warehouse, the owner would have to take steps to have its warrants “cancelled.”¹⁰⁴¹ To cancel the warrants, the owner must notify the warehouse holding the metal, and the warehouse must complete the necessary paperwork and notify the LME, which monitors the amounts of metal stored in each LME-approved warehouse. It is only after the warrants are cancelled, the owner of the metal has settled outstanding rent and other warehouse charges, and the owner has provided the warehouse with shipping instructions that the metal is placed in a queue for load-out from the LME warehouse.¹⁰⁴²

For most of LME’s history and at most warehouses, metal owners could load out metal stored in an LME warehouse within a few days or weeks. Over the past several years, however, long lines or “queues” to load out metal from some LME-approved warehouses have developed, in particular with respect to aluminum. In some cases, warrant owners have had to wait months, a year, or even longer to take possession of warranted aluminum. As discussed more fully below, in the United States, as the queue has grown, the difference between the LME official price and the all-in market price for physical aluminum has widened, reducing the effectiveness of the LME price as a hedge for aluminum prices.

LME Warehouses. While the LME does not own or operate the warehouses where aluminum and other exchange-traded metals are stored, it enters into a standard, non-negotiable Warehouse Agreement with the warehouse owners, allowing them to store LME-warranted metal in exchange for compliance with the terms and conditions of the Warehouse Agreement.¹⁰⁴³

Currently, more than 700 LME-approved warehouses are in operation.¹⁰⁴⁴ LME-approved warehouses are located in many countries

¹⁰⁴⁰ See 11/2013 “Summary Public Report of the LME Warehousing Consultation,” prepared by London Metal Exchange, at 68, <https://www.lme.com/~media/Files/Warehousing/Warehouse%20consultation/Public%20Report%20of%20the%20LME%20Warehousing%20Consultation.pdf>.

¹⁰⁴¹ See *In re Aluminum Warehousing Antitrust Litigation*, Case No. 13-md-02481-KBF (USDC SD New York), Complaint (4/11/2014), at ¶ 147.

¹⁰⁴² See 8/8/2014 letter from Goldman legal counsel to Subcommittee, “Follow-Up Requests,” PSI-Goldman-11-000001 - 011, at 008.

¹⁰⁴³ See *In re Aluminum Warehousing Antitrust Litigation*, Case No. 13-md-02481-KBF (USDC SD New York), Complaint (4/11/2014), at ¶ 156; Opinion and Order (8/25/2014) (ECF No. 564), at 9.

¹⁰⁴⁴ See undated “Approved Warehouses,” LME website, <https://www.lme.com/trading/warehousing-and-brands/warehousing/approved-warehouses/>.

around the globe and store a vast volume of metals. For many years, LME warehouses were owned by independent warehousing companies that did not engage in commodities trading. Beginning in 2010, however, many of those warehouse companies were bought by bank holding companies or trading houses with extensive commodity trading operations.¹⁰⁴⁵

Some of the key global networks of LME-approved warehouses are operated by Metro, which is owned by Goldman;¹⁰⁴⁶ Henry Bath & Sons, which was recently sold by JPMorgan to Mercuria Energy Trading;¹⁰⁴⁷ Pacorini Metals, which is owned by Glencore, a commodities trading house; NEMS Ltd. (recently renamed Impala Terminals) which was acquired by Trafigura, a commodities trading and logistics company; and C. Steinweg Handelsveem, an independent warehousing firm unaffiliated with a trading company.¹⁰⁴⁸

Aluminum Trading on the CME. The CME Group Inc. owns four exchanges on which commodity-related financial products are traded, including futures, options, and swaps linked to aluminum.¹⁰⁴⁹ The CME Group is primarily regulated by the U.S. Commodity Futures Trading Commission (CFTC) and the U.S. Securities and Exchange Commission (SEC).

In 2012, the CME Group began offering a new financial product related to aluminum called the “Aluminum MW U.S. Transaction Premium Futures” contract. That futures contract was made available for trading on COMEX, one of the CME Group’s commodity exchanges. It represented the first exchange-traded product allowing aluminum market participants to manage price risks associated with the Midwest Premium for aluminum.¹⁰⁵⁰ In May 2014, the CME Group

¹⁰⁴⁵ See, e.g., “Metals Warehousing: The Perfect Hedge & The Perfect Storm?,” Hard Assets Investor, Tom Vulcan (3/23/2012), <http://www.hardassetsinvestor.com/features/3567-metals-warehousing-the-perfect-hedge-a-the-perfect-storm.html>.

¹⁰⁴⁶ See “Goldman and JPMorgan enter metal warehousing,” Financial Times, Javier Blas (3/2/2010), <http://www.ft.com/intl/cms/s/0/5025f82a-262e-11df-aff3-00144feabdc0.html#axzz3CkHqTn7n>.

¹⁰⁴⁷ See 10/3/2014 Mercuria press release, “Mercuria Closes Acquisition of J.P. Morgan Chase Physical Commodities Business,” <http://www.mercuria.com/media-room/business-news/mercuria-closes-acquisition-jp-morgan-chase-physical-commodities-business>.

¹⁰⁴⁸ See “Metals Warehousing: The Perfect Hedge & The Perfect Storm?,” Hard Assets Investor, Tom Vulcan (3/23/2012), <http://www.hardassetsinvestor.com/features/3567-metals-warehousing-the-perfect-hedge-a-the-perfect-storm.html>.

¹⁰⁴⁹ See undated “Driving Global Growth and Commerce,” CME Group website, <http://www.cmegroup.com/company/history/>. The four exchanges are the Chicago Mercantile Exchange (CME), Chicago Board of Trade (CBOT), New York Mercantile Exchange (NYMEX), and the Commodity Exchange (COMEX) which is a division of the NYMEX.

¹⁰⁵⁰ See 8/9/2013 CME Group press release, “CME Group Announces the First Aluminum Midwest Premium Contracts Traded,” <http://investor.cmegroup.com/investor-relations/releasedetail.cfm?ReleaseID=784335>. At the time of its introduction, the CME said it was offering the product, because “[i]n the past three years, the premium increased from \$0.04/lb to close to \$0.09/lb and it is now a larger component of the aluminum consumer’s cost and risk. This contract enables market participants in North America to better manage their price risk.”

launched a second new aluminum-related product for trading on COMEX, a futures contract for delivery of physical aluminum in North America. CME described the new contract, which is intended to be an all-in price, as designed to increase price transparency for aluminum and enable market participants to better manage price risks than is currently possible using LME futures.¹⁰⁵¹ To date, however, both of the new CME aluminum products have been thinly traded.¹⁰⁵²

Aluminum Trading in the Over-the-Counter (OTC) Market.

Aluminum and aluminum-related derivatives are also traded over-the-counter (OTC), which means they are traded outside official exchanges like the LME and COMEX.

Aluminum-related swaps executed in the OTC market are often customized to address specific issues. They include, for example, swaps designed to permit aluminum market participants to hedge their price exposure to the all-in price of aluminum, the LME price, or the Midwest Premium, which has been steadily increasing in price and volatility over the last few years.¹⁰⁵³ The Subcommittee has been told that large financial institutions, including Goldman, and major aluminum consumers have traded those aluminum swaps in the OTC market.¹⁰⁵⁴

Another type of aluminum trading that takes place in the OTC market, outside of the exchanges, involves trading LME warrants for aluminum lots held in different warehouse locations.¹⁰⁵⁵ That trading takes place because the value of aluminum is affected by where it is located and how long it may take to remove the aluminum from the warehouse. For example, warrants for aluminum held in a warehouse with a long queue may be worth less than warrants for aluminum held in a warehouse with no queue. Relative values of warrants for aluminum held in different locations may change by the day as warehouse queues lengthen or shorten.

Because OTC trades are not subject to the same reporting as those that occur on regulated exchanges, it is difficult to determine the overall size of the OTC aluminum market and the types of financial instruments that are most common.

Undated "FAQ: Aluminum MW US Transaction Premium Platts (25MT) Swap Futures," CME Group website, http://www.cmegroup.com/trading/metals/files/faq_aluminum_mw_us_transaction_premium_swap.pdf.

¹⁰⁵¹ See 3/18/2014 CME Group press release, "CME Group to Launch North American Physically Delivered Aluminum Futures," <http://online.wsj.com/article/PR-CO-20140318-907146.html>.

¹⁰⁵² Subcommittee briefing by CFTC (9/2/2014).

¹⁰⁵³ See 9/17/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-GoldmanSachs-15-000001, at 003.

¹⁰⁵⁴ See, e.g., Subcommittee briefing by Anheuser-Busch (10/9/2014).

¹⁰⁵⁵ Subcommittee briefing by London Metal Exchange (8/1/2014).

Relationship Between Warehouse Queues and Aluminum

Prices. A critical factor affecting aluminum trading in recent years has been an unprecedented growth in the size of physical aluminum inventories at LME-approved warehouses, as industrial demand for the metal plummeted during the financial crisis and metal owners sought to sell or store their excess stocks.¹⁰⁵⁶ The increase in aluminum inventory was particularly dramatic at Metro's Detroit warehouses. At the same time the physical aluminum inventories increased, warrant holders with metal in the Metro Detroit warehouses experienced increasingly long queues before they could remove their aluminum from the warehouses. Those queues, over time, have been highly correlated with the increases in the Midwest Premium prices.

At the end of February 2010, just after Goldman acquired Metro, the Midwest Premium was approximately \$134 per metric ton.¹⁰⁵⁷ It has since steadily climbed to over \$400.¹⁰⁵⁸ In dollar terms, the Midwest Premium climbed over 300% in just a few years. Over the same period, the queue went from about 40 days to over 600 days.¹⁰⁵⁹

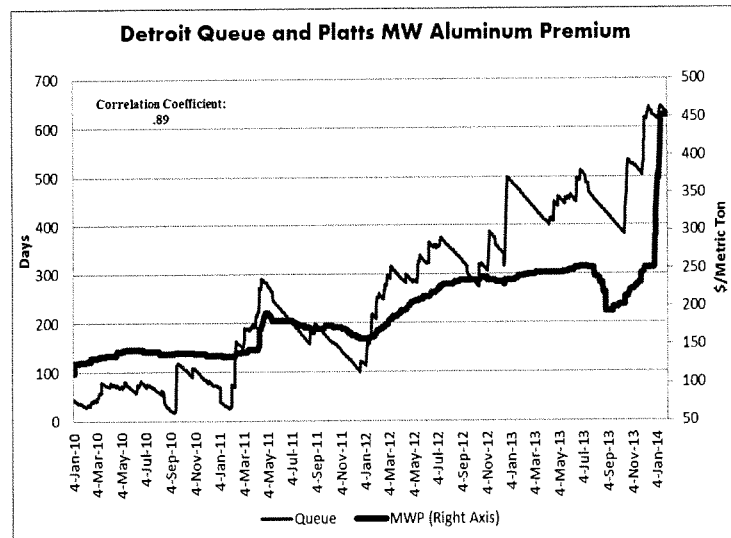
¹⁰⁵⁶ See 11/2013 "Summary Public Report of the LME Warehousing Consultation," prepared by LME, at 20, <https://www.lme.com/~media/Files/Warehousing/Warehouse%20consultation/Public%20Report%20of%20the%20LME%20Warehousing%20Consultation.pdf>.

¹⁰⁵⁷ See undated "LME Stocks 2014-05-06," prepared by Novelis, PSI-Novelis-01-000001.

¹⁰⁵⁸ Id.

¹⁰⁵⁹ See undated "Harbor's Estimated Aluminum Load-Out Waiting Time in LME Detroit Warehouses, prepared by Harbor Aluminum, PSI-HarborAlum-01-000001.

As depicted in the chart below, the increase in the Midwest Premium has been highly correlated with the growth of the queue at Metro's Detroit warehouses.



Source: Prepared by the Subcommittee using information provided by Harbor Aluminum. See undated "HARBOR's estimated aluminum load-out waiting time in LME Detroit Warehouses vs HARBOR's MW Transactional Premium," prepared by Harbor Aluminum, PSI-HarborAluminum-03-000004.

Between 2010 and 2014, the changes in queue length at the Metro warehouses in Detroit and the changes in the Midwest Premium price had a correlation coefficient of approximately 0.89, an exceptionally high correlation.¹⁰⁶⁰

Many market participants, including many large aluminum users, contend that the longer queues are pushing up the Midwest Premium, which is intended to reflect, in part, storage costs, and that the increased Midwest Premium prices result in higher all-in aluminum prices. The Aluminum Users Group, a coalition of large manufacturers including Novelis, Coca Cola, MillerCoors, and others, wrote to the LME that market "distortions" due to long queues had resulted in physical premiums that "are at least double their normal levels."¹⁰⁶¹ In 2013, a MillerCoors representative testified before the U.S. Senate Banking

¹⁰⁶⁰ Subcommittee calculation using information provided by Harbor Aluminum. See undated "HARBOR's estimated aluminum load-out waiting time in LME Detroit Warehouses vs HARBOR's MW Transactional Premium," prepared by Harbor Aluminum, PSI-HarborAluminum-03-000004.

¹⁰⁶¹ 10/29/2012 letter from Aluminum Users Group to LME, PSI-AlumUsersGroup-01-000010-012.

Committee that the queues had cost his company “tens of millions of dollars in excess premiums over the last several years.”¹⁰⁶²

Prominent aluminum analysts agree with that view. Jorge Vazquez of Harbor Aluminum Intelligence, a leading industry analyst, has said that the emergence of long queues led directly to higher premiums, commenting that warehouse practices were “being used as a platform to inorganically inflate aluminum premiums at the expense of the aluminum consumer and at the benefit of some warehouses, banks and trading companies.”¹⁰⁶³

In contrast, the LME and Goldman contend that longer queues have not affected the all-in price for aluminum. Although both the LME and Goldman concede that the queue has affected premium prices and the relative proportions of the all-in price attributable to the premium price versus the LME price, they assert that the effect of the longer queue has been to drive the LME portion down and the premium portion up, leaving the all-in price substantially unchanged.¹⁰⁶⁴ That analysis is a minority view, according to briefings provided to the Subcommittee by numerous aluminum market participants and experts. Alcoa, the largest U.S. aluminum producer, told the Subcommittee, for example, that the LME and premium prices are not inversely related, but move independently of one another.¹⁰⁶⁵ In a recent filing with the SEC, Alcoa wrote that the LME price and the aluminum premium each “has its own drivers of variability.”¹⁰⁶⁶ Mr. Vazquez, the aluminum analyst, agreed with that view, indicating to the Subcommittee that “there has been no empirical study or evidence or modeling that suggests changes in LME prices and the Midwest Premium are inversely related,” as the LME and Goldman have suggested.¹⁰⁶⁷ In fact, the LME and Midwest Premium prices can and often have moved in the same direction.

¹⁰⁶² “Examining Financial Holding Companies: Should Banks Control Power Plants, Warehouses and Oil Refineries?” hearing before the U.S. Senate Banking Subcommittee on Financial Institutions and Consumer Protection, S. Hrg. 113-67 (7/23/2013), testimony of Tim Weiner, Global Risk Manager, Commodities/Metals, MillerCoors LLC, at 9, <http://www.gpo.gov/idsys/pkg/CHRG-113shrg82568/html/CHRG-113shrg82568.htm>.

¹⁰⁶³ “Aluminum Premiums To Fall After LME Warehouse Plan?” Metal Miner, (11/8/2013), <http://agmetminer.com/2013/11/08/aluminum-premium-to-fall-after-lme-warehouse-plan/>; Subcommittee briefing by Jorge Vazquez (9/30/2014).

¹⁰⁶⁴ See 10/31/2013 “The Economic Role of a Warehouse Exchange” prepared by Goldman Sachs Commodity Research (The development of the queues has not affected the total “physical” price for aluminum), GSPSICOMMODS00047511 - 545; 11/2013 “Summary Public Report of the LME Warehousing Consultation,” prepared by LME, at 24, <https://www.lme.com/~media/Files/Warehousing/Warehouse%20consultation/Public%20Report%20of%20the%20LME%20Warehousing%20Consultation.pdf> (“[L]ong queues reduce the value of warrants, and . . . it was these lower-value warrants which were being used to settle LME contracts and set LME price.”).

¹⁰⁶⁵ Subcommittee briefing by Alcoa (8/5/2014);

¹⁰⁶⁶ 3/31/2014 Alcoa, Inc. Form 10-Q for the quarterly period ending March 31, 2014, at 45, <http://www.sec.gov/Archives/edgar/data/4281/000119312514157120/d701633d10q.htm>.

¹⁰⁶⁷ Subcommittee briefing by Jorge Vazquez (9/30/2014).

The Subcommittee's investigation found that, while there was disagreement about the impact of the queue on the level of the all-in aluminum price, there was broad consensus that the queue had affected Midwest Premium prices. The investigation also found that the price impacts of the queue had created problems for aluminum users like beverage can producers and automobile manufacturers who actually use aluminum, because the increasing difference between the all-in price and the LME futures price made hedging price risk through the LME market increasingly ineffective.¹⁰⁶⁸ A number of commercial users told the Subcommittee that the lack of effective hedges damages planning and impacts revenues.¹⁰⁶⁹

Historically, industrial users seeking to hedge their aluminum price risk over time used futures, forwards, or swap transactions linked to LME prices. Trading records show that, in the five years prior to Goldman's purchase of Metro, the LME price as a percentage of the all-in price for aluminum averaged over 95%, making LME futures a fairly effective hedge against all-in aluminum price increases.¹⁰⁷⁰ Since 2010, however, the portion of the all-in price attributable to the LME price has fallen steadily. For example, in January 2014, the LME price made up about 75% of the all-in price, eroding the value of LME futures as a hedge for aluminum's all-in price.¹⁰⁷¹ At the same time, the Midwest Premium has grown in both in dollar terms and as a percentage of the all-in aluminum price. At the end of February, 2010, just after Goldman acquired Metro, the Midwest Premium was about \$134, or about 6% of the all-in price. By the end of January 2014, the Midwest Premium was over \$450, comprising about 22% of the all-in price.¹⁰⁷²

Compounding the problem for aluminum users has been the difficulty in hedging the growing premium portion of the all-in aluminum price. While the CME Group now offers futures to manage price risks associated with the Midwest Premium, those new products are still thinly traded.¹⁰⁷³ The end result is that aluminum users have been less able to hedge their price risk and more susceptible to price changes due – not to market forces of supply and demand – but to increased Midwest Premium prices highly correlated with longer

¹⁰⁶⁸ This was, in fact, the explicit reasoning used by the CME when it introduced its Aluminum MW U.S. Transaction Premium contract in 2012. Undated, "FAQ: Aluminum MW US Transaction Premium Platts (25MT) Swap Futures," CME Group website, http://www.cmegroup.com/trading/metals/files/faq_aluminum_mw_us_transaction_premium_swap.pdf.

¹⁰⁶⁹ For example, one manufacturer who uses aluminum to build warships told the Subcommittee that its inability to effectively hedge the all-in price has resulted in its taking costly measures, including buying substantial amounts of physical aluminum to hold it for future use. Subcommittee briefing by Austal (10/30/2014).

¹⁰⁷⁰ See undated "LME Stocks 2014-05-06," prepared by Novelis, PSI-Novelis-01-000001.

¹⁰⁷¹ Id.

¹⁰⁷² Id.

¹⁰⁷³ Subcommittee briefing by CFTC staff (9/2/2014).

warehouse queues. According to industry aluminum users, those factors have cost manufacturers and consumers billions of dollars.¹⁰⁷⁴

At the same time the increasing Midwest Premium prices have been causing problems for aluminum users, the LME has said that the emergence of increasing premiums “convey[ed] an advantage to the expertise of merchants and brokers, who have built-up strong modelling capabilities around premiums and queues.”¹⁰⁷⁵ In other words, the increases in the Midwest Premium have benefited aluminum traders.

(2) Goldman Involvement with Aluminum

Over the last five years, Goldman has dramatically increased its physical aluminum activities. Beginning in 2010, it took control of a network of LME-approved warehouses, and helped the warehouses in Detroit accumulate the largest stockpile of LME warranted aluminum in the United States. It also dramatically increased its own physical inventory, building its physical aluminum holdings from less than \$100 million in 2009 to more than \$3 billion at one point in 2012. In addition, from 2009 until late 2012, Goldman had a significant ownership stake in the LME itself, the primary exchange for trading aluminum. In short, Goldman owned aluminum, traded in aluminum-related financial products, owned part of the exchange where those products were traded, owned warehouses where aluminum was stored, and its warehouse sat on the committee advising on the rules for how warehouses should operate. Those activities made Goldman an increasingly influential participant in the aluminum markets.

(a) Building An Aluminum Inventory

Prior to 2010, Goldman’s physical aluminum activities appear to have been relatively small. From 2008 to 2009, Goldman’s aluminum holdings fluctuated between about 1,600 and 44,000 metric tons, representing between \$2 million and just under \$100 million in assets.¹⁰⁷⁶ At the time Goldman acquired Metro in February 2010, Goldman actually owned no physical aluminum at all.¹⁰⁷⁷ As shown in

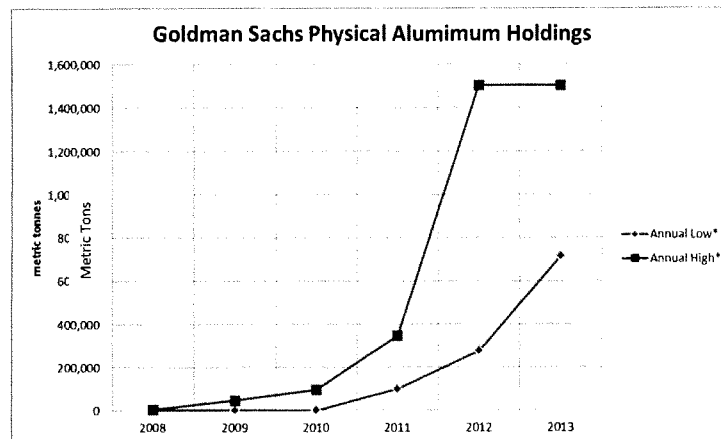
¹⁰⁷⁴ See, e.g., “Examining Financial Holding Companies: Should Banks Control Power Plants, Warehouses and Oil Refineries?” hearing before the U.S. Senate Banking Subcommittee on Financial Institutions and Consumer Protection, S. Hrg. 113-67 (7/23/2013), testimony of Tim Weiner, Global Risk Manager, Commodities/Metals, MillerCoors LLC, at 9, <http://www.gpo.gov/fdsys/pkg/CHRG-113shrg82568/html/CHRG-113shrg82568.htm>.

¹⁰⁷⁵ 11/2013 “Summary Public Report of the LME Warehousing Consultation,” prepared by LME, at 29, <https://www.lme.com/~media/Files/Warehousing/Warehouse%20consultation/Public%20Report%20of%20the%20LME%20Warehousing%20Consultation.pdf>.

¹⁰⁷⁶ See 2/20/2013 letter from Goldman legal counsel to Subcommittee, “January 11, 2013 Questionnaire,” PSI-Goldman-02-000001, attaching Goldman chart, GSFSICOMMODS00000001-R - 003-R, at 002-R.

¹⁰⁷⁷ Id.

the graph below, however, Goldman's aluminum inventory then began to skyrocket.



*Totals for 2012 and 2013 reflect Goldman Sachs aluminum holdings at the close of highest and lowest months during those years. Physical holdings may have exceeded or been lower than month-ending figures.

Source: See 2/20/2013 letter from Goldman legal counsel to Subcommittee, "January 11, 2013 Questionnaire," PSI-Goldman-02-000001, attaching Goldman chart, GSPSICOMMODS00000001-R, at 002-R; 4/30/2014 letter from Goldman letter to Subcommittee, "April 2, 2014 Email," PSI-GoldmanSachs-09-000001, Exhibit D, at 013.

By the end of 2010, less than a year after purchasing Metro, Goldman's physical aluminum holdings grew to approximately 95,000 metric tons worth about \$240 million. By the fall of 2011, Goldman had nearly 350,000 metric tons worth more than \$860 million.¹⁰⁷⁸ The trend continued in 2012; by year's end, Goldman's aluminum holdings exceeded 1.5 million metric tons worth more than \$3.2 billion dollars.¹⁰⁷⁹ In early 2013, the company sold about half of its aluminum.¹⁰⁸⁰ In September 2013, Goldman's aluminum holdings totaled about 714,000 metric tons, with a market value of about \$1.3 billion.¹⁰⁸¹

One reason for the dramatic increase in Goldman's physical aluminum trading was its decision to expand its aluminum trading desk. In an interview, Christopher Wibbelman, Chief Executive Officer (CEO) of Metro, explained that around the time Goldman purchased the warehouse business, he was asked by Goldman to recommend some physical aluminum experts with whom Goldman's trading desk could

¹⁰⁷⁸ Id.

¹⁰⁷⁹ 4/30/2014 letter from Goldman letter to Subcommittee, "April 2, 2014 Email," PSI-GoldmanSachs-09-000001 - 013, at Exhibit D, GSPSICOMMODS000004116.

¹⁰⁸⁰ Id.

¹⁰⁸¹ Id.

discuss the aluminum market.¹⁰⁸² He indicated that, shortly thereafter, Goldman hired two aluminum traders he had recommended.¹⁰⁸³ Goldman's physical aluminum trading soon after began to increase and its inventory to grow.

In addition to its rapidly expanding aluminum trading operations, between mid-2009 and the end of 2012, Goldman more than quadrupled its stake in the London Metal Exchange.¹⁰⁸⁴ By 2012, Goldman was second only to JP Morgan as the exchange's largest shareholder.¹⁰⁸⁵

(b) Acquiring a Warehousing Business

Goldman also deepened its involvement with aluminum by purchasing Metro International Trade Services LLC (Metro), the owner of a global network of LME-approved warehouses that stored a variety of metals, including aluminum.¹⁰⁸⁶ Under Goldman's ownership, Metro implemented unprecedented practices to aggressively attract and retain aluminum in its Detroit warehouses. Over the next few years, Metro's Detroit warehouses accumulated the largest stockpile of LME warranted aluminum in the United States.

According to Goldman, in 2009, it was approached by representatives of Metro about buying the company.¹⁰⁸⁷ In February 2010, Goldman acquired Metro for about \$450 million.¹⁰⁸⁸ Goldman's purchase of Metro was the first of a series of warehouse acquisitions by financial firms that were also involved in trading metals.¹⁰⁸⁹

¹⁰⁸² Subcommittee interview of Christopher Wibbelman (10/6/2014).

¹⁰⁸³ Id.

¹⁰⁸⁴ See 8/8/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-Goldman-11-000001 - 011, at 003 - 004.

¹⁰⁸⁵ See, e.g., "London Metal Exchange shareholders vote on takeover," Reuters (7/24/2012), http://articles.chicagotribune.com/2012-07-24/news/sns-rt-lmevotel6e8ioig6-20120724_1_hkex-lme-board-shareholders ("The LME's top shareholder is JPMorgan, with 1.4 million shares, followed by Goldman with 1.23 million.").

¹⁰⁸⁶ See 9/12/2013 letter from Goldman legal counsel to Subcommittee, "January 11, 2013 Questionnaire," PSI-GoldmanSachs-06-000001 - 021, at 017 (Exhibit C); "Goldman and JPMorgan Enter Metal Warehousing," *Financial Times*, Javier Blas (3/2/2010), <http://www.ft.com/cms/s/0/5025f82a-262e-11d1-af33-00144feabdc0.html#axzz2kXv0R8iX>. Metro is a Delaware corporation.

¹⁰⁸⁷ Subcommittee briefing by Goldman (7/16/2014).

¹⁰⁸⁸ 8/3/2011 "Presentation to Firmwide Client and Business Standards Committee," prepared by Goldman, FRB-PSI-707486-500, at 493. Compare Goldman Sachs Group, Form 10-K for the fiscal year ending December 31, 2010, at Exhibit 21.1 (including "Metro International Trade Services LLC" as a subsidiary of GS Power Holdings LLC), with Goldman Sachs Group, Form 10-K for the fiscal year ending December 31, 2009, at Exhibit 21.1 (not listing GS Power Holdings LLC or Metro International as significant subsidiaries).

¹⁰⁸⁹ A few months later, JPMorgan acquired Henry Bath & Sons which, like Metro, owned a global network of warehouses storing aluminum and other metals traded on the LME. See, e.g., "Goldman and JPMorgan enter metal warehousing," *Financial Times*, Javier Blas (3/2/2010), <http://www.ft.com/intl/cms/s/0/5025f82a-262e-11d1-af33-00144feabdc0.html#axzz3CkHqTn7n>. In March 2010, Trafigura, a commodities trading and logistics company, purchased NEMS Ltd, another LME-approved warehousing company. See 3/10/2010 Trafigura press release, "Trafigura Beheer B.V. has acquired metal warehousing company NEMS Ltd.,"

Goldman's Global Commodities Principal Investing (GCPI) group conducted the analysis and took the lead in the Metro acquisition.¹⁰⁹⁰ Jacques Gabillon, a Goldman executive based in London, led the GCPI effort and later became Chairman of Metro's Board of Directors.¹⁰⁹¹

Goldman has said publicly that it does not consider Metro a "strategic business" for the financial holding company.¹⁰⁹² Goldman told the Subcommittee that its decision to buy Metro was instead driven by: (1) the warehouse company's potential to generate rental income arising from storage of a glut of metal in the market (due to reduced demand from the financial crisis and recession); and (2) the potential for the warehouse company's rental income to act as a counter-cyclical source of income compared to Goldman's trading revenues.¹⁰⁹³ In 2011, Goldman projected internally that, by April 2013, the Metro investment would have "returned more than the full invested capital and continue to pay out substantial annual dividends."¹⁰⁹⁴

At the time of the acquisition in 2010, Goldman stated publicly that Metro would "continue to operate independently," and the company's top management remained largely in place.¹⁰⁹⁵ Metro's senior executives at the time of acquisition, including Christopher Wibbelman, Mark Askew, and Michael Whelan, had each been with the company for more than a decade, and were seasoned leaders intimately familiar with the warehousing business.¹⁰⁹⁶

At the same time, however, Goldman installed a new Board of Directors at Metro that consisted exclusively of Goldman employees, including several executives in the company's Global Commodities

<http://www.trafigura.com/media-centre/latest-news/18580/#.U7rxFvldVu0>. In September 2010, Glencore International, a commodities trading company, purchased the Pacorini Group's LME-warehousing assets. See "Glencore completes deal for Pacorini Metal," Reuters, Michael Taylor (9/14/2010), <http://www.reuters.com/article/2010/09/14/pacorini-metals-idUSLDE68D0RR20100914>. The Pacorini warehouse in Vlissingen is the only other warehouse in the world with lengthy aluminum queues.

¹⁰⁹⁰ Subcommittee interview of Jacques Gabillon (10/14/2014).

¹⁰⁹¹ Id.

¹⁰⁹² 7/31/2013 "LME Warehousing and Aluminum," Goldman Sachs website, <http://www.goldmansachs.com/media-relations/in-the-news/archive/goldman-sachs-physical-commodities-7-31-13.html>.

¹⁰⁹³ Subcommittee briefing by Goldman (7/16/2014); Subcommittee interview of Gregory Agran (10/10/2014).

¹⁰⁹⁴ 8/3/2011 "Presentation to Firmwide Client and Business Standards Committee," prepared by Goldman, FRB-PSI-707486 - 500, at 493.

¹⁰⁹⁵ See "Goldman and JPMorgan enter metal warehousing," *Financial Times*, Javier Blas (3/2/2010), <http://www.ft.com/intl/cms/s/0/5025f82a-262e-11df-aff3-00144feabdc0.html#axzz3CkHqTn7n>; "Wall Street, Fed Face off Over Physical Commodities," Reuters, David Sheppard, Jonathan Leff, and Josephine Mason (3/2/2012), <http://www.reuters.com/article/2012/03/02/us-fed-banks-commodities-idUSTRE8211CC2012030>.

¹⁰⁹⁶ Subcommittee interview of Christopher Wibbelman (10/6/2014).

group.¹⁰⁹⁷ The following chart identifies the Goldman employees who served on the Metro Board at some point during the last five years:

**Goldman Employees Who Served as Metro Board Members
2009 to 2014**

Goldman Employee	Goldman Department	From Date	To Date
Agran, Gregory	Global Commodities	2/1/2010	12/1/2011
Attwood Scott, Victoria*	Securities Div Compliance	2/1/2010	11/16/2012
Bulk, Maxwell*	Global Deriv Ops Mgmt	2/1/2010	7/1/2014
Gabillon, Jacques	GCPI head	2/1/2010	CURRENT
Haynes, Oliver*	Securities Div Compliance	10/30/2012	4/1/2014
Holzer, Philip	EQ PIPG Sales	2/15/2010	3/1/2014
Murphy, Ken	Archon**	3/1/2010	5/1/2011
Mancini, Robert*	Assetco***	2/1/2010	12/1/2012
McDonogh, Dermot	Controllers' Admin	3/1/2010	CURRENT
Siewert, Richard	Media Relations	10/1/2012	CURRENT
Weiss, Michael	Securities Div Compliance	1/23/2013	CURRENT
West, Owen	Natural Gas Trading	11/28/2011	CURRENT

*Former Goldman employee

**Archon refers to Archon LP, which is the predecessor to Goldman Sachs Realty Management LP.

***Assetco likely refers to GCPI, which stands for Global Commodities Principal Investing group.

Source: 8/15/2014 letter from Goldman Sachs legal counsel to Subcommittee, PSI-GoldmanSachs-17-000001 - 009, at Exhibit A, GSPSICOMMODS00046225; 11/11/2014 Briefing by Goldman legal counsel to Subcommittee (describing Archon and Assetco).

In its documentation, Goldman indicated that it relied on the Gramm-Leach-Bliley merchant banking authority to purchase the Metro warehousing business.¹⁰⁹⁸ That authority requires a financial holding company making a merchant banking investment to refrain from becoming involved in the routine management of the portfolio company and that it sell the company within ten years of acquisition.¹⁰⁹⁹ Despite Goldman's assertions that it was "not involved in the day-to-day management of the company,"¹¹⁰⁰ after the acquisition, many business decisions by Metro required review and approval by Metro's Board of

¹⁰⁹⁷ 8/15/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-GoldmanSachs-17-000001 - 009, at Exhibit A, GSPSICOMMODS00046225.

¹⁰⁹⁸ See 7/25/2012 Goldman "Presentation to Firmwide Client and Business Standards Committee: Global Commodities," FRB-PSI-200984 - 1043, at 1000.

¹⁰⁹⁹ See discussions of the Gramm-Leach-Bliley merchant banking authority in Chapter 2 and 3, above.

¹¹⁰⁰ 7/31/2013 "LME Warehousing and Aluminum," Goldman Sachs website, <http://www.goldmansachs.com/media-relations/in-the-news/archive/goldman-sachs-physical-commodities-7-31-13.html>.

Directors or a Board subcommittee, both of which were comprised entirely of Goldman employees.¹¹⁰¹

Goldman has stated that “under the rules governing its purchase, we have to sell it within ten years from the date we bought it.”¹¹⁰² Because Goldman characterized the Metro acquisition as a merchant banking investment, it did not notify or obtain prior permission from the Federal Reserve.

(c) Paying Incentives to Attract Outside Aluminum

Soon after its acquisition by Goldman, Metro significantly increased its spending on “freight incentives” to entice aluminum owners to move metal into its Detroit warehouses. Those financial incentives led to Metro’s loading aluminum into its Detroit warehouses at an historic rate, resulting in Metro’s expanding its Detroit operations, building the largest aluminum stockpile in the United States, and constructing a near monopoly of the U.S. LME aluminum storage market. The unprecedented warehouse queues that were developed at Metro’s Detroit warehouses forced metal owners to wait months, a year, or at one point nearly two years to get their metal out of storage.

Storing an Aluminum Glut. Beginning in 2008, the financial crisis led to an unprecedented increase in the aluminum inventories at LME-approved warehouses, as industrial demand for the metal plummeted and metal owners sought to sell or store their excess stocks.¹¹⁰³ As reflected in the graph below, between the end of January 2008 and the end of February 2010, global stocks of LME-warranted aluminum more than quadrupled, from less than 1 million to more than 4.5 million metric tons.¹¹⁰⁴ Inventories of LME-warranted aluminum in the United States alone saw a similar dramatic increase, from less than 400,000 to nearly 2.1 million metric tons over the same period.¹¹⁰⁵

¹¹⁰¹ Subcommittee interview of Christopher Wibbelman (10/6/2014). Approval was required, for example, for each of the six merry-go-round deals described below.

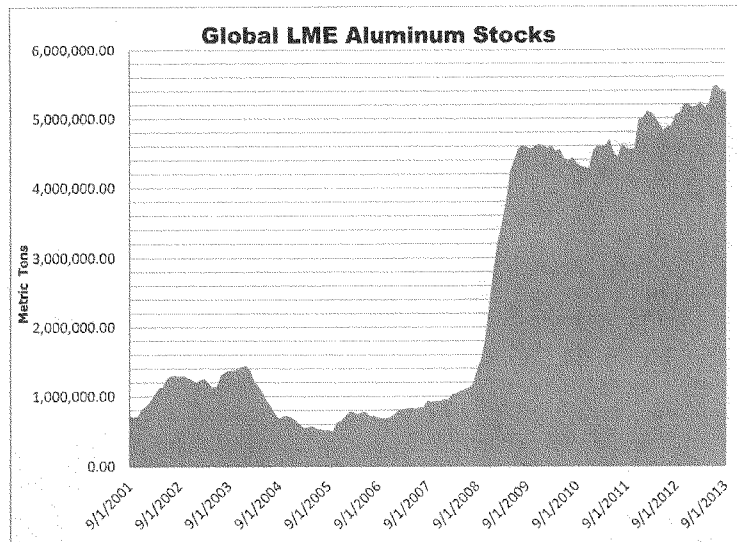
¹¹⁰² 7/31/2013 “LME Warehousing and Aluminum,” Goldman Sachs website, <http://www.goldmansachs.com/media-relations/in-the-news/archive/goldman-sachs-physical-commodities-7-31-13.html>.

¹¹⁰³ See, e.g., 11/2013 “Summary Public Report of the LME Warehousing Consultation,” prepared by LME, at 20,

<https://www.lme.com/~media/Files/Warehousing/Warehouse%20consultation/Public%20Report%20of%20the%20LME%20Warehousing%20Consultation.pdf>.

¹¹⁰⁴ See undated “LME Stocks 2014-05-06,” prepared by Novelis, PSI-Novelis-01-000001.

¹¹⁰⁵ Id.



Source: Prepared by the Subcommittee using information provided by Novelis. See undated "LME Stocks 2014-05-06," prepared by Novelis, PSI-Novelis-01-000001.

Metro was a prime beneficiary of the increasing aluminum stockpiles. Whereas in January 2008, less than 400,000 metric tons of LME warranted aluminum were in storage in the entire United States,¹¹⁰⁶ by the end of February 2010, Metro's Detroit warehouses alone were storing about 915,000 metric tons.¹¹⁰⁷ Over the next two years, Metro's Detroit aluminum stocks continued to grow, reaching about 1 million metric tons in January 2011, and about 1.4 million metric tons by February 2012.¹¹⁰⁸ A year later in 2013, they remained at nearly 1.4 million metric tons¹¹⁰⁹ and, by February 2014, Metro's Detroit aluminum stocks stayed steady about 1.5 million metric tons, nearly all of which was on LME warrant.¹¹¹⁰

Its increased aluminum inventories were accompanied by significant gains in Metro's share of the U.S. LME aluminum storage market. According to internal materials provided to Metro's Board of Directors, in early 2012, Metro's share of the U.S. LME aluminum

¹¹⁰⁶ *Id.*

¹¹⁰⁷ See 3/11/2010 "MITSI Holdings LLC[] Board of Directors Meeting," prepared by Metro and Goldman (hereinafter "3/2010 MITSI Board Meeting"), GSPSICOMMODS00009519 - 542, at 534.

¹¹⁰⁸ See 2/15/2011 "MITSI Holdings LLC Board of Directors Meeting," prepared by Metro and Goldman, GSPSICOMMODS00009492 - 505, at 500 (hereinafter "2/2011 MITSI Board Meeting"); 3/21/2012 "MITSI Holdings LLC Board of Directors Meeting," prepared by Metro and Goldman, GSPSICOMMODS00009423 - 449, at 429.

¹¹⁰⁹ See 3/26/2013 "MITSI Holdings LLC Board of Directors Meeting," prepared by Metro and Goldman, GSPSICOMMODS00009355 - 377, at 360, 363.

¹¹¹⁰ See 3/24/2014 "MITSI Holdings LLC Board of Directors Meeting," prepared by Metro and Goldman, GSPSICOMMODS00009268 - 286, at 273, 276.

storage market stood at 70%.¹¹¹¹ By February 2013, it topped 78%.¹¹¹² A year later, in 2014, the company's share of the U.S. LME aluminum storage market exceeded 85%.¹¹¹³

To accommodate the increased aluminum inflows, Metro expanded its operations in Detroit, tripling the number of its warehouses from about 9 or 10 in 2010, to nearly 30 in 2014.¹¹¹⁴

Paying Freight Incentives. Metro's near-monopoly of the U.S. LME aluminum storage market was built on the aluminum stored in its Detroit warehouses. In January 2008, only 52,000 metric tons of LME-warranted aluminum was stored in LME-approved warehouses in Detroit; by February 2014 Metro's Detroit warehouses had more than 1.5 million metric tons,¹¹¹⁵ an astounding increase. According to the LME, "revenues generated by large stocks allowed warehouses to offer incentives to attract more metal and this exacerbated the problem."¹¹¹⁶ In other words, the more metal Metro had, the more rent it received, and the more incentives it could afford to pay.

Metro's increasing budget allocation for aluminum freight incentives supports that analysis. In early 2010, just after Goldman acquired the company, Metro paid nearly \$37 million in freight incentives to attract aluminum to its warehouses.¹¹¹⁷ That figure doubled in one year to nearly \$79 million in 2011, grew to nearly \$103 million in 2012, and reached nearly \$129 million in 2013, an increase of nearly 350% over four years.¹¹¹⁸

The rapid increase in freight payments took place with the knowledge and approval of the Goldman employees sitting on Metro's Board of Directors. The freight incentive payment amounts were a regular part of the business review conducted by the Metro Board, using figures supplied by Metro management. In fact, in the very first Board meeting conducted after Goldman's acquisition of Metro, the new Board of Directors, comprised of exclusively Goldman employees, discussed

¹¹¹¹ 3/21/2012 "MITSI Holdings LLC Board of Directors Meeting," prepared by Metro and Goldman, GSPSICOMMODS00009423 - 449, at 431.

¹¹¹² 3/26/2013 "MITSI Holdings LLC Board of Directors Meeting," prepared by Metro and Goldman, GSPSICOMMODS00009355 - 377, at 360, 363.

¹¹¹³ 3/24/2014 "MITSI Holdings LLC Board of Directors Meeting," prepared by Metro and Goldman, GSPSICOMMODS00009268 - 286, at 273, 276.

¹¹¹⁴ Subcommittee interview of Christopher Wibbelman (10/6/2014).

¹¹¹⁵ See undated Novelis internal data, prepared by Novelis, PSI-Novelis-01-000001; 3/24/2014 MITSI Holdings LLC Board of Directors Meeting, prepared by Metro and Goldman, GSPSICOMMODS00009268 - 286, at 273.

¹¹¹⁶ 11/2013 "Summary Public Report of the LME Warehousing Consultation," prepared by LME, at 24, <https://www.lme.com/~media/Files/Warehousing/Warehouse%20consultation/Public%20Report%20of%20the%20LME%20Warehousing%20Consultation.pdf>.

¹¹¹⁷ See 9/17/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-15-000001 - 015, at 006 (Exhibit A).

¹¹¹⁸ *Id.*

freight incentives as a factor that would affect the company's monthly cash requirements.¹¹¹⁹

The growth in incentive payments was controversial, since it resulted in Metro's affecting the flow of physical aluminum in the U.S. marketplace.¹¹²⁰ In October 2012, a coalition of large aluminum users wrote to the LME complaining about "distortions" in the aluminum market, including warehouse incentives that "lure[d] metal away from the physical market" and contributed to increases in the Midwest Premium.¹¹²¹ Jorge Vazquez, a leading aluminum analyst, told the Subcommittee that while warehouse incentives have long been part of the aluminum market, it was a completely new phenomenon to have a warehouse company, in this case Metro, capture a critical mass of aluminum, use rent revenues from that critical mass to increase its incentive payments, and outbid others in the market for aluminum.¹¹²²

Warning Against Exceptional Inducements. The LME warehousing agreement, which sets the rules by which LME warehouses operate, warns against "artificially" affecting the metals markets by "Warehouses giving exceptional inducements":

"[T]he proper functioning of the market through the liquidity and elasticity of stocks of metal under Warrant should not be artificially or otherwise constrained by Warehouses giving exceptional inducements or imposing unreasonable charges for depositing or withdrawing metals, nor by Warehouses delaying unreasonably the receipt or dispatch of metal, save where unavoidable due to force majeure."¹¹²³

The LME's warehousing agreement has long provided the LME with authority to investigate all charges levied. Since April 2014, it has also had the right to compel warehouse companies to provide information about their activities, "including, without limitation, details of all inducements paid to attract the load-in of metal and details of the provenance of loaded-in metal, including information about metal which may have been previously in that Warehouse, or in another facility operated by the same Warehouse or member of the Warehouse's

¹¹¹⁹ See 3/2010 MITS Board Meeting," prepared by Metro and Goldman, GSPSICOMMODS00009519 - 542, at 530.

¹¹²⁰ Warehouses offering incentives directly compete against buyers offering more than the LME price to aluminum sellers. As the LME put it, "[t]he warehouse incentive often underpins the willingness of merchants to bid a premium for producers' excess metal." 11/2013 "Summary Public Report of the LME Warehousing Consultation," prepared by LME, at 27, <https://www.lme.com/~media/Files/Warehousing/Warehouse%20consultation/Public%20Report%20of%20the%20LME%20Warehousing%20Consultation.pdf>

¹¹²¹ See 10/29/2012 letter from Aluminum Users Group to the London Metal Exchange, PSI-AlumUsersGroup-01-000010.

¹¹²² Subcommittee interview of Jorge Vazquez (9/30/2014).

¹¹²³ 4/1/2014 "Terms and conditions applicable to all LME listed warehouse companies," prepared by LME, at Clause 9.3.1, LME_PSI0001406 - 427.

group.”¹¹²⁴ In addition, under the agreement, the LME can “impose additional load-out requirements on a Warehouse which the Exchange considers to have intentionally created or caused, or attempted to create or cause, a queue by the use of inducements or any other method.”¹¹²⁵

The LME’s authority to investigate and impose additional load-out requirements on warehouses that intentionally create queues is designed to detect and prevent unfair warehouse practices.¹¹²⁶ In 2013, the LME stated in a report that warehouse inducements were “possibly[] relatively commonplace,” but it had “not historically had cause to investigate” them.¹¹²⁷ In December 2013, however, as discussed in more detail below, the LME opened an investigation into the inducements paid by Metro related to aluminum.¹¹²⁸ The investigation included examining the freight incentives Metro paid to attract metal owners whose aluminum was already stored within its Detroit warehouses.¹¹²⁹

(d) Paying Incentives to Retain Existing Aluminum

Under Goldman’s ownership, Metro’s efforts to build aluminum stocks in its Detroit warehouses using incentives were not limited to offering freight incentives to attract so-called “free metal” from outside its warehouses. Metro also offered millions of dollars in incentives to a few large metal owners whose aluminum was already stored inside the Metro warehouse system. Most of those transactions involved Metro paying millions of dollars in incentives for a financial firm to cancel its warrants on metal held in Metro warehouses; join the queue to exit the Metro warehouse system; upon reaching the head of the queue, load out the metal from one Metro warehouse and re-load it into another Metro warehouse nearby; and later re-warrant the aluminum. Those “merry-

¹¹²⁴ *Id.* at Clause 9.3.3 - 9.3.4.

¹¹²⁵ *Id.*

¹¹²⁶ The LME’s powers to investigate and take enforcement actions related to inducements may be limited. However, the LME has introduced amendments to its warehousing agreement that may enhance its powers, including by providing the LME with the power to compel warehouses to provide details of the inducements they pay, and the LME may impose additional load-out requirements on warehouses that it determines have intentionally created or caused or attempted to create or cause, a queue by the use of inducements or any other method. 11/7/2014, “Consultation on Changes to the Warehouse Agreement,” prepared by LME, https://www.lme.com/~media/files/notices/2014/2014_11/14%20319%20w149%20consultation%20on%20changes%20to%20the%20warehouse%20agreement.pdf.

¹¹²⁷ 11/2013 “Summary Public Report of the LME Warehousing Consultation,” prepared by LME, at 55, <https://www.lme.com/~media/Files/Warehousing/Warehouse%20consultation/Public%20Report%20of%20the%20LME%20Warehousing%20Consultation.pdf>. See In re Aluminum Warehousing Antitrust Litigation, Case No. 13-md-02481-KBF (USDC SD New York), Declaration of Mark Bradley in Support of the London Metal Exchange’s Motion to Dismiss All Complaints (5/23/2014), LME_PSI0000696 - 722, at 700 (representatives of both Metro and Pacorini, the companies that own warehouses with significant queues, sit on the LME’s Warehousing Committee).

¹¹²⁸ 12/4/2013 letter from LME to Metro, GSPSICOMMODS00046656 [sealed exhibit].

¹¹²⁹ 12/6/2013 letter from LME to Metro, GSPSICOMMODS00046658 [sealed exhibit]; 3/10/2014 letter from LME to Metro, GSPSICOMMODS00046827 [sealed exhibit].

go-round” deals resulted, not only in Metro’s retaining the metal inside its system, but also in lengthening its load-out queue and essentially blocking other metal owners from exiting Metro warehouses. When asked to identify all of these types of deals, Goldman identified six involving over 600,000 metric tons of aluminum.¹¹³⁰

Metro also saw four large proprietary aluminum cancellations involving about 500,000 metric tons of aluminum held by Goldman or JPMorgan whose warrant cancellations further lengthened the Detroit warehouse queue. In addition, Metro disclosed 13 transactions in which it received “break fees” from metal owners who withdrew aluminum from its U.S. warehouses earlier than planned and where the amount of those fees was linked to the Midwest Premium price. By obtaining fees linked to a rising Midwest Premium, Metro could potentially benefit financially in still another way from maintaining a long queue.

Lengthening the Queue and Blocking the Exits. Warehouse income depends upon the rent and other fees paid by metal owners storing metal. Warehouses that pay freight incentives to attract aluminum can offset that cost through higher rents, longer rental periods, or additional fees. A warehouse queue, which requires metal owners to wait in line – paying rent until they exit – offers one way to boost rental income. If the metal owner at the head of the queue has a large amount of metal, it may take weeks or months to load it out, essentially blocking the exits for other metal owners still waiting in line and paying rent.

A queue forms when metal owners cancel their warrants and seek to load out their metal from a warehouse at a rate that exceeds the LME’s daily warehouse load-out requirement. The LME specifies the minimum amount of metal that a warehouse must load-out each day. Between 2003 and 2011, the LME’s minimum load-out rate was 1,500 metric tons per day for the largest LME warehouses, such as Metro’s Detroit warehouses.¹¹³¹ In April 2012, the LME increased that number to a rate ranging from 1,500 to 3,000 metric tons a day, depending upon a warehouse’s closing stock level.¹¹³² In November 2013, the LME adopted a rule that would have linked a warehouse’s load-in rate to its load-out rate as of April 2014, but the rule was subjected to a court

¹¹³⁰ Subcommittee interview of Jacques Gabillon (10/14/2014); 10/22/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-22-000001 - 004. As discussed below, one of the six deals involved warrants that had already been cancelled and were already in the queue to exit the warehouse. In that deal, Metro paid incentives for the owner to stay in the queue, load out its metal from one Metro warehouse into another, and place the metal on warrant.

¹¹³¹ See *In re Aluminum Warehousing Antitrust Litigation*, Case No. 13-md-02481-KBF (USDC SD New York), Opinion and Order (4/11/2014), at LME_PSI0001137 - 167, at 149; Undated “Europe-Economics Analysis Conducted for the LME,” Executive Summary, at 1, LME website, <https://www.lme.com/~media/Files/Warehousing/Studies/Warehouse%20minimum%20loading%20out%20rates/Europe%20Economics-Summary.pdf>.

¹¹³² See 11/17/2011, “Changes to LME Policy for Approval of Warehouses in Relation to Loading Out Rates – Result of Consultation With Warehouse Companies,” prepared by LME, LME_PSI0001085 - 089.

challenge.¹¹³³ Metro nevertheless began voluntarily complying with the new rule in April.¹¹³⁴ After the court challenge failed, the LME announced on October 27, 2014, that it would proceed with the rule.¹¹³⁵ The new rule provides that, as of February 2015, a warehouse which has a queue over 50 days and which continues to load in metal, will be subject to additional load-out requirements aimed at reducing the queue and preventing new queues from forming in the future.¹¹³⁶

Together, the LME's rules create a minimum daily load-out rate for LME-approved warehouses; they do not place any cap on the amount of metal that may be loaded out each day. A warehouse may always load out more than the specified minimum. According to Goldman, however, while the LME sets a minimum rather than maximum daily rate, "it is well understood by market participants that LME warehouses have an incentive to maximize inventory and rent and are likely to deliver metal at the minimum load-out rate."¹¹³⁷ Despite the emergence of long queues under Goldman's ownership, Metro has largely continued the practice of loading out aluminum at, and not above, the LME's minimum daily rate.¹¹³⁸

In addition, the LME does not require Metro to apply the minimum load-out rate to each one of its warehouses, but rather allows Metro to apply the load-out rate on a collective basis, to all of Metro's warehouses in the Detroit area as a whole. As a result, Metro has combined all of its Detroit warehouses into a single warehouse system for purposes of the LME minimum load-out rate, created a single exit queue for the entire system, and generally allowed metal to exit the system at, but not above, the LME minimum daily rate.¹¹³⁹ Metal owners who get to the head of the Metro Detroit queue typically use all of the available exit "slots" to load out their metal, so that no one else can load out metal at the same time.

Goldman and Metro's use of the LME load-out rate as a maximum rather than minimum load-out rate has been targeted as an abusive

¹¹³³ 11/10/2014 email from LME to Subcommittee, PSI-LME-06-000001 - 003, at 002.

¹¹³⁴ *Id.*

¹¹³⁵ *Id.*

¹¹³⁶ LME Policy Regarding the Approval of Warehouses, Revised 1 February 2015, LME, LME_PSI0002257 - 278. The new rule does not address the issue of whether numerous warehouses may share a single load-out queue, nor does it make any determinations on the appropriateness of the incentives and penalties that contributed to the queue at Metro.

¹¹³⁷ See 8/6/2013 "Federal Reserve Bank of New York Reputational Risk Questions MITS Holdings LLC," prepared by Goldman, FRB-PSI-700124 - 150, at 129.

¹¹³⁸ See "Examining Financial Holding Companies: Should Banks Control Power Plants, Warehouses, and Oil Refineries?," hearing before the U.S. Senate Banking Subcommittee on Financial Institutions and Consumer Protection, S. Hrg. 113-67 (7/23/2013), prepared testimony of Tim Weiner, Global Risk Manager, Commodities/Metals, MillerCoors LLC, at 3 - 4, <http://www.gpo.gov/fdsys/pkg/CHRG-113shrg82568/html/CHRG-113shrg82568.htm>.

¹¹³⁹ Subcommittee interview of Leo Prichard (10/6/2014).

practice in over a dozen class action suits.¹¹⁴⁰ At a 2013 Senate hearing, one commercial aluminum user had this to say:

“[W]hat’s happening is that the aluminum we are purchasing is being held up in warehouses controlled and owned by U.S. bank holding companies, who are members of the LME, and set the rules for their own warehouses. These bank holding companies are slowing the load-out of physical aluminum from these warehouses to ensure that they receive increased rent for an extended period time. Aluminum users like MillerCoors are being forced to wait in some cases over 18 months to take physical delivery due to the LME warehouse practices or pay the high physical premium to get aluminum today. This does not happen with any of the other commodities we purchase. When we buy barley we receive prompt delivery, the same with corn, natural gas and other commodities. It is only with aluminum purchased through the LME that our property is held for an extraordinary period of time, with the penalty of paying additional rent and premiums to the warehouse owners, until we get access to the metal we have purchased.”¹¹⁴¹

The LME told the Subcommittee that it did not maintain records of queues before 2010, but the view of its personnel was that any queues that may have existed prior to that year were “short-lived” and the result of inclement weather or other discreet events such as a labor strike.¹¹⁴² That changed in 2010, the same year Goldman purchased Metro.

Beginning in 2010, as reflected in the graph below, Metro’s Detroit warehouses developed a queue which, overall, grew longer and longer each year.¹¹⁴³ In March 2010, just after Goldman purchased Metro, the Detroit warehouses had a queue that was slightly more than 40 days.¹¹⁴⁴ A year later, in March 2011, the Detroit queue had more than tripled, exceeding 150 days.¹¹⁴⁵ By March 2012, it had doubled again, to nearly 300 days.¹¹⁴⁶ The queue passed 500 days in October 2013, and 600 days

¹¹⁴⁰ See In Re Aluminum Warehousing Antitrust Litigation, 2014 U.S. Dist. LEXIS 121435 (USDC SDNY)(8/29/2014)(describing allegations contained in multiple the class action lawsuit complaints).

¹¹⁴¹ See “Examining Financial Holding Companies: Should Banks Control Power Plants, Warehouses, and Oil Refineries?,” hearing before the U.S. Senate Banking Subcommittee on Financial Institutions and Consumer Protection, S. Hrg. 113-67 (7/23/2013), prepared testimony of Tim Weiner, Global Risk Manager, Commodities/Metals, MillerCoors LLC, at 3 - 4, <http://www.gpo.gov/fdsys/pkg/CHRG-113shrg82568/html/CHRG-113shrg82568.htm>.

¹¹⁴² 9/5/2014 letter from The London Metal Exchange to Subcommittee, LME_PSI0000001 - 004, at 002.

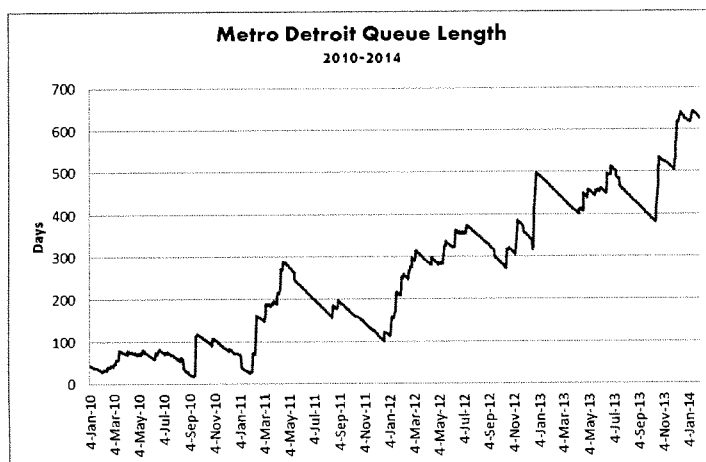
¹¹⁴³ The queue length records were compiled by Harbor Aluminum using LME records, and produced to the Subcommittee. See “HARBOR’s estimated aluminum load-out waiting time in LME Detroit Warehouses,” prepared by Harbor Aluminum, PSI-HarborAlum-01-000001.

¹¹⁴⁴ *Id.*

¹¹⁴⁵ *Id.*

¹¹⁴⁶ *Id.*

two months later.¹¹⁴⁷ In May 2014, the queue to get aluminum out of Metro's Detroit warehouses reached a stunning 674 days.¹¹⁴⁸ That meant an aluminum owner seeking to remove its aluminum from the Detroit warehouses would have to wait in line – paying rent – for almost two years.



Source: Prepared by the Subcommittee using information provided by Harbor Aluminum. See undated "HARBOR's estimated aluminum load-out waiting time in LME Detroit Warehouses vs HARBOR's MW Transactional Premium," prepared by Harbor Aluminum, PSI-HarborAluminum-03-000004.

Large aluminum users have denounced the Detroit queue as unreasonable and damaging to aluminum markets, and have called the LME's current warehousing system "dysfunctional and prone to manipulation."¹¹⁴⁹ In addition, as described above, the increases in the Metro Detroit queue were highly correlated with increases in the aluminum Midwest Premium over the same time period which, in turn, became a growing component of the all-in price of aluminum. Some industrial aluminum users have charged that the longer queues led to higher Midwest Premium prices, costing their companies millions of dollars.¹¹⁵⁰ More broadly, one aluminum user, MillerCoors, estimated that the dysfunctional aluminum market had imposed an estimated "additional \$3 billion expense on companies that purchase

¹¹⁴⁷ Id.

¹¹⁴⁸ Id.

¹¹⁴⁹ 9/9/2013 letter from Aluminum Users Group to LME, "13/208:A201;W076," PSI-AlumUsersGroup-01-000002 - 008, at 004.

¹¹⁵⁰ "Examining Financial Holding Companies: Should Banks Control Power Plants, Warehouses and Oil Refineries?" hearing before the U.S. Senate Banking Subcommittee on Financial Institutions and Consumer Protection, S. Hrg. 113-67 (7/23/2013), prepared testimony of Tim Weiner, Global Risk Manager, Commodities/Metals, MillerCoors LLC, at 9, <http://www.gpo.gov/fdsys/pkg/CHRG-113shrg82568/html/CHRG-113shrg82568.htm>.

aluminum.”¹¹⁵¹ While long queues and increasing Midwest Premium prices were hurting aluminum users, the LME has said that the emergence of increasing premiums “convey[ed] an advantage to the expertise of merchants and brokers, who have built-up strong modelling capabilities around premiums and queues.”¹¹⁵² In addition, as described earlier, at the same time Goldman was approving Metro practices that lengthened its queue, it was ramping up its own aluminum trading operations.

Driving the Queue Length. The Subcommittee investigation found that a significant contributor to the Detroit queue length was a number of large warrant cancellations by a small group of financial institutions, including Deutsche Bank; Red Kite, a London hedge fund; Glencore, a commodities trading firm based in Switzerland; JPMorgan; and Goldman. Deutsche Bank, Red Kite, and Glencore were all involved in “merry-go-round” deals in which aluminum was loaded out of one Metro warehouse and loaded into another. The cancellations involving JPMorgan and Goldman involved metal that they held for themselves. Each of the five financial firms cancelled 100,000 metric tons or more, an amount that would have been unprecedented for Metro’s Detroit warehouses just a few years earlier.

Merry-Go-Round Deals. Metro’s merry-go-round deals took place in 2010, 2012, and 2013. According to a Metro executive, the deals began in the summer of 2010, just a few months after Goldman acquired Metro, when Metro became concerned that owners of aluminum in its warehouses were removing the metal from its warehouses and storing it elsewhere, leading to a loss of revenue.¹¹⁵³ In an effort to curb that loss, Metro executives and the Metro Board of Directors, composed exclusively of Goldman employees, made a strategic decision to – for the first time – “market” Metro incentives to metal owners that already had metal stored in Metro’s warehouses.¹¹⁵⁴

Ultimately, those efforts led to at least six deals with three customers: Deutsche Bank, Red Kite, and Glencore.¹¹⁵⁵ Although each deal involved millions of dollars, none was formalized in a signed

¹¹⁵¹ Id., prepared testimony of Tim Weiner, Global Risk Manager, Commodities/Metals, MillerCoors LLC, at 4.

¹¹⁵² 11/2013 “Summary Public Report of the LME Warehousing Consultation,” prepared by LME, at 29, <https://www.lme.com/~media/Files/Warehousing/Warehouse%20consultation/Public%20Report%20of%20the%20LME%20Warehousing%20Consultation.pdf>.

¹¹⁵³ Subcommittee interview of Christopher Wibbelman (10/6/2014).

¹¹⁵⁴ Id.

¹¹⁵⁵ Subcommittee interviews of Jacques Gabillon, (10/14/2014) and Christopher Wibbelman (10/24/2014). See also 10/22/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-22-000001 - 004.

contract.¹¹⁵⁶ Instead, details were spelled out in an unsigned contract, emails, and invoices.¹¹⁵⁷

In each deal, Metro provided financial incentives to the owner of the aluminum stored in its warehouses to: (1) wait in the queue; (2) upon reaching the head of the queue, load out its metal from a Metro warehouse; (3) deliver the metal to another nearby Metro warehouse; and (4) warrant the metal while in the second Metro warehouse. Each deal led to aluminum being loaded out of one Metro warehouse in Detroit and loaded right back into another, a practice that one Metro forklift operator later told the New York Times amounted to a “merry-go-round of metal.”¹¹⁵⁸

Because Metro used a single exit queue for all of its Detroit warehouses combined, when a warehouse client in a merry-go-round deal got to the head of the queue and started loading out metal, that client essentially blocked the exits for any other metal owner seeking to leave the Metro Detroit warehouse system. In addition, instead of 1,500 or 3,000 metric tons of aluminum leaving the Metro warehouse system each day as envisioned by the LME’s daily minimum load out requirement, in the merry-go-round deals, the aluminum that left the Detroit warehouses nearly all came right back into the Metro warehouse system.¹¹⁵⁹ The net impact for Metro was that, each day in which the front of the queue was occupied by a metal owner executing a merry-go-round deal, its warehouses lost virtually no metal. At the same time, the merry-go-round deals made money for Metro, not only by preventing the loss of metal, but also by helping to lengthen the Detroit queue, extending the period during which other metal owners had to pay rent to Metro.

Increases in the Detroit queue length were highly correlated with increases in the Midwest Premium, which ultimately affected the entire aluminum market. Goldman, through its employees on the Metro Board of Directors, reviewed and approved each of the merry-go-round deals that lengthened the queue, and throughout the years in which the merry-go-round transactions took place, Goldman actively traded aluminum.

¹¹⁵⁶ Subcommittee interview of Christopher Wibbelman (10/6/2014).

¹¹⁵⁷ See, e.g., Glencore Ltd. invoice to Metro (6/21/2013), GSPSICOMMODS00046873; Red Kite Master Fund Ltd. invoice to Metro (11/13/2012), GSPSICOMMODS00046876.

¹¹⁵⁸ Subcommittee interview of Jacques Gabillon (10/14/2014); “A Shuffle of Aluminum, but to Banks, Pure Gold,” New York Times, David Kocieniewski, http://www.nytimes.com/2013/07/21/business/a-shuffle-of-aluminum-but-to-banks-pure-gold.html?pagewanted=all&_r=1&.

¹¹⁵⁹ The vast majority of the metal that came back into a Metro warehouse was ultimately placed back on warrant, while, as of earlier this year, a fraction of it had not been placed on warrant.

(i) Deutsche Bank Merry-Go-Round Deal

Goldman acquired Metro in February 2010, and Metro conducted its first merry-go-round deal in September 2010, with DB Energy Trading, a subsidiary of Deutsche Bank.¹¹⁶⁰ It involved 100,000 metric tons of aluminum, most of which was loaded out of one Metro warehouse and immediately loaded into another. The transaction was not suggested by Deutsche Bank, but by Metro personnel, and reviewed and approved by Metro senior executives and the Metro Board of Directors' Commercial Decisions Subcommittee, composed exclusively of Goldman employees.¹¹⁶¹

According to Deutsche Bank, the 100,000 metric tons of aluminum at issue was held by Deutsche Bank for its own account as part of a so-called "cash and carry" trade.¹¹⁶² Consistent with its general practice, Deutsche Bank entered into negotiations with Metro's agent seeking discounted rent.¹¹⁶³ According to Deutsche Bank, Metro declined to provide the discounted rent directly, but suggested instead that Deutsche Bank move the metal to a cheaper off-warrant storage site at other Metro warehouses.¹¹⁶⁴ According to Deutsche Bank, Metro proposed that Deutsche Bank cancel the warrants for the aluminum stored in the LME-approved warehouses, wait in the queue to load out the metal, transport the aluminum to other Metro warehouses, and after a period of less expensive or free rent, re-warrant the metal.¹¹⁶⁵

While both Deutsche Bank and Metro have acknowledged to the Subcommittee that the proposed transaction did, in fact, occur, no formal written contract was signed by both parties. Instead, the terms of the agreement were spelled out in a contract that was signed by Deutsche Bank employees,¹¹⁶⁶ but which Metro CEO Christopher Wibbelman told

¹¹⁶⁰ 9/15/2010 Warrant Finance Agreement between DB Energy Trading LLC and Metro, GSPSICOMMODS00047438.

¹¹⁶¹ Subcommittee interview of Christopher Wibbelman (10/6/2014).

¹¹⁶² Subcommittee briefing by Deutsche Bank legal counsel (10/22/2014). A "cash and carry" trade occurs when a trader buys physical metal, often through LME warrants, and enters into a forward contract to sell the metal at a specified price on a specified date in the future. The trader seeks to set a price in the forward contract that will exceed the cost of storing, insuring, and financing the purchase of the metal during the period until the sale is executed. The prolonged "contango" in the aluminum market during 2011 and 2012, in which future aluminum prices were higher than current prices, made these types of trades profitable. Banks and their holding companies, with access to low-cost financing, increasingly entered into cash and carry trades. For more information on these trades, see, e.g., "Aluminum Premiums Seen by Rusal Exceeding 500 on Demand," Bloomberg, Agnieszka Troszkiewicz (6/3/2014), <http://www.bloomberg.com/news/2014-06-03/aluminum-premiums-seen-by-rusal-exceeding-500-on-demand.html>; 11/7/2014 email from Deutsche Bank legal counsel to Subcommittee, PSI-DB-01-000001 - 003, at 002.

¹¹⁶³ 11/7/2014 email from Deutsche Bank legal counsel to Subcommittee, PSI-DB-01-000001 - 003, at 002.

¹¹⁶⁴ Subcommittee briefing with Deutsche Bank legal counsel (10/22/2014).

¹¹⁶⁵ Id.

¹¹⁶⁶ See 9/15/2010 Warrant Finance Agreement between DB Energy Trading LLC and Metro, GSPSICOMMODS00047438.

the Subcommittee was never signed by Metro.¹¹⁶⁷ The Subcommittee understands that an agreement was nevertheless reached generally in line with the terms of the contract signed by Deutsche Bank.

The agreement involved Deutsche Bank cancelling warrants associated with 100,000 metric tons of aluminum stored in Metro's Detroit warehouses, requesting "the maximum number of [load-out] Slots" in the queue, loading the metal out of the warehouses, and transporting the metal to other Metro warehouses in Detroit.¹¹⁶⁸ By requesting the "maximum number of Slots," Deutsche Bank essentially ensured that the aluminum in the deal would fill Metro's load-out requirement from the day the first lot of Deutsche Bank metal reached the front of the queue until all of its aluminum was loaded out, which would take more than 65 business days at the minimum load-out rate of, then, 1,500 metric tons per day. The agreement also involved Metro capping Deutsche Bank's rent while its aluminum was in the queue waiting to be loaded out.¹¹⁶⁹

According to the unsigned contract, Deutsche Bank was responsible for paying \$42.95 per metric ton in costs to move the metal from one Metro warehouse to another. However, the contract also contained a provision in which Metro committed to pay the bank the same amount, \$42.95, for every metric ton of metal that was subsequently re-warranted and stored at a Metro warehouse. The effect was to offset Deutsche Bank's costs so long as its aluminum was re-warranted and stored in another Metro warehouse, essentially enabling Deutsche Bank to move its metal to the new location for free.¹¹⁷⁰ In addition, according to Deutsche Bank, Metro then provided the bank with discounts equal to "roughly 15 cents/ton/day for the period from September 15, 2010 to February 16, 2011," a substantial savings.¹¹⁷¹

Finally, the agreement imposed a substantial penalty on Deutsche Bank if it elected to do anything other than re-load the aluminum into a new Metro Detroit warehouse and re-warrant it. The agreement provided that, if Deutsche Bank sold the metal to a third party at any point during the five months covered by the deal, it would have to pay Metro a fee of \$65 per metric ton, or about \$6.5 million for 100,000 metric tons of aluminum.¹¹⁷²

¹¹⁶⁷ Subcommittee interview of Christopher Wibbelman (10/6/2014).

¹¹⁶⁸ 9/15/2010 Warrant Finance Agreement between DB Energy Trading LLC and Metro, GSPSICOMMODS00047438.

¹¹⁶⁹ *Id.*

¹¹⁷⁰ As stated by Deutsche Bank's legal counsel, "the net cost to Deutsche Bank of moving this metal was zero." 11/7/2014 email from Deutsche Bank legal counsel to Subcommittee, PSI-DB-01-000001 - 003, at 002.

¹¹⁷¹ *Id.*

¹¹⁷² 9/15/2010 Warrant Finance Agreement between DB Energy Trading LLC and Metro, GSPSICOMMODS00047438.

The agreement essentially provided Deutsche Bank with the rent discount it had sought, but instead of applying the discount in a straightforward manner to the aluminum already stored in a Metro warehouse – a discount permissible under LME rules – Metro required Deutsche Bank to cancel its warrants, join the queue, leave the warehouse, and move its metal to a new Metro warehouse. The question is why Metro imposed that merry-go-round process as the condition for Deutsche Bank’s rent discount.

There appears to have been no logistical reason to move the metal outside of the LME- approved storage space. None of the Metro Board of Directors presentations from that period discuss a shortage of LME- approved storage space. To the contrary, they show LME inventory levels in Detroit dropping immediately following the deal.¹¹⁷³ Further, Metro CEO Christopher Wibbelman told the Subcommittee that he was not aware of any shortage of LME-storage capacity in Metro’s Detroit facilities at that time.¹¹⁷⁴

The most immediate consequence of the transaction was Deutsche Bank’s cancellation of warrants on 100,000 metric tons of aluminum, which immediately contributed to the queue at the Detroit warehouses. On September 15, 2010, there was a short queue in Detroit of about 20 days.¹¹⁷⁵ One week later, on September 22, 2010, a few days after Deutsche Bank cancelled the warrants, Metro had a queue of nearly 120 days, a significant portion of which was attributable to the bank’s warrant cancellation.¹¹⁷⁶ The presence of that nearly 120-day queue meant that any metal owner that cancelled warrants after September 22, 2010, would not only have to wait behind Deutsche Bank for their metal to be loaded out of the warehouse, but would also have to pay rent to Metro while waiting.

Of the original 100,000 metric tons of aluminum subject to the deal, approximately 70,000 metric tons left one Metro warehouse for another Metro warehouse in Detroit, and were then re-warranted.¹¹⁷⁷ The remaining 30,000 metric tons were placed back on warrant before they were actually loaded out.¹¹⁷⁸ Thus, in the end, all 100,000 metric tons were back on warrant at Metro at the end of the deal. The re-warranting of that metal ensured that if Deutsche Bank wanted to exit

¹¹⁷³ See, e.g., 11/15/2010 “MITSU Holdings LLC Board of Directors Meeting,” prepared by Metro and Goldman, GSPSICOMMODS00009559 - 614, at 566.

¹¹⁷⁴ Subcommittee interview of Christopher Wibbelman (10/6/2014).

¹¹⁷⁵ See undated “HARBOR’s estimated aluminum load-out waiting time in LME Detroit Warehouses vs HARBOR’s MW Transactional Premium,” prepared by Harbor Aluminum, PSI-HarborAluminum-03-000004.

¹¹⁷⁶ Id.

¹¹⁷⁷ 11/7/2014 email from Deutsche Bank legal counsel to Subcommittee, PSI-DB-01-000001 - 003

¹¹⁷⁸ Id.

the Metro warehouse system in the future, it would have to rejoin the queue once more before it could take possession of its aluminum.

Expressing Concerns. Metro’s merry-go-round transaction with Deutsche Bank raised concerns with at least one senior Metro executive. In early December 2010, Mark Askew, Metro’s Vice President of Marketing, sent an email to Metro CEO Christopher Wibbelman expressing concerns about the Deutsche Bank deal.¹¹⁷⁹ Mr. Askew relayed that a customer had “asked about rumours they’d heard on 100 k cancellation in Sep[tember] that we were blocking others.”¹¹⁸⁰ The only 100,000 metric ton cancellation in September at Metro was the one involving Deutsche Bank. The rumor, as relayed by Mr. Askew, focused explicitly on whether Metro was “blocking others.”

Mr. Askew’s email also expressed his own concern about the transaction: “I remain concerned, as I have expressed from [the] start, regarding ‘Q management’ etc (esp in light of conversation Michael said he had with Paco on the same a few weeks back).”¹¹⁸¹ Mr. Wibbelman explained to the Subcommittee that Mr. Askew had “never liked the idea” of offering financial incentives to existing Metro customers.¹¹⁸² Mr. Wibbelman denied that the Deutsche Bank deal was designed to help put a queue in place to block other clients from quickly leaving the Detroit warehouses.¹¹⁸³

As explained earlier, the longer Metro Detroit warehouse queue had two immediate consequences. It forced other metal owners to wait in line before they could exit and pay rent to Metro while waiting. In addition, the longer queue was highly correlated with higher Midwest Premiums which, according to some experts and industrial users, increased the all-in price for aluminum. Higher aluminum prices increased the value of aluminum stockpiles and could also be used to benefit trading activities in the aluminum market.

(ii) Four Red Kite Merry-Go-Round Deals

Metro conducted four merry-go-round deals with Red Kite, a London-based hedge fund that is active in the physical commodities markets. In each of the years 2011, 2012, and 2013, Red Kite, through either Red Kite Master Fund Ltd. or Red Kite Management Ltd., was

¹¹⁷⁹ 12/4/2010 email from Mark Askew, Metro, to Christopher Wibbelman, Metro (12/4/2010), GSPSICOMMODS00047422 - 430.

¹¹⁸⁰ Id.

¹¹⁸¹ Id. The Subcommittee was told that “Paco” referred to a competitor, Pacorini Metals, which operated a metals warehouse in Vlissingen, Netherlands, which was also developing an unprecedented queue. Subcommittee interview of Christopher Wibbelman (10/24/2014).

¹¹⁸² Id. Mr. Wibbelman further told the Subcommittee that he believed that part of Mr. Askew’s dislike of the deals was that Mr. Askew was not a part of them and was not compensated for them as a salesperson. Id.

¹¹⁸³ Id.

one of Metro's top ten customers.¹¹⁸⁴ The four merry-go-round deals all took place in 2012, and involved a total of nearly 440,000 metric tons of aluminum.¹¹⁸⁵ Approximately 410,000 metric tons were loaded out of Metro warehouses and right back into other Metro warehouses.¹¹⁸⁶ Because a small amount of metal never left Metro, a total of nearly 95% of the nearly 440,000 metric tons of aluminum either never left Metro or was loaded out of Metro only to be loaded back in to Metro warehouses. Each of the four Red Kite deals, like the Deutsche Bank deal, was reviewed and approved by Metro senior executives and the Goldman employees on the Metro Board's Commercial Decisions Subcommittee.¹¹⁸⁷

First Three Red Kite Deals. The first three deals with Red Kite took place from January through March of 2012. In those transactions, Metro offered financial incentives for Red Kite to cancel warrants on a combined total of 250,000 metric tons of aluminum, wait in line, load out the metal from Metro warehouses, load it back into other Metro warehouses, and re-warrant the metal.¹¹⁸⁸ The incentives offered by Metro included: (1) paying a "day one" cash incentive to the metal owner when the metal warrants were cancelled,¹¹⁸⁹ (2) offering a period of free rent, and (3) paying another cash incentive for re-warranting.¹¹⁹⁰ As in the Deutsche Bank deal, each transaction required Red Kite to pay a substantial cash penalty to Metro if Red Kite did anything other than re-load the metal into a Metro warehouse and re-warrant it.¹¹⁹¹ The terms for all three deals, each of which involved millions of dollars, were set out, not in formal signed contracts, but in emails and invoices.¹¹⁹²

Expressing Additional Concerns. Around the same time that Metro entered into the first of the series of Red Kite deals, in February 2012, the Metro Vice President of Marketing, Mark Askew, sent an email to Michael Whelan, Metro's Vice President of Business Development, copying Metro CEO Christopher Wibbelman and Metro

¹¹⁸⁴ See 10/20/2014 letter from Goldman legal counsel to Subcommittee, GPSICOMMODS000047431 - 432.

¹¹⁸⁵ See 12/19/2012 "MITSI Holdings LLC Board of Directors Meeting," prepared by Metro and Goldman, GPSICOMMODS00009332 - 354, at 348 (indicating a combined total of 410,000 metric tons, which later increased by another 30,000 metric tons, when the final deal rose from 160,000 to nearly 190,000 warrants).

¹¹⁸⁶ Id.

¹¹⁸⁷ Subcommittee interview of Jacques Gabillon (10/14/2014).

¹¹⁸⁸ See 3/21/2012 "MITSI Holdings LLC Board of Directors Meeting," prepared by Metro and Goldman, GPSICOMMODS00009423 - 449, at 437.

¹¹⁸⁹ This incentive may have been intended to off-set fees associated with the subsequent loading out of metal.

¹¹⁹⁰ 3/21/2012 "MITSI Holdings LLC Board of Directors Meeting," prepared by Metro and Goldman, GPSICOMMODS0000942 - 449, at 437.

¹¹⁹¹ Id.

¹¹⁹² Subcommittee interview of Christopher Wibbelman (10/6/2014).

Chief Operating Officer Leo Prichard, again expressing concerns about engaging in “queue management.”¹¹⁹³

Neither Mr. Wibbelman nor Mr. Prichard responded.¹¹⁹⁴ Mr. Whelan responded to Mr. Askew’s email by defending the transaction:

“[W]e are not participating in queue management. We have done an off warrant storage deal with a customer who was going to remove the metal and place [it] in an off warrant warehouse. We were able to provide an off-warrant storage option and make a commercial deal that doesn’t in any way violate the rules of the LME.”¹¹⁹⁵

While Mr. Whelan’s email described the Red Kite deal as “off warrant storage,” all of the 250,000 metric tons of metal involved in the first three deals were subsequently re-warranted.¹¹⁹⁶ So were the approximately 160,000 tons of aluminum moved to new Metro warehouses in the fourth and final deal. In addition, while Mr. Whelan stated that the merry-go-round transactions did not violate LME rules, Metro told the Subcommittee it had never actually consulted with the LME to obtain its view of the deals.¹¹⁹⁷

Although Mr. Askew’s concerns about how the queue was being managed were directly communicated in writing to senior Metro employees on two occasions, Jacques Gabillon, Chairman of the Metro Board of Directors, told the Subcommittee that he was not aware of them.¹¹⁹⁸ While the deals themselves were discussed at Metro’s Board meetings, Mr. Askew’s concerns appear to have not been.¹¹⁹⁹ Minutes from a March 2012 Metro Board meeting where the “off-warrant deals” were discussed, for example, do not mention Mr. Askew’s concerns or indicate any discussion of whether the deal was appropriate or consistent with LME rules.¹²⁰⁰

¹¹⁹³ 2/25/2012 email from Mark Askew, Metro, to Michael Whelan, Leo Prichard and Christopher Wibbelman, Metro, GSPSICOMMODS00047422 - 430, at 423.

¹¹⁹⁴ Subcommittee interview of Christopher Wibbelman (10/6/2014).

¹¹⁹⁵ 2/25/2012 email from Michael Whelan, Metro, to Mark Askew, Leo Prichard and Christopher Wibbelman, Metro, GSPSICOMMODS00047422, at 423.

¹¹⁹⁶ See 12/19/2012 “MITSI Holdings LLC Board of Directors Meeting,” prepared by Metro and Goldman, GSPSICOMMODS00009332, at 348.

¹¹⁹⁷ Subcommittee interviews of Christopher Wibbelman (10/24/2014) and Jacques Gabillon (10/14/2014). As discussed below, without commenting specifically about Metro, the LME told the Subcommittee that “the LME would view such behavior as a contravention of the “spirit” of the relevant requirements, it may be difficult to argue that it constituted a contravention of the “letter” of those requirements.”

¹¹⁹⁸ Subcommittee interview of Jacques Gabillon (10/14/2014).

¹¹⁹⁹ Subcommittee interviews of Christopher Wibbelman (10/6/2014) and Jacques Gabillon (10/14/2014).

¹²⁰⁰ 3/21/2012 “MITSI Holdings LLC Board of Directors Meeting,” prepared by Metro and Goldman, GSPSICOMMODS00009423 - 449.

Mr. Askew's earlier email raised the issue of whether the merry-go-round deals were being used for "blocking others" – preventing metal owners from gaining possession of their stored metal within a reasonable period of time. The deals also created a false impression that metal was leaving the Metro system when, in fact, the metal was simply being moved around. Another concern is that the merry-go-round deals contributed to a longer warehouse queue which, in turn, was highly correlated with higher Midwest Premium prices, leading to charges by industrial users that the queues were distorting the aluminum market and increasing aluminum costs for consumers. There is no record, however, of any of those problems being discussed at Metro Board meetings at the time.

Fourth Red Kite Deal. After Mr. Askew's email, Metro entered into a fourth merry-go-round deal with Red Kite. That fourth and final deal between Red Kite and Metro was the largest. On November 5, 2012, Metro's warehouse manager emailed representatives of Red Kite about a large amount of aluminum that Red Kite was then storing at Metro warehouses in Detroit.¹²⁰¹ The metal was being held in the name of Barclays Bank as part of a financing agreement between the bank and Red Kite.¹²⁰² When the Metro manager emailed Red Kite, the aluminum was still under LME warrant in the Detroit warehouses.¹²⁰³

The Metro email contained terms for another merry-go-round deal under which Red Kite was to "immediately" cancel warrants for 150,000 metric tons of metal,¹²⁰⁴ place the metal "asap" in the Detroit queue and, upon reaching the front of the queue, load the metal out of one Metro warehouse and into another Metro warehouse in the Detroit area.¹²⁰⁵ In exchange, Metro agreed to pay Red Kite cash incentives totaling \$196 per metric ton of metal that completed the loop and was re-warranted.¹²⁰⁶

The cash incentives had two components. Like the previous Red Kite deals, Metro promised to pay a "day one" incentive, in this case equal to \$36 per metric ton, when Red Kite cancelled the warrants.¹²⁰⁷

¹²⁰¹ See 11/5/2012 email from Gabriella Vagnini, Metro, to Barry Feldman, Red Kite, GSPSICOMMODS00046684.

¹²⁰² See 9/26/2014 email from Barclays Capital Inc. to Subcommittee, "Barclays [BARC-AMER.FID670446]," PSI-Barclays-02-000001.

¹²⁰³ See 11/5/2012 email from Gabriella Vagnini, Metro, to Barry Feldman, Red Kite, GSPSICOMMODS00046684.

¹²⁰⁴ Id. The total amount of aluminum in the transaction later increased to nearly 190,000 tons. 4/15/2012 Simmons & Simmons letter to LME, Appendix A, GSPSICOMMODS00046850.

¹²⁰⁵ 11/5/2012 email from Gabriella Vagnini, Metro, to Barry Feldman, Red Kite, GSPSICOMMODS00046684.

¹²⁰⁶ See 4/15/2012 Simmons & Simmons letter to LME, Appendix A, GSPSICOMMODS00046850, at 854.

¹²⁰⁷ See 3/21/2012 "MITSI Holdings LLC Board of Directors Meeting," prepared by Metro and Goldman, GSPSICOMMODS00009423, at 437. See also Red Kite Master Fund Limited invoice to Metro (11/13/2012), GSPSICOMMODS00046876 (reflecting an amount of "USD 36.00 PMT").

The deal provided a second cash incentive of \$160 per metric ton when the metal was re-warranted.¹²⁰⁸ Together, Red Kite would receive \$36 per metric ton upon cancellation and another \$160 per metric ton upon re-warranting at other Metro warehouses, for a combined cash incentive of \$196 per metric ton.¹²⁰⁹ In addition, Metro committed to discount the rent it would charge Red Kite at the new warehouse locations and, as in other deals, pay the cost of shipping the metal from one warehouse to the other.

While Red Kite retained the right to either sell the metal when it reached the front of the queue or move it to a warehouse company other than Metro, as before, the Metro agreement imposed a penalty if Red Kite did so. Specifically, if Red Kite did not direct the metal back to Metro warehouses, Red Kite would have to pay Metro a penalty of about \$66 per metric ton.¹²¹⁰

The transaction proposed by Metro involved tens of millions of dollars, but was never formalized in a signed contract; the November 5 Metro email and a handful of invoices¹²¹¹ appear to be the only documentation of the details of the agreement.¹²¹² Red Kite started cancelling its warrants just two days later, on November 7, 2012. Over the next six weeks, the hedge fund continued to cancel warrants as the amount of aluminum included in the deal reached nearly 190,000 metric tons.¹²¹³ Prior to the deal, the queue in Detroit was just over 300 days long.¹²¹⁴ By the end of December, just after the last of Red Kite's cancellations, the queue was just under 500 days, with a significant portion of that increase attributable to Red Kite's warrant cancellations.¹²¹⁵

In the end, of the nearly 190,000 metric tons covered by the fourth Red Kite merry-go-round deal, about 182,000 metric tons were loaded

¹²⁰⁸ See, e.g., 1/28/2014 Red Kite Master Fund Ltd. invoice to Metro, GSPSICOMMODS00046879 (reflecting an amount of "USD 160.00 PMT"); 4/15/2012 Simmons & Simmons letter to LME, Appendix A, GSPSICOMMODS00046850, at 854.

¹²⁰⁹ The "day one" incentive may have been intended to offset certain fees and costs associated with loading out the metal.

¹²¹⁰ The \$66 per ton fee represented the cost of the \$36 prepaid incentive plus an additional \$30 per ton. 4/15/2012 Simmons & Simmons letter to LME, Appendix A, GSPSICOMMODS00046850, at 854.

¹²¹¹ Subcommittee interview of Christopher Wibbelman (10/6/2014). See also, e.g., 11/13/2012 Red Kite Master Fund Ltd. invoice to Metro, GSPSICOMMODS00046876 (reflecting an amount of "USD 36.00 PMT"); 12/20/2012 Red Kite Master Fund Ltd. invoice to Metro, GSPSICOMMODS00046877; 1/28/2014 Red Kite Master Fund Ltd. invoice to Metro, GSPSICOMMODS00046878; 1/28/2014 Red Kite Master Fund Ltd. invoice to Metro, GSPSICOMMODS00046879 (reflecting an amount of "USD 160.00 PMT").

¹²¹² Subcommittee interview of Christopher Wibbelman (10/6/2014).

¹²¹³ 4/15/2012 Simmons & Simmons letter to LME, at 4, GSPSICOMMODS00046850.

¹²¹⁴ See undated "HARBOR's estimated aluminum load-out waiting time in LME Detroit Warehouses vs HARBOR's MW Transactional Premium," prepared by Harbor Aluminum, PSI-HarborAluminum-03-000004.

¹²¹⁵ Id..

out of Metro warehouses.¹²¹⁶ Of that, about 160,000 metric tons simply went out of some Metro warehouses and back into other Metro warehouses.¹²¹⁷ Thus, nearly 90% of the metal shipped as pursuant to the deal went from Metro right back to Metro. Metro records show that, pursuant to this deal, Metro arranged for more than 4,300 truck shipments, moving the metal from some Metro warehouses to other Metro warehouses in the Detroit area, at a cost of more than \$1 million.¹²¹⁸ That came on top of the \$26 million that Red Kite billed Metro for incentive payments under the deal.¹²¹⁹

(iii) Glencore Merry-Go-Round Deal

In February 2013, Metro entered into the sixth and final merry-go-round deal disclosed by Goldman. The deal was struck with Glencore, a Swiss company active in physical commodity markets. The transaction involved Glencore's loading out about 91,400 metric tons of aluminum from Metro warehouses in Detroit, only to load the same amount into other Metro warehouses nearby, and warranting the metal. Metro's records reflect that all of the approximately 90,000 metric tons simply shuffled between different Metro warehouses.¹²²⁰

The Glencore deal differed from Metro's other merry-go-round agreements in that it did not require Glencore to first cancel its warrants. That was because the company had already cancelled the warrants, and the metal was already in the queue to exit Metro's warehouses.¹²²¹ Prior to execution of the deal, as with the other merry-go-round deals, the Glencore deal was reviewed and approved by senior Metro executives and by the Metro Board's Commercial Decisions Subcommittee, composed exclusively of Goldman employees. In addition, it was

¹²¹⁶ 4/15/2012 Simmons & Simmons letter to LME, Appendix A, GSPSICOMMODS00046850. The remaining 21,600 metric tons – totaling about 10% of the original deal amount – were shipped outside of the Metro warehouse system, because Red Kite had sold the metal to a third party.

¹²¹⁷ The 21,600 tons were purchased from Red Kite and shipped to another warehouse. See 4/15/2012 Simmons & Simmons letter to London Metal Exchange, Appendix A, GSPSICOMMODS00046850.

¹²¹⁸ 4/15/2012 Simmons & Simmons letter to LME, shipment spreadsheet, GSPSICOMMODS00046902.

¹²¹⁹ Id. at Invoice Summary, GSPSICOMMODS00046872.

¹²²⁰ However, according to Glencore, at least 70,000 metric tons was metal that had just previously been on-warrant at Metro. 11/7/2014 email from Glencore to Subcommittee, PSI-Glencore-01-000001, at 003. According to Goldman and Glencore, the deal involved a warrant incentive for 50,000 metric tons, as well as two swaps, one for 20,000 metric tons and another for 21,000. In addition, according to Glencore there was another deal that involved a separate warrant incentive for 25,000 to 75,000 additional metric tons. 11/7/2014 email from Glencore to Subcommittee, PSI-Glencore-01-000001 - 003, at 003.

¹²²¹ 4/15/2012 Simmons & Simmons letter to LME, Appendix A, GSPSICOMMODS00046850; 11/7/2014 email from Glencore to Subcommittee, PSI-Glencore-01-000001 - 003, at 002.

presented to the full Metro Board which, again, consisted solely of Goldman employees.¹²²²

According to Goldman, the Glencore deal consisted of the the following components. The first component, which covered about 50,000 metric tons of aluminum, was similar to past deals, in that Metro agreed to pay a cash incentive, this time \$198 per ton, for any metal that the company subsequently re-warranted at a Metro warehouse.¹²²³

The second component involved two physical aluminum swaps. In the first swap, Metro arranged for Glencore to receive 21,000 metric tons of aluminum free on truck (FOT) in Baltimore from another metal owner, plus \$15 per metric ton from Metro, in return for Glencore's delivering to that third party warrants for 21,000 metric tons in Detroit.¹²²⁴ Mr. Wibbelman explained that Metro was able to help arrange the swap, because the owner of the aluminum in Baltimore had previously committed to shipping more than that amount, which he estimated at approximately 80,000 metric tons, to Metro.¹²²⁵ Mr. Wibbelman explained that Metro simply asked the metal owner to replace the obligation to deliver 21,000 metric tons to Metro with an obligation to deliver 21,000 metric tons to Glencore. The second swap involved Metro's arranging for Glencore to receive 20,000 metric tons of aluminum FOT in Mobile from yet another metal owner, plus \$20 per metric ton from Metro, in return for Glencore's again delivering to that third party warrants for 20,000 metric tons in Detroit.¹²²⁶

By engaging in this transaction, Glencore was able to obtain 41,000 metric tons of aluminum from other warehouses, plus cash. Glencore told the Subcommittee that this transaction also allowed Glencore to save on the costs on shipping metal from Detroit.¹²²⁷ According to Glencore, Metro was able to keep approximately 91,000 metric tons in its Detroit warehouses on warrant, as well as save the costs of shipping 21,000 metric tons of metal to Detroit from Baltimore.¹²²⁸ When the aluminum covered by the merry-go-round deal reached the head of the queue, each day on which that metal was loaded

¹²²² See 4/15/2012 Simmons & Simmons letter to LME, at 6, GSPSICOMMODS00046839; 12/19/2012 "MITSU Holdings LLC Board of Directors Meeting," prepared by Metro and Goldman, GSPSICOMMODS00009332 - 354, at 348.

¹²²³ See 6/21/2013 Glencore Ltd. invoice to Metro, GSPSICOMMODS00046873 (reflecting 50,046.872 metric tons at \$198 per metric ton); Subcommittee briefing by Glencore (10/31/2014).

¹²²⁴ See 9/24/2013 Glencore Ltd. invoice to Metro, GSPSICOMMODS00046875 (reflecting 21,407.022 metric tons at \$15 per metric ton); Subcommittee briefing by Glencore (10/31/2014).

¹²²⁵ Subcommittee interview of Christopher Wibbelman (10/24/2014).

¹²²⁶ See 6/21/2013 Glencore Ltd. invoice to Metro, GSPSICOMMODS00046874 (reflecting 19,949.939 metric tons at \$20.15 per metric ton); Subcommittee briefing by Glencore (10/31/2014).

¹²²⁷ Subcommittee briefing by Glencore (10/31/2014).

¹²²⁸ Id.

out, Metro experienced no net loss of metal, while other metal owners were effectively blocked from leaving the Metro system.¹²²⁹

As a result of the deal, all 91,000 metric tons covered by the deal were subsequently warranted.¹²³⁰ To execute the transaction, Metro arranged for more than 2,200 individual truck shipments between Metro warehouses in the Detroit area and paid nearly \$500,000 for those shipments.¹²³¹ In addition, a Metro invoice summary indicated that, as of March 2014, the warehouse had been billed about \$11 million by Glencore for the incentive payments under the agreement.¹²³²

At about the time of this deal, Michael Whelan, who had taken the lead on this deal as well as the other merry-go-round transactions, was promoted.¹²³³ After more than a dozen years at Metro, Mark Askew resigned.¹²³⁴

Transporting Merry-Go-Round Metal. When asked whether the merry-go-round deals complied with LME rules, Jacques Gabillon, Chairman of the Metro Board of Directors, as well as head of Goldman's Global Commodities Principal Investing group, told the Subcommittee that they did.¹²³⁵ He stated that, if metal associated with cancelled warrants was loaded back into the same warehouse from which it came, that would have violated an LME requirement that precludes warehouses from counting metal that is off warrant but "still on the Warehouse's premises" toward their load-out obligations.¹²³⁶ But the LME rules did not preclude a warehouse from loading out metal and then moving into a nearby warehouse belonging to the same company, according to Mr. Gabillon.¹²³⁷ He told the Subcommittee that, to ensure no LME violation occurred, Metro had set up a system to exclude the originating warehouse from the list of possible destinations for metal

¹²²⁹ While the deal did not involve new cancellations, and so did not, by itself, lengthen the queue, by remaining in line, it blocked the exits and ensured that metal that would otherwise have been loaded out of Metro's system stayed within Metro.

¹²³⁰ 4/15/2012 Simmons & Simmons letter to LME, Appendix A, GSPSICOMMODS00046850. According to Glencore, approximately 71,000 metric tons of the metal that was ultimately placed on warrant at Metro was previously on warrant at Metro, while the remaining 20,000 tons were not previously on warrant at Metro. 11/7/2014 email from Glencore to Subcommittee, PSI-Glencore-01-000001 - 003, at 003. Nevertheless, the net effect was that Metro kept 91,000 metric tons on warrant at Metro.

¹²³¹ Id. at shipment spreadsheet, GSPSICOMMODS00047097.

¹²³² Id. at Invoice Summary, GSPSICOMMODS00046872.

¹²³³ Subcommittee interview of Christopher Wibbelman (10/6/2014).

¹²³⁴ See "Marketing vice president Askew quits metals warehouse" Reuters (4/12/2013), Metrohttp://www.reuters.com/article/2013/04/12/metals-warehousing-askew-idUSL5N0CZ1HA20130412.

¹²³⁵ Subcommittee interview with Jacques Gabillon (10/14/2014).

¹²³⁶ Id. See also "Terms and conditions applicable to all LME listed warehouse companies," LME website, at ¶6.3.2,

https://www.lme.com/~media/Files/Warehousing/Warehouse%20consultation/Proposed%20revised%20Warehouse%20Agreement.pdf.

¹²³⁷ Subcommittee interview with Jacques Gabillon (10/14/2014).

being loaded out of that warehouse.¹²³⁸ While Mr. Gabillon said that the Metro merry-go-round deals complied with the LME load-out rules, the LME itself has not, to date, made a public determination on that issue, as discussed below.

The Metro system for transporting metal that was part of a merry-go-round deal produced some unusual metal movements. For example, on October 2, 2013, several trucks were loaded with aluminum at a Metro warehouse on Lafayette Street in Mount Clemens, Michigan, destined for another Metro warehouse about twelve miles away. That same day, several trucks were loaded with aluminum at a third Metro warehouse in New Baltimore, Michigan, and shipped to the Lafayette Street warehouse. The next day, the Lafayette Street warehouse again shipped out several truckloads of aluminum only to be on the receiving end of metal shipments the day after that.¹²³⁹ In short, over the space of two days, the Lafayette Street warehouse saw truckloads of virtually identical aluminum shipments depart, arrive, depart, and arrive again.

On another occasion, in November 2013, Metro loaded aluminum out of one warehouse and moved it into another warehouse about 200 feet away across a parking lot.¹²⁴⁰ Goldman told the Subcommittee that warehouse personnel didn't know whether the metal was moved across the parking lot on the property to the second warehouse, or instead was driven around the block on public streets.¹²⁴¹ In any event, multiple trucks trundled tons of aluminum from one warehouse location to the other just a few feet away.¹²⁴²

On another three-day period, in December 2013, pursuant to a merry-go-round deal, trucks carrying tons of aluminum transported that aluminum to and from the exact same warehouses in a circular pattern at odds with rational warehouse activity. The trucks loaded the aluminum from the first warehouse, unloaded it at the second, picked up different lots of aluminum from the second warehouse, and drove it to the first where it was unloaded. Those trucks bearing similar loads of aluminum did not transport the metal for free, but imposed substantial costs on Metro to carry out the transactions.

Thousands of similar shipments occurred during the course of Metro's merry-go-round deals. In fact, according to Goldman, between February 2010 and January 2014, more than 625,000 tons of aluminum were loaded out of a Metro warehouse in Detroit only to be loaded right back into another Metro facility in Detroit, all part of the Metro metal

¹²³⁸ *Id.*

¹²³⁹ See 4/15/2012 Simmons & Simmons letter to LME, chart, GSPSICOMMODS00046906 - 615.

¹²⁴⁰ See Spreadsheet prepared by Goldman, GSPSICOMMODS00046902, at 974 - 975.

¹²⁴¹ Subcommittee interview of Christopher Wibbelman (10/24/2014).

¹²⁴² See Spreadsheet prepared by Goldman, GSPSICOMMODS00046902, at 974 - 975.

merry-go-round.¹²⁴³ In the end, while the truck movements created a false impression that metal was actually leaving the Metro warehouses, in fact, almost all of the metal was simply being moved around the warehouse system in Detroit.

Reacting to the Metro Merry-Go-Round. Metro's practice of loading metal out of one Metro warehouse only to load it back into another Metro warehouse came to the public's attention through a July 20, 2013, front-page New York Times article that disclosed the practice and raised fresh concerns about the integrity of the aluminum market.¹²⁴⁴ The article quoted a former Metro forklift operator who described a "merry-go-round of metal," and indicated that the practice had become a running joke among some warehouse workers.¹²⁴⁵

On July 23, 2013, the Senate Banking Subcommittee on Financial Institutions and Consumer Protection held a hearing on bank involvement with physical commodities, and focused attention more broadly on the Metro Detroit warehouse queue, raising concerns that it was distorting the aluminum market and inflating aluminum prices.¹²⁴⁶ One witness from MillerCoors testified that companies like Metro had created bottlenecks that slowed the removal of aluminum from their warehouses, and forced metal owners to pay additional rent. He further testified that those actions had cost MillerCoors "tens of millions of dollars in excess premiums over the last several years," and imposed an estimated "additional \$3 billion expense on companies that purchase aluminum."¹²⁴⁷ In an attempt to quiet the uproar, Goldman issued a statement offering, as one media report put it, "to speed up delivery of aluminum to users of the metal and proposed changes to industry rules amid claims that its warehouse unit created shortages and drove up prices."¹²⁴⁸

¹²⁴³ 10/22/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-22-000001 - 004, at 002.

¹²⁴⁴ "A Shuffle of Aluminum, but to Banks, Pure Gold," New York Times, David Kocieniewski, http://www.nytimes.com/2013/07/21/business/a-shuffle-of-aluminum-but-to-banks-pure-gold.html?pagewanted=all&_r=1&_.

¹²⁴⁵ *Id.* Concerns about Metro's lengthening queue and its effect on aluminum markets had begun years earlier. See, e.g., "Wall Street Gets Eyed in Metal Squeeze," Wall Street Journal, Tatyana Shumsky and Andrea Horter (6/17/2011), <http://online.wsj.com/articles/SB10001424052702304186404576389680225394642>.

¹²⁴⁶ See "Examining Financial Holding Companies: Should Banks Control Power Plants, Warehouses, and Oil Refineries?" hearing before the U.S. Senate Banking Subcommittee on Financial Institutions and Consumer Protection, S. Hrg. 113-67 (7/23/2013), opening statement of Subcommittee Chairman Sherrod Brown, <http://www.gpo.gov/fdsys/pkg/CHRG-113shrg82568/html/CHRG-113shrg82568.htm>.

¹²⁴⁷ *Id.*, prepared testimony of Tim Weiner, Global Risk Manager, Commodities/Metals, MillerCoors LLC, at 4.

¹²⁴⁸ "Goldman Sachs Offers Aluminum to Clients Stuck in Queue," Bloomberg, Michael J. Moore and Agnieszka Troszkiewicz (7/31/2013), <http://www.bloomberg.com/news/2013-07-31/goldman-sachs-offers-aluminum-to-clients-stuck-in-queue.html>.

Despite that offer, in August 2013, more than a dozen class action lawsuits were filed against Goldman, Metro, the LME, and others, by aluminum purchasers claiming:

“[D]efendants together arranged to stockpile aluminum in warehouses in the Midwestern portion of the United States and delayed load-outs of such aluminum, causing storage costs to increase. This led to an increase in the Midwest Premium, a price component that incorporates a number of inputs including storage costs. Plaintiffs allege that their purchases of aluminum are priced with reference to the Midwest Premium, and that they therefore paid inflated prices.”¹²⁴⁹

Triggering LME Investigation. Another development from the New York Times article was that, shortly after its publication, an LME examiner visited Metro and made a number of inquiries into Metro’s practices. Several months later, on December 4, 2013, the LME notified Metro that the exchange had opened a formal investigation “into the circumstances surrounding the movement of primary aluminum between listed warehouses” operated by Metro in Detroit.¹²⁵⁰ A few days later, LME sent Metro a request for documents and information about Metro’s cancellation practices, the inducements it offered to metal owners who participated in the merry-go-round transactions, and whether Metro considered those metal shipments consistent with its load-out obligations under LME rules.¹²⁵¹ The LME also asked why Metro had not consulted the exchange about the practice before engaging in it.¹²⁵²

On January 27, 2014, Metro responded to the LME’s letter.¹²⁵³ The response drew upon information provided by a number of Metro and Goldman employees, including Jacques Gabillon, head of Goldman’s GCPI group and Chairman of Metro’s Board of Directors. Metro’s response detailed the last Red Kite deal and the Glencore deal described above.¹²⁵⁴ As to the unusual movements of metal that resulted from the deals, Metro asserted that once the aluminum was loaded onto a truck, the owner of the metal was entitled to send it anywhere the owner wanted – including back to Metro. Metro wrote:

“[Metro] considers metal that is loaded free on truck (FOT) at the owner’s instruction, in accordance with the order of priority required by the LME ... to count towards the operator’s load-out

¹²⁴⁹ See In Re Aluminum Warehousing Antitrust Litigation, 2014 U.S. Dist. LEXIS 121435 (USDC SDNY)(8/29/2014)(court decision describing allegations; it dismissed the class action suits for lack of standing).

¹²⁵⁰ 12/4/2013 letter from LME to Metro, GSPSICOMMODS00046656 [sealed exhibit].

¹²⁵¹ 12/6/2013 letter from LME to Metro, GSPSICOMMODS00046658 [sealed exhibit].

¹²⁵² *Id.*

¹²⁵³ 1/27/2014 letter from Simmons & Simmons to LME, GSPSICOMMODS00046661.

¹²⁵⁴ *Id.* at Appendix A, GSPSICOMMODS00046666. The four previous merry-go-round deals were not within the time scope of the LME’s document request.

obligations. At that point, the warehouse operator has released possession of the metal and thus has loaded-out the metal from its warehouse. The LME has long recognized the right of the metal owner to decide what to do with free metal, and, as the operator of LME-approved warehouses, Metro is bound to respect the owner's instruction."¹²⁵⁵

Metro stated that, "consistent with LME requirements, Metro deducts metal from its inventory once a bill of lading has been signed by both Metro and the truck operator."¹²⁵⁶ Metro also wrote that LME's external auditors had reviewed Metro's operations pursuant to inventory audits in 2012, and "no material issues" were noted in the Audit Summary or any follow up.¹²⁵⁷

On March 10, 2014, LME sent another letter to Metro, asking for details about Metro's vetting and approval process for the deals, and asking for new information, including whether Metro employees had "brokered" the merry-go-round deals identified in Metro's January letter, and whether Metro had considered asking LME "as to the appropriateness" of the deals.¹²⁵⁸ LME also asked whether "Metro consider[ed] that the incentives it offered contributed to the perpetuation of metal queues in Detroit."¹²⁵⁹

On April 15, 2014, Metro replied to the LME's letter.¹²⁶⁰ Metro said that it was "unable to pinpoint which party first initiated the Transactions."¹²⁶¹ As to whether the warehouse company had considered asking the LME its view of the deals, Metro stated that the company "regards its process for reviewing all transactions to be a matter of sound corporate practice and governance and therefore did not make enquiries to the LME regarding the [Red Kite and Glencore] Transactions."¹²⁶² Metro also denied that the merry-go-round deals had contributed to the perpetuation of the queue stating that "Metro has no influence over warrant cancellations."¹²⁶³ Metro made that statement even after paying millions of dollars in incentives for warrant cancellations.

Metro also attempted to justify the incentives offered to Red Kite and Glencore, by explaining that it was "competing with other storage

¹²⁵⁵ 1/27/2014 letter from Simmons & Simmons to LME, GSPSICOMMODS00046661, 662.

¹²⁵⁶ Id.

¹²⁵⁷ Id.

¹²⁵⁸ 3/10/2013 letter from LME to Metro, GSPSICOMMODS00046827 - 833, at 828 [sealed exhibit].

¹²⁵⁹ Id. at 831.

¹²⁶⁰ 4/15/2012 letter from Simmons & Simmons to LME, GSPSICOMMODS00046834 - 849.

¹²⁶¹ Id. at 837.

¹²⁶² Id. at 838.

¹²⁶³ Id. at 844.

options available” to those companies.¹²⁶⁴ Metro also continued to assert that the deals were consistent with LME rules:

“Metro does not consider the incentives it offered to be ‘exceptional inducements’ that ‘artificially or otherwise constrained’ the ‘proper functioning of the market through the liquidity and elasticity of stocks of metal under warrant.’ (Clause 9.3.1 of the Warehouse Agreement.)”¹²⁶⁵

The Subcommittee is not aware of any correspondence between LME and Metro since Metro’s April reply. The LME would not comment on the existence or status of the investigation.¹²⁶⁶

The Subcommittee then asked the LME whether it would “consider it a violation of its load out rule for an owner of multiple warehouses to “load out” metal from one warehouse only to load it back in to another warehouse owned by the same company in the same geographic region.” The LME told the Subcommittee that “while the LME would view such behavior as inconsistent with the “spirit” of the relevant requirements, it may not violate the “letter” of those requirements because the relevant terms may be susceptible to more than one interpretation.”¹²⁶⁷ The LME has recently initiated a consultation on changes to its warehousing requirements to stop the practice.¹²⁶⁸

(e) Benefiting from Proprietary Cancellations

In addition to the merry-go-round deals, four large proprietary cancellations by JPMorgan and Goldman also measurably lengthened the Detroit queue. The JPMorgan cancellations involved about 200,000 metric tons of aluminum and took place in January and December 2012. The Goldman cancellations involved more than 300,000 metric tons of aluminum and took place in May and December 2012.

JPMorgan Cancellations. In January 2012, JPMorgan cancelled warrants for nearly 100,000 metric tons of aluminum held at Metro in Detroit. JPMorgan told the Subcommittee that the aluminum belonged to JPMorgan Chase Bank, which was not acting as an agent for any

¹²⁶⁴ Id., at 843.

¹²⁶⁵ Id., at 842.

¹²⁶⁶ The LME has consistently declined the Subcommittee’s invitations to discuss the matter, citing the LME’s role as a regulator. In particular, the LME stated that “as an instrumentality of the government of the United Kingdom and a market regulator, the LME maintains strict confidentiality of ongoing investigations into approved warehouses and therefore we are unable to provide further information. ... The LME’s confidentiality obligations stem from multiple sources.” 11/10/2014 letter from LME to Subcommittee, LME_PSI0002459, at 461.

¹²⁶⁷ Id.

¹²⁶⁸ 11/7/2014 “Consultation and Proposed Amendments to the Policies and Procedures Relating to the LME’s Physical Delivery Network,” prepared by LME, https://www.lme.com/~media/files/notices/2014/2014_11/14%20318%20a310%20w148%20physical%20network%20reform%20consultation%20notice.pdf.

client but was acting on its own behalf, and that the purpose of the cancellation was, in part, to replenish its readily available stocks of aluminum.¹²⁶⁹ At the beginning of January 2012, the Detroit queue was approximately 115 days. By January 20, after JPMorgan had cancelled its warrants for 100,000 metric tons, the queue had increased to 216 days.¹²⁷⁰ A significant portion of that increase was attributable to JPMorgan's cancellation. According to JPMorgan, after waiting about nine months to get through the queue, the majority of the aluminum was shipped out of the Metro warehouse and into a Henry Bath LME-approved warehouse in Baltimore.¹²⁷¹

Nearly a year later, in December 2012, JPMorgan cancelled warrants for another approximately 95,000 metric tons of aluminum. The bank told the Subcommittee that it was the direct owner of the aluminum, it was not acting on behalf of a client, and the purpose of the cancellation was to use the aluminum in various future transactions.¹²⁷² In mid-December 2012, prior to the cancellation, the queue in Detroit was less than 350 days. By the end of that month the wait for aluminum approached 500 days, with the increase appearing to be largely attributable to warrant cancellations by JPMorgan, Red Kite, and Goldman.¹²⁷³ JPMorgan waited in the queue for more than one year. In early 2014, the metal was shipped out of the Metro warehouses.¹²⁷⁴ According to JPMorgan, some of the aluminum was ultimately sold to clients and the remainder was shipped to other warehouses.¹²⁷⁵

Goldman Cancellations. In 2012, the same year as the JPMorgan cancellations, Goldman engaged in two large acquisitions of aluminum warrants followed by cancellations of many of those warrants. The cancellations involved more than 300,000 tons of aluminum worth hundreds of millions of dollars.

Goldman told the Subcommittee that, in 2012, it began to focus on building trading relationships with aluminum consumers and set out to increase its physical holdings of aluminum to do business with those

¹²⁶⁹ Subcommittee briefing by JPMorgan (9/5/2014).

¹²⁷⁰ See undated "Harbor's Estimated Aluminum Load-Out Waiting Time in LME Detroit Warehouses, prepared by Harbor Aluminum, PSI-HarborAlum-01-000001.

¹²⁷¹ Subcommittee briefing by JPMorgan (9/5/2014). At the time, JPMorgan owned the Henry Bath warehouses. In March 2014, JPMorgan reached an agreement to sell its physical commodities business to Mercuria Energy Group, including the Henry Bath warehousing business. See Subcommittee briefing by JPMorgan (9/5/2014); 3/19/2014 JPMorgan press release, "J.P. Morgan announces sale of its physical commodities business to Mercuria Energy Group Limited,"

https://www.jpmorgan.com/cm/cs?pagename=JPM_redesign/JPM_Content_C/Generic_Detail_Page_Template&cid=1394963095027&c=JPM_Content_C.

¹²⁷² Subcommittee briefing by JPMorgan (9/5/2014).

¹²⁷³ See undated "Harbor's Estimated Aluminum Load-Out Waiting Time in LME Detroit Warehouses, prepared by Harbor Aluminum, PSI-HarborAlum-01-000001.

¹²⁷⁴ Subcommittee briefing by JPMorgan (9/5/2014).

¹²⁷⁵ Id.

clients.¹²⁷⁶ Goldman told the Subcommittee that it had determined that purchasing aluminum warrants on the LME was the most cost-effective way to build its physical inventory and set out to buy readily available aluminum, meaning aluminum that was not in a warehouse with a queue, such as Metro.¹²⁷⁷

According to Goldman records, in March 2012, it held about 277,000 metric tons of aluminum.¹²⁷⁸ Goldman told the Subcommittee that it entered into a large number of LME futures contracts with warrants for delivery of aluminum in April 2012.¹²⁷⁹ At the same time, the company sold futures contracts to deliver LME aluminum warrants in May and June.¹²⁸⁰ At the time, the vast majority of warrants used to settle LME aluminum trades were associated with aluminum held in either Detroit or Vlissingen. Since those warrants were associated with aluminum held in warehouses with long queues, they were the least valuable and the most likely to be used to settle futures trades.¹²⁸¹ According to Goldman, its goal was to buy so many LME warrants for April delivery that at least some of those warrants would be for aluminum held in warehouses without queues.¹²⁸²

Goldman executed the trades in April 2012, which increased its physical aluminum holdings that month to nearly 780,000 tons of aluminum with a market value of more than \$1.6 billion.¹²⁸³ According to Goldman, however, the effort to secure warrants in warehouses without queues was unsuccessful, and the company used many of the warrants it had bought to meet its May and June trading commitments.¹²⁸⁴

On May 15, 2012, in the midst of that series of trades, Goldman cancelled warrants associated with almost 50,000 metric tons of physical aluminum in Metro's Detroit warehouses. In mid-July 2012, Goldman

¹²⁷⁶ Subcommittee briefing by Goldman (7/16/2014).

¹²⁷⁷ *Id.* Finding warrants for aluminum at warehouses without queues was difficult since the two warehouses with the vast majority of LME warranted aluminum were the Metro warehouses in Detroit and the Pacorini warehouses in Vlissingen, both of which had long queues for removal of metal. A later public report issued by the LME in November 2013, noted the problem, observing that, of the aluminum warrants used to settle trades on September 18, 2013, for example, 99% were associated with aluminum in a warehouse with a queue. See 11/2013 "Summary Public Report of the LME Warehousing Consultation," prepared by LME, <https://www.lme.com/~media/Files/Warehousing/Warehouse%20consultation/Public%20Report%20of%20the%20LME%20Warehousing%20Consultation.pdf>.

¹²⁷⁸ 2/20/2013 letter from Goldman legal counsel to Subcommittee, at chart, GSPSICOMMODS00000002-R.

¹²⁷⁹ Subcommittee briefing by Goldman (7/16/2014).

¹²⁸⁰ *Id.*

¹²⁸¹ *Id.*; Subcommittee interview of Gregory Agran (10/10/2014).

¹²⁸² *Id.*; See 8/8/2014 letter from Goldman to Subcommittee, "Follow-Up Requests," PSI-Goldman-11-000001 - 011, at 007; Subcommittee briefing by Goldman (7/16/2014).

¹²⁸³ 2/20/2013 letter from Goldman legal counsel to Subcommittee, at chart, GSPSICOMMODS00000002-R.

¹²⁸⁴ 8/8/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-Goldman-11-000001 - 011, at 007; Subcommittee interview of Gregory Agran (10/10/2014).

cancelled warrants for another 45,000 metric tons in Detroit, for a combined total of 95,000 metric tons.¹²⁸⁵ Prior to Goldman's first set of cancellations, in mid-May 2012, the queue in Detroit was about 285 days.¹²⁸⁶ By mid-July 2012, after the last of Goldman's cancellations, it had increased by nearly a third to around 370 days.¹²⁸⁷

A few months later, in December 2012, driven by what Goldman called a "longer-term strategy to developing our consumer franchise business," the company again set out to significantly increase its holdings of physical aluminum.¹²⁸⁸ According to Goldman, discussions with aluminum consuming clients had identified "interest in having Goldman Sachs serve as a source of supply for metal in the future and as a counterparty on forward-starting hedge transactions."¹²⁸⁹

Goldman told the Subcommittee that, despite its failure to obtain any significant number of warrants outside of Detroit and Vlissingen during the prior spring, it decided to try the same strategy again – buying such a large volume of LME warrants that at least some would likely come from warehouses without queues.¹²⁹⁰ Goldman ultimately purchased LME futures contracts for December delivery with warrants for more than 1 million tons aluminum, a huge amount. At the same time, the company sold a large number of futures contracts for January 2013.¹²⁹¹

In the midst of that series of trades, Goldman's physical aluminum holdings grew to more than 1.5 million metric tons of aluminum worth more than \$3.2 billion, nearly five times the amount held just weeks earlier. As with the first attempt, however, Goldman obtained few warrants for aluminum in a warehouse without a queue. According to Goldman, it then used about half of the LME warrants to settle its short January contracts. Even after that, at the end of January 2013, Goldman held nearly 825,000 metric tons of aluminum worth more than \$1.76 billion.¹²⁹²

Goldman said that the LME warrants that were not used to settle the January contracts were then cancelled, which significantly increased the queue in Metro's Detroit warehouses as well as the queue in the Pacorini warehouses located in Vlissingen, Netherlands where much of

¹²⁸⁵ 4/30/2014 letter from Goldman legal counsel to Subcommittee, "April 2, 2014 Email," PSI-GoldmanSachs-09-000001 - 013, Exhibit C, at 011.

¹²⁸⁶ See undated "Harbor's Estimated Aluminum Load-Out Waiting Time in LME Detroit Warehouses, prepared by Harbor Aluminum, PSI-HarborAlum-01-000001.

¹²⁸⁷ Id.

¹²⁸⁸ 8/8/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-Goldman-11-000001 - 011, at 007.

¹²⁸⁹ Id.

¹²⁹⁰ Id.

¹²⁹¹ Id.

¹²⁹² 4/30/2014 letter from Goldman legal counsel to Subcommittee, "April 2, 2014 Email," PSI-GoldmanSachs-09-000001 - 013, Exhibit D, at 013.

the warranted aluminum was located.¹²⁹³ Over just three days in mid-December 2012, Goldman cancelled warrants for more than 227,000 metric tons of aluminum in Detroit.¹²⁹⁴

Why Goldman thought that the second aluminum trade would succeed when the first failed is unclear, but what is clear is that, for a second time, Goldman's cancellations lengthened the Metro Detroit queue. In mid-December 2012, prior to Goldman's cancelling the warrants, the queue in Detroit was just under 350 days.¹²⁹⁵ By the end of December 2012, the wait to get aluminum out of the Metro warehouse system was approaching 500 days, with the increase largely attributable to warrant cancellations by JPMorgan, Red Kite, and Goldman.¹²⁹⁶

As explained earlier, longer queues in Detroit were highly correlated with higher Midwest Premiums.¹²⁹⁷ According to Goldman, longer queues and higher Midwest Premiums would directly impact LME prices.¹²⁹⁸ At the same time Goldman was cancelling its warrants, it was actively trading financial products tied to the price of aluminum, including the LME price.

(f) Benefiting from Fees Tied to Higher Midwest Premium Prices

Under Goldman's ownership, Metro entered into a series of transactions that enabled it to benefit financially from the rising Midwest Premium, which was highly correlated to its own lengthening queue in Detroit.

As explained above, the Midwest Premium is a key price component in U.S. aluminum contracts that, along with the LME price, produces the all-in price for physical aluminum. The premium is intended to reflect, among other factors, storage costs for aluminum.

¹²⁹³ 8/8/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-Goldman-11-000001 - 011, at 007.

¹²⁹⁴ 4/30/2014 letter from Goldman legal counsel to Subcommittee, "April 2, 2014 Email," PSI-GoldmanSachs-09-000001 - 013, Exhibit C, at 011.

¹²⁹⁵ See undated "Harbor's Estimated Aluminum Load-Out Waiting Time in LME Detroit Warehouses," prepared by Harbor Aluminum, PSI-HarborAlum-01-000001.

¹²⁹⁶ *Id.*

¹²⁹⁷ For another explanation of the correlation between the queue and the Midwest Premium price, see *In Re Aluminum Warehousing Antitrust Litigation*, 2014 U.S. Dist. LEXIS 121435 (USDC SDNY)(8/29/2014)(court decision summarizing the position taken by aluminum buyers: "LME stored aluminum in the Detroit area determines the level of the Midwest Premium. As trader rather than user dynamics took root in the LME warehouses, the level of the Premium became driven by trading dynamics rather than actual supply and demand of aluminum users. ... A direct result of this was to increase storage duration, thus storage costs, thereby increasing the Midwest Premium.").

¹²⁹⁸ Goldman has strenuously argued, however, that queues simply impact the LME price in relation to the physical price. Put another way, in Goldman's opinion, as the queue gets longer, the Midwest Premium gets higher and the LME price falls, yet the "all in price" remains the same. See "The economic role of a warehouse exchange," Goldman Sachs (10/31/2013), GSPSICOMMODS00047511 - 545, at 513.

While the Midwest Premium used to be an inconsequential part of the all-in price, about 4%; over the last five years, it has increased substantially, and, since January 2014, has been more than 20% of the all-in price. As shown in a graph earlier, between 2010 and 2014, the increases in the Midwest Premium have had an extremely high correlation of 0.89 with increases in the length of the Metro Detroit queue.¹²⁹⁹ In other words, when the queue lengthened, the Midwest premium almost always increased.

In response to Subcommittee questions, Goldman disclosed that, from 2010 through 2014, in at least 13 arrangements, Metro received payments from some warehouse clients of amounts that were directly or indirectly tied to the Midwest Premium price.¹³⁰⁰ Agreements that potentially link Metro revenues to the Midwest Premium raise conflict of interest concerns, since a Metro financial interest in the premium price would create an incentive for the company to develop and maintain longer queues.

Each month since Goldman acquired Metro, Goldman's Global Commodities Principal Investing (GCPI) group produced a one-page management brief for Isabelle Ealet, who was Global Head of GS Commodities until she was promoted to co-head of the Securities Division in 2012.¹³⁰¹ The Metro management briefs included such information as Metro's gross year-over-year profit, inventory projections, and business highlights.¹³⁰² The June 2011 management brief stated that "Metro showed another month of record financial performance," and highlighted "Extraordinary income from counterparties sharing physical premium with Metro after delivering metal previously under financing deals into the physical market."¹³⁰³ Ms. Ealet told the Subcommittee that she did not recall that briefing document and could not explain how Metro's counterparties were "sharing physical premium with Metro."¹³⁰⁴

Goldman told the Subcommittee that the "premium sharing" payments referenced in the brief and other payments like it were "a means of compensating Metro for, among other things, rent discounts Metro provided based on the understanding that the customer would

¹²⁹⁹ See chart entitled, "Detroit Queue and Platts MW Aluminum Premium," above.

¹³⁰⁰ 10/2/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-21-000001 - 010, at 002 and Appendix A, GSPSICOMMODS00046531; and 10/3/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-27-000001 and attachment, GSPSICOMMODS00046630.

¹³⁰¹ Subcommittee interview of Jacques Gabillon (10/14/2014).

¹³⁰² See, e.g., 6/2011 "Metro International Trade Services Management Brief," prepared by Metro and Goldman, GSPSICOMMODS00009668.

¹³⁰³ Id.

¹³⁰⁴ Subcommittee interview with Isabelle Ealet (10/14/2014).

hold metal for a period that is longer than the period for which the customer ultimately held the metal in Metro's warehouses."¹³⁰⁵

Goldman identified 29 agreements between 2010 and 2014 in which a customer paid Metro a "break fee" for selling physical aluminum that was held at a Metro warehouse under a discount rent agreement.¹³⁰⁶ Thirteen of those 29 agreements were associated with the sale of metal stored in Metro warehouses in the United States.¹³⁰⁷ The Midwest Premium was the applicable premium in those sales. It appears that Metro earned more than \$7.3 million in break fees from those 13 agreements.¹³⁰⁸

Metro CEO Christopher Wibbelman told the Subcommittee that Metro got a better deal out of the break fees than it would have if Metro had simply continued with the discount rent agreements.¹³⁰⁹ The amounts were also sufficiently large that they were brought to the attention of the head of Goldman's Commodities division and described as "Extraordinary income" in "another month of record financial performance."¹³¹⁰ The premium sharing arrangements gave Metro another financial reward for longer queues,¹³¹¹ since longer queues were highly correlated with higher Midwest Premium prices – higher prices that produced additional income for Metro through the premium sharing agreements.

(g) Sharing Non-Public Information

A second set of issues involves the extent to which Metro shared commercially valuable, non-public information with Goldman employees who were involved in commodities and trading in the aluminum markets.

Background on Information Sharing. In the regular course of business, LME-approved warehouses acquire information on warehouse metal stocks, current and future metal shipments, LME warrant cancellations, and warehouse queue lengths that is not available generally to market participants. The LME has recognized that traders

¹³⁰⁵ 10/2/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-21-000001, at 002.

¹³⁰⁶ Id. The "break fee" refers to a fee paid by the client for breaking the agreement with Metro to keep its metal in a Metro warehouse for a specified period of time. Subcommittee interview of Christopher Wibbelman (10/6/2014).

¹³⁰⁷ Id. 10/2/2014 letter from Goldman legal counsel to the Subcommittee, PSI-GoldmanSachs-21-000001, at 002, and attachment, GSPSICOMMODS00046531; 10/3/2014 letter from Goldman legal counsel to the Subcommittee, PSI-GoldmanSachs-27-000001, and attachment, GSPSICOMMODS00046630.

¹³⁰⁸ Id.

¹³⁰⁹ Subcommittee interview with Christopher Wibbelman (10/6/2014).

¹³¹⁰ 6/2011 "Metro International Trade Services Management Brief," prepared by Metro and Goldman, GSPSICOMMODS00009668.

¹³¹¹ Of course, the principal reward was the ability to charge additional rent to those who may want to exit Metro's Detroit warehouses, but were blocked by the queue.

privity to such warehouse information before it becomes available to the broader market could use that non-public information to benefit their trading strategies, gaining an unfair advantage over the rest of the market and their own counterparties. To prevent inappropriate sharing or the misuse of market sensitive information, the LME has required warehouse companies who are affiliated with trading companies to set up information barriers between the two.

The LME requirements relating to erecting so-called “Chinese walls” between the warehouse and trading operations state that “it is essential that personnel engaged in trading activities in relation to the LME market do not come into possession of any Confidential Information” from the warehouse, including warehouse stock figures, proposed or actual metal shipments to or from an LME warehouse, and information relating to the issuance and cancellation of LME warrants.¹³¹² The requirements state that such confidential information may be provided only to certain “Designated Individuals” and that the number of such individuals at affiliated trading companies should be “kept to a minimum.”¹³¹³ Under LME requirements, information shared with a trading company “will be confined to common directors and others who have management responsibility for both entities.”¹³¹⁴

Prior to its purchase of Metro, Goldman identified the “perception of misuse of confidential [Metro] information” as a key investment risk.¹³¹⁵ To address that risk, Goldman issued a policy to ensure compliance with LME information sharing requirements, warning:

“It is strictly prohibited for Metro to disclose any information about pending metal deposits or withdrawals or to give any specific information relating to storage terms, client deals or financing transactions to individuals within [Commodities Sales and Trading or any other Goldman personnel not approved to receive information]. It is also prohibited for Metro staff to share any information which is reported to or published by the LME ahead of publication to the market.”¹³¹⁶

Despite that Goldman policy, and a corresponding one at Metro, the Subcommittee found that confidential Metro information was

¹³¹² 11/17/2011 “Information Barriers Between Warehouse Companies and Trading Companies,” prepared by LME, at 1-3 (hereinafter, “LME Information Barrier Rules.”), https://www.lme.com/~media/Files/Notices/2011/2011_11/11_334_A326_W173_Information_Barriers_Between_Warehouse_Companies_and_Trading_Companies.pdf.

¹³¹³ *Id.* at 4.

¹³¹⁴ *Id.*

¹³¹⁵ See 8/6/2013 “Federal Reserve Bank of New York Reputational Risk Questions MITS Holdings LLC,” prepared by Goldman, FRB-PSI-700124 - 150, at 130.

¹³¹⁶ 3/26/2014 “Information Barrier Policy: Metro and Other GS Business and Personnel,” prepared by Goldman, GSPSICOMMODS00004059 - 076, at 066.

made available to dozens of Goldman employees, including personnel active in trading commodities.

Metro Executives. Metro's CEO, COO, and Chairman of the Board all told the Subcommittee that they viewed Metro's and Goldman's information barrier policies as prohibiting them from sharing specific Metro-related information with Goldman aluminum traders or others involved in trading aluminum.¹³¹⁷

Beginning in April 2012, the LME began mandating that warehouse companies affiliated with a trading company engage a third party to ensure that their policies and procedures complied with the exchange's information barrier requirements.¹³¹⁸ Metro hired PricewaterhouseCoopers (PwC) to conduct its 2012 and 2013 reviews.

According to Goldman, the PwC reviews took place over several weeks in which the auditor independently tested and verified each of the controls put in place by Metro to protect against inappropriate sharing of confidential warehouse information. Both PwC reviews concluded that Metro's assertions that its information barriers were in compliance with LME requirements were "fairly stated, in all material aspects."¹³¹⁹ PwC's assessments, however, were limited to reviewing Metro's information barriers, since the LME requirement applies only to warehouse companies and not to their affiliated trading companies. PwC did not undertake a similar review of Goldman.

Goldman Access to Metro Information. For its part, Goldman told the Subcommittee that internal audits of Goldman's information barriers have not identified problems. While a significant number of Goldman employees are authorized under Metro's and Goldman's policies to receive confidential information from Metro, Goldman advised the Subcommittee that "Compliance has found no unauthorized instances where Metro confidential information was transmitted to Goldman Sachs sales and trading personnel."¹³²⁰

Goldman's information barriers policy identifies three categories of "Designated Individuals" who are permitted access to certain confidential Metro information. One group consists of certain

¹³¹⁷ Subcommittee interviews of Christopher Wibbelman (10/6/2014), Leo Prichard (10/6/2014), and Jacques Gabillon (10/14/2014).

¹³¹⁸ 11/17/2011 "Information Barriers Between Warehouse Companies and Trading Companies," prepared by LME, at 6-7.

https://www.lme.com/~media/Files/Notices/2011/2011_11/11_334_A326_W173_Information_Barriers_Between_Warehouse_Companies_and_Trading_Companies.pdf.

¹³¹⁹ 8/8/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-Goldman-11-000001-011, at 005.

¹³²⁰ See 8/6/2013 "Federal Reserve Bank of New York Reputational Risk Questions MITS Holdings LLC," prepared by Goldman, FRB-PSI-700124-150, at 133; 8/8/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-Goldman-11-000001-011, at 010.

employees in Goldman's Global Commodities Principal Investing (GCPI) group. A second group is made up of Goldman employees who sit on Metro's Board of Directors. A third group includes certain senior managers in Goldman's Securities Division.¹³²¹

Global Commodities Principal Investments. As mentioned above, GCPI is the group within Goldman's Global Commodities group that makes equity investments in commodities-related businesses like power plants and coal mines, and it was GCPI personnel who conducted the analysis and strategy that led to Goldman's purchase of Metro.¹³²²

Ten Goldman employees assigned to GCPI have been authorized to receive monthly data packages from Metro containing warehouse related confidential information.¹³²³ GCPI data packages include information on Metro stock levels, warrant cancellations, deal-specific freight incentives, rent discounts, and future metal flows, the latter of which is referred to as Metro's "deal pipeline." For example, for the month ending November 2012, the GCPI data packet showed more than 550,000 tons of metal under contract for delivery to Metro's Detroit warehouse. Of that amount, the data packet indicated that only about 110,000 metric tons had been warranted and that 74,000 metric tons of metal already in the warehouse was awaiting warranting, the latter figure being particularly sensitive market information because it was not reflected in public stock reports.¹³²⁴

Goldman told the Subcommittee that its GCPI personnel requires detailed non-public information from Metro on a monthly basis to conduct business planning, estimate cash flows, and support Metro. Information on Metro's "deal pipeline," meaning metal that is under contract for delivery to Metro warehouses, is information not included in the LME's public warehouse stock reports until the metal was delivered and warranted. It is important to prevent such information from being shared with traders as it could give a trading company an advantage by, for example, allowing it to better predict spreads between cash and futures aluminum prices. Such insight could not only inform a firm's trading strategy but would allow it to assess risks associated with particular trades.¹³²⁵

¹³²¹ 3/26/2014 "Information Barrier Policy: Metro and Other GS Business and Personnel," prepared by Goldman, GSPSICOMMODS00004059 - 076, at 060, 066.

¹³²² Subcommittee briefing by Goldman Sachs (7/16/2014).

¹³²³ 8/15/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-GoldmanSachs-17-000001-009, at Exhibit A, GSPSICOMMODS00046225.

¹³²⁴ 12/1/2012 MITSI Holdings, LLC, GCPI data packet, prepared by Metro and Goldman, GSPSICOMMODS00040203, at 205; 2/19/2010 "Conflict Management Procedures Between Metro and Other GS Businesses and Personnel," prepared by Metro and Goldman, FRB-PSI-602457 - 471, at 458.

¹³²⁵ Subcommittee briefing by Jorge Vazquez (9/30/2014).

Goldman Employees on Metro Board. A second group of persons designated to receive confidential Metro information are the Goldman employees who sit on the Metro Board. Following its purchase of Metro, Goldman installed a new Board of Directors consisting exclusively of Goldman employees, more than half of whom were from the Global Commodities group. Board Members included individuals associated with commodity trading, commodity operations, and GCPI. One Board Member ran Goldman's Natural Gas and Power Trading group and was head of GCPI during his time on the Board.¹³²⁶ While the composition of the Board has varied since 2010, it has always been wholly comprised of Goldman employees, many from Goldman's Global Commodities group.¹³²⁷ Metro supplies each Board member with information packets which are produced and distributed on a quarterly basis.¹³²⁸

Goldman has said that the format of the Board packets "ensures that no market sensitive non public information is disclosed."¹³²⁹ While less detailed than the data packets provided to GCPI employees, the Board packets have included substantial information about future expected metal flows and stock levels. For example, the packet produced for an October 2012 Board meeting described the "Current Deal Pipeline"¹³³⁰ for metal to be delivered to Metro warehouses, indicated "Metro has another 277 [thousand metric tons] booked," and "Detroit continues to be the key inbound location for Metro."¹³³¹

In another example, information provided to the Board in June 2013, showed more than 576,000 tons of metal, including 400,000 tons of aluminum, in Metro's deal pipeline at the end of May 2013. The Board packet also stated that Detroit "continues to be the key inbound location for Metro with another 431 [thousand metric tons] of metal expected."¹³³²

¹³²⁶ See 12/5/2011 MITSU Holdings LLC Board of Directors Meeting, prepared by Metro and Goldman, GSPSICOMMODS00009287 - 309, at 290; 3/2010 MITSU Board Meeting, prepared by Metro and Goldman, GSPSICOMMODS00009519 - 542, at 534 (Gregory Agran left Metro's Board of Directors at the end of 2011).

¹³²⁷ 8/15/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-GoldmanSachs-17-000001 - 009, at Exhibit A, GSPSICOMMODS00046225. See also chart listing Metro Board members, above.

¹³²⁸ 8/8/2014 letter from Goldman legal counsel to Subcommittee, PSI-Goldman-11-000001 - 011, at 009.

¹³²⁹ 3/26/2014 "Information Barrier Policy: Metro and Other GS Business and Personnel," prepared by Goldman, GSPSICOMMODS00004059 - 076, at 063.

¹³³⁰ 3/2010 MITSU Board Meeting, prepared by Metro and Goldman, GSPSICOMMODS00009519 - 542, at 535 ("Metro's deal book pipeline consists of a series of committed deals based on verbal agreements with market counterparties").

¹³³¹ 10/4/2012 MITSU Holdings LLC Board of Directors Meeting, prepared by Metro and Goldman, GSPSICOMMODS00009398 - 422, at 409.

¹³³² 6/19/2013 MITSU Holdings LLC Board of Directors Meeting, prepared by Metro and Goldman, GSPSICOMMODS00009378 - 397, at 387.

Again, experts told the Subcommittee that information on existing and upcoming aluminum flows could be commercially valuable to a trading company by providing insight into market direction, helping with predictions of future spreads, and informing the strategic direction for its trading activities.¹³³³

Senior Goldman Managers. The third and final group of Goldman employees designated to receive confidential Metro information work for the Goldman Securities Division. The Securities Division at Goldman oversees the Global Commodities group, including Commodity Sales, Commodity Trading, and GCPI. Isabelle Ealet is the current co-head of the Securities Division and is responsible for the Division's commodity-related business. Prior to being named to that position in January 2012, Ms. Ealet was global head of the Commodities group.¹³³⁴

Beginning in March 2010, Ms. Ealet began receiving monthly reports, called a "management brief," that provided her with confidential Metro information, including information about future metal flows in Metro's deal pipeline.¹³³⁵ For example, a September 2010 brief discussed an off-warrant deal reached for 100,000 metric tons of aluminum at Metro and included a graph projecting Metro stock balances.¹³³⁶ Similarly, a November 2011 brief stated that Metro expected to put in excess of 100,000 metric tons on warrant the following month.¹³³⁷ Subsequent briefs discussed future metal flows, referring to "strong 2013 pipeline," and metal outflows "offset by a strong pipeline and inflows."¹³³⁸

LME's information barrier requirements state "it is essential that personnel engaged in trading activities in relation to the LME market do not come into possession of any Confidential Information"¹³³⁹ The LME has told the Subcommittee, however, that "personnel engaged in trading activities" as discussed in its requirements would not necessarily include executives, such as Ms. Ealet, even though they supervised

¹³³³ Subcommittee briefing by Jorge Vazquez (9/30/2014).

¹³³⁴ "2 Securities Heads Are Latest to Leave Goldman," *New York Times*, Susanne Craig (1/11/2012), http://dealbook.nytimes.com/2012/01/11/global-securities-co-heads-to-leave-goldman/?_php=true&_type=blogs&r=0.

¹³³⁵ Subcommittee interview of Isabelle Ealet (10/14/2014).

¹³³⁶ 9/2010 "Metro International Trade Services Management Brief," prepared by Goldman, GSPSICOMMODS00009675.

¹³³⁷ 11/2011 "Metro International Trade Services Management Brief," prepared by Goldman, GSPSICOMMODS00009670.

¹³³⁸ 4/2013 "Metro International Trade Services Management Brief," prepared by Goldman, GSPSICOMMODS00009664; 9/2013 "Metro International Trade Services Management Brief," prepared by Goldman, GSPSICOMMODS00009690.

¹³³⁹ 11/17/2011 "Information Barriers Between Warehouse Companies and Trading Companies," prepared by LME, at 1-3, https://www.lme.com/~media/Files/Notices/2011/2011_11/11_334_A326_W173_Information_Barriers_Between_Warehouse_Companies_and_Trading_Companies.pdf.

trading activities.¹³⁴⁰ According to the exchange, whether or not the prohibition on access to confidential information applied would depend on the extent of the supervisor's involvement in setting trading strategy.¹³⁴¹ Ms. Ealet told the Subcommittee that while she was not typically involved in the day-to-day management of trading, she may become involved in specific trades or issues from time to time.¹³⁴²

Other Goldman Employees. At the Subcommittee's request, Goldman identified more than 30 additional Goldman employees, other than the groups already discussed, who, since 2010, have been provided access to confidential Metro information.¹³⁴³ They include individuals working in the bank's Market Risk Management & Analysis, tax, litigation, accounting, audit, compliance, derivatives, and commodities departments.¹³⁴⁴

The Subcommittee interviewed, among others, Gregory Agran, who formerly headed GCPI and is now the Global co-head of Commodities for Goldman; Jacques Gabillon, the current head of GCPI and Chairman of Metro's Board of Directors; and Isabelle Ealet, former Global Head of Commodities and current co-head of Goldman's Securities Division. Ms. Ealet and Mr. Agran told the Subcommittee that they could not recall any instance in the past five years in which any commercially sensitive warehouse information had been shared in violation of the Goldman information-sharing policy. Nor could either recall any occasion on which a concern was raised that the information barriers policy had been violated.¹³⁴⁵

Mr. Gabillon recalled one information-sharing related incident that had been registered by Michael Whelan, a senior Metro executive, who brought that matter to Mr. Gabillon's attention in 2013.¹³⁴⁶ According to Mr. Gabillon, the incident involved a Goldman commodities trader who came to him and expressed unhappiness with a zinc-related transaction involving Metro in New Orleans.¹³⁴⁷ Mr. Gabillon said the interaction was unusual as it was the only occasion he could recall in which a trader approached him directly about a Metro-related issue. Mr. Gabillon said that he told the trader to take the complaint to his own reporting chain. Mr. Gabillon also said that he reported the incident to compliance.¹³⁴⁸

¹³⁴⁰ Subcommittee briefing by LME (8/1/2014).

¹³⁴¹ *Id.*

¹³⁴² Subcommittee interview of Isabelle Ealet (10/14/2014).

¹³⁴³ 8/15/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-GoldmanSachs-17-000001-009, at Exhibit A, GSPSICOMMODS00046226.

¹³⁴⁴ *Id.*

¹³⁴⁵ Subcommittee interviews of Isabelle Ealet (10/14/2014) and Gregory Agran (10/14/2014).

¹³⁴⁶ Subcommittee interview of Jacques Gabillon (10/14/2014).

¹³⁴⁷ *Id.*

¹³⁴⁸ *Id.*

However, according to Christopher Wibbelman, another senior executive at Metro, Michael Whelan, the company's Vice President of Business Development, had registered a concern about an interaction between a Goldman trader and Mr. Gabillon.¹³⁴⁹ The incident was apparently the same as that referred to by Mr. Gabillon and discussed above. A June 2013 email from Mr. Whelan to Mr. Wibbelman, apparently referring to the interaction, stated that Mr. Whelan was resigning from the company and identified concerns with Metro's "Chinese Wall" policy. Mr. Whelan wrote:

"I have some questions and concerns regarding the Chinese Wall Policy that is in place which regulates the interaction between Metro International, its customers, and J. Aron [Goldman's primary commodities trading subsidiary]. This morning's confrontation was extremely questionable."¹³⁵⁰

Mr. Wibbelman told the Subcommittee he could not recall the details of the "confrontation" referred to in the 2013 email.¹³⁵¹

Goldman told the Subcommittee that the bank's compliance department subsequently determined that no breach of the LME information barriers policy had occurred with respect to the incident, but declined to provide any documentation.¹³⁵² Metro's CEO, Christopher Wibbelman, told the Subcommittee that he believed that Goldman came to that conclusion, in part, because the LME Chinese Wall policy covers only information that could flow from the warehouse company to Goldman.¹³⁵³ Goldman told the Subcommittee that the compliance review involved its Legal Department, and asserted and declined to waive attorney-client privilege in refusing to provide documents related to that review.¹³⁵⁴

All told, nearly 50 Goldman employees, including Commodities executives and traders, have had access to confidential Metro information, including information that could be commercially valuable to a trading company.¹³⁵⁵

¹³⁴⁹ Subcommittee interview of Christopher Wibbelman (10/6/2014).

¹³⁵⁰ 6/14/2013 email from Michael Whelan to Christopher Wibbelman, "Resignation," GSPSICOMMODS00047430.

¹³⁵¹ Subcommittee interviews of Christopher Wibbelman (10/6/2014).

¹³⁵² 10/20/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-GoldmanSachs-20-000001 - 041, at 002 - 003.

¹³⁵³ Subcommittee interview of Christopher Wibbelman (10/6/2014).

¹³⁵⁴ 10/20/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-GoldmanSachs-20-000001 - 041, at 002 - 003.

¹³⁵⁵ 8/15/2014 letter from Goldman legal counsel to Subcommittee, "Follow-up Requests," PSI-Goldman Sachs-17-000001 - 005, at 002, and Exhibits A and B, PSI-GoldmanSachs-17-000007, 009 (also listed as GSPSICOMMODS00046225 - 226).

(h) Current Status

Current relations between Goldman and Metro appear to be strained. In addition, in mid-2014, Goldman announced it was “exploring” a possible sale of the warehouse business.

Strained Relations. Prior to its acquisition by Goldman, Metro had built a robust warehousing business. Its senior executives, including Christopher Wibbelman, Mark Askew, and Michael Whelan, had each been with the company for more than a decade, and had been intimately involved in its economic well-being.¹³⁵⁶

After being acquired by Goldman, Metro’s executives were required to obtain approval for a large swath of Metro’s business activities, including each of the merry-go-round deals described above.¹³⁵⁷ According to Metro CEO Christopher Wibbelman, Metro employees found it, at times, “demanding” to work for Goldman.¹³⁵⁸ He indicated, for example, that Goldman traders sometimes pressured Metro employees to provide free or discounted rent when storing metal in the warehouses that Metro found not commercially viable.¹³⁵⁹

Mr. Wibbelman told the Subcommittee that he “never rolled over” to Goldman, and that Metro was repeatedly told by its Chairman of the Board, Jacques Gabillon, that Metro should always act in the best interests of Metro.¹³⁶⁰

Nevertheless, according to Mr. Wibbelman, at one point, there was what Mr. Wibbelman called a “falling out” between Metro and Goldman.¹³⁶¹ The contours of that dispute remain unclear, with some evidence suggesting that it involved Goldman’s decision to not store zinc in Metro after receiving an incentive from Metro to store it there.¹³⁶² The dispute was ultimately raised to Metro’s Chairman of the Board, Jacques Gabillon, and Isabelle Ealet, for resolution. Mr. Wibbelman told the Subcommittee that the matter was resolved, but relations remained strained. He said that, unlike his former marketing staff, he had not spoken with Goldman’s traders about sales issues in perhaps eight or nine months.¹³⁶³

Resignations and Departures. One of the complicating factors in determining what happened at Metro is the significant turnover in personnel. Since the end of 2012, key personnel have left both Metro

¹³⁵⁶ Subcommittee interview of Christopher Wibbelman (10/6/2014).

¹³⁵⁷ Id.

¹³⁵⁸ Id.

¹³⁵⁹ Id.

¹³⁶⁰ Id.

¹³⁶¹ Id.

¹³⁶² Id.

¹³⁶³ Id.

and Goldman. In February 2013, Mark Askew, Metro's Vice President for Marketing resigned after repeatedly raising concerns with Metro's "queue management."¹³⁶⁴ Shortly thereafter, despite a recent promotion, Michael Whelan, another senior Metro executive, resigned, citing concerns with Metro's "Chinese Wall Policy" in his resignation email.¹³⁶⁵ The senior aluminum trader at Goldman, who was hired after a referral by Mr. Wibbelman, also resigned.¹³⁶⁶ Lastly, a Goldman compliance executive who served on Metro's Board of Directors also left at about that time to take a new job.¹³⁶⁷

In May 2014, a Goldman spokesman stated publicly that Goldman was "exploring a sale" of its warehousing business, but as of November 2014, Goldman still owns it.¹³⁶⁸

(3) Issues Raised by Goldman's Involvement with Aluminum

Perhaps the most striking aspect of Goldman's foray into physical aluminum and the metals warehouse business is the extent to which, within three years, its actions significantly impacted U.S. aluminum markets. Goldman's ownership of Metro, Metro's rise to dominance in the U.S. LME aluminum storage business, and the long queues to remove metal from Metro have generated LME rule changes, Senate hearings, a *New York Times* expose, class action litigation, and ongoing allegations by industrial aluminum users that Metro's and Goldman's actions have increased aluminum prices and disrupted the aluminum market as a whole. Concerns include conflicts of interest, access to commercially valuable non-public information, and unfair trading advantages.

(a) Conflicts of Interest

The facts discovered by the Subcommittee raise at least four different types of conflict of interest issues, involving the merry-go-round trades, proprietary metal cancellations, premium sharing, and Goldman's authority over Metro operations.

Merry-Go-Round Transactions. The merry-go-round trades created multiple conflicts of interest for Metro and its owner, Goldman.

¹³⁶⁴ 12/4/2010 email from Mark Askew, Metro, to Christopher Wibbelman, Metro, GSPSICOMMODS00047422.

¹³⁶⁵ 6/14/2013 email from Michael Whelan to Christopher Wibbelman, "Resignation," GSPSICOMMODS00047430.

¹³⁶⁶ "Goldman Sachs heads of metals to retire," *Financial Times*, Jack Farhy (10/11/2012), <http://www.ft.com/intl/cms/s/0/497280ba-13d0-11e2-8260-00144feabdc0.html#axzz3li1Mkdjk>.

¹³⁶⁷ This compliance staffer joined a Geneva-based commodities trading firm.

¹³⁶⁸ See, e.g., "Goldman Puts Metals Warehouse Business Up For Sale," *Wall Street Journal*, Tatyana Shumsky and Christian Berthelsen (5/20/2014), <http://online.wsj.com/articles/SB10001424052702303468704579574283591643044>.

Those warehouse clients were asked to get into or stay in the warehouse queue to load out their metal. Cancellations of their warrants, which typically involved 100,000 or more metric tons of aluminum, significantly increased the length of the Metro Detroit queue. The longer queue was highly correlated with higher Midwest Premium prices, since that premium reflects, in part, metal storage costs, and longer queues meant increased rental payments. Higher Midwest Premiums, according to most experts with whom the Subcommittee spoke, also meant higher aluminum prices. Lengthening the queue, then – “queue management” – could be seen as, not only producing more rental income for Metro, but also higher prices for the aluminum held or being traded by Goldman.

When a metal owner involved with a merry-go-round trade got to the head of the warehouse queue, it often took weeks or months to load out its metal, essentially blocking the exits for all other metal owners until it was done. At the end of the process, the metal owner in the merry-go-round transaction re-loaded its metal into another Metro warehouse, and in the overwhelming number of cases, re-warranted the metal. The end result was that the delays imposed on the other metal owners in the Metro system appear to have had little economic rationale, but increased revenues to Metro and its owner, Goldman. The merry-go-round trades also involved an element of deception, since the metal being loaded “out” did not actually leave the Metro system at all, but went from one Metro warehouse to another.¹³⁶⁹ The LME is still considering whether such in-system transfers meet its minimum load-out requirement.

The evidence indicates that Goldman personnel, through the Metro Board of Directors and otherwise, reviewed and approved the merry-go-round deals. That meant senior Goldman personnel knew of the deals ahead of time, including the size, nature, and, in some instances, the timing of the cancellations. Goldman personnel acquired that information during the same period that Goldman itself was accumulating physical aluminum and engaging in substantial aluminum-related transactions.

In the end, the merry-go-round trades resulted in some clients receiving surreptitious financial incentives for leaving their metal within the Metro warehouse system while, at the same time, making it harder for other warehouse clients to exit. The deals resulted in more rent for

¹³⁶⁹ Metro counted the more than 600,000 metric tons of aluminum loaded “out” in the six merry-go-round deals as helping it meet the LME’s daily minimum load out requirement, even though it appears that nearly all of that metal was loaded right back into a Metro warehouse. See 4/15/2014 letter from Metro legal counsel to LME, GSPSICOMMODS00046834 - 849, at Appendix A, 835; 12/19/2012 MITSI Holdings LLC Board Meeting, prepared by Metro and Goldman, GSPSICOMMODS00009332 - 354, at 348.

Metro, offered trading opportunities for Goldman, and had the effect of distorting the aluminum market.

Other Warehouse Transactions. Other Metro warehouse transactions also raised conflict of interest concerns. Like the merry-go-round transactions, the large proprietary aluminum cancellations by Goldman and JPMorgan added to the Metro Detroit queues, were correlated with increases in the Midwest Premium price, and blocked the exits for other metal holders seeking to withdraw metal from the Metro system. Because longer queues also contributed to increased Metro rental income, Goldman's proprietary cancellations raised the conflict of interest concern that its actions added to Metro's revenues at the expense of Metro's clients, while ultimately benefiting Goldman as the owner of Metro.

The premium sharing payments, described earlier, allowed Metro to profit when the Midwest Premium rose. That type of financial incentive, which was not publicly disclosed, converts a warehouse company from a neutral actor in the aluminum marketplace to a biased market participant favoring higher premium prices. The LME has told the Subcommittee, however, that provided those arrangements did not relate to an LME contract, they would not violate LME rules prohibiting a warehouse company from taking a direct or indirect interest in an LME contract.¹³⁷⁰

Influencing Warehouse Management. Still another set of conflict of interest concerns involved Goldman's influence over Metro policies and actions. Because Metro was acquired as a merchant banking investment, Goldman was not permitted under U.S. law to routinely manage or control Metro. The evidence indicates, however, that Goldman required Metro senior management to clear many business decisions through the Board of Directors, which was composed exclusively of Goldman employees. That included Board review and approval of the merry-go-round deals. Later, when Metro was publicly criticized for its lengthy queues, it was Goldman who announced that it would swap metal with any aluminum end user waiting in Metro's queue.¹³⁷¹ In addition, Goldman provided significant assistance to Metro's legal and compliance functions.

Goldman might contend that Metro's decisions about financial incentives, including in the merry-go-round deals, involved millions of dollars and novel arrangements that were not matters of routine management and so should have been subject to Board oversight. Goldman may, in fact, have been involved with reviewing and

¹³⁷⁰ 10/15/2014 email from LME legal counsel to Subcommittee, PSI-LME-03-000001 - 004.

¹³⁷¹ See, e.g., "Goldman Sachs Offers Aluminum to Clients Stuck in Queue," Bloomberg, Michael J. Moore (7/31/2013), <http://www.bloomberg.com/news/2013-07-31/goldman-sachs-offers-aluminum-to-clients-stuck-in-queue.html>.

approving all of Metro's financial incentive programs. But when a trading company influences the incentives paid by a warehouse company to attract or retain metal, its actions may, as they did here, end up influencing prices in the corresponding markets. Similarly, if a trading company influences the incentives paid to metal owners for cancelling warrants, it also influences the length of the warehouse queue which, as discussed above, is highly correlated with the Midwest Premium price. The same is true for a trading company that influences a warehouse company's load out policies, which have a direct impact on the warehouse queue. In all of these cases, the trading company's influence over the warehouse company's actions may provide the trading company with trading advantages.

Each of these conflicts is embedded in the larger issue of commodity trading companies owning commodity warehousing companies. Traditionally, LME-approved warehouses were owned by companies that were not engaged in trading. It is only in the last five years that a significant portion of LME-approved warehouses have come under the ownership of companies that trade in the commodity markets.¹³⁷² That new development raises serious conflict of interest concerns illustrated by the Metro-Goldman relationship.

(b) Aluminum Market Impact

The Metro warehouse practices described above also had a broader market impact. In the last five years, Metro has expanded rapidly and, by early 2014, controlled 85% of the U.S. LME aluminum storage market. It also developed an extraordinarily long queue that was highly correlated with the recent, unprecedented increases in the Midwest Premium.

Metro's warehouse practices in Detroit likely contributed to the Midwest Premium's rapid rise since 2010, in both real dollar terms and in its growing percentage of the all-in price of aluminum. That percentage increase necessarily reduced the percentage of the all-in aluminum price attributable to the LME reference price, undermining the ability of aluminum users to effectively hedge their price risks on the LME futures market. Higher premium prices and less effective hedging tools have caused widespread difficulty for aluminum users facing volatile aluminum prices, including in the defense, transportation, beverage, and construction sectors. These facts suggest that changes in aluminum prices over the past several years may not have been simply the product of fundamental market forces of supply and demand, but also responses to the warehousing practices and transactions described in this report. To restore the integrity of warehousing operations and

¹³⁷² See earlier discussion.

aluminum pricing, it seems essential to separate warehouse companies from trading companies.

(c) Non-Public Information

A third set of concerns highlighted by Goldman's physical aluminum activities involves the issue of a trading company's gaining unfair advantages through access to commercially valuable, non-public information. When Goldman acquired Metro, it acquired a company with vast amounts of commercially valuable, non-public information about aluminum including, with respect to incoming and outgoing metal shipments, information regarding large cancellations, metal re-warranting, non-LME metal stockpiles, and queue lengths. As described earlier, access to that type of information can give a commodity trader an unfair advantage over trading counterparties.

While both Metro and Goldman have information barrier policies designed to implement the LME's requirements, those policies and LME's rules nevertheless allowed over 50 Goldman employees, including some with trading and trading management responsibilities, to receive routine reports with commercially valuable, non-public information from Metro.¹³⁷³ For example, Gregory Agran, sat on Metro's Board of Directors at the same time he headed a commodities trading desk for Goldman and worked alongside Goldman aluminum traders on the same trading floor in New York.¹³⁷⁴ Similarly, Isabelle Ealet, who was, for most of the relevant period, Head of Global Commodities at Goldman, received information about Metro while, at the same time, exercising responsibility over all of Goldman's commodities-related trading operations, including aluminum trading.¹³⁷⁵

When Goldman acquired Metro and obtained access to non-public Metro information, it also increased its aluminum trading, hired new aluminum traders friendly with Metro management, accumulated massive aluminum holdings, engaged in outsized aluminum transactions, and traded in aluminum-related swaps.¹³⁷⁶ In addition, Goldman employees, through the Metro Board of Directors and otherwise, reviewed and approved the merry-go-round deals, which meant Goldman personnel had non-public information about the deals ahead of time, including the size, nature, and timing of the cancellations.

¹³⁷³ 8/15/2014 letter from Goldman legal counsel to Subcommittee, "Follow-up Requests," PSI-Goldman Sachs-17-000001 - 005, at 002, and Exhibits A and B, PSI-Goldman Sachs-17-000007, 009 (also listed as GSPSICOMMODS00046225 - 226).

¹³⁷⁴ Subcommittee interview of Gregory Agran (10/14/2014).

¹³⁷⁵ Subcommittee interview of Isabelle Ealet (10/14/2014). Ms. Ealet told the Subcommittee that, despite receiving written Metro briefings and occasional updates from Jacques Gabillon, she exercised little to no oversight of Metro operations and was generally not involved in individual commodities trading strategies or positions. *Id.*

¹³⁷⁶ See 9/17/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-Goldman Sachs-15-000001 - 015, at 003.

If Metro or Goldman were to violate the LME's information barrier requirements, the LME could rescind approval of Metro's warehouse system. But doing so could disrupt LME trading worldwide and damage the LME itself, making it a difficult penalty to impose.¹³⁷⁷ Another problem is that U.S. law today does not prohibit the use of material, non-public information in commodity transactions in the same manner as securities transactions. For most of its 200-year history, commodity futures markets were relatively small in size and dominated by commodity producers and users seeking to hedge price risks. They traditionally controlled roughly 70% of the futures trading, while speculators controlled only about 30%.¹³⁷⁸ Today, however, those percentages have reversed, and financial firms – including bank holding companies – have become the dominant players in commodity markets.

Pursuant to the Dodd-Frank Act, the Commodity Futures Trading Commission adopted a rule that is intended to implement an “insider trading” prohibition that is similar to the longstanding prohibition on insider trading in the securities laws.¹³⁷⁹ It is unclear, however, if the CFTC's new prohibition applies to the facts described here, and if so, how it might work. For example, even assuming that the LME rule and Metro information barrier policies established a sufficient duty to not trade based on non-public warehouse information, it is unclear whether the scope of the prohibition would cover trading in the physical markets, as opposed to the financial markets. If markets are to be fair in their operations, larger traders should be legally precluded from using material non-public information gained from warehouse ownership to benefit their trading activities in the physical and financial markets for commodities stored in those warehouses.

In the meantime, a trading company that has access to non-public information from a warehouse company presents the former with ongoing opportunities to use that information to benefit its trading activities.

¹³⁷⁷ The LME may be in the process of establishing new, more practical penalties and enforcement powers. 11/10/2014 email from LME to Subcommittee, PSI-LME-06-000001 - 003.

¹³⁷⁸ See “Excessive Speculation and Compliance with the Dodd-Frank Act,” hearing before the Permanent Subcommittee on Investigations, S. Hrg. 112-313 (11/3/2011), at 32-33, <http://www.gpo.gov/fdsys/pkg/CHRG-112shrg72487/pdf/CHRG-112shrg72487.pdf> (testimony of CFTC Chairman Gary Gensler indicating that, 2011, 80% of the oil futures market participants were speculators, as opposed to producers or consumers).

¹³⁷⁹ See “Rule 180.1: The CFTC Targets Fraud and Manipulation,” *New York Law Journal*, David Mesiter, Jocelyn Strauber and Brittany Bettman, (4/7/2014), <http://www.newyorklawjournal.com/id=1202649563488/Rule-1801-Thc-CFTC-Targets-Fraud-and-Manipulation?slreturn=20141010180332>.

(4) Analysis

All three of the financial holding companies examined by the Subcommittee were heavily involved with aluminum trading. In addition, Goldman was not the only financial holding company that owned a network of LME-approved warehouses. For four years, JPMorgan owned the Henry Bath network of LME warehouses, although those warehouses operated without lengthy queues and JPMorgan sold the business in 2014.

Goldman's aluminum activities and its ownership of Metro illustrate troubling issues involving conflicts of interest, market distortions, and the potential to gain unfair trading advantages from non-public information, all of which can arise when a financial holding company owns a commodity-related business at the same time it is actively trading the same commodities. Since being acquired by Goldman, Metro's practices have likely added billions of dollars in costs to a wide range of aluminum users, from beer makers to car manufacturers to defense companies that make warships for the Navy. It is past time for the Federal Reserve and other regulators, including the LME, to adopt and enforce needed safeguards on this high risk physical commodity activity.

V. MORGAN STANLEY

Morgan Stanley has a long history of involvement with a vast array of physical commodities. For many years prior to becoming a bank holding company in 2008, Morgan Stanley built up an extensive series of businesses involving oil products, adding natural gas as a secondary focus in recent years, among other commodities. This case study examines Morgan Stanley's involvement with natural gas through trading, investments in a major pipeline company, and actions to construct its own natural gas compression facility. It also examines how Morgan Stanley once ran an empire of oil-related commodity activities, including trading, storing, transporting, and supplying oil products, including supplying jet fuel to airlines. Each of the financial holding companies examined by the Subcommittee was heavily involved with oil and natural gas activities; this case history illustrates common issues involving operational risks and conflicts of interest.

A. Overview of Morgan Stanley

Morgan Stanley is a large global financial services firm incorporated under Delaware law and headquartered in New York City.¹³⁸⁰ It is listed on the New York Stock Exchange (NYSE) under the ticker symbol "MS."¹³⁸¹ In addition to being one of the largest financial holding companies in the United States, Morgan Stanley conducts operations in more than 25 countries and has over 55,000 employees.¹³⁸² In 2013, Morgan Stanley reported total consolidated assets of \$833 billion, \$32 billion in revenues, and net income of \$3.6 billion.¹³⁸³

Morgan Stanley Leadership. The Chairman of the Board and Chief Executive Officer of Morgan Stanley is James P. Gorman.¹³⁸⁴ He has been Chief Executive Officer since 2010 and Chairman of the Board since 2012.¹³⁸⁵ His predecessor was John J. Mack. The Chief Operating Officer is James Rosenthal, and the Chief Financial Officer is Ruth

¹³⁸⁰ 2013 Morgan Stanley Annual Report, filed with the SEC on 2/25/2014, at 1.

<http://www.sec.gov/Archives/edgar/data/895421/000119312514067354/d639242d10k.htm>.

¹³⁸¹ Undated "Investor Relations," Morgan Stanley website,

http://www.morganstanley.com/about/ir/sec_filings.html.

¹³⁸² Id.; undated "Global Offices," Morgan Stanley website,

<http://www.morganstanley.com/about/offices/index.html>; undated "Morgan Stanley," *New York Times*, <http://dealbook.nytimes.com/public/overview?symbol=MS>; 6/30/2014

"Holding Companies with Assets Greater Than \$10 Billion," prepared by the National Information Center using data from the Federal Reserve, Federal Financial Institutions Examination Council website, <http://www.ffiec.gov/nicpubweb/nicweb/Top50Form.aspx>.

¹³⁸³ 2013 Morgan Stanley Annual Report, filed with the SEC on 2/25/2014, at 50,

<http://www.sec.gov/Archives/edgar/data/895421/000119312514067354/d639242d10k.htm>; 12/31/2013 "Consolidated Financial Statements for Holding Companies," Form FR Y-9C, filed by Morgan Stanley with the Federal Reserve.

¹³⁸⁴ 2013 Morgan Stanley Annual Report, filed with the SEC on 2/25/2014, at 21,

<http://www.sec.gov/Archives/edgar/data/895421/000119312514067354/d639242d10k.htm>.

¹³⁸⁵ Id.

Porat.¹³⁸⁶ The Global Co-Heads of Morgan Stanley Commodities are Simon Greenshields and Colin Bryce.¹³⁸⁷ Three other senior commodities executives are Peter Sherk, Head of North American Power and Gas; Deborah Hart, Chief Operating Officer of North American Power and Gas; and Nancy King, Global Head of Oil Liquids Flow.¹³⁸⁸

(1) Background

Morgan Stanley was formed by former members of J.P. Morgan & Company after enactment of the Glass-Steagall Act of 1933.¹³⁸⁹ Because the Glass-Steagall Act required the separation of commercial banking and investment banking activities, in 1935, Henry S. Morgan, and Harold Stanley left J.P. Morgan & Company, which chose to remain a bank, and formed Morgan Stanley as a separate securities firm.¹³⁹⁰ Since its formation, the firm has grown significantly while conducting a wide range of securities, investment, and other financial activities, including trading in commodities. Morgan Stanley first registered with the CFTC as a futures commodity merchant in 1982,¹³⁹¹ and over the next few years began trading oil and natural gas futures and options.¹³⁹² In 1986, Morgan Stanley became a publicly traded corporation.¹³⁹³

Bank Holding Company. In September 2008, in the midst of the financial crisis, Morgan Stanley submitted,¹³⁹⁴ and the Federal Reserve approved on the same day,¹³⁹⁵ an application to become a bank holding

¹³⁸⁶ Id.

¹³⁸⁷ 1/9/2013 “Morgan Stanley Commodities Business Overview,” prepared by Morgan Stanley, FRB-PSI-624436 - 508, at 450.

¹³⁸⁸ 9/19/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-13-000001 - 009, at 005.

¹³⁸⁹ Undated “Company History - Interactive Timeline,” Morgan Stanley website, <http://www.morganstanley.com/about/company/timeline/index.html#/year/1930>.

¹³⁹⁰ Id.

¹³⁹¹ Undated “Morgan Stanley & Co. LLC,” National Futures Association BASIC website, <http://www.nfa.futures.org/basicnet/Details.aspx?entityid=UpygXzt3Ct4%3d&rn=N>.

¹³⁹² 1/9/2013 “Morgan Stanley Commodities Business Overview,” prepared by Morgan Stanley, FRB-PSI-624436 - 508, at 450; 2/11/2013 presentation “Morgan Stanley Commodities Business Overview,” prepared by Morgan Stanley for the Subcommittee (hereinafter, “2013 Morgan Stanley Commodities Business Overview”), PSI-MorganStanley-01-000001 - 027, at 004.

¹³⁹³ Undated “Company History - Interactive Timeline,” Morgan Stanley website, <http://www.morganstanley.com/about/company/timeline/index.html#/year/1980>.

¹³⁹⁴ 9/21/2008 “Application to the Board of Governors of the Federal Reserve System by Morgan Stanley for prior approval to acquire 100% of Morgan Stanley Bank, National Association and thereby become a Bank Holding Company Pursuant to Section 3(a)(1) of the Bank Holding Company Act and a Declaration to become Financial Holding Company pursuant Section 225.82 of Regulation Y,” prepared by Morgan Stanley and filed with the Federal Reserve, FRB-PSI-302972 - 996 (full capitalization of some words omitted).

¹³⁹⁵ 9/21/2008 “Order Approving Formation of Bank Holding Companies and Notice to Engage in Certain NonBanking Activities,” prepared by the Federal Reserve, <http://www.federalreserve.gov/newsevents/press/orders/orders20080922a2.pdf>; 9/21/2008 Morgan Stanley press release, “Morgan Stanley Granted Federal Bank Holding Company Status by U.S. Federal Reserve Board of Governors,” <http://www.morganstanley.com/about/press/articles/6933.html>.

company with access to Federal Reserve lending programs. At the same time, Morgan Stanley converted an industrial bank it held in Utah into a national bank under supervision of the OCC.¹³⁹⁶ Morgan Stanley also elected to become a financial holding company.¹³⁹⁷ Today, Morgan Stanley owns two banks with federal deposit insurance, Morgan Stanley Bank, N.A. and Morgan Stanley Private Bank, N.A.¹³⁹⁸ At the end of 2013, their combined deposits totaled about \$112 billion.¹³⁹⁹

Key Subsidiaries. In addition to its banks, other key Morgan Stanley subsidiaries include Morgan Stanley & Co. LLC, a U.S. broker-dealer and futures commission merchant; Morgan Stanley Smith Barney LLC, another U.S. broker-dealer and futures commission merchant; and Morgan Stanley Capital Services LLC, a U.S. swap dealer.¹⁴⁰⁰ Morgan Stanley Capital Group Inc. is its leading U.S. subsidiary in the commodities area; it is also a swap dealer.¹⁴⁰¹ Its leading U.K. subsidiary is Morgan Stanley & Co. International plc, which is registered as a broker-dealer.¹⁴⁰²

¹³⁹⁶ 9/21/2008 “Order Approving Formation of Bank Holding Companies and Notice to Engage in Certain NonBanking Activities,” prepared by the Federal Reserve, at 1, <http://www.federalreserve.gov/newsevents/press/orders/orders20080922a2.pdf>.
¹³⁹⁷ Undated “Financial Holding Companies,” prepared by the Federal Reserve, <http://www.federalreserve.gov/bankinfo/foreg/fhc.htm>.
¹³⁹⁸ Undated “Bank Find Results: Morgan Stanley,” prepared by Federal Deposit Insurance Corporation (FDIC), <http://research.fdic.gov/bankfind/results.html?name=Morgan+Stanley&fdic=&address=&city=&state=&zip=> (listing seven FDIC registered banks with the “Morgan Stanley” name, but identifying Morgan Stanley Bank, N.A. and Morgan Stanley Private Bank, N.A. as the only two banks with active FDIC status). Morgan Stanley Bank, N.A. is headquartered in Salt Lake City, Utah and has only one location. It was first established as an industrial bank on May 25, 1990, as Mountainwest Financial Corp. In 1998, it changed to Morgan Stanley Dean Witter Bank, Inc., and took its current name in 2008, when it also converted into a commercial bank under OCC supervision. See undated “Morgan Stanley Bank, National Association (FDIC #: 32992),” prepared by FDIC, FDIC website, <http://research.fdic.gov/bankfind/detail.html?bank=32992&name=Morgan%20Stanley%20Bank,%20National%20Association&searchName=Morgan%20Stanley&searchFdic=&city=&state=&zip=&address=&tabId=1>. Morgan Stanley Private Bank, N.A. is headquartered in Purchase, New York and also owns “Morgan Stanley Trust Office” in Wilmington, Delaware. Morgan Stanley Private Bank, N.A. was established on August 12, 1996, under the name “Dean Witter Trust FSB” as a stock savings bank in Jersey City, New Jersey. On March 24, 1998, it changed its name to Morgan Stanley Dean Witter Trust FSB. On December 10, 2001, the bank changed its name again to “Morgan Stanley Trust.” On July 1, 2010, the bank changed to its current name and converted into a commercial bank under OCC supervision. See undated “Morgan Stanley Private Bank, National Association (FDIC #: 34221),” prepared by FDIC, FDIC website, <http://research.fdic.gov/bankfind/detail.html?bank=34221&name=Morgan%20Stanley%20Private%20Bank,%20National%20Association&searchName=Morgan%20Stanley&searchFdic=&city=&state=&zip=&address=&tabId=1>. See also 6/30/2013 Morgan Stanley Quarterly Report, filed with the SEC on 8/2/2013, at 8-9, <http://www.sec.gov/Archives/edgar/data/895421/000119312513317186/d542053d10q.htm>.
¹³⁹⁹ 2013 Annual Report for Morgan Stanley, filed with the SEC on 2/25/2014, at 98, <http://www.sec.gov/Archives/edgar/data/895421/000119312514067354/d639242d10k.htm>.
¹⁴⁰⁰ 7/1/2014 “2014 Morgan Stanley Resolution Plan” (hereinafter “2014 Morgan Stanley Resolution Plan”), prepared by Morgan Stanley, at 9, <http://www.federalreserve.gov/bankinfo/foreg/resolution-plans/morgan-stanley-1g-20140701.pdf>.
¹⁴⁰¹ Id.
¹⁴⁰² Id.

Major Business Lines. According to Morgan Stanley, it has three primary business segments: (1) Institutional Securities, which provides financial advisory, capital-raising, lending, trading, and investment services to institutional clients such as corporations, hedge funds, and other financial institutions; (2) Wealth Management, which provides similar services to individual investors “through a network of 16,784 global representatives in 649 locations”; and (3) Investment Management, which provides equity, fixed income, real estate investing, and merchant banking activities and services for institutional investors, high net worth individuals, hedge funds, private equity funds, and real estate funds.¹⁴⁰³ The Institutional Securities segment’s trading and sales activities include both financial and physical commodity activities.¹⁴⁰⁴

Commodities. With respect to commodities, Morgan Stanley told the Subcommittee that the “overwhelming majority of business in physical commodities resides in Morgan Stanley Commodities,” which is part of its Institutional Securities business segment.¹⁴⁰⁵ “Morgan Stanley Commodities,” also referred to at times as “Global Commodities” and, in the past, as the “Worldwide Commodities Group,” is headquartered in Purchase, New York.¹⁴⁰⁶ In 2013, Morgan Stanley Commodities managed “365 dedicated front office employees and over 1,000 total employees... covering markets 24 hours per day.”¹⁴⁰⁷

Within the commodities group, Morgan Stanley maintained five offices, or “desks,” organized around particular types of commodities: (1) Oil Liquids; (2) North American Electricity and Natural Gas; (3) European Union and Asia Pacific Electricity and Natural Gas; (4) Metals; and (5) Other Commodities.¹⁴⁰⁸ In addition, Morgan Stanley Commodities maintained a “Principal Investments” office that invested

¹⁴⁰³ Id. at 9-12. See also 2012 Morgan Stanley Annual Report, filed with the SEC on 2/26/2013, at 2-6.

¹⁴⁰⁴ <http://www.sec.gov/Archives/edgar/data/895421/000119312513077191/d484822d10k.htm>

¹⁴⁰⁵ 2014 Morgan Stanley Resolution Plan, at 10; Subcommittee briefing by Morgan Stanley (9/8/2014).

¹⁴⁰⁶ 7/16/2013 letter from Morgan Stanley legal counsel to the Subcommittee (hereinafter “2013 Morgan Stanley response to Subcommittee questionnaire”), PSI-MorganStanley-07-000001 - 034, at 001. See also 8/29/2014 “Morgan Stanley Infrastructure Partners, Overview of Southern Star,” MS-PSI-00000001 - 037, at 005, 007 (showing Commodities is part of Institutional Securities); 2014 Morgan Stanley Resolution Plan, at 10; 2012 Morgan Stanley Annual Report, filed with the SEC on 2/26/2013, at 3-4.

¹⁴⁰⁷ <http://www.sec.gov/Archives/edgar/data/895421/000119312513077191/d484822d10k.htm>.

¹⁴⁰⁸ Morgan Stanley explained to the Subcommittee that its Wealth Management business segment had also maintained, since 2008, a small inventory of precious metals, but was not otherwise involved with physical commodities. 2013 Morgan Stanley response to Subcommittee questionnaire, at 6.

¹⁴⁰⁹ Subcommittee briefing by Morgan Stanley (2/4/2014). See also 5/7/2009 “Morgan Stanley Global Commodities Overview,” prepared by Morgan Stanley (hereinafter “2009 Morgan Stanley Global Commodities Overview”), FRB-PSI-618889 - 908, at 893.

¹⁴¹⁰ 2013 Morgan Stanley Commodities Business Overview, at 004.

¹⁴¹¹ Id. at 011-027. See also 2009 Morgan Stanley Global Commodities Overview, at 893.

on behalf of Morgan Stanley in commodity-related businesses; a “Global Marketing” office which marketed physical commodities and commodity-related services; and a “Commodities Risk Management” office, which analyzed and monitored risks associated with commodities transactions.¹⁴⁰⁹

One key legal entity executing activities on behalf of Morgan Stanley Commodities was Morgan Stanley Capital Group Inc. (MSCG), which conducted the bulk of its commodities trading in the futures, swaps, options, forwards, and spot markets.¹⁴¹⁰ MSCG also, through various subsidiaries, owned key physical commodity businesses,¹⁴¹¹ including the Heidmar Group, a marine transportation company,¹⁴¹² Wellbore Capital LLC, an oil and gas exploration company,¹⁴¹³ and Wentworth Holdings LLC, a shell company seeking to build natural gas compression facilities, as described further below.¹⁴¹⁴ In addition, MSCG personnel sometimes executed physical commodity supply contracts, such as contracts to supply jet fuel to airlines as described below.¹⁴¹⁵ Morgan Stanley also owned numerous other subsidiaries involved with physical commodities, including, for example, TransMontaigne Inc., which operated an oil storage and pipeline company as described below; MSDW Power Development Corporation, which developed power plants and solar power companies, and Morgan Stanley Commodities Trading Hong Kong Holdings Limited.¹⁴¹⁶

Commodities-Related Merchant Banking. In addition to its commodities group, Morgan Stanley engaged in commodity-related activities through certain investment funds and merchant banking activities undertaken in other areas of the bank. Morgan Stanley’s Investment Management business segment included a unit called “Merchant Banking and Real Estate Investments.”¹⁴¹⁷ It housed at least two Morgan Stanley partnerships with commodity-related investments.¹⁴¹⁸

¹⁴⁰⁹ 2009 Morgan Stanley Global Commodities Overview, at 893.

¹⁴¹⁰ Subcommittee briefing by Morgan Stanley (2/4/2014). See also 2009 Morgan Stanley Global Commodities Overview, at 901.

¹⁴¹¹ See 2013 Morgan Stanley Annual Report, Exhibit 21, filed with the SEC on 2/25/2014, <http://www.sec.gov/Archives/edgar/data/895421/000119312514067354/d639242dex21.htm>.

¹⁴¹² 8/2/2006 “Morgan Stanley Capital Group Inc. signs definitive agreement to acquire the Heidmar Group,” Morgan Stanley press release,

<http://www.morganstanley.com/about/press/articles/3767.html>.

¹⁴¹³ See, e.g., 7/16/2013 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-07-000001 - 034, at 008, 034.

¹⁴¹⁴ 9/19/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-13-000001 - 009, at 004 (tracing ownership chain from MSCG to Wentworth Holdings LLC).

¹⁴¹⁵ Subcommittee briefing by Morgan Stanley (2/4/2014).

¹⁴¹⁶ Id.

¹⁴¹⁷ Subcommittee briefing by Morgan Stanley (9/8/2014).

¹⁴¹⁸ Id.; 8/29/2014 presentation, “Morgan Stanley Infrastructure Partners Overview of Southern Star,” prepared by Morgan Stanley, MS-PSI-00000001 - 037, at 005; 9/11/2013 “Morgan

The first was Morgan Stanley Infrastructure Partners LP (MSIP) which Morgan Stanley established in 2007.¹⁴¹⁹ A Morgan Stanley subsidiary, MS Infrastructure GP LP, acted as MSIP's general partner; Morgan Stanley employees actually directed and oversaw the investments; and Morgan Stanley was the largest single investor with a nearly 11% ownership stake valued at about \$430 million.¹⁴²⁰ MSIP raised \$4 billion for investments in infrastructure projects around the world, focused in part on energy and utility projects.¹⁴²¹ One key holding was Southern Star Central Corporation which owns natural gas storage facilities and pipelines in the U.S. Midwest, described further below.¹⁴²² Others were Continuum Wind Energy which developed and financed wind farms in India; SAESA Group, which is the second largest energy distributor in Chile; and Zhaoheng Hydropower, which operated hydropower plants in China.¹⁴²³

The second partnership within Merchant Banking and Real Estate Investments is Morgan Stanley Global Private Equity.¹⁴²⁴ Like the infrastructure partnership, a Morgan Stanley subsidiary acted as the general partner; Morgan Stanley employees actually directed and oversaw its investments; and Morgan Stanley was the largest single investor with an ownership interest varying from 23% to 33% since 2008.¹⁴²⁵ Morgan Stanley Global Private Equity has sponsored five investment funds, some of which have made commodity-related

Stanley Infrastructure Platform Review," prepared by Morgan Stanley, FRB-PSI-400321 - 382, at 326.

¹⁴¹⁹ 8/29/2014 presentation, "Morgan Stanley Infrastructure Partners Overview of Southern Star," prepared by Morgan Stanley, MS-PSI-00000001 - 037, at 009.

¹⁴²⁰ Id. at 002, 006, 009 (disclosing \$430 million MSIP investment by Morgan Stanley in fund that raised \$4 billion overall); Subcommittee briefing by Morgan Stanley (9/8/2014); 10/24/2014 presentation "Morgan Stanley Infrastructure Partners Southern Star Follow Up Questions," prepared by Morgan Stanley, MS-PSI-00000455 - 475, at 456; 9/11/2013 "Morgan Stanley Infrastructure Platform Review," prepared by Morgan Stanley, FRB-PSI-400321 - 382, at 328.

¹⁴²¹ 8/29/2014 presentation, "Morgan Stanley Infrastructure Partners Overview of Southern Star," prepared by Morgan Stanley, MS-PSI-00000001 - 037, at 009, 011; 9/11/2013 "Morgan Stanley Infrastructure Platform Review," prepared by Morgan Stanley, FRB-PSI-400321 - 382, at 331. See also undated "OECD Assets within Morgan Stanley Infrastructure Portfolios," prepared by Morgan Stanley Infrastructure,

<http://www.morganstanley.com/infrastructure/portfolio.html>.

¹⁴²² See 8/23/2012 Morgan Stanley press release, "Morgan Stanley Infrastructure Partners Acquires Full Ownership of Southern Star Central Corp.,"

http://www.morganstanley.com/infrastructure/pdf/msin_08232012.pdf.

¹⁴²³ See 9/11/2013 "Morgan Stanley Infrastructure Platform Review," prepared by Morgan Stanley, FRB-PSI-400321 - 382, at 333; undated "Home," on the Continuum Wind Energy website, <http://continuumenergy.in/> (providing the company history and stating it is majority-owned by MSIP); 11/8/2011 Morgan Stanley press release, "Morgan Stanley Infrastructure Announces Sales of Its Interest in SAESA Group,"

<http://www.morganstanley.com/infrastructure/pdf/11082011.pdf> (indicating MSIP acquired a 50% ownership interest in SAESA Group in 2008, and sold it in 2011).

¹⁴²⁴ Subcommittee briefing by Morgan Stanley (9/8/2014); 10/24/2014 "Morgan Stanley Infrastructure Partners[:] Southern Star Follow Up Questions," prepared by Morgan Stanley, MS-PSI-00000455 - 475, at 460 [sealed exhibit].

¹⁴²⁵ See 5/21/2013 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-05-000001 - 006, at 003.

investments. The most recent fund, for example, has investments in Triana Energy, a U.S. natural gas exploration and production company; Trinity, a U.S. carbon dioxide pipeline company; and Sterling Energy, a U.S. natural gas gathering, processing, and marketing company.¹⁴²⁶

In 2013, Morgan Stanley prepared a list of its “Commodities Division Merchant Banking Investments” and provided it to the Federal Reserve.¹⁴²⁷ The list identified investments in a new TransMontaigne oil storage facility expected to begin operations in late 2013, an aircraft fuel storage facility at an airport in the Netherlands, and a number of solar power projects.¹⁴²⁸ The list did not include any reference, however, to the commodity-related investments made by the Morgan Stanley Infrastructure or Global Private Equity investment funds.¹⁴²⁹ In June 2014, Morgan Stanley reported to the Federal Reserve that it held merchant banking investments with a total value of about \$11 billion, of which about \$5 billion was held under the Gramm-Leach-Bliley Act; it remains unclear how many of those were commodity related and whether the total included the commodity-related projects in the two investment funds.¹⁴³⁰

Commodities Trading. At the same time it conducts a wide range of physical commodity activities, Morgan Stanley trades commodities-related financial instruments, including futures, swaps, and options, involving billions of dollars each day. Morgan Stanley is among the ten largest financial institutions in the United States trading financial commodity instruments, according to Coalition Development Ltd., a company that collects commodity trading statistics.¹⁴³¹ OCC data indicates it is one of the largest financial institutions trading commodity-related derivatives.¹⁴³²

Commodities Revenues. Historically, commodity activities provided a significant revenue stream for Morgan Stanley. Over time, revenues derived from this area have dropped substantially. According to an internal Morgan Stanley presentation, in 2008, the commodities

¹⁴²⁶ See undated “Morgan Stanley Global Private Equity - Portfolio,” Morgan Stanley website, http://www.morganstanley.com/institutional/invest_management/private_equity/portfolio.html.

¹⁴²⁷ Undated “Commodities Division Merchant Banking Investments,” prepared by Morgan Stanley, FRB-PSI-400001 - 382, at 318.

¹⁴²⁸ Id.

¹⁴²⁹ Id.

¹⁴³⁰ 6/30/2014 “Consolidated Holding Company Report of Equity Investments in Nonfinancial Companies – FR Y-12,” prepared by Morgan Stanley and filed with the Federal Reserve, FRB-PSI-800009 - 012.

¹⁴³¹ 9/2014 “Global & Regional Investment Bank League Tables - 1H2014,” prepared by Coalition Development Ltd., PSI-Coalition-01-000019 - 025, at 020 - 021.

¹⁴³² 12/31/2013 “OCC Quarterly Report on Bank Trading and Derivatives Activity Fourth Quarter 2013,” prepared by OCC, at Tables 1 and 2, <http://www.occ.gov/topics/capital-markets/financial-markets/trading/derivatives/dq413.pdf>.

group produced about \$3 billion in revenues for the firm,¹⁴³³ with “22% and 26% [c]ompound [a]nnual [g]rowth [r]ates for revenues and [p]rofit [b]efore [t]ax, respectively.”¹⁴³⁴ The Federal Reserve estimated that, as of March 31, 2011, Morgan Stanley had about \$13.1 billion in commodities-related assets, of which about \$9 billion “relate[d] to the ownership and trading of oil-related commodities” and \$900 million “relate[d] to the ownership and trading of electricity and natural gas in North America.”¹⁴³⁵

In a 2013 presentation to the Subcommittee, however, Morgan Stanley provided data showing that its commodities revenues had declined every year since 2008.¹⁴³⁶ From a total of \$3 billion in 2008, its net revenues had fallen by two-thirds in 2012, to \$912 million.¹⁴³⁷ The oil liquids desk experienced the greatest drop in revenues, falling from \$1.4 billion in 2008, to a 2012 total of \$676 million.¹⁴³⁸

(2) Historical Overview of Involvement with Commodities

According to Morgan Stanley, it first began trading physical and financial commodities in the early 1980s.¹⁴³⁹ Its first foray was in 1982, after it registered as a futures commissions merchant, trading precious metals.¹⁴⁴⁰ Over the next few years, Morgan Stanley also began trading crude oil and natural gas.¹⁴⁴¹ In 1984, Morgan Stanley entered into a joint venture with Transco Energy Company and others to form the Natural Gas Clearinghouse (NGC), which “brokered and marketed

¹⁴³³ 2009 Morgan Stanley Global Commodities Overview, at 896; 2013 Morgan Stanley response to Subcommittee questionnaire, at 5.

¹⁴³⁴ 2009 Morgan Stanley Global Commodities Overview, at 891.

¹⁴³⁵ 6/19/2011 internal Federal Reserve email, “MS Commodities details for 4(o) memo,” FRB-PSI-200942 - 943, at 943.

¹⁴³⁶ 2013 Morgan Stanley Business Overview, at 009.

¹⁴³⁷ Id.

¹⁴³⁸ Id. See also “Morgan Stanley Said to Cut 10% of Commodities Jobs Amid Rut,” Bloomberg, Michael J. Moore (6/20/2013), <http://www.bloomberg.com/news/print/2013-06-20/morgan-stanley-said-to-cut-commodities-jobs-as-revenue-declines.html> (“Morgan Stanley is cutting jobs in its commodities business, one of the Wall Street’s three biggest, after Chief Executive Officer James Gorman said revenue the past two quarters was among the unit’s worst in 18 years.”).

¹⁴³⁹ See undated document prepared by the Federal Reserve entitled, “Comparison of Risks of Commodity Activities at Morgan Stanley and Goldman Sachs between 1997 and Present,” FRB-PSI-200428 - 454, at 452 (presenting two timelines described as having been submitted by Morgan Stanley to the Federal Reserve “[d]uring exams”) [sealed exhibit]. The same two timelines appear in an undated document prepared by the Federal Reserve entitled, “Appendix: Morgan Stanley Global Commodities Timelines” (hereinafter “Morgan Stanley Global Commodities Timelines”), FRB-PSI-000025 [sealed exhibit]. In addition, one of the timelines appears in 2009 “Morgan Stanley Global Commodities Overview,” FRB-PSI-618889 - 908, at 892; and in 2013 Morgan Stanley Commodities Business Overview, at PSI-MorganStanley-01-000011, at 011 - 027.

¹⁴⁴⁰ 2009 Morgan Stanley Global Commodities Overview, at 889 - 908.

¹⁴⁴¹ Id. See also 7/8/2010 letter from Morgan Stanley to the Federal Reserve, FRB-PSI-200173 - 182, at 174 - 178 (citing investments in various natural gas producing, processing, and transportation ventures).

natural gas and gas liquids” and owned pipeline transportation operations.¹⁴⁴² In 1985, Morgan Stanley bought out the other investors to acquire sole ownership, then sold NGC in 1989.¹⁴⁴³ In the late 1980s, according to Morgan Stanley, it also began intensifying its activities associated with storing oil, chartering oil transport, and refining oil products.¹⁴⁴⁴ During all of this period, Morgan Stanley operated, not as a bank, but as a securities firm that had no restrictions on its commodity-related investments.

During the 1990s and the first decade of the 2000s, Morgan Stanley continued to increase its commodities trading activities as well as its investments in physical commodity businesses. According to Morgan Stanley, in the 1990s, it expanded into trading base metals and electricity, while making investments in a hydroelectric power producer, aluminum manufacturer, and steel rolling mill.¹⁴⁴⁵ Over time, Morgan Stanley acquired additional interests in power plants, holding, directly or through subsidiaries, interests in seven power plants (two in the United States and five abroad), seven wind generation companies, and thirteen solar power generation companies.¹⁴⁴⁶

In addition, according to Morgan Stanley, between 1990 and 2000, it invested in the following commodity-related ventures: a company that produced fertilizer and other agricultural minerals and chemicals; a pork production facility and packing plant; “the largest methanol production facility in the U.S.”; and two natural gas companies, one of which owned an interstate natural gas pipeline and marketing facility.¹⁴⁴⁷ Other commodity-related holdings included an investment in the Tennessee Valley Steel Corporation; an entity which owned two major ethylene production facilities and five processing plants; and a railroad freight transporter.¹⁴⁴⁸ By September 30, 1997, Morgan Stanley reported that, through Morgan Stanley Capital Group Inc. and Morgan Stanley & Co. International, it was engaged in a “variety of commodity derivative and physical commodity transactions ... [in] crude oil and oil liquids,

¹⁴⁴² 5/17/2011 letter from Morgan Stanley to Federal Reserve, FRB-PSI-200167 - 172, at 171.

¹⁴⁴³ Id.

¹⁴⁴⁴ 2009 Morgan Stanley Global Commodities Overview, at 889 - 908.

¹⁴⁴⁵ Id. See also 5/17/2011 letter from Morgan Stanley to the Federal Reserve, FRB-PSI-200167 - 172, at 169 - 171.

¹⁴⁴⁶ See 11/27/2009 chart prepared by the Federal Reserve entitled, “Commodities Activities at Goldman Sachs and Morgan Stanley,” FRB-PSI-200944 - 959, at 952 [sealed exhibit]. See also 8/31/2005 “Federal Energy Regulatory Commission Reply to Morgan Stanley” (hereinafter “FERC Reply”), prepared by FERC, FERC website, <http://www.ferc.gov/eventcalendar/Files/20050831171232-ER94-1384-030.pdf> (listing as parties to a FERC enforcement action some Morgan Stanley wholly-owned subsidiaries that owned or operated power plants).

¹⁴⁴⁷ 5/17/2011 letter from Morgan Stanley to Federal Reserve, FRB-PSI-200167 - 172, at 169-170; 7/8/2010 letter from Morgan Stanley to the Federal Reserve, FRB-PSI-200173 - 182, at 175.

¹⁴⁴⁸ 5/17/2011 letter from Morgan Stanley to Federal Reserve, FRB-PSI-200167 - 172, at 171; 7/8/2010 letter from Morgan Stanley to the Federal Reserve, FRB-PSI-200173 - 182, at 175.

natural gas, electricity and other power and energy commodities and metals.”¹⁴⁴⁹

In 2000, Morgan Stanley joined other financial institutions and oil companies in founding the Intercontinental Exchange (ICE), an electronic trading facility specialized in commodity-linked financial instruments.¹⁴⁵⁰ Morgan Stanley further expanded its commodities activities into the areas of coal and freight (2001), biofuels (2005), emissions (2004), and agriculture (2007).¹⁴⁵¹ Morgan Stanley also became involved with power plants, acquiring 100% ownership of a number of power plants, including power plants in Nevada, Georgia, and Alabama.¹⁴⁵² All of these activities took place prior to Morgan Stanley’s conversion to a bank holding company in September 2008.

During the 25-year period from 1982 to 2007, Morgan Stanley concentrated significant resources on building its investments related to oil products, acquiring businesses involved in, not only the trading of oil-linked financial instruments, but also the production, storage, transport, and delivery of physical oil products, as further explained below. Morgan Stanley reported that, by 2008, oil liquids accounted for approximately 50% of its Worldwide Commodities Group balance sheet.¹⁴⁵³

In September 2008, in the midst of the financial crisis, when Morgan Stanley applied to become a bank holding company, its application included this description of its commodity activities:

“The Applicant trades as principal and maintains long and short proprietary trading positions in the spot, forward and futures markets in several commodities, including metals (base and precious), agricultural products, crude oil, oil products, natural gas, electric power, emissions credits, coal, freight, liquefied natural gas (‘LNG’) and related products and indices. The Applicant is a market-maker in exchange-traded options and futures and OTC options and swaps on commodities, and offers counterparties hedging programs relating to productions, consumption, reserve/inventory management and structured transactions, including energy-contract securitizations. The Applicant is also an

¹⁴⁴⁹ 7/8/2010 letter from Morgan Stanley to Federal Reserve, FRB-PSI-200173 - 182, at 173.

¹⁴⁵⁰ Morgan Stanley Global Commodities Timelines; “Intercontinental Exchange to Acquire NYSE for \$8.2 Billion,” Bloomberg, Nina Mehta & Nandini Sukumar (12/20/12), <http://www.bloomberg.com/news/2012-12-20/intercontinentalexchange-said-in-merger-talks-with-nyse-euronext.html> (explaining the Intercontinental Exchange as a “12-year-old energy and commodity futures bourse” with Morgan Stanley as its lead adviser).

¹⁴⁵¹ “2009 Morgan Stanley Global Commodities Overview,” FRB-PSI-618889 - 908.

¹⁴⁵² Subcommittee briefing by Morgan Stanley (11/18/2014); 2013 Morgan Stanley Annual Report, filed with the SEC on 2/25/2014, Exhibit 21, <http://www.sec.gov/Archives/edgar/data/895421/000119312514067354/d639242dex21.htm>.

¹⁴⁵³ 2009 Morgan Stanley Global Commodities Overview, at FRB-PSI-618889 - 908.

electricity power marketer in the U.S. and owns five electricity generating facilities in the U.S. and Europe. The Applicant owns TransMontaigne Inc. and its subsidiaries, a group of companies operating the refined petroleum products marketing and distribution business, and an interest in the Heidmar Group of companies, which provide international marine transportation and U.S. marine logistics services.”¹⁴⁵⁴

The application noted that, in 2007, Morgan Stanley had formed a “Merchant Banking Division” which included “private equity funds and [an] infrastructure investing group.”¹⁴⁵⁵

Morgan Stanley’s 2008 application also included these overall observations on its commodities activities, as well as a request for a five-year grace period to “conform or divest any impermissible activities”:

“Physical commodities may exceed the Federal Reserve’s cap of 5% of Tier 1 capital. The commodities business extends beyond the Federal Reserve restriction that physical commodities be limited to those for which derivative contracts have been authorized for trading on a U.S. futures exchange by the CFTC. ... Accordingly, Morgan Stanley respectfully requests that the Federal Reserve grant a five-year grace period during which Morgan Stanley can conform or divest any impermissible activities or investments.”¹⁴⁵⁶

Although Morgan Stanley’s application acknowledged that it might be asked to divest some of its physical commodity activities, the Federal Reserve did not, in 2008, make that request.

After becoming a bank holding company, Morgan Stanley continued for a number of years to expand its physical commodity activities. By 2013, Morgan Stanley had accumulated a long list of commodity-related subsidiaries. They included Heidmar Group, Inc., Morgan Stanley Infrastructure Inc., Morgan Stanley International Holdings, Inc., Morgan Stanley Petroleum Development LLC, Morgan Stanley Renewables, Inc., MSDW Power Development Corp., MS Solar Holdings Inc., MS Solar Solutions Corp., Olco Petroleum, South Eastern Electric Development Corporation, South Eastern Generating Corp., and

¹⁴⁵⁴ 9/21/2008 “Application to the Board of Governors of the Federal Reserve System by Morgan Stanley for prior approval to acquire 100% of Morgan Stanley Bank, National Association and thereby become a Bank Holding Company Pursuant to Section 3(a)(1) of the Bank Holding Company Act and a Declaration to become Financial Holding Company pursuant Section 225.82 of Regulation Y,” FRB-PSI-302972 - 996, at 979 (full capitalization of some words omitted).

¹⁴⁵⁵ Id. at 982.

¹⁴⁵⁶ Id. at 986.

TransMontaigne Inc., each of which had been involved with acquiring interests in businesses that handle physical commodities.¹⁴⁵⁷

(3) Current Status

When the Federal Reserve initiated its special review of financial holding company involvement with physical commodities in 2010, Morgan Stanley was one of the ten banks it examined in detail. Morgan Stanley was also featured in the October 2012 Summary Report issued by the Federal Reserve's Commodities Team summarizing the findings of the special review.¹⁴⁵⁸

The 2012 Summary Report described Morgan Stanley's wide-ranging physical commodity activities. According to the report, Morgan Stanley held operating leases on more than one hundred oil storage tank fields with a global storage capacity of 58 million barrels,¹⁴⁵⁹ "18 natural gas storage facilities in US and Europe with total lease payments as high as \$2[billion]",¹⁴⁶⁰ and six power plants, three of which were in the United States.¹⁴⁶¹ The 2012 Summary Report also noted that Morgan Stanley had "over 100 ships under time charters or voyages for movement of oil product, and was ranked 9th globally in shipping oil distillates in 2009."¹⁴⁶² According to the report, Morgan Stanley also planned to increase its capacity to ship liquefied natural gas.¹⁴⁶³

The 2012 Summary Report also identified multiple concerns with Morgan Stanley's physical commodities operations. One Federal Reserve concern was that Morgan Stanley, like its peers, had insufficient capital and insurance to cover potential losses from a catastrophic event. The report noted at one point that, while Morgan Stanley had calculated a potential oil spill risk of \$360 million, through "aggressive assumptions" and "diversification benefits," it had reduced that total by nearly 70% to \$54 million, allocating risk capital for only that much smaller amount.¹⁴⁶⁴ In addition, the 2012 Summary Report expressed concern that Morgan Stanley had determined that the "operational and event risks of owning power facilities" was capped at the dollar value of

¹⁴⁵⁷ See, e.g., 2013 Morgan Stanley Annual Report, filed with the SEC on 2/25/2014, Exhibit 21, <http://www.sec.gov/Archives/edgar/data/895421/000119312514067354/d639242dex21.htm>; undated document prepared by the Federal Reserve entitled, "Comparison of Risks of Commodity Activities at Morgan Stanley and Goldman Sachs between 1997 and Present," FRB-PSI-200428 - 454, at 444 - 446 [sealed exhibit]; 7/8/2010 letter from Morgan Stanley to the Federal Reserve, FRB-PSI-200173 - 182, at 181.

¹⁴⁵⁸ 10/3/2012 "Physical Commodity Activities at SIFIs," prepared by the Federal Reserve Bank of New York Commodities Team, (hereinafter, "2012 Summary Report"), FRB-PSI-200477 - 510 [sealed exhibit].

¹⁴⁵⁹ Id. at 485.

¹⁴⁶⁰ Id.

¹⁴⁶¹ Id.

¹⁴⁶² Id. at 486.

¹⁴⁶³ Id.

¹⁴⁶⁴ Id. at 493 - 494.

those facilities in the event of their total loss, with some insurance to cover “the death and disability of workers” and some facility replacement costs, but leaving all other expenses, including a “failure to deliver electricity under contract,” to be paid by the holding company.¹⁴⁶⁵ At another point, the 2012 Summary Report compared the level of Morgan Stanley’s capital and insurance reserves against estimated costs associated with “extreme loss scenarios,” and found that, like its peers, “the potential loss exceeds capital and insurance” by \$1 billion to \$15 billion.¹⁴⁶⁶ If Morgan Stanley were to incur losses from its physical commodity activities while maintaining insufficient capital and insurance protections, the Federal Reserve, and ultimately U.S. taxpayers, could be asked to rescue the firm.

In 2013, when the Subcommittee asked Morgan Stanley about its physical commodity activities, the financial holding company provided information that, consistent with the 2012 Summary Report, depicted far-reaching commodity operations. Morgan Stanley reported trading in the physical commodities of aluminum, copper, gold, lead, palladium, platinum, silver, rhodium, zinc, coal, crude oil, heating oil, ethanol, fuel oil, gasoline, jet kerosene, naphtha, and natural gas.¹⁴⁶⁷ Morgan Stanley also reported maintaining inventories of many physical commodities. In 2012, the last complete year of data provided to the Subcommittee, those inventories included 5,300 metric tons of aluminum, 3,600 metric tons of copper, 1.7 million barrels of crude oil, 5.8 million barrels of heating oil, and 6.2 million barrels of gasoline.¹⁴⁶⁸

“Optimizing” its Commodity Activities. In September 2014, Morgan Stanley told the Subcommittee that, while it did not intend to exit the physical commodities business entirely, it was exiting its “global physical oil merchanting business,” meaning its worldwide business of buying, selling, storing, and transporting oil for clients, including through its U.S. subsidiary, TransMontaigne, Inc.¹⁴⁶⁹ Morgan Stanley explained:

“Morgan Stanley has decided to exit certain of its physical commodities business lines, including its global physical oil merchanting business and its investment in TransMontaigne, Inc.

¹⁴⁶⁵ Id. at 494.

¹⁴⁶⁶ Id. at 498, 509. The 2012 Summary Report also noted that commercial firms engaged in oil and gas businesses had a capital ratio of 42%, while bank holding company subsidiaries had a capital ratio of, on average, 8% to 10%. Id. at 499.

¹⁴⁶⁷ 3/4/2013 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-03-000001 - 006, at 003.

¹⁴⁶⁸ Id.

¹⁴⁶⁹ Subcommittee briefing by Morgan Stanley’s legal counsel (9/11/2014); 9/19/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-13-000001 - 009, at 003.

Morgan Stanley plans to realign its commodities business to be more client focused. It plans to continue developing its global commodities business, which is focused on providing risk management and financing services to its clients across the commodities space, including risk intermediation, liquidity provision, lending and investor business, as well as providing supply solutions to its clients.”¹⁴⁷⁰

On July 1, 2014, Morgan Stanley completed the sale of TransMontaigne to NGL Energy Partners LP for \$200 million cash plus an additional \$347 million for inventory transferred at closing.¹⁴⁷¹ This sale transferred to NGL Energy a significant portion of Morgan Stanley’s physical commodity activities, including extensive oil and gas storage and pipeline capacity in the United States. On December 20, 2013, Morgan Stanley also entered into an agreement with a subsidiary of Rosneft Oil Company to sell the rest of its global oil merchanting business.¹⁴⁷² Rosneft is a Russian state-owned corporation that is the country’s largest petroleum company and third largest gas producer.¹⁴⁷³ Morgan Stanley planned to sell to Rosneft another large segment of its physical commodity activities, including oil storage facility leases and a large inventory of oil products. Morgan Stanley has since indicated publicly that the planned sale may not close due to recent sanctions imposed by the United States on Rosneft in connection with Russia’s incursions into Ukraine.¹⁴⁷⁴ If the sale does not proceed, Morgan Stanley has indicated that it will work to locate another buyer for the rest of its oil merchanting business.¹⁴⁷⁵

¹⁴⁷⁰ 9/19/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-13-000001 - 009, at 003.

¹⁴⁷¹ 7/2/2014 NGL Energy press release, “NGL Energy Partners LP Announces Completion of Acquisition of TransMontaigne GP and Related Assets,” <http://www.nglenergypartners.com/investor-relations/news/>. See also “Morgan Stanley to sell oil business TransMontaigne to NGL Energy,” *The Wall Street Journal*, Justin Baer, (6/9/2014), <http://online.wsj.com/articles/morgan-stanley-sells-stake-in-transmontaigne-to-ngl-1402316959>.
¹⁴⁷² 6/30/2014 Morgan Stanley Quarterly Report, filed with the SEC on 8/5/2014, at 113, <http://www.sec.gov/Archives/edgar/data/895421/000119312514295874/d763478d10q.htm>;
12/20/2013 Morgan Stanley press release, “Morgan Stanley to sell global oil merchanting business to Rosneft,” <http://www.morganstanley.com/about/press/articles/00ddb583-1c3c-4dd9-b27f-6023c884aae3.html>.

¹⁴⁷³ See 7/16/2014 Treasury press release, “Announcement of Treasury Sanctions on Entities Within the Financial Services and Energy Sectors of Russia, Against Arms or Related Material Entities, and those Undermining Ukraine’s Sovereignty,” <http://www.treasury.gov/press-center/press-releases/Pages/jl2572.aspx>.

¹⁴⁷⁴ Id.; 9/12/2014 Treasury press release, “Announcement of Expanded Treasury Sanctions within the Russian Financial Services, Energy and Defense or Related Material Sectors,” <http://www.treasury.gov/press-center/press-releases/Pages/jl2629.aspx>; “Morgan Stanley says ‘no assurance’ Rosneft deal will close,” Reuters (10/10/2014), <http://www.reuters.com/article/2014/10/10/morgan-stanley-rosneft-idUSL2N0S524L20141010>.
¹⁴⁷⁵ 11/18/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-25-000001 - 008, at 002.

In contrast to its efforts to exit its oil merchanting business, in recent years, Morgan Stanley has taken actions to continue and even expand its physical natural gas holdings. In 2012, the Morgan Stanley Infrastructure Partners investment fund acquired a 100% ownership of Southern Star, a large natural gas pipeline company in the Midwest, as explained below.¹⁴⁷⁶ In 2013, Morgan Stanley initiated an effort to build, own, and operate compressed natural gas facilities in Texas and Georgia, as described below.¹⁴⁷⁷ In August 2014, Morgan Stanley purchased a large number of natural gas trading book assets from Deutsche Bank, consisting primarily of financial rather than physical assets, also described below.¹⁴⁷⁸

In October 2014, however, Morgan Stanley told the Subcommittee that it was reconsidering its natural gas activities and may sell both Southern Star and its compressed natural gas project.¹⁴⁷⁹ In November 2014, Morgan Stanley's Chief Executive Officer James Gorman gave a public interview in which he indicated that Morgan Stanley was in the process of "optimizing" its commodities business to eliminate ownership and operation of physical assets:

"We've been pretty clear about our commodities businesses. It essentially is two businesses. We have physical businesses, where we actually own and operate physical assets. We store fuel, we own pipelines, we ship oil And on the other side is the trading business, where we facilitate trading for people in need to hedge their exposure to wheat, or pork bellies, or silver, or gold, or whatever commodity. And what I've said by optimizing is, we're not going to be in the physical side. All we're doing by optimizing is removing the ownership and operation of [the] physical commodity plant. What other firms do is their business, that's what Morgan Stanley is going to do."¹⁴⁸⁰

Morgan Stanley explained to the Subcommittee that these plans apply only to its commodities division, but not to other areas of the bank, and that the commodities division would be focusing on "its core strength – providing intermediation, risk management, and supply services – rather than owning transportation, storage, or other

¹⁴⁷⁶ Undated "OECD Assets within Morgan Stanley Infrastructure Portfolios" prepared by Morgan Stanley, Morgan Stanley website, <http://www.morganstanley.com/infrastructure/>; 8/29/2014 presentation "Morgan Stanley Infrastructure Partners Overview of Southern Star," prepared by Morgan Stanley, MS-PSI-00000001 - 037; Subcommittee interview of Morgan Stanley (9/8/2014).

¹⁴⁷⁷ 8/29/2014 presentation "Morgan Stanley Infrastructure Partners Overview of Southern Star," prepared by Morgan Stanley, MS-PSI-00000001 - 037, at 006.

¹⁴⁷⁸ See 9/19/2014 letter from Morgan Stanley's legal counsel to Subcommittee, PSI-MorganStanley-13-000001 - 009.

¹⁴⁷⁹ Subcommittee briefing by Morgan Stanley legal counsel (10/22/2014).

¹⁴⁸⁰ 11/13/2014 interview of James Gorman, Bloomberg, <http://www.bloomberg.com/video/morgan-stanley-ceo-gorman-on-industry-strategy-OPPkV0QFQqC4JAbdevImYQ.html>.

infrastructure assets that are used in connection with physical commodities.”¹⁴⁸¹ Morgan Stanley also wrote:

“Morgan Stanley expects to continue to purchase, sell, and make and take delivery of physical commodities in connection with its core business of providing intermediation and risk management to its clients. ... Effective hedging strategies include transacting in physical commodities. Morgan Stanley Commodities division will use fully-vetted third party owners and operators of any facilities used to transport, store, produce, generate, or modify those commodities.”¹⁴⁸²

These explanations indicate that Morgan Stanley is reducing its physical commodities activities, but not exiting the area.

¹⁴⁸¹ 11/18/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-25-000001 - 008, at 004.

¹⁴⁸² Id. at 004 - 005.

B. Morgan Stanley Involvement with Natural Gas

Morgan Stanley has long been an active trader of natural gas. Over the last five years, it has also used shell companies and merchant banking investments controlled by Morgan Stanley personnel to invest in an array of physical natural gas businesses. Over the last year, Morgan Stanley set up three shell companies under the name of Wentworth to build and operate a \$355 million compressed natural gas facility in Texas. In one of the first operations of its kind, the facility is designed to produce containerized gas on a large-scale, primarily for export to Central America and the Caribbean. In addition, Morgan Stanley has engaged in commodity-related merchant banking activities through two investment funds it controls, Morgan Stanley Infrastructure Partners and Morgan Stanley Global Private Equity. Those merchant banking activities include a large natural gas pipeline company in the Midwest, Southern Star, as well as natural gas exploration, production, and processing facilities around the country. Because Morgan Stanley relied on its merchant banking and grandfather authorities, Morgan Stanley did not notify or obtain prior permission from the Federal Reserve to engage in those physical natural gas activities.

Morgan Stanley's physical natural gas activities raise multiple concerns, including using shell companies to conduct physical commodity activities, unfair competition in commercial enterprises, insufficient capital and insurance to protect against operational and catastrophic event risks, conflicts of interest arising from obtaining non-public information about natural gas supplies and transport, while trading natural gas in the financial markets, and inadequate safeguards on high risk natural gas activities.

(1) Background on Natural Gas

Natural gas is an odorless, gaseous mixture of hydrocarbons dominated by methane.¹⁴⁸² It is a primary source of energy in the United States, representing nearly one quarter of U.S. energy consumption.¹⁴⁸³ In the United States, natural gas consumption is second only to oil, followed by coal, nuclear, and other energy sources.¹⁴⁸⁴ The U.S. Department of Energy (DOE) estimates that one-third of U.S. natural gas consumption goes to "residential and commercial uses, such as

¹⁴⁸² See undated "Natural Gas Fuel Basics," DOE website, http://www.afdc.energy.gov/fuels/natural_gas_basics.html.

¹⁴⁸³ "Excessive Speculation in the Natural Gas Market," hearing before the U.S. Senate Permanent Subcommittee on Investigations, S. Hrg. 110-235 (6/25/2007 and 7/9/2007), at 210 (hereinafter "2007 Subcommittee Hearing"). See also undated "Uses," NaturalGas.org, <http://naturalgas.org/overview/uses/>.

¹⁴⁸⁴ See 7/3/2013 EIA report "Energy sources have changed throughout the history of the United States," <http://www.eia.gov/todayinenergy/detail.cfm?id=11951>. In 2013, the United States consumed approximately 26 trillion cubic feet of natural gas. See "Frequently Asked Questions," EIA website, <http://www.eia.gov/tools/faqs/faq.cfm?id=50&t=8>.

heating and cooking; one-third to industrial uses; and one-third to electric power production.”¹⁴⁸⁵ According to the U.S. Energy Information Administration (EIA), natural gas consumption has increased in the United States over the past five years, particularly in the industrial sector, due to low prices.¹⁴⁸⁶ Inexpensive natural gas has been directly linked, for example, to increased manufacturing and related jobs.¹⁴⁸⁷ U.S. natural gas exports have also been growing.¹⁴⁸⁸

Natural Gas Production. The United States has become a leading producer of natural gas. According to the American Gas Association:

“Beginning in 2006, domestic natural gas production began to grow and has done so every year since, primarily due to the development of domestic, onshore, unconventional resources – specifically shale gas – to the point where the U.S. is now the world’s largest gas producer.”¹⁴⁸⁹

EIA has indicated that it anticipates natural gas production will grow by 5% in 2014, and another 2% in 2015, driven by industrial demand.¹⁴⁹⁰ According to DOE, in recent years, 80% to 90% of the natural gas used in the United States was produced domestically.¹⁴⁹¹

Natural Gas Infrastructure. To produce usable energy from natural gas, an extensive infrastructure is required. It includes pipelines, initial treatment plants, refineries, and storage facilities. More than 2.4 million miles of underground pipelines transport natural gas from gas fields and wellheads to refineries, utilities, residences, and industrial sites, “provid[ing] service to more than 177 million Americans.”¹⁴⁹² Initial treatment plants process raw natural gas to ready it for transport to larger refineries.¹⁴⁹³ Refineries remove additional impurities and fluids

¹⁴⁸⁵ See undated “Natural Gas Fuel Basics,” DOE website, http://www.afdc.energy.gov/fuels/natural_gas_basics.html.

¹⁴⁸⁶ See 9/2014 “Short-term Energy and Winter Fuels Outlook,” section on “Natural Gas,” EIA website, <http://www.eia.gov/forecasts/steo/report/natgas.cfm>.

¹⁴⁸⁷ See, e.g., “Job growth expected from cheap natural gas,” *USA Today*, Paul Davidson (3/27/2012), <http://usatoday30.usatoday.com/money/industries/energy/story/2012-03-27/natural-gas-manufacturing-boom/53812740/1> (One estimate was that inexpensive natural gas “could help U.S. manufacturers save \$11.6 billion a year and create more than 500,000 jobs by 2025.”).

¹⁴⁸⁸ See 9/2014 “Short-term Energy and Winter Fuels Outlook,” section on “Natural Gas,” EIA website, <http://www.eia.gov/forecasts/steo/report/natgas.cfm>.

¹⁴⁸⁹ 2014 “Natural Gas Supply and Prices,” American Gas Association website, <http://www.aga.org/Newsroom/factsheets/Documents/Supply%20and%20Prices.pdf>.

¹⁴⁹⁰ “Short-term energy and winter fuels outlook,” (10/07/2014), EIA website, <http://www.eia.gov/forecasts/steo/report/natgas.cfm>.

¹⁴⁹¹ See undated “Natural Gas Fuel Basics,” DOE website, http://www.afdc.energy.gov/fuels/natural_gas_basics.html.

¹⁴⁹² 2014 “Get the Facts: Pipeline Safety,” American Gas Association website, <http://www.aga.org/Newsroom/factsheets/Documents/Pipeline%20Safety.pdf>.

¹⁴⁹³ See, e.g., 1/2006 “Natural Gas Processing: The Crucial Link Between Natural Gas Production

to produce “pipeline quality” dry natural gas.¹⁴⁹⁴ Storage facilities capture and pressurize gas for later use. As the American Gas Association has explained:

“Natural gas utilities purchase natural gas during warm-weather months, when it traditionally costs less, and store it for later use on cold days. Storage can account for half of some utilities’ natural gas supplies on winter’s coldest days, contributing to reliable service.”¹⁴⁹⁵

Currently, natural gas in storage continues to outpace historical norms.¹⁴⁹⁶ Exporters of natural gas use Liquefied Natural Gas (LNG) or Compressed Natural Gas (CNG) facilities to prepare the gas for shipment.

Natural Gas Markets. Natural gas prices are determined through two types of markets, physical and financial. As explained in an earlier Subcommittee report examining the natural gas market:

“Natural gas prices are determined through the interaction of the two major types of markets for natural gas: the cash (or ‘physical’) markets, which involve the purchase and sale of physical quantities of natural gas; and the financial markets, which involve the purchase and sale of financial instruments whose prices are linked to the price of natural gas in the physical market.”¹⁴⁹⁷

In the cash markets, natural gas prices are generally negotiated by the buyers and sellers.¹⁴⁹⁸ Key market participants are natural gas producers, distributors, utilities, and industrial users.

In the financial markets, natural gas can be traded through a variety of financial instruments, including futures, swaps, options, and forwards. One key financial instrument, listed by the CME Group Inc., is a standardized natural gas futures contract for 10,000 mmBtu (millions of British thermal units) of natural gas.¹⁴⁹⁹ Known as the Henry Hub natural gas futures contract, it is the “third-largest physical commodity futures contract in the world by volume,” and is widely used as a

and Its Transportation to Market,” prepared by EIA Office of Oil and Gas, at 3, http://www.eia.gov/pub/oil_gas/natural_gas/feature_articles/2006/ngprocess/ngprocess.pdf.¹⁴⁹⁴ Id.

¹⁴⁹⁵ 2014 “Natural Gas Supply and Prices,” American Gas Association website, <http://www.aga.org/Newsroom/factsheets/Documents/Supply%20and%20Prices.pdf>.

¹⁴⁹⁶ 9/2014 “Short-term Energy and Winter Fuels Outlook,” section on “Natural Gas,” EIA website, <http://www.eia.gov/forecasts/steo/report/natgas.cfm>.

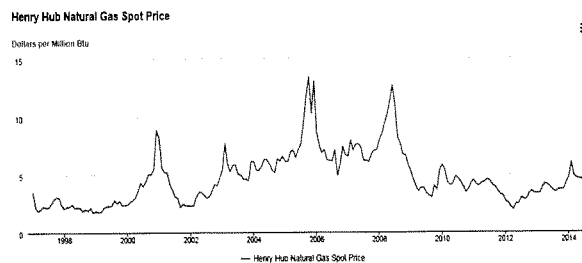
¹⁴⁹⁷ 2007 Subcommittee Hearing, at 224.

¹⁴⁹⁸ Id.

¹⁴⁹⁹ See “Henry Hub Natural Gas Futures Contract Specs,” CME Group website, http://www.cmegroup.com/trading/energy/natural-gas/natural-gas_contract_specifications.html?gclid=COeq9vj3tb0CFYhaMgodJGwAfw.

benchmark price for physical natural gas transactions in the United States.¹⁵⁰⁰ The contract can be settled financially or through the physical delivery of natural gas, although physical settlement is atypical.¹⁵⁰¹ The contract is traded on the CME Globex and CME Clearport trading platforms, and by open outcry on the NYMEX floor.¹⁵⁰² The natural gas futures market has numerous participants, and Henry Hub futures contracts typically have substantial open interest on a daily basis. Natural gas can also be traded through a variety of financially-settled, over-the-counter swaps and options on the Intercontinental Exchange (ICE).¹⁵⁰³ The natural gas financial market as a whole is a large, complex, and active trading market.

Natural Gas Prices. Natural gas prices have traditionally been volatile.¹⁵⁰⁴ Seasonal demand for natural gas, which typically peaks during winter months and drops during summer months, contributes to the price volatility.¹⁵⁰⁵ In the physical markets, over time, natural gas spot market prices have ranged from \$3 to \$13/mmBtu, with current prices on the low end around \$4.¹⁵⁰⁶ Natural gas is currently one of the least expensive sources of energy in the United States.¹⁵⁰⁷



*Source: U.S. Energy Information Administration¹⁵⁰⁸

¹⁵⁰⁰ “Henry Hub Natural Gas Volume,” CME Group website, http://www.cmegroup.com/trading/energy/natural-gas/natural-gas_quotes_volume_voi.html?gclid=CN3syN245bwCFRPxOgodghMAzg. It is known as the Henry Hub futures contract, because the contract price is based on delivery of the natural gas at the Henry Hub in Louisiana, where a number of natural gas pipelines converge.

¹⁵⁰¹ Id. See also 2007 Subcommittee Hearing, at 224.

¹⁵⁰² See “Henry Hub Natural Gas Futures Contract Specs,” CME Group website, http://www.cmegroup.com/trading/energy/natural-gas/natural-gas_contract_specifications.html?gclid=COeq9vj3tb0CFYhaMgodJGwAfw.

¹⁵⁰³ See “Natural Gas,” ICE website,

https://www.theice.com/publicdocs/ICE_NatGas_Brochure.pdf.

¹⁵⁰⁴ See id.

¹⁵⁰⁵ Id.

¹⁵⁰⁶ Id.

¹⁵⁰⁷ “Levelized cost and levelized avoided cost of new generation resources in the annual energy outlook 2014,” EIA Energy Outlook 2014, (05/07/2014),

http://www.eia.gov/forecasts/aeo/electricity_generation.cfm.

¹⁵⁰⁸ “Henry Hub Natural Gas Spot Price,” U.S. Energy Information Administration (10/1/2014), <http://www.eia.gov/dnav/ng/hist/rngwhhdm.htm>.

Natural Gas Incidents. Natural gas is highly flammable, and leaks can lead to explosions. Between 1994 and 2013, the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) identified 944 serious pipeline incidents.¹⁵⁰⁹ PHMSA defines a "serious incident" as one including a fatality or injury requiring hospitalization.¹⁵¹⁰ Those 944 incidents included 362 fatalities and 1,397 injuries.¹⁵¹¹ The data includes incidents involving natural gas distribution, gathering, and transmission, as well as liquefied natural gas and other hazardous liquids.¹⁵¹²

Four years ago, the Pacific Gas & Electric Company (PG&E) experienced a "deadly" natural gas pipeline explosion in San Bruno, California.¹⁵¹³ On September 9, 2010, a natural gas pipeline operated by PG&E ruptured, releasing large quantities of natural gas which ignited and started fires in the area surrounding the pipeline.¹⁵¹⁴ As a result, eight people died, 51 people required hospitalization, and 38 homes were destroyed.¹⁵¹⁵ According to PHMSA, the estimated property damage from the explosion was over \$220 million.¹⁵¹⁶ The California Public Utilities Commission continues to review the incident and is reportedly considering levying a \$1.4 billion penalty against PG&E, which would be "the biggest safety fine in the state's history."¹⁵¹⁷

Natural gas storage facilities have also experienced explosions. Perhaps the worst was in 1944 in Cleveland when, as one newspaper described it, "a natural gas tank filled with over 90,000,000 cubic feet of natural gas exploded, destroying everything within a mile-radius in a wall of fire. The blaze continued uncontrolled for over nine hours."¹⁵¹⁸

¹⁵⁰⁹ See undated "Pipeline serious incident 20 year trend," PHMSA website, <https://hip.phmsa.dot.gov/analyticsSOAP/saw.dll?Portalpages>.

¹⁵¹⁰ See undated "Pipeline Incident 20 Year Trends, PHMSA website, <http://www.phmsa.dot.gov/pipeline/library/datastatistics/pipelineincidenttrends>.

¹⁵¹¹ See undated "Pipeline serious incident 20 year trend," PHMSA website, <https://hip.phmsa.dot.gov/analyticsSOAP/saw.dll?Portalpages>.

¹⁵¹² See undated "Pipeline Incident 20 Year Trends, PHMSA website, <http://www.phmsa.dot.gov/pipeline/library/datastatistics/pipelineincidenttrends>.

¹⁵¹³ Undated "Pacific Gas & Electric pipeline rupture in San Bruno, CA," PHMSA website, <http://opsweb.phmsa.dot.gov/pipelineforum/facts-and-stats/recent-incidents/sanbruno-ca/>. See also "California pipeline disaster brings more scandal for PG&E," Bloomberg, Mark Chediak, (9/16/2014), <http://www.bloomberg.com/news/2014-09-16/california-pipeline-disaster-brings-more-scandal-for-pg-e.html>.

¹⁵¹⁴ Undated "Pacific Gas & Electric pipeline rupture in San Bruno, CA," PHMSA website, <http://opsweb.phmsa.dot.gov/pipelineforum/facts-and-stats/recent-incidents/sanbruno-ca/>.

¹⁵¹⁵ Id.

¹⁵¹⁶ Id.

¹⁵¹⁷ See "California pipeline disaster brings more scandal for PG&E," Bloomberg, Mark Chediak, (9/16/2014), <http://www.bloomberg.com/news/2014-09-16/california-pipeline-disaster-brings-more-scandal-for-pg-e.html>. Several plaintiffs have filed a civil suit against PG&E, because of the San Bruno pipeline explosion. See *Bou-Salman v. PG&E Corp.*, Civ. No. 524283 (Cal. Super. Ct. Sept. 23, 2013).

¹⁵¹⁸ "Cleveland East Ohio Gas Explosion," <http://counterspill.org/disaster/cleveland-east-ohio-gas-explosion>.

Regulatory Framework. Natural gas facilities, including natural gas wellheads, gas fields, pipelines, gathering processes, initial treatment facilities, refineries, liquefied natural gas facilities, and compressed natural gas facilities, are heavily regulated. The Natural Gas Pipeline Safety Act, for example, authorizes the U.S. Department of Transportation (DOT) to set minimum safety requirements both for the transportation of natural gas by pipeline and for natural gas pipeline facilities.¹⁵¹⁹ In response, DOT, through its Pipeline and Hazardous Materials Safety Administration, has promulgated an extensive set of safety regulations for pipe design, equipment maintenance, fire protection, and personnel qualifications, among other matters.¹⁵²⁰ Compliance with those safety regulations is overseen and enforced primarily by the states.¹⁵²¹ To build and operate a natural gas facility also requires permits from the Department of Energy and the Environmental Protection Agency, among others.¹⁵²² State agencies must also be consulted. Under the Natural Gas Act, any entity seeking to import or export natural gas must first obtain authorization from the U.S. Department of Energy.¹⁵²³ In addition, under the Natural Gas Act, the Federal Energy Regulatory Commission oversees the construction and operation of natural gas projects, including certain pipelines and storage facilities, as well as their rates and charges.¹⁵²⁴

(2) Morgan Stanley Involvement with Natural Gas

Morgan Stanley has been trading financial instruments linked to natural gas since 1989, and became involved with conducting physical natural gas activities in the 1990s. In 2010, through a Morgan Stanley investment fund, it purchased an ownership interest in a natural gas pipeline company, Southern Star, and in 2012, took full ownership of that company. In 2013, Morgan Stanley intensified its physical natural gas activities by launching a plan to build and operate a large-scale compressed natural gas facility in Texas.

(a) Trading Natural Gas

In 2013, Morgan Stanley described itself as “a significant participant in the energy markets, with substantial activity (both physical

¹⁵¹⁹ 49 U.S.C. §60102(a)(2).

¹⁵²⁰ See 49 C.F.R. §192.1-192.1015, 193.2001-193.2917.

¹⁵²¹ See, e.g., 2014 “Get the Facts: Pipeline Safety,” American Gas Association website, <http://www.aga.org/Newsroom/factsheets/Documents/Pipeline%20Safety.pdf>.

¹⁵²² See 9/3/1953 Executive Order 10485, National Archives, <http://www.archives.gov/federal-register/codification/executive-order/10485.html> (granting the Department of Energy power to accept permit applications for natural gas facilities); see also National Environmental Policy Act of 1969, P.L. 91-190, codified at 42 U.S.C. §4321 (requiring a permit for any large environmental project that receives federal funding).

¹⁵²³ 15 U.S.C. §717b(a).

¹⁵²⁴ See 8/29/2014 “Morgan Stanley Infrastructure Partners: Overview of Southern Star,” prepared by Morgan Stanley, at MS-PSI-000000001 – 037, at 016; “Natural Gas,” FERC website, <http://www.ferc.gov/industries/gas.asp>; Natural Gas Act, Sections 3 and 7.

and financial)” in natural gas, among other commodities.¹⁵²⁵ Morgan Stanley has been trading in natural gas since 1989.¹⁵²⁶ Its activities in the natural gas sector have included “trading and investing in physically-settled forward contracts, options, futures, options on futures and similar contracts, both over-the-counter and exchange-listed on natural gas.”¹⁵²⁷ Morgan Stanley has bought and sold physical natural gas¹⁵²⁸ as well as cargoes of liquefied natural gas (LNG)¹⁵²⁹ on spot markets. In addition, it has “helped domestic natural gas producers price hedge” domestic shale gas.¹⁵³⁰

Natural gas trading at Morgan Stanley is conducted within the Commodities group’s “North America Power/Gas Management Organization,” which, in 2013, had 72 full-time employees.¹⁵³¹ The Commodities group tracks revenues by desk rather than individual commodity and does not break out financial activities from physical activities.¹⁵³² The following table shows the net revenues from the desk that handles both electricity and natural gas financial and physical activities, indicating that, while substantial, those revenues have declined by two-thirds from 2008 to 2012:

**Morgan Stanley Natural Gas and Electricity Net Revenues
2008-2012**

Year	2008	2009	2010	2011	2012
North American Power & Gas	\$382 million	\$239 million	\$384 million	\$280 million	\$335 million
Asian Pacific-European Power & Gas	\$539 million	\$293 million	\$179 million	\$112 million	-\$21 million
Total	\$921 million	\$532 million	\$563 million	\$392 million	\$314 million

Source: 2/11/2013 letter from Morgan Stanley legal counsel to Subcommittee, at PSI-MorganStanley-02-000002.

On August 15, 2014, Morgan Stanley expanded its natural gas activities by purchasing a portfolio of North American natural gas assets

¹⁵²⁵ 2/11/2013 “Morgan Stanley Commodities: Business Overview,” prepared by Morgan Stanley, PSI-MorganStanley-01-000001 - 027, at 005.

¹⁵²⁶ 7/8/2010 letter from Morgan Stanley to Federal Reserve, FRB-PSI-200173 - 182, at 177.

¹⁵²⁷ Id.

¹⁵²⁸ See, e.g., “Deal or No Deal, Morgan Stanley Commodity Trade Shrinks,” WHTC, Matthew Robinson and Scott Disavino (6/7/2012), <http://whtc.com/news/articles/2012/jun/07/deal-or-no-deal-morgan-stanley-commodity-trade-shrinks/>.

¹⁵²⁹ See, e.g., id.; “Morgan Stanley LNG traders leave for Glencore – sources,” Reuters (6/6/2013), <http://www.reuters.com/article/2013/06/06/morgan-lng-idUSL5N0EI0QD20130606>.

¹⁵³⁰ 2/11/2013 “Morgan Stanley Commodities: Business Overview,” prepared by Morgan Stanley, PSI-MorganStanley-01-000001 - 027, at 010.

¹⁵³¹ Id. at 021. This organization is also referred by other, similar names. See, e.g., 1/9/2013 “Morgan Stanley Commodities Business Overview,” prepared by Morgan Stanley, FRB-PSI-624436 - 508, at 450 (referring to a “North American Electricity/Natural Gas” desk).

¹⁵³² 2/11/2013 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-02-000001 - 004, at 002.

from Deutsche Bank.¹⁵³³ According to Morgan Stanley, the portfolio consisted of “listed commodity futures contracts and options on commodity futures contracts; cash-settled over-the-counter swap and swap option agreements; and physical forward agreements.”¹⁵³⁴ It stated that no physical commodity infrastructure assets were part of the transaction.¹⁵³⁵ In addition, Morgan Stanley noted that, of the “13,200 discrete transactions ... only 24 were physically-settled forward contracts”; the rest were financially-settled.¹⁵³⁶ Morgan Stanley noted that the delivery dates for those transactions ranged from 2014 to 2017.¹⁵³⁷

(b) Planning to Construct a Compressed Natural Gas Facility

In 2013, in a major expansion of its physical natural gas activities, Morgan Stanley Commodities launched an effort to construct a \$355 million compressed natural gas (CNG) facility in Texas, using shell corporations run by Morgan Stanley personnel.¹⁵³⁸ The objective was to construct the facility, initiate large-scale compressed natural gas operations, and sell the containerized gas, primarily by exporting it to countries in Central America and the Caribbean.

Compressed natural gas (CNG) is natural gas stored at high pressure in containers of various sizes.¹⁵³⁹ CNG has most often been used to power vehicles.¹⁵⁴⁰ CNG has also been viewed as a way to export natural gas, providing an alternative to Liquefied Natural Gas (LNG), although no large-scale CNG exporting operations currently exist in the United States.¹⁵⁴¹ In November 2013, Emera CNG, LLC, a Canadian energy company, filed the first application submitted to DOE to export CNG on a large scale; portions of that application are still under DOE consideration.¹⁵⁴² Also in 2013, the United States approved

¹⁵³³ 9/19/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-13-000001 - 009, at 002.

¹⁵³⁴ *Id.*

¹⁵³⁵ *Id.* Deutsche Bank originally entered into these transactions with “five middle-market Canadian gas marketers and Natural Gas Exchange, Inc., as counterparties.”

¹⁵³⁶ *Id.* Morgan Stanley purchased 22 fixed price natural gas forward agreements and 2 basis transactions. Morgan Stanley also entered into a swap agreement with the three Deutsche Bank entities. Under the terms of that agreement Morgan Stanley “agreed to take both the future commodity price and credit risk of the [Deutsche Bank] contracts being sold.”

¹⁵³⁷ *Id.*

¹⁵³⁸ *Id.* at 008.

¹⁵³⁹ See undated “Natural Gas Fuel Basics,” DOE website, http://www.afdc.energy.gov/fuels/natural_gas_basics.html.

¹⁵⁴⁰ *Id.*

¹⁵⁴¹ Subcommittee briefing by the U.S. Department of Energy (10/14/2014).

¹⁵⁴² *Id.*; 11/20/2013 “Application of Emera CNG LLC for Long-Term Multi-Contract Authorization to Export Compressed Natural Gas,” Docket No. 13-157-CNG,” filed by Emera CNG, LLC,

http://www.fossil.energy.gov/programs/gasregulation/authorizations/2013_applications/13_157_cng.pdf. See also “Two new natural gas export plans set up challenge to controversial policy,” *Platts*, Brian Scheid (12/27/2013), <http://blogs.platts.com/2013/12/27/lng-2projects/>.

construction of a \$10 billion LNG facility at Quintana Island, Texas, known as the “Freeport LNG Project,” to export natural gas in liquefied form.¹⁵⁴³ Morgan Stanley launched its CNG project around the same time, seeking to establish a CNG facility in the same general vicinity as the Freeport LNG Project.

Morgan Stanley claimed that it could engage in this new activity under the Gramm-Leach-Bliley grandfather clause, even though it had never before built or run a CNG facility. Morgan Stanley reasoned that it could act under the grandfather clause because it had long dealt with natural gas that is pressurized when it moves through natural gas pipelines, including pipelines operated by its TransMontaigne subsidiary, even though a plant designed to produce massive amounts of natural gas for export would require more intensive pressure on a much larger scale.¹⁵⁴⁴ Morgan Stanley told the Subcommittee that it also had experience building complex energy facilities, pointing, for example, to its 2000 construction of a 360 megawatt electrical plant in Nevada known as the Naniwa power plant.¹⁵⁴⁵

The Federal Reserve told the Subcommittee that when it inquired about the project, Morgan Stanley explained that it had decided to construct the CNG facility because it saw a “market opportunity.”¹⁵⁴⁶ According to the Wentworth application, Morgan Stanley’s primary target market is Central American and Caribbean countries that have no existing natural gas pipelines, and where Morgan Stanley believes CNG can be delivered at a relatively low price.¹⁵⁴⁷ In a letter to the Subcommittee, Morgan Stanley wrote that “the CNG business is being developed in order to deliver a cheap and cleaner source of fuel to power generators and other commercial end users who need access to reliable natural gas supplies ... [and to] assure long term delivery of this fuel source.”¹⁵⁴⁸ Morgan Stanley indicated that the new facility would deliver CNG to both domestic and foreign clients.¹⁵⁴⁹

Forming Shell Corporations. To conduct work on the CNG project, on October 21, 2013, Morgan Stanley, through its key

¹⁵⁴³ “Energy Department authorizes additional volume at proposed Freeport LNG facility to export liquefied natural gas,” (11/15/2013), <http://energy.gov/articles/energy-department-authorizes-additional-volume-proposed-freeport-lng-facility-export>. See also, e.g., “U.S. Approves Expanded Gas Exports,” *Wall Street Journal*, Keith Johnson and Ben Lefebvre (5/18/2013), <http://online.wsj.com/news/articles/SB10001424127887324767004578489130300876450>.

¹⁵⁴⁴ See undated document, “Draft Talking Points Regarding Commodities Plans to Sell and Export Compressed Natural Gas,” prepared by Morgan Stanley, PSI-MorganStanley-000001 - 043, at 042 - 043.

¹⁵⁴⁵ Subcommittee briefing by Morgan Stanley (11/18/2014).

¹⁵⁴⁶ Subcommittee briefing by Federal Reserve, (9/19/2014).

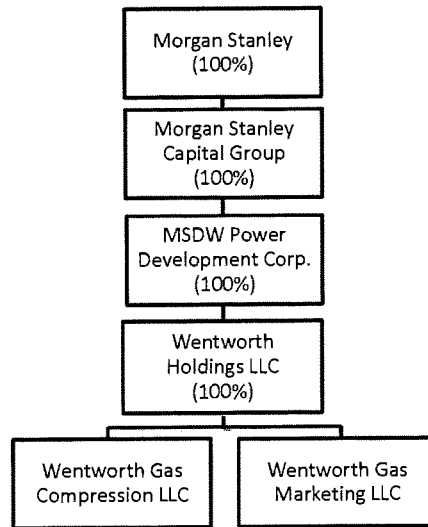
¹⁵⁴⁷ *Id.*

¹⁵⁴⁸ 9/19/2014 letter from Morgan Stanley to Subcommittee, PSI-MorganStanley-13-000001 - 009, at 008.

¹⁵⁴⁹ Subcommittee briefing by the Federal Reserve, (9/19/2014).

commodities subsidiary, Morgan Stanley Capital Group, formed two wholly-owned shell companies in Delaware, Wentworth Compression LLC and Wentworth Gas Marketing LLC.¹⁵⁵⁰ Seven months later, on April 1, 2014, Morgan Stanley incorporated a third wholly-owned shell company in Delaware, Wentworth Holdings LLC, and transferred to it the stock of the two earlier companies, so that they became its wholly-owned subsidiaries. The current Wentworth ownership structure is as follows:

Wentworth Ownership Structure



Source: 9/19/2014 letter from Morgan Stanley to Subcommittee, at PSI-MorganStanley-13-000004.

Morgan Stanley told the Subcommittee that none of the three Wentworth companies has any employees of its own “at present.”¹⁵⁵¹ Instead, all three companies “rely upon the expertise and day-to-day involvement of employees of Morgan Stanley” to carry out their activities.¹⁵⁵² According to Morgan Stanley, the Wentworth companies utilize “the breadth of the firm, including support in legal, tax, risk management and many other areas.”¹⁵⁵³

¹⁵⁵⁰ 9/19/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-13-000001 – 009, at 003. See also the incorporation papers for the three Wentworth entities, MS-COM-0001 - 006.

¹⁵⁵¹ 9/19/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-13-000001 - 009, at 005.

¹⁵⁵² *Id.* at 008.

¹⁵⁵³ *Id.*

In addition to relying on Morgan Stanley employees for day-to-day operations, the three Wentworth companies rely on Morgan Stanley Commodities executives for their leadership.¹⁵⁵⁴ All three Wentworth companies list the same Board members, officers, and managers. The President and Manager of each company is Simon Greenshields, Global Co-Head of Morgan Stanley Commodities. The companies also have the same three Vice-Presidents and Managers: Nancy King, Global Head of Oil Liquids Flow; Peter Sherk, Head of North American Power and Gas; and Deborah Hart, Chief Operating Officer of North American Power and Gas.¹⁵⁵⁵ Each of these individuals is formally employed by Morgan Stanley Capital Group (MSCG) and works for the Morgan Stanley Commodities group.¹⁵⁵⁶ In a letter to the Subcommittee, Morgan Stanley stated that “strategic management and operational decision-making at the Wentworth entities ... is made by MSCG [Morgan Stanley Capital Group] employees.”¹⁵⁵⁷

In addition to relying on Morgan Stanley for its leadership and employees, the three Wentworth companies rely on it for office space. Morgan Stanley told the Subcommittee that none of the Wentworth companies has its own office. Instead, the Wentworth companies have designated as their place of business the same building used by Morgan Stanley Commodities in Purchase, New York.¹⁵⁵⁸ As Morgan Stanley put it: “the principal administrative business for each of the Wentworth entities is conducted within the Commodities group at Morgan Stanley’s offices located in Purchase, NY.”¹⁵⁵⁹

Morgan Stanley told the Subcommittee that it formed the Wentworth entities for the sole purpose of acting as the owner and operator of the CNG facility and to market the containerized gas. When asked for the origin of the name, Morgan Stanley explained that “in the early phases of the project,” it had considered locating the CNG facility in the City of Port Wentworth, near the Port of Savannah in Georgia, but later decided to develop the Texas site first.¹⁵⁶⁰

Constructing the CNG Facility. Morgan Stanley has expended substantial resources on the CNG project to date. Among other steps, it has entered into an Engineering, Procurement, and Construction

¹⁵⁵⁴ Id. at 005.

¹⁵⁵⁵ Id.

¹⁵⁵⁶ Id.

¹⁵⁵⁷ Id. at 006.

¹⁵⁵⁸ See, e.g., *In re Wentworth Gas Marketing LLC*, FE Docket No. 14-63-CNG, “Application of Wentworth Gas Marketing LLC for Long-Term Authorization to Export Compressed Natural Gas,” (5/13/2014), at 3, http://energy.gov/sites/prod/files/2014/06/fl6/14_63_cng_tracy.pdf (listing the Purchase, New York address as the “principal place of business” of Wentworth Gas Marketing LLC and Wentworth Compression LLC).

¹⁵⁵⁹ 9/19/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-13-000001-009.

¹⁵⁶⁰ Id. at 004.

Agreement with H.P. Industries to design and build the CNG facility.¹⁵⁶¹ H.P. Industries, in turn, has contracted with a third party for the facility design.¹⁵⁶² Morgan Stanley has selected a possible site for the facility, 50 acres known as Parcel 19, which is owned by the Port of Freeport in Texas.¹⁵⁶³ H.P. Industries has entered into an access agreement to inspect the site,¹⁵⁶⁴ and has hired a professional consulting firm to provide a required site assessment.¹⁵⁶⁵ H.P. Industries has also commenced a “Phase I environmental review.”¹⁵⁶⁶ H.P. Industries has also placed an order for the facility compressors, since they require lead time to procure.¹⁵⁶⁷

Morgan Stanley told the Subcommittee it is currently negotiating a lease with Port Freeport and working to obtain electrical and natural gas pipeline connections for the site.¹⁵⁶⁸ Morgan Stanley indicated that it had also evaluated potential insurance, but did not plan to obtain actual insurance until the facility begins construction.¹⁵⁶⁹

In May 2014, Morgan Stanley filed an application with the Department of Energy’s Office of Fossil Energy seeking “long-term authorization” to export containerized gas.¹⁵⁷⁰ The application was filed in the name of Wentworth Gas Marketing LLC, and sought authority to export 60 billion cubic feet of CNG annually for a 20-year period.¹⁵⁷¹ It requested authorization to “export CNG using intermodal transportation containers via truck and ocean-going carrier” to any country with which the United States has a Free Trade Agreement.¹⁵⁷² The application explained that Wentworth planned to move CNG from Parcel 19 “via truck approximately one mile to the Port of Freeport,” where it would then be “shipped on vessels chartered by Wentworth Gas to various destinations.”¹⁵⁷³ The application also indicated that, “in the near term,” it planned to sell CNG to countries in Central America and the

¹⁵⁶¹ Id. at 006.

¹⁵⁶² Id.

¹⁵⁶³ See *In re Wentworth Gas Marketing LLC*, FE Docket No. 14-63-CNG, “Application of Wentworth Gas Marketing LLC for Long-Term Authorization to Export Compressed Natural Gas,” (5/13/2014), at 4, http://energy.gov/sites/prod/files/2014/06/f16/14_63_cng_tracy.pdf.

¹⁵⁶⁴ See 5/12/2014 “Access Agreement,” between H.P. Industries LLC and Port Freeport, attached as Appendix C to “Application of Wentworth Gas Marketing LLC for Long-Term Authorization to Export Compressed Natural Gas,” (5/13/2014), filed with the U.S. Department of Energy in *In re Wentworth Gas Marketing LLC*, FE Docket No. 14-63-CNG, http://energy.gov/sites/prod/files/2014/06/f16/14_63_cng_tracy.pdf.

¹⁵⁶⁵ Id.

¹⁵⁶⁶ 9/19/2014 letter from Morgan Stanley legal counsel to Subcommittee, at PSI-MorganStanley-13-000001 – 009, at 006.

¹⁵⁶⁷ Id.

¹⁵⁶⁸ Id.

¹⁵⁶⁹ Id. at 007.

¹⁵⁷⁰ See *In re Wentworth Gas Marketing LLC*, FE Docket No. 14-63-CNG, “Application of Wentworth Gas Marketing LLC for Long-Term Authorization to Export Compressed Natural Gas,” (5/13/2014), http://energy.gov/sites/prod/files/2014/06/f16/14_63_cng_tracy.pdf.

¹⁵⁷¹ Id. at 1.

¹⁵⁷² Id.

¹⁵⁷³ Id. at 4.

Caribbean.¹⁵⁷⁴ The Department of Energy granted Wentworth authorization to export CNG in October 2014.¹⁵⁷⁵

Morgan Stanley estimated the total construction cost for the CNG facility at up to \$55 million.¹⁵⁷⁶ It indicated that fabrication of the natural gas shipping containers would require an “initial investment of up to \$300 million.”¹⁵⁷⁷ Morgan Stanley projected that a second facility in Georgia would have an “equivalent” cost of \$55 million.¹⁵⁷⁸ Shipping containers for that second facility would be an additional expense.

Morgan Stanley’s plans to build CNG facilities were not widely known until its DOE application for export authority was made public and became the subject of a news report.¹⁵⁷⁹ Some media reports described the effort to set up a large-scale CNG export operation as unusual.¹⁵⁸⁰ Others noted that the Morgan Stanley proposal to export 60 billion cubic feet per year far exceeded the earlier Emera proposal to export 9 billion cubic feet.¹⁵⁸¹ Some negative reactions to the proposal also suggested it may be controversial, with opposition focused primarily on exporting large amounts of low-cost domestic natural gas to other countries.¹⁵⁸²

Informing the Federal Reserve. Federal Reserve personnel in Washington, D.C. told the Subcommittee that they first became aware of the Morgan Stanley CNG project when it was disclosed in the August 2014 media report, nearly a year after Morgan Stanley had begun work

¹⁵⁷⁴ Id. at 2.

¹⁵⁷⁵ See *In re Wentworth Gas Marketing LLC*, FE Docket No. 14-63-CNG, “Order Granting Long-term Authorization to Export Compressed Natural Gas by Vessel From a Proposed CNG Compression and Loading Facility at the Port of Freeport, Texas, to Free Trade Agreement Nations,” (10/7/2014), <http://energy.gov/sites/prod/files/2014/10/f18/ord3515.pdf>.

¹⁵⁷⁶ 9/19/2014 letter from Morgan Stanley legal counsel to Subcommittee, at PSI-MorganStanley-13-000001 – 009, at 008.

¹⁵⁷⁷ Id.

¹⁵⁷⁸ Id. at 007.

¹⁵⁷⁹ See “Morgan Stanley plans natural gas export plant in new commodities foray,” Reuters, Anna Louie Sussman (8/29/2014), <http://www.reuters.com/article/2014/08/29/us-morganstanley-naturalgas-idUSKBN0GT0B320140829>.

¹⁵⁸⁰ See, e.g., “Morgan Stanley Forays Into Natural Gas Commodities,” Stocks.org, Jennifer Zhang (8/29/14), <http://stocks.org/energy-solar/morgan-stanley-nysems-forays-into-natural-gas-commodities/25180/>; (“There has not been another project like this in the industry.”); “Morgan Stanley subsidiary plans \$30 million – \$50 million Texas maritime CNG export facility,” *NGV Today* (9/3/2014), <http://ngvtoday.org/2014/09/03/morgan-stanley-subsiary-plans-30-million-50-million-texas-maritime-cng-export-facility/> (indicating an energy expert describing it as “one of the first such CNG export projects he was aware of”).

¹⁵⁸¹ “Morgan Stanley Forays Into Natural Gas Commodities,” Stocks.org, Jennifer Zhang (8/29/14), <http://stocks.org/energy-solar/morgan-stanley-nysems-forays-into-natural-gas-commodities/25180/>; See also “Morgan Stanley subsidiary plans \$30 million – \$50 million Texas maritime CNG export facility,” *NGV Today* (9/3/2014), <http://ngvtoday.org/2014/09/03/morgan-stanley-subsiary-plans-30-million-50-million-texas-maritime-cng-export-facility/>.

¹⁵⁸² See, e.g., discussion about the Morgan Stanley CNG proposal on CNGchat.com, <http://www.cngchat.com/forum/showthread.php?12170-Morgan-Stanley-Wentworth-Gas-Marketing-plan-30-to-50M-EXPORT-plant-at-Freeport-TX>.

on it.¹⁵⁸³ Morgan Stanley told the Subcommittee that it provided “an initial, oral notice” of the project to the Federal Reserve Bank of New York (FRBNY) in November 2013, and provided detailed information in May 2014, in response to a FRBNY request for information about its grandfather activities.¹⁵⁸⁴ The Federal Reserve told the Subcommittee that its personnel received the information in May 2014, but did not focus on the Wentworth project prior to the news report.¹⁵⁸⁵ The Federal Reserve also told the Subcommittee that it was still analyzing the CNG project to determine whether it was an appropriate use of the Gramm-Leach-Bliley grandfathering authority.¹⁵⁸⁶

When the Subcommittee spoke with the Federal Reserve about the project, the Federal Reserve representatives indicated they had been under the impression that Morgan Stanley had acquired the Wentworth companies as unrelated, pre-existing businesses; the Federal Reserve indicated that it had not been aware, until informed by the Subcommittee, that the Wentworth companies were shell corporations formed and run by Morgan Stanley employees.¹⁵⁸⁷ When asked, the Federal Reserve representatives indicated that they were unaware of any other instance in which a financial holding company had formed shell corporations and then used them to build an industrial facility to handle physical commodity activities.¹⁵⁸⁸

(c) Investing in a Natural Gas Pipeline Company

Over the past decade, in addition to trading natural gas financial instruments and launching the CNG construction project, Morgan Stanley has used its merchant banking authority to invest in an array of physical natural gas businesses, including a large natural gas pipeline company in the Midwest known as Southern Star. Morgan Stanley’s investment in Southern Star is through an investment fund called Morgan Stanley Infrastructures Partners LP, which is located within Morgan Stanley’s Merchant Banking & Real Estate Investing group and is administered, advised, and overseen by Morgan Stanley personnel.

Morgan Stanley Infrastructure Partnership. Although Morgan Stanley portrays Southern Star as owned by an investment fund in which Morgan Stanley holds only a minority interest, that investment fund, Morgan Stanley Infrastructure Partners LP (MSIP), is intimately connected to Morgan Stanley. MSIP was established by Morgan Stanley in 2007, and is managed by Morgan Stanley employees operating out of

¹⁵⁸³ Subcommittee briefing by the Federal Reserve (9/19/2014).

¹⁵⁸⁴ 11/18/2014 Morgan Stanley letter to Subcommittee, PSI-MorganStanley-25-000001 - 008, at 003; 5/19/2014 letter from Morgan Stanley to FRBNY, PSI-MorganStanley-26-000005 - 044.

¹⁵⁸⁵ Subcommittee briefing by the Federal Reserve (9/19/2014).

¹⁵⁸⁶ *Id.*

¹⁵⁸⁷ *Id.*

¹⁵⁸⁸ *Id.*

Morgan Stanley offices.¹⁵⁸⁹ Morgan Stanley was the largest investor in MSIP's initial infrastructure fund, supplying \$430 million. MSIP owns 100% of Southern Star.

Although MSIP is controlled by Morgan Stanley, it has a complex ownership structure that reflects different groups of investors and projects. At the apex of the ownership structure is Morgan Stanley. In the next tier is MS Holdings, Inc., which is wholly owned by Morgan Stanley.¹⁵⁹⁰ MS Holdings, in turn, owns 100% of Morgan Stanley Infrastructure, Inc. (MSI).¹⁵⁹¹ MSI is the manager of MSIP.¹⁵⁹² MSI is also a business unit within Morgan Stanley's Merchant Banking & Real Estate Investing group.¹⁵⁹³ MSI currently has 37 employees, all of whom are Morgan Stanley employees in the Merchant Banking & Real Estate Investing group and work exclusively on MSIP infrastructure projects.¹⁵⁹⁴

The remaining layers of MSIP's ownership structure grow increasingly complex. Virtually all of the remaining entities are shell entities with no employees or offices of their own. One key entity is Morgan Stanley Infrastructure GP LP (MSIGP), which is the general partner of MSIP. MSIGP is a shell entity with no employees of its own. Its general partner is MSI, and MSI employees actually administer MSIGP, meaning that, on a practical level, MSI manages MSIP.¹⁵⁹⁵ Also included within the ownership structure are multiple limited partnerships and "feeder vehicles" that group together certain types of investors and "feed" their investment dollars to MSIP and its infrastructure projects. The following graphic depicts MSIP's full ownership structure:

¹⁵⁸⁹ See 8/29/2014 "Morgan Stanley Infrastructure Partners: Overview of Southern Star," prepared by Morgan Stanley, MS-PSI-00000001 - 037, at 006; 10/24/2014 "Morgan Stanley Infrastructure Partners Southern Star Follow Up Questions," prepared by Morgan Stanley, MS-PSI-00000455 - 475, at 458; 9/11/2013 "Morgan Stanley Infrastructure Platform Review," prepared by Morgan Stanley, FRB-PSI-400321 - 382, at 326.

¹⁵⁹⁰ See 10/24/2014 "Morgan Stanley Infrastructure Partners: Southern Star Follow Up Questions," prepared by Morgan Stanley, MS-PSI-00000455 - 475, at 456.

¹⁵⁹¹ *Id.*

¹⁵⁹² *Id.* See also 8/29/2014 "Morgan Stanley Infrastructure Partners: Overview of Southern Star," prepared by Morgan Stanley, FRB-PSI-00000001 - 037, at 002.

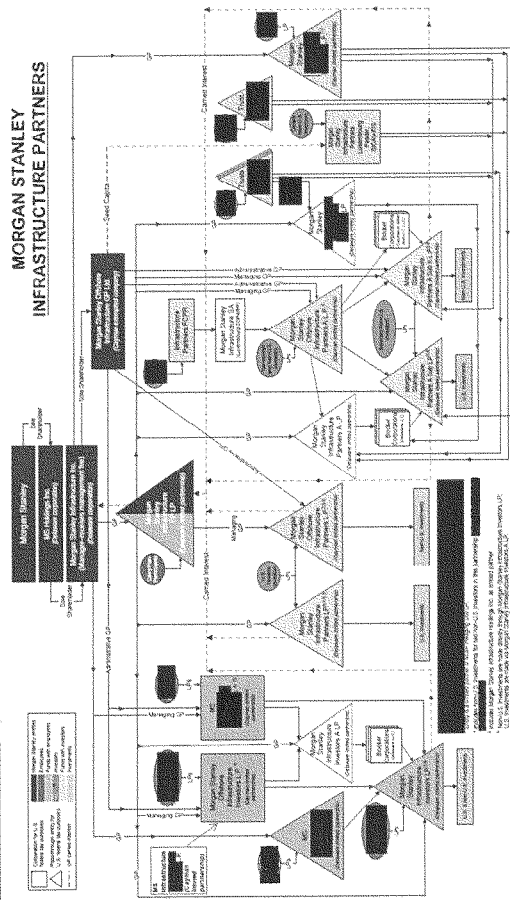
¹⁵⁹³ *Id.* at 005.

¹⁵⁹⁴ *Id.* at 008; Subcommittee briefing by Morgan Stanley (9/8/2014).

¹⁵⁹⁵ See 10/24/2014 "Morgan Stanley Infrastructure Partners: Southern Star Follow Up Questions," prepared by Morgan Stanley, MS-PSI-00000455 - 475, at 457; 8/29/2014 "Morgan Stanley Infrastructure Partners: Overview of Southern Star," prepared by Morgan Stanley, MS-PSI-00000001 - 037, at 002 and 006.

RESPONSES TO QUESTIONS
Answer to Question 1

Question 1:
Complete ownership structure
chart for MSIP, including all
funds that feed into the master
limited partnerships for MSIP 1
and all MS Ownership interests.



Morgan Stanley

Contains Competitively Sensitive Information

MSIP Investments. MSIP is a closed investment fund with a 15-year term ending in 2022.¹⁵⁹⁶ MSIP raised about \$4 billion for its investments, most of which are ongoing.¹⁵⁹⁷ To find investors, MSI “utilize[d] Morgan Stanley’s institutional and wealth management distribution networks ... work[ing] through three sales channels.”¹⁵⁹⁸ According to Morgan Stanley, investors contributed about \$3.6 billion or nearly 90% of MSIP’s investment capital.¹⁵⁹⁹ Those investors included pension funds, financial institutions, corporations, endowment funds, high net worth individuals, and some Morgan Stanley employees.¹⁶⁰⁰ The remaining 10.74% of MSIP’s investment capital, about \$430 million, came from Morgan Stanley, its single largest investor.¹⁶⁰¹

MSIP has been profitable, with a gross internal rate of return of about 12%.¹⁶⁰² According to Morgan Stanley, MSIP has several categories of investments including “Energy and Utilities (oil and gas pipelines, regulated electricity assets, transmission and distribution systems, and water distribution and treatment).”¹⁶⁰³ Out of a list of 16 MSIP investments provided by Morgan Stanley to the Federal Reserve, eight involved physical commodity activities.¹⁶⁰⁴ They included an electricity, heating, and cooling facility in the United States; a large electricity distributor in Chile; a natural gas distribution company in Spain; hydropower plants in China; and a wind power developer and operator in India.¹⁶⁰⁵ As of March 31, 2013, Southern Star was MSIP’s largest single investment.¹⁶⁰⁶

Southern Star. MSIP owns 100% of Southern Star Central Corp., the parent company of Southern Star Central Gas Pipeline Inc., its wholly owned subsidiary.¹⁶⁰⁷ MSIP purchased 40% of Southern Star’s

¹⁵⁹⁶ 8/29/2014 “Morgan Stanley Infrastructure Partners: Overview of Southern Star,” prepared by Morgan Stanley, MS-PSI-00000001 - 037, at 012; 9/11/2013 “Morgan Stanley Infrastructure Platform Review,” prepared by Morgan Stanley for FRBNY, FRB-PSI-400321 - 382, at 332.

¹⁵⁹⁷ 8/29/2014 “Morgan Stanley Infrastructure Partners: Overview of Southern Star,” prepared by Morgan Stanley, MS-PSI-00000001 - 037, at 009; 9/11/2013 “Morgan Stanley Infrastructure Platform Review,” prepared by Morgan Stanley for FRBNY, FRB-PSI-400321 - 382, at 332, 381.

¹⁵⁹⁸ 9/11/2013 “Morgan Stanley Infrastructure Platform Review,” prepared by Morgan Stanley for FRBNY, FRB-PSI-400321 - 382, at 351.

¹⁵⁹⁹ 8/29/2014 “Morgan Stanley Infrastructure Partners: Overview of Southern Star,” prepared by Morgan Stanley, MS-PSI-00000001 - 037, at 006 and 009.

¹⁶⁰⁰ Id. at 009; Subcommittee briefing by Morgan Stanley (9/8/2014).

¹⁶⁰¹ 8/29/2014 “Morgan Stanley Infrastructure Partners: Overview of Southern Star,” prepared by Morgan Stanley, MS-PSI-00000001 - 037, at 009, footnote 1.

¹⁶⁰² 9/11/2013 “Morgan Stanley Infrastructure Platform Review,” prepared by Morgan Stanley for FRBNY, FRB-PSI-400321 - 382, at 336.

¹⁶⁰³ Id. at 327.

¹⁶⁰⁴ Id. at 333.

¹⁶⁰⁵ Id. See also 10/24/2014 “Morgan Stanley Infrastructure Partners: Southern Star Follow Up Questions,” prepared by Morgan Stanley, MS-PSI-00000455 - 475, at 467; Morgan Stanley Infrastructure Partners website, <http://www.morganstanley.com/infrastructure/portfolio.html>.

¹⁶⁰⁶ 9/11/2013 “Morgan Stanley Infrastructure Platform Review,” prepared by Morgan Stanley for FRBNY, FRB-PSI-400321 - 382, at 336.

¹⁶⁰⁷ See 8/23/2012 Morgan Stanley press release, “Morgan Stanley Infrastructure Partners acquires full ownership of Southern Star Central Corp.,”

shares in 2010, and acquired the remaining 60% in 2012.¹⁶⁰⁸ Morgan Stanley relied on the Gramm-Leach-Bliley merchant banking authority to buy the company and, under the statutory requirements, generally must sell the company within ten years, by 2020.¹⁶⁰⁹

Southern Star was founded in 1904, and is headquartered in Owensboro, Kentucky.¹⁶¹⁰ It “is the primary gas transmission and natural gas storage facility provider” in certain areas of the Midwest, with approximately 6,000 miles of pipeline serving Colorado, Kansas, Missouri, Oklahoma, Texas, and Wyoming.¹⁶¹¹ Its pipeline system has a delivery capacity of approximately 2.4 billion cubic feet (Bcf) of natural gas per day, and its primary function is delivering gas to local natural gas distributors in its service areas.¹⁶¹² Southern Star serves a number of metropolitan areas including St. Louis, Kansas City, and Joplin in Missouri, and Kansas City, Wichita, Topeka, and Lawrence in Kansas.¹⁶¹³

Southern Star operates eight underground natural gas storage fields: seven in Kansas and one in Oklahoma.¹⁶¹⁴ The fields have a “natural gas storage capacity of approximately 47 Bcf and aggregate delivery capacity of approximately 1.3 Bcf of natural gas per day.”¹⁶¹⁵ Southern Star also has transportation contracts with 127 natural gas shippers, which include:

“regulated natural gas distribution companies, municipalities, intrastate pipelines, direct industrial users, electrical generators,

<http://www.morganstanley.com/about/press/articles/e5a5716e-8ff9-4b44-b073-ba6255f5b077.html>.

¹⁶⁰⁸ 8/29/2014 “Morgan Stanley Infrastructure Partners: Overview of Southern Star,” prepared by Morgan Stanley, MS-PSI-00000001 - 037, at 003; Morgan Stanley corporate website, <http://www.morganstanley.com/infrastructure/portfolio.html>; 8/23/2012 Morgan Stanley press release, “Morgan Stanley Infrastructure Partners acquires full ownership of Southern Star Central Corp.,” <http://www.morganstanley.com/about/press/articles/e5a5716e-8ff9-4b44-b073-ba6255f5b077.html>. MSIP acquired the remaining shares from GE Energy Financial Services, Inc. (GE), which resulted in a change in control for Southern Star. See Southern Star Central Corp. 10-Q, 09/30/2013, at 8, <http://www.sec.gov/Archives/edgar/data/1260349/000126034913000016/southernstar10q9302013r189.pdf>.

¹⁶⁰⁹ 8/29/2014 “Morgan Stanley Infrastructure Partners: Overview of Southern Star,” prepared by Morgan Stanley, MS-PSI-00000001 - 037, at 014.

¹⁶¹⁰ See undated “About Southern Star,” Southern Star website, <http://www.sscgp.com/about-southern-star/>.

¹⁶¹¹ Southern Star Central Corp. Form 10-Q for fiscal year ending 6/30/2014, SEC website, at 8, <http://www.sec.gov/Archives/edgar/data/1260349/000126034914000020/southernstar10q6302014doc.htm>. See also “About Southern Star,” Southern Star website, <http://www.sscgp.com/about-southern-star/>.

¹⁶¹² Southern Star Central Corp. Form 10-Q for fiscal year ending 6/30/2014, SEC website, at 8, <http://www.sec.gov/Archives/edgar/data/1260349/000126034914000020/southernstar10q6302014doc.htm>.

¹⁶¹³ 8/29/2014 “Morgan Stanley Infrastructure Partners: Overview of Southern Star,” prepared by Morgan Stanley, MS-PSI-00000001 - 037, at 016.

¹⁶¹⁴ Southern Star Central Corp. 10-K, 12/31/2013, at 2,

<http://www.sec.gov/Archives/edgar/data/1260349/000126034914000002/southernstar201310kdoc.htm>.

¹⁶¹⁵ *Id.*

gas marketers and producers. Central transports natural gas to approximately 528 delivery points, including natural gas distribution companies and municipalities, power plants, interstate and intrastate pipelines, and large and small industrial and commercial customers.”¹⁶¹⁶

In addition, Southern Star has 41 compressor stations to facilitate natural gas transport.¹⁶¹⁷

Southern Star Ownership. As indicated earlier, Southern Star is wholly owned by Morgan Stanley Infrastructure Partners LP (MSIP), an investment fund that is administered, advised, and controlled by Morgan Stanley personnel. According to Morgan Stanley, MSIP uses a “typical Holding Company, Operating Company ownership structure commonly used for regulated pipelines” under oversight of the Federal Energy Regulatory Commission.¹⁶¹⁸

According to Morgan Stanley, MSI, which manages MSIP, “formed two intermediate holding companies: MSIP Southern Star, LLC (March 2010) and MSIP Southern Star II, LLC (September 2012) to acquire and hold” MSIP’s ownership interests in Southern Star.¹⁶¹⁹ Those two intermediate holding companies wholly own MSIP-SSCC Holdings LLC (MSIP-SSCC), which, in turn, owns Southern Star’s parent corporation.¹⁶²⁰

¹⁶¹⁶ Id.

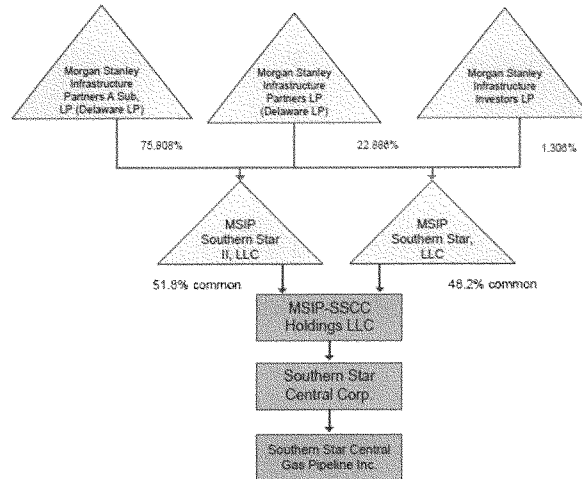
¹⁶¹⁷ 8/29/2014 “Morgan Stanley Infrastructure Partners: Overview of Southern Star,” prepared by Morgan Stanley, MS-PSI-00000001 - 037, at 016. According to Southern Star, it is not involved with natural gas production, refining, or liquefied natural gas. Id. at 019.

¹⁶¹⁸ 8/29/2014 “Morgan Stanley Infrastructure Partners, Overview of Southern Star,” MS-PSI-00000001 - 037, at 003.

¹⁶¹⁹ Id.

¹⁶²⁰ Id.

The following graphic is a simplification of Southern Star's ownership structure:



Source: 8/29/2014 "Morgan Stanley Infrastructure Partners, Overview of Southern Star," prepared by Morgan Stanley, at FRB-PSI-00000004.

The two intermediate holding companies are ultimately owned by MSIP, through the complex ownership structure of limited partnerships and feeder vehicles indicated earlier. The three entities depicted in the graphic above represent the 380 global investors that have invested in MSIP.¹⁶²¹ Morgan Stanley told the Subcommittee that, as a result of the MSIP ownership structure, it ultimately holds a 10.74% indirect ownership interest in Southern Star.¹⁶²²

Board of Directors. The Southern Star Board of Directors consists of three MSI senior executives who are also Morgan Stanley employees.¹⁶²³ The Board meets quarterly and reviews information on Southern Star's financial performance, business activities and development projects, volume throughput, compliance issues, environmental issues, and capital spending plans, among other issues.¹⁶²⁴ When asked by the Subcommittee if Southern Star's Board presentations

¹⁶²¹ Subcommittee briefing by Morgan Stanley (9/8/2014). Morgan Stanley explained that Morgan Stanley Infrastructure Partners A Sub LP is the feeder vehicle used by foreign investors; Morgan Stanley Infrastructure Partners LP is the feeder vehicle used by domestic investors; and Morgan Stanley Infrastructure Investors LP is the feeder vehicle used by Morgan Stanley employees, including former employees. *Id.*

¹⁶²² 8/29/2014 "Morgan Stanley Infrastructure Partners Overview of Southern Star," MS-PSI-00000001 - 037, at 002. Morgan Stanley told the Subcommittee that the Volcker Rule requires it to reduce its holdings in investment funds to 3%, but asserted that MSIP was covered by an exception for illiquid funds. Subcommittee briefing by Morgan Stanley (9/8/2014).

¹⁶²³ 8/29/2014 "Morgan Stanley Infrastructure Partners Overview of Southern Star," MS-PSI-00000001 - 037, at 023.

¹⁶²⁴ *Id.*

were ever given to the Morgan Stanley Commodities group, several MSIP representatives said “absolutely not.”¹⁶²⁵

In addition to Board meetings, Morgan Stanley indicated that monthly meetings were held between Southern Star and MSI personnel to discuss business activities.¹⁶²⁶ Morgan Stanley representatives told the Subcommittee that while its employees worked with Southern Star management, they were aware that, under the merchant banking statutory restrictions, Morgan Stanley was prohibited from becoming involved in the company’s day-to-day operations.¹⁶²⁷ At the same time, Morgan Stanley indicated that its employees had reviewed Southern Star’s vendors, performed counterparty assessments, utilized Morgan Stanley’s legal and insurance expertise to assist Southern Star, and exercised oversight over pipeline safety issues.¹⁶²⁸ In 2010, the Board of Directors, which consists of Morgan Stanley employees, directed Southern Star to create a Chief Compliance Officer position to oversee pipeline integrity, safety issues, and regulatory compliance.¹⁶²⁹

Incidents. As a natural gas business, Southern Star faces a range of operational risks, including pipeline ruptures, natural gas leaks, and damages caused by natural disasters like tornadoes or earthquakes. According to Morgan Stanley, Southern Star has “a strong safety and environmental record,” with no material incidents over the past ten years.¹⁶³⁰

According to documents found on the website of the National Transportation Safety Board (NTSB), prior to Morgan Stanley’s acquisition of the company, one of Southern Star’s pipelines was ruptured in 2006, by an unrelated contractor doing work for a third party.¹⁶³¹ The accident occurred on September 29, 2006, in Mound Valley, Kansas. According to the NTSB materials, Double M Construction Company was doing trenching work for a natural gas well project.¹⁶³² While trenching, an operator of Double M struck Southern Star’s underground pipeline, which ran through the property. The ruptured pipeline leaked gas, which then came into contact with the

¹⁶²⁵ Subcommittee briefing by Morgan Stanley (9/8/2014).

¹⁶²⁶ Id.

¹⁶²⁷ Id.

¹⁶²⁸ Id.

¹⁶²⁹ Id.

¹⁶³⁰ 8/29/2014 “Morgan Stanley Infrastructure Partners, Overview of Southern Star,” prepared by Morgan Stanley, MS-PSI-00000001 - 037, at 026.

¹⁶³¹ U.S. Department of Transportation, “Incident report – gas transmission and gathering systems, Southern Star gas pipeline,” (10/11/2006), PSI-USDOTIncidentRpt_Oct06-000001. See also “Kansas State Fire Marshal Department Fire Investigation Summary Report,” (12/12/2006), Case No. 24731, PSI-KSFireMarRpt_Nov06-000001 - 024, at 001-003. See also “Kansas Corporation Commission Report and Recommendation in the matter of the investigation of Double M Construction, Inc.,” Docket no. 07-MMCP-469-SHO, (11/13/2006), PSI-KSFireMarRpt_Nov06-000001 - 024, at 013-024.

¹⁶³² Id. The owner of the natural gas well project was Admiral Bay Resources, Inc., which had contracted with Double J Construction Company, who in turn had subcontracted with Double M Construction to do the trenching.

running trenching machine and caused a large explosion and fire. One Double M Construction employee died, and there was substantial property damage.¹⁶³³ The Kansas State Fire Marshal determined that Southern Star was aware of the illegal trenching near its underground pipeline before the accident occurred, but did not report it.¹⁶³⁴ When asked why, Southern Star stated that it did not have an obligation to report the conduct under Kansas law, which the Fire Marshal determined to be true.¹⁶³⁵ No government agency assessed a penalty against Southern Star in connection with the incident. Southern Star was named as a defendant in a wrongful death case filed against Double J Pipeline Construction, which was settled in 2009, in part with a payment from Southern Star's insurance policy.¹⁶³⁶

Southern Star's pipeline infrastructure has also suffered damage due to natural disasters. In May 2013, Southern Star reported damage to its pipelines in Cement, Oklahoma, after a tornado hit the town.¹⁶³⁷

Morgan Stanley told the Subcommittee that insurance experts within the Merchant Banking and Real Estate Investment group have met with Southern Star to discuss the adequacy and pricing of insurance policies, and helped Southern Star obtain a comprehensive insurance program.¹⁶³⁸ Its policies include insurance protecting against pollution incidents, well issues, property damage, damage from sabotage or terrorism, business interruption, and commercial crime, as well as directors' and officers' liability.¹⁶³⁹

Morgan Stanley-Southern Star Relationship. Morgan Stanley told the Subcommittee that it had a classic merchant banking relationship with Southern Star, in which it oversaw its overall business but did not participate in its day-to-day operations.¹⁶⁴⁰ In response to questions, Morgan Stanley said that it was not Southern Star's primary banker and did not loan it money.¹⁶⁴¹ Morgan Stanley indicated that it also did not perform any natural gas trading activities on behalf of

¹⁶³³ Id. Double M Construction was found to have been trenching illegally under Kansas law, because it did not follow certain protocols. The Kansas State Fire Marshal Department provided a report that concluded the incident was an accident, and there was no intentionally malicious conduct that led to the explosion. Id.

¹⁶³⁴ Id.

¹⁶³⁵ Id.

¹⁶³⁶ See *Foran vs. Double J Pipeline Construction, L.L.C., et al.*, Docket No. CJ-2007-29 (USDC D. Okla.), "Order Approving Settlement" (7/31/2009); 10/24/2014 "Morgan Stanley Infrastructure Partners[:] Southern Star Follow Up Questions," prepared by Morgan Stanley, MS-PSI-00000455 - 475, at 473 [sealed exhibit].

¹⁶³⁷ See "Energy infrastructure largely spared Oklahoma tornado's fury," Reuters, (5/21/2013), <http://www.reuters.com/article/2013/05/21/us-usa-tornadoes-energy-idUSBRE94K0Q920130521>.

¹⁶³⁸ Subcommittee briefing by Morgan Stanley (9/8/2014). See also 8/29/2014 "Morgan Stanley Infrastructure Partners, Overview of Southern Star," prepared by Morgan Stanley, MS-PSI-00000001 - 037, at 032.

¹⁶³⁹ 8/29/2014 "Morgan Stanley Infrastructure Partners, Overview of Southern Star," prepared by Morgan Stanley, MS-PSI-00000001 - 037, at 032.

¹⁶⁴⁰ Subcommittee briefing by Morgan Stanley (9/8/2014).

¹⁶⁴¹ Id.

Southern Star.¹⁶⁴² In addition, according to Morgan Stanley, Southern Star did not provide physical natural gas or related services to Morgan Stanley, including the Morgan Stanley Commodities group.¹⁶⁴³ Morgan Stanley told the Subcommittee that information from Southern Star was shared with MSI employees in the Merchant Banking and Real Estate Investment Group, but not with anyone in the Morgan Stanley Commodities group.¹⁶⁴⁴

MSIP II. Morgan Stanley noted that MSI was sponsoring a second infrastructure investment fund, MSIP II, which was in the process of raising another \$4 billion and would concentrate on energy, utility, and transportation projects.¹⁶⁴⁵ Morgan Stanley told the Federal Reserve that it expected “energy-related infrastructure will constitute a majority of the deal flow in MSIP II.”¹⁶⁴⁶ It identified possible “Americas” investments in “[s]hale oil opportunities,” natural gas gathering, processing, storage and LNG facilities; natural gas fired turbines; and wind and solar activities.¹⁶⁴⁷ Morgan Stanley also indicated that “MSI officers will invest \$25 million in MSIP II,” to align their interests with those of investors.¹⁶⁴⁸ MSIP II has raised about \$1.5 billion as of late 2014.¹⁶⁴⁹ The plans for MSIP II indicate that Morgan Stanley intends to continue to invest billions of dollars in natural gas and other commodity-related businesses for years to come.

(d) Investing in Other Natural Gas Facilities

Southern Star is not Morgan Stanley’s only natural gas investment, nor is MSIP the only Morgan Stanley merchant banking entity that has invested in natural gas. A second is Morgan Stanley Global Private Equity, a business unit which, like Morgan Stanley Infrastructure, is located within Morgan Stanley’s Merchant Banking & Real Estate Investing group.¹⁶⁵⁰ As its name suggests, Morgan Stanley Global Private Equity is the financial holding company’s leading private equity investment arm. Currently, Morgan Stanley Global Private Equity has one active fund, Morgan Stanley Capital Partners V.¹⁶⁵¹

Like MSIP, the Morgan Stanley Capital Partners V investment fund was established by Morgan Stanley and is managed by Morgan

¹⁶⁴² 8/29/2014 “Morgan Stanley Infrastructure Partners, Overview of Southern Star,” prepared by Morgan Stanley, MS-PSI-00000001 - 037, at 036.

¹⁶⁴³ Id. at 025.

¹⁶⁴⁴ Subcommittee briefing by Morgan Stanley (9/8/2014).

¹⁶⁴⁵ 9/11/2013 “Morgan Stanley Infrastructure Platform Review,” prepared by Morgan Stanley for FRBNY, FRB-PSI-400321 - 382, at 331, 344.

¹⁶⁴⁶ Id. at 352.

¹⁶⁴⁷ Id.

¹⁶⁴⁸ Id. at 346.

¹⁶⁴⁹ 8/29/2014 “Morgan Stanley Infrastructure Partners, Overview of Southern Star,” prepared by Morgan Stanley, MS-PSI-00000001 - 037, at 009.

¹⁶⁵⁰ 10/24/2014 “Morgan Stanley Infrastructure Partners: Southern Star Follow Up Questions,” prepared by Morgan Stanley, MS-PSI-00000455 - 475, at 459 [sealed exhibit].

¹⁶⁵¹ Id. Four predecessor funds sponsored by Morgan Stanley Capital Partners “have either been fully realized or are in liquidation.”

Stanley employees operating out of Morgan Stanley offices. It has an ownership structure almost as complicated as that of MSIP.¹⁶⁵² Morgan Stanley is its largest investor, having held an ownership interest of between 23% and 33% in the fund since 2008.¹⁶⁵³ Morgan Stanley told the Subcommittee that MSIP and Morgan Stanley Capital Partners V, which are both within the Merchant Banking and Real Estate Investment group, share senior leadership but not other employees.¹⁶⁵⁴ In 2013, Morgan Stanley Global Private Equity had about 50 employees, all of whom were employed by Morgan Stanley.¹⁶⁵⁵

Morgan Stanley Capital Partners V has raised about \$1.5 billion.¹⁶⁵⁶ Its investment portfolio currently includes at least three natural gas-related investments: Triana Energy, Trinity, and Sterling Energy.¹⁶⁵⁷ Triana Energy Investments LLC owns 70% of a natural gas exploration and production company in West Virginia.¹⁶⁵⁸ Trinity Investment Holdings, LLC owns 70% of “one of the largest independent CO₂ [carbon dioxide] pipeline systems in the US.”¹⁶⁵⁹ Sterling Investment Holdings LLC owns 63% of a natural gas gathering and processing company, Sterling Energy Investments LLC, and is headquartered in Denver, Colorado.¹⁶⁶⁰

Like Southern Star, these natural gas companies have Morgan Stanley employees on their boards of directors and meet on a regular basis with Morgan Stanley personnel. They have similar operational and environmental risks as Southern Star.

¹⁶⁵² Id. at 459-460.

¹⁶⁵³ 5/21/2013 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-05-000001 - 006, at 003.

¹⁶⁵⁴ 10/24/2014 “Morgan Stanley Infrastructure Partners: Southern Star Follow Up Questions,” prepared by Morgan Stanley, MS-PSI-00000455 - 475, at 466.

¹⁶⁵⁵ 9/11/2013 “Morgan Stanley Infrastructure Platform Review,” prepared by Morgan Stanley for FRBNY, FRB-PSI-400321 - 382, at 326. In a recent job listing seeking an investment professional for Morgan Stanley Capital Partners (MSCP), Morgan Stanley wrote: “MSCP employs a fully-integrated Operating Partner model and is unique among middle market private equity firms in its ability to leverage the global network and resources of Morgan Stanley to benefit the investment team and management teams with whom we partner to drive value creation.” October 2014 posting for “Vice President, Morgan Stanley Capital Partners,” LinkedIn, https://www.linkedin.com/jobs2/view/24772940?trk=job_view_company_other_jobs&trk=job_view_company_other_jobs.

¹⁶⁵⁶ 9/11/2013 “Morgan Stanley Infrastructure Platform Review,” prepared by Morgan Stanley for FRBNY, FRB-PSI-400321 - 382, at 326 (listing Merchant Banking and Real Estate Investing Funds, which includes MSCP V); 10/14/2014 email from Morgan Stanley legal counsel to Subcommittee, “MS Questions,” PSI-MorganStanley-18-000001 [sealed exhibit].

¹⁶⁵⁷ See Morgan Stanley Global Private Equity Fund website, portfolio list, http://www.morganstanley.com/institutional/invest_management/private_equity/portfolio.html. See also 5/21/2013 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-05-000001 - 006, at 004.

¹⁶⁵⁸ 5/21/2013 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-05-000001 - 006, at 004.

¹⁶⁵⁹ Id. See also Morgan Stanley Global Private Equity Fund website, portfolio list, http://www.morganstanley.com/institutional/invest_management/private_equity/portfolio.html.

¹⁶⁶⁰ 5/21/2013 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-05-000001 - 006, at 004.

(3) Issues Raised by Morgan Stanley's Natural Gas Activities

Morgan Stanley's expanding physical natural gas activities raise multiple concerns, including its decision to build and operate a commercial natural gas business using shell companies, unfair competition concerns, insufficient capital and insurance to protect against catastrophic event risks, conflicts of interest arising from controlling natural gas supplies while trading natural gas financial instruments, and inadequate safeguards.

(a) Shell Companies

Although Morgan Stanley has long traded natural gas and, for the last decade, invested in merchant banking natural gas businesses, it appears to have never before produced CNG or built a commercial energy facility. Additionally, the most striking and unusual aspect of Morgan Stanley's physical natural gas activities is its recent decision to introduce the use of shell companies. Morgan Stanley's formation and use of shell companies, run by Morgan Stanley employees, to build and operate a CNG facility appears to be an unprecedented use of the Gramm-Leach-Bliley grandfather authority.

By using shell entities with no employees or physical presence of their own, and installing its own senior executives as the shells' directors and officers, Morgan Stanley essentially created a corporate alter ego to operate a new commercial business. Morgan Stanley, through its shell entities, became the designer, builder, and soon-to-be operator of a new CNG facility, as well as the marketer and exporter of its products. Morgan Stanley chose, not only for the first time to start a new physical commodities business, but also to use shell companies to initiate construction of a complex, untested natural gas facility with no operational track record or established market. Its actions raise a number of potential legal, operational, and financial risks.

Equally troubling is that Morgan Stanley embarked on this course of action, despite its novel elements, with only an "initial oral notice" to its regulator. While Morgan Stanley supplied additional information later, it was not until media reports alerted the Federal Reserve to the CNG project a year after Morgan Stanley began work on it, that regulators focused on the details. Even then, regulators didn't understand that Morgan Stanley was using shell companies with no employees and no prior business activities, and able to operate on a day-to-day basis only by utilizing Morgan Stanley's own personnel.

The Federal Reserve told the Subcommittee that it is still considering whether the Wentworth companies represent an appropriate exercise of the Gramm-Leach-Bliley grandfather authority. Since the Wentworth companies represent Morgan Stanley's first foray into the

physical CNG industry, it cannot contend that the grandfather clause is protecting against the forced disinvestment of an existing commodity activity. In fact, it is difficult to see how the word “grandfather” applies. If Morgan Stanley is permitted to proceed, it will represent a major expansion of the ability of financial holding companies with grandfather authority to enter into commercial businesses. They will no longer have to buy an existing enterprise; they can start the business themselves.¹⁶⁶¹ Allowing financial holding companies to start commercial businesses using shell entities managed by their own personnel cannot be reconciled with the longstanding bar against mixing banking and commerce or the intended scope of the grandfather clause.

In late October 2014, a media report indicated that Morgan Stanley may be considering selling the Wentworth companies and the CNG project to a third party.¹⁶⁶²

(b) Unfair Competition

A second concern raised by Morgan Stanley’s CNG project is the issue of unfair competition. Morgan Stanley apparently told the Federal Reserve that it launched the CNG project because it saw a “market opportunity.” It acted around the same time as another company, Emera CNG LLC, filed an application to export CNG. The Wentworth application sought a similar authorization, except that it requested permission to export 60 billion cubic feet of CNG per year instead of the 9 billion sought by Emera. The competing applications show that Morgan Stanley, through its Wentworth shell entities, is in direct competition in the natural gas distribution business with a commercial enterprise.

Morgan Stanley’s ability to compete commercially in an industry in which it has no prior experience is due, in part, to the inherent advantages that financial holding companies have when competing against businesses that don’t own banks. Morgan Stanley has immediate access to inexpensive, ready credit through its bank subsidiary, enabling its borrowing costs to nearly always undercut those of a nonbank competitor. Another advantage is Morgan Stanley’s relatively low capital requirements. In 2012, the FRBNY Commodities Team determined that corporations engaged in oil and gas businesses typically had a capital ratio of 42% to cover potential losses, while bank holding

¹⁶⁶¹ When Goldman decided to enter the physical uranium business, Goldman acquired an existing company, Nufcor, whose employees declined to stay on and were replaced with Goldman personnel. In so doing, Goldman essentially turned a substantive company into a shell. Goldman’s employees then took over a longstanding, well established business operation and expanded it. Goldman did not start up the business. In its CNG project, Morgan Stanley has dispensed with taking over an existing business with a track record of success, in favor of initiating a completely new business enterprise.

¹⁶⁶² See “Morgan Stanley looks at sale of gas export venture,” *Financial Times*, Gregory Meyer, Tom Braithwaite and Gina Chon (10/21/2014), <http://www.ft.com/cms/s/0/76c23932-58c7-11e4-a31b-00144feab7de.html#axzz3GuK83tj9>.

company subsidiaries had a capital ratio of, on average, 8% to 10%, making it much easier for them to invest corporate funds in their business operations.¹⁶⁶³

Less expensive financing and lower capital are two key factors underlying the traditional U.S. ban on mixing banking with commerce. Morgan Stanley's direct competition with an energy company to construct a CNG export facility is simply not the type of activity that, under U.S. banking principles, is appropriate for a bank holding company. If Morgan Stanley sees CNG exports as a good market opportunity, it should be financing or investing in one or more of the companies entering that business rather than competing to run the business itself.

(c) Catastrophic Event Risks

A third set of concerns involves the catastrophic event risks attached to Morgan Stanley's CNG project and investments in Southern Star and other natural gas portfolio companies.

The CNG project, which seeks to produce containerized natural gas on a large scale that Morgan Stanley describes as "unique,"¹⁶⁶⁴ and which does not exist in the United States today, carries numerous risks. Building the facility and arranging for electrical and pipeline connections raises a host of operational issues, as does moving the natural gas by truck and vessel. The flammability and explosive nature of natural gas intensify the catastrophic event risks. Hurricanes, tornados, and floods in Texas compound the problem. Additional financial risks arise from the absence of an existing market for large scale CNG exports, and the necessity for CNG exports to compete with LNG exports. Morgan Stanley's liability for any mishap affecting the CNG project is particularly acute, since it owns and is in the process of building and operating the facility through shell corporations run by Morgan Stanley employees.

Southern Star, as an established natural gas pipeline company, poses similar catastrophic event risks. While Morgan Stanley takes the position that it would have little or no liability for a catastrophic event at Southern Star, because it is a merchant banking investment in which Morgan Stanley has only an indirect 11% ownership interest, the level of Morgan Stanley's control over the investment fund that owns Southern Star makes the liability issue less clear cut.

Southern Star is 100% owned by Morgan Stanley Investment Partners (MSIP), which was formed by and is closely affiliated with Morgan Stanley, its largest investor. Morgan Stanley employees

¹⁶⁶³ 2012 Summary Report, at FRB-PSI-200477 - 510, at 499 [sealed exhibit].

¹⁶⁶⁴ 9/19/2014 letter from Morgan Stanley to Subcommittee, PSI-MorganStanley-13-000001 - 009, at 008.

manage MSIP, help it find investors, and oversee its investments. Those Morgan Stanley employees sit in Morgan Stanley offices and control MSIP's investments. Morgan Stanley employees also control Southern Star's Board of Directors, and advise it on financial, insurance and tax issues. In addition, Morgan Stanley, through its Board Members, oversees Southern Star vendors and pipeline safety, integrity, and compliance efforts.

As explained earlier, if a catastrophic event were to occur either in the United States or, in connection with CNG exports to foreign countries, multiple legal theories could be used to try to assign a portion of the liability to Morgan Stanley. Arguments could be made that Morgan Stanley was the owner and operator of the CNG facility involved in the event, the owner of the natural gas, or knowingly entrusted the natural gas to an incompetent operator, including operators in foreign ports and facilities.¹⁶⁶⁵ Morgan Stanley might be required to defend against claims in a state court, U.S. federal court, or foreign court, under the different laws in each jurisdiction. A financial institution viewed as being potentially liable for damages could see customers or counterparties withdraw funds, refrain from doing business, or demand increased compensation to continue doing business with the institution in light of its increased credit risk.

Morgan Stanley does not appear to be prepared for those types of unanticipated financial consequences. In 2012, the FRBNY Commodities Team found that Morgan Stanley had insufficient capital and insurance to cover potential losses from a catastrophic event.¹⁶⁶⁶ The 2012 Summary Report prepared a chart comparing the level of capital and insurance coverage at four financial holding companies, including Morgan Stanley, against estimated costs associated with "extreme loss scenarios." It found that at each institution, including Morgan Stanley, "the potential loss exceed[ed] capital and insurance" by \$1 to \$15 billion.¹⁶⁶⁷ That shortfall leaves the Federal Reserve, and ultimately U.S. taxpayers, at risk of having to provide financial support to Morgan Stanley should a catastrophic event occur.

(d) Conflicts of Interest

Still another set of issues raised by Morgan Stanley's natural gas activities involves conflicts of interest. The conflicts arise from the fact that Morgan Stanley trades natural gas financial products at the same time it is intimately involved with an array of physical natural gas activities. Its conduct raises questions about two sets of conflict of

¹⁶⁶⁵ See discussion in the Goldman and uranium section above.

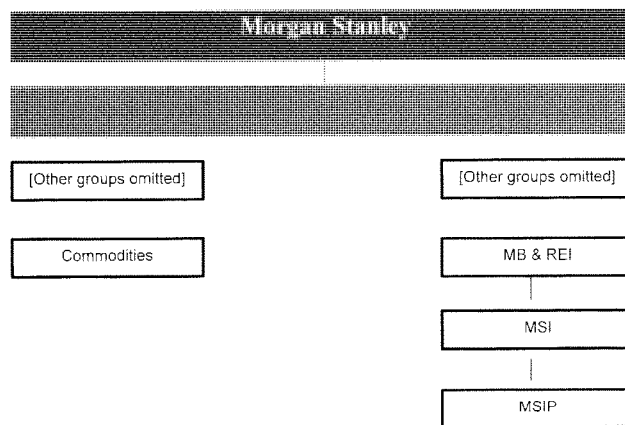
¹⁶⁶⁶ See 2012 Summary Report, at FRB-PSI-200477 - 510, at 498 [sealed exhibit].

¹⁶⁶⁷ Id. at 498, 509. The 2012 Summary Report also noted that commercial firms engaged in oil and gas businesses had a capital ratio of 42%, while bank holding company subsidiaries had a capital ratio of, on average, 8% to 10%. Id. at 499. The recent decision in the BP oil spill case suggests that the "extreme loss" scenarios may entail expenses beyond those contemplated as recently as 2012.

interest concerns, one involving non-public information and the other involving natural gas supplies.

While commodities laws do not bar the use of non-public information by traders in the financial markets in the same way as securities laws, concerns about unfair trading advantages deepen when one commodities trader has access to significant non-public information. Morgan Stanley's merchant banking investments put Morgan Stanley employees on the boards of multiple companies involved with different aspects of the natural gas business, from natural production to pipelines to storage to LNG cargoes to CNG exports. Those board positions provide Morgan Stanley personnel with access to a massive amount of non-public information about the physical natural gas market.

When asked about this informational advantage, Morgan Stanley personnel explained that merchant banking was lodged in a different part of the bank than commodities, and merchant banking employees did not share non-public information about their portfolio companies with commodities personnel. The following graphic shows that the Commodities group falls under the Institutional Securities segment of the financial holding company, while the Merchant Banking and Real Estate Investments group falls under the Investment Management segment:



Source: 8/29/2014 "Morgan Stanley Infrastructure Partners, Overview of Southern Star." MS-PSI-00000001 - 037, at 007. "MB & REI" stands for Merchant Banking & Real Estate Investments.

While the two activities are lodged in separate parts of the financial holding company, and the Subcommittee saw no evidence of the misuse of confidential Southern Star information, Morgan Stanley commodity traders could gain non-public information from their colleagues about natural gas activities providing useful market intelligence for natural gas trades. In addition, the Wentworth shell

companies are directly managed by employees in the Commodities group, meaning all non-public information related to the CNG project would be immediately and fully accessible to Morgan Stanley natural gas traders. The potential exists for Morgan Stanley commodity traders to use that non-public information to gain an unfair trading advantage over other market participants, including their customers and counterparties.

A second conflict of interest issue is whether Morgan Stanley would gain an unfair degree of control over CNG supplies if it actually completed construction of the planned CNG facility. The facility is apparently being designed to export 60 billion cubic feet of CNG per year. Given the infancy of the CNG export market, Morgan Stanley's plans suggest a significant market presence. Morgan Stanley's control over the timing and amount of the CNG it hopes to export raises questions about whether it could use its exports to benefit its natural gas trading activities. Those market manipulation concerns, and their accompanying legal, financial, and reputational risks, would not exist if Morgan Stanley remained a financial intermediary and trader in the natural gas financial market rather than increasing its involvement in physical natural gas activities.

(e) Inadequate Safeguards

A final set of issues involves the lack of regulatory safeguards related to financial holding company involvement with high risk physical natural gas activities. Natural gas is flammable and explosive. Natural gas prices are unpredictable and volatile. Large scale CNG exports have no established markets.

Because Morgan Stanley has relied on the grandfather clause to build and operate the CNG facility and on the merchant banking authority to invest in Southern Star and other natural gas companies, it has not notified or obtained prior permission from the Federal Reserve to engage those activities. For its part, the Federal Reserve has failed to issue guidance on the proper scope of the grandfather clause, including whether it may be used to authorize physical commodity activities that a holding company has never before conducted. The Federal Reserve has also failed to require annual disclosure of a comprehensive list of commodity-related activities undertaken under the grandfather and merchant banking authorities, so that it can learn of, track, and analyze those activities.

Because Morgan Stanley has relied on the grandfather clause for its CNG project, Morgan Stanley has not been required by the Federal Reserve to include the market value of that project when calculating compliance with the complementary physical commodities limit prohibiting those activities from exceeding 5% of the financial holding company's Tier 1 capital. The only cap on the size of Morgan Stanley's

CNG activities is the statutory prohibition that its grandfathering activities not exceed 5% of Morgan Stanley's consolidated assets, a limit set so high as to be no restriction at all. In addition, its commodity-related merchant banking activities have been allowed to accumulate with no volume limit at all.

Morgan Stanley's physical natural gas activities disclose that, due to inadequate reporting requirements, the Federal Reserve is at times left in the dark about important physical commodity activities being conducted under the grandfather and merchant banking authorities. They also disclose that the Federal Reserve has failed to put key safeguards in place to limit the size and risks associated with those activities and to ensure the safe and sound operation of the financial holding company.

(4) Analysis

Despite the sale of portions of its oil merchanting business, Morgan Stanley remains heavily involved in physical commodities, as evidenced by its initiation of the CNG project and ongoing investments in natural gas businesses like Southern Star. Morgan Stanley's utilization of the Wentworth shell companies to build and operate a CNG export facility is an unprecedented and inappropriate use of the Gramm-Leach-Bliley grandfather authority. Its extensive natural gas merchant banking activities demonstrate the need for a size limit on those investments. The catastrophic risks presented by its natural gas activities indicate Morgan Stanley needs to increase its capital and insurance to protect U.S. taxpayers against being called on to shore up the firm. Potential market manipulation opportunities also call out for stronger oversight and preventative safeguards.

All of the financial holding companies examined by the Subcommittee have been involved with financial and physical natural gas activities. It is past time for the Federal Reserve to enforce needed safeguards on this high risk physical commodity activity.

C. Morgan Stanley Involvement with Crude Oil

For more than 25 years, Morgan Stanley has engaged in extensive physical oil activities. Prior to its 2008 conversion to a bank holding company, Morgan Stanley built a wide-ranging physical oil business, including activities associated with producing, storing, supplying, and transporting oil. As part of that effort, Morgan Stanley purchased companies involved in various stages of the energy supply chain, such as TransMontaigne, which managed nearly 50 oil storage sites within the United States and Canada; Heidmar, which managed a fleet of 100 vessels delivering oil internationally; and Olco Petroleum, which blended oils, sponsored storage facilities, and ran about 200 retail gasoline stations in Canada. As part of its activities, Morgan Stanley supplied crude oil to a large European refinery, home heating oil to Northeastern utilities, and jet fuel to airlines. Over the last few years, Morgan Stanley began to reduce the extent of its physical oil activities. In 2013, it decided to sell many of its physical oil assets. In 2014, it sold TransMontaigne and some of its oil storage and transport facilities to an unrelated party. It arranged to sell additional physical oil assets to Rosneft, a Russian state owned company, only to see that transaction suspended when the United States imposed sanctions on Rosneft in connection with Russian incursions into Ukraine. In September 2014, Morgan Stanley told the Subcommittee that it intended to complete its exit from most of its physical oil business, although it would take longer than planned.

Morgan Stanley's physical oil activities present a classic case study of banking mixed with commerce, raising concerns about financial and catastrophic event risks as well as conflicts of interest from simultaneously trading both financial and physical oil products.

(1) Background on Oil

Crude oil, also known as petroleum, is a naturally occurring liquid formed through the heating and compression of organic materials beneath the earth's crust over an extended period of time.¹⁶⁶⁸ Crude oil and the products derived from it – including gasoline, diesel fuel, jet fuel, propane, and heating oil – are some of the most commonly used sources of energy in the world.¹⁶⁶⁹

¹⁶⁶⁸ See 7/29/2009 "What is Crude Oil? A Detailed Explanation on this Essential Fossil Fuel," prepared by the Editorial Department, Oilprice.com website, <http://oilprice.com/Energy/Crude-Oil/What-Is-Crude-Oil-A-Detailed-Explanation-On-This-Essential-Fossil-Fuel.html>.

¹⁶⁶⁹ See 6/19/2014 "Oil Crude and Petroleum Products Explained," U.S. Energy Information Administration website, http://www.eia.gov/energyexplained/index.cfm?page=oil_home.

The most common method of extracting crude oil from the earth is drilling.¹⁶⁷⁰ In the method most commonly used in the oil industry, an extractor drills to the depth at which geologists believe oil is located. The driller then inserts a tube into the newly drilled hole so that the oil can flow through to the surface. Oil drilling can take place on land or offshore on a seabed using a drilling platform. Oil can also be extracted from “oil sands,” typically beds of sand or clay mixed with water and a form of crude oil.¹⁶⁷¹ A third method of extraction involves “hydraulic fracturing,” which typically involves injecting water, sand, and chemicals under high pressure into petroleum-bearing rock formations such as shale to create new fractures in the rock and increase oil or natural gas flow to a well.¹⁶⁷²

The bulk of oil production worldwide comes from state-owned oil companies.¹⁶⁷³ Large privately owned oil companies and smaller independent oil companies also play a key role in oil production. The five countries with the greatest crude oil production are Saudi Arabia, the United States, Russia, China, and Canada.¹⁶⁷⁴ In 2013, about 12.4 million barrels per day were produced in the United States, comprising roughly 14% of the crude oil produced worldwide.¹⁶⁷⁵ The United States was also the world’s leading crude oil user during that time, consuming about 18.8 million barrels per day in 2013.¹⁶⁷⁶ Other prominent oil-consuming nations include China, Japan, and India.¹⁶⁷⁷

Crude Oil Infrastructure. Crude oil requires a complicated infrastructure to make the oil usable for U.S. industry. First, the crude oil must be located and produced, using drilling rigs, oil sand

¹⁶⁷⁰ 7/29/2009 “What is Crude Oil? A Detailed Explanation on this Essential Fossil Fuel,” prepared by the Editorial Department, Oilprice.com, website, <http://oilprice.com/Energy/Crude-Oil/What-Is-Crude-Oil-A-Detailed-Explanation-On-This-Essential-Fossil-Fuel.html>.

¹⁶⁷¹ Id.

¹⁶⁷² See undated “Hydraulic Fracturing,” prepared by U.S. Geological Society, U.S. Geological Society website, <http://energy.usgs.gov/OilGas/UnconventionalOilGas/HydraulicFracturing.aspx>.

¹⁶⁷³ 9/30/2014 “Energy in Brief: Who are the major players supplying the world oil market?” U.S. Energy Information Administration website, http://www.eia.gov/energy_in_brief/article/world_oil_market.cfm. As it is used here, the term “production” refers to the process by which crude oil is extracted from oil reserves in a particular place.

¹⁶⁷⁴ See undated “International Energy Statistics: 2013 Petroleum Production,” U.S. Energy Information Administration website, <http://www.eia.gov/cfapps/ipdbproject/iedindex3.cfm?tid=5&pid=53&aid=1&cid=regions,&syid=2013&eyid=2013&unit=TBD>.

¹⁶⁷⁵ See undated “International Energy Statistics: 2013 Petroleum Production,” U.S. Energy Information Administration website, <http://www.eia.gov/cfapps/ipdbproject/IEDIndex3.cfm?tid=5&pid=53&aid=1>. One barrel is equivalent to 42 U.S. gallons. 5/22/2014 “Frequently Asked Questions,” U.S. Energy Information Administration website, <http://www.eia.gov/tools/faqs/faq.cfm?id=24&t=10>.

¹⁶⁷⁶ See undated “International Energy Statistics: 2013 Petroleum Consumption,” U.S. Energy Information Administration website, <http://www.eia.gov/cfapps/ipdbproject/iedindex3.cfm?tid=5&pid=5&aid=2&cid=regions&syid=2013&eyid=2013&unit=TBD>.

¹⁶⁷⁷ Id.

processing, or hydraulic fracturing techniques. Next, it must be transported, typically by oil tanker, pipeline, or railway.¹⁶⁷⁸ Commonly, oil is taken by pipeline to a port, where it is loaded onto an ocean-going tanker and transported to its ultimate destination.¹⁶⁷⁹ Within the United States, oil is typically transported via pipeline, but due to a recent spike in oil production, despite more than 190,000 miles of pipeline,¹⁶⁸⁰ the existing U.S. pipeline network cannot reach or accommodate all of the oil requiring transport within U.S. borders.¹⁶⁸¹ Oil companies have increasingly turned to the railway system to transport the excess.¹⁶⁸² On occasion, they also use tanker trucks.¹⁶⁸³ The crude oil is typically transported to a refinery to process it into refined oil products. The United States currently has about 142 oil refineries.¹⁶⁸⁴ The refined oil products are typically stored at the refinery until they are transported to a broker or end user, such as a utility, airline, gasoline station, or industrial plant.

Crude Oil Markets and Prices. Crude oil is the largest and most actively traded commodity market in the world, with numerous physical and financial trading venues and market participants.¹⁶⁸⁵ There are currently hundreds of crude oil and refined oil products available for trade.¹⁶⁸⁶ Because of the size of the market and the many participants, crude oil prices are set globally, typically using U.S. dollars.¹⁶⁸⁷ Over the last ten years, crude oil prices have been volatile, with the most

¹⁶⁷⁸ 9/29/2014 "Transporting Oil and Natural Gas," American Petroleum Institute website, <http://www.api.org/oil-and-natural-gas-overview/transporting-oil-and-natural-gas>.

¹⁶⁷⁹ Id.

¹⁶⁸⁰ See undated "Oil and Natural Gas Overview," American Petroleum Institute website, <http://www.api.org/oil-and-natural-gas-overview/transporting-oil-and-natural-gas/pipeline/where-are-the-oil-pipelines>. See also 2013 "U.S. Refineries, Crude Oil, and Refined Products Pipelines" prepared by American Energy Mapping, American Petroleum Institute website, <http://www.api.org/oil-and-natural-gas-overview/transporting-oil-and-natural-gas/pipeline/~media/Files/Oil-and-Natural-Gas/pipeline/US-Pipeline-Map-API-Website3.pdf>.

¹⁶⁸¹ See "Oil boom downside: Exploding trains," *Politico*, Kathryn A. Wolfe and Bob King (6/8/2014), <http://www.politico.com/story/2014/06/exploding-oil-trains-energy-environment-107966.html>.

¹⁶⁸² Id. See also undated "Rail Accidents Involving Crude Oil and Ethanol Releases," NTSB report by Paul L. Stancil, NTSB website, at slide 2, <https://www.nts.gov/news/events/2014/railsafetyforum/presentations/Opening%20Presentation%20Rail%20Accidents%20Involving%20Crude%20Oil%20and%20Ethanol%20Releases.pdf>.

¹⁶⁸³ See 10/31/2013 "EIA's new map layers provide more detailed information on petroleum infrastructure," U.S. Energy Information Administration website, <http://www.eia.gov/todayinenergy/detail.cfm?id=13611>.

¹⁶⁸⁴ See 6/25/2014 "Petroleum & Other Liquids," U.S. Energy Information Administration website, http://www.eia.gov/dnav/pet/pet_pnp_cap1_dcu_nus_a.htm.

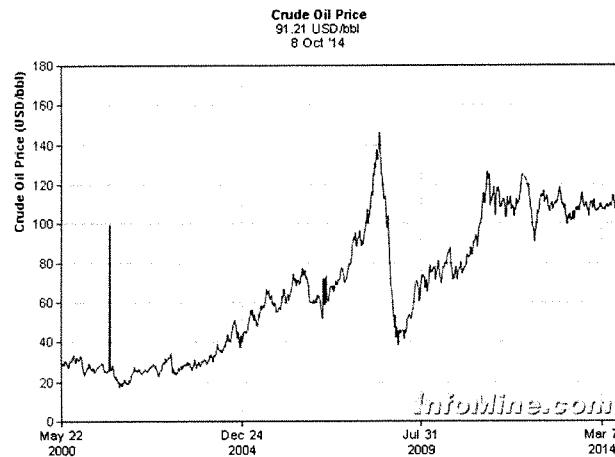
¹⁶⁸⁵ See undated "Crude Oil Futures Quotes," CME Group website, <http://www.cmegroup.com/trading/energy/crude-oil/light-sweet-crude.html>.

¹⁶⁸⁶ See, e.g., undated "ICE Crude & Refined Oil Products," prepared by ICE Futures Europe, ICE Futures Europe website, at 6, https://www.theice.com/publicdocs/ICE_Crude_Refined_Oil_Products.pdf.

¹⁶⁸⁷ See 7/2014 "Crude Oil Methodology and Specifications Guide," prepared by Platts, Platts' website, at 3, 8,

<http://www.platts.com/IM.Platts.Content/MethodologyReferences/MethodologySpecs/Crude-oil-methodology.pdf>. See also "Why Do Oil Prices Swing So Wildly?" *CBS Money Watch*, Cait Murphy (9/1/2009), <http://www.cbsnews.com/news/why-do-oil-prices-swing-so-wildly/>.

notorious price swings in 2008, when oil spiked at \$147 per barrel and then fell to about \$32 per barrel, a difference of \$115 in less than six months.¹⁶⁸⁸ This year, from August to October 2014, crude oil prices fell from about \$100 to about \$80 per barrel, a 20% drop in two months.¹⁶⁸⁹



Source: 10/8/2014 "Historical Crude Oil Prices and Price Chart," InfoMine website, <http://www.infomine.com/investment/metal-prices/crude-oil/all/>.

In the financial markets, crude oil and refined oil products can be traded through a variety of financial instruments, including futures, swaps, options, and forwards. The most actively traded crude oil future in the United States is a standardized contract for 1,000 barrels of West Texas Intermediate (WTI) crude oil, which is listed by CME Group Inc.¹⁶⁹⁰ The WTI contract is traded on the CME Globex and CME Clearport trading platforms, and by open outcry on the NYMEX floor.¹⁶⁹¹ The contract can be settled financially or through the physical delivery of WTI, although physical settlement is atypical. Another leading crude oil future is a standardized contract for 1,000 barrels of Brent crude oil, which is traded on ICE Futures Europe and cash

¹⁶⁸⁸ See, e.g., undated "Spot Price Series History," U.S. Energy Information Administration website, "Cushing, OK WTI Spot Price FOB," <http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=RWTC&f=D>.

¹⁶⁸⁹ Id.

¹⁶⁹⁰ See "Crude Oil Futures Contract Specs," CME Group website, http://www.cmegroup.com/trading/energy/crude-oil/light-sweet-crude_contract_specifications.html. The contract price is based upon delivery of WTI crude oil, a light, sweet crude oil produced in Texas, at Cushing, Oklahoma, where a number of oil pipelines converge.

¹⁶⁹¹ Id.

settled.¹⁶⁹² It is the most actively traded crude oil future in the world.¹⁶⁹³ Crude oil and refined oil products can also be traded through a variety of financially-settled, over-the-counter swaps and options on the Intercontinental Exchange.¹⁶⁹⁴

In the physical market, crude oil and refined oil products are bought and sold in thousands of trading venues around the world, typically using bilateral contracts. The contracts are settled using electronic, voice, or in-person transactions involving a variety of producers, brokers, intermediaries, and end users. Often, Brent and WTI futures prices are used as benchmark prices in the contracts used to buy and sell physical oil.

Crude Oil Incidents. Extracting, storing, refining, and transporting crude oil, which is highly flammable, carry ever-present risks of fire and explosion.¹⁶⁹⁵ They also present a variety of environmental risks, including oil spills. Past catastrophic events include the 2011 BP Deepwater Horizon incident involving an oil spill from a deep-sea drilling platform,¹⁶⁹⁶ the 2010 Kalamazoo River incident involving a ruptured oil pipeline,¹⁶⁹⁷ and the 1989 Exxon-Valdez incident involving an oil spill from a shipwrecked oil tanker.¹⁶⁹⁸ Additionally, crude oil is extremely toxic and can cause health issues in the event of physical contact, inhalation, ingestion, or chronic exposure.¹⁶⁹⁹

¹⁶⁹² See “Brent Crude Futures,” ICE Futures Europe website, <https://www.theice.com/products/219/Brent-Crude-Futures>.

¹⁶⁹³ See “The Growth of Brent Crude Oil,” Intercontinental Exchange (ICE) website, https://www.theice.com/publicdocs/ICE_Brent_Infographic.pdf. The contract price is based upon delivery of Brent crude oil, a light, sweet crude oil produced in the North Sea.

¹⁶⁹⁴ See oil products listed on the ICE website, <https://www.theice.com/products>.

¹⁶⁹⁵ See 2/1/2013 “Safety Data Sheet: Crude Oil, Sweet or Sour,” prepared by JPMorgan Ventures Energy Corp., JP Morgan website, https://www.jpmorgan.com/cm/BlobServer/commodities_crudeoil.pdf?blobkey=id&blobwhere=1320592138413&blobheader=application/pdf&blobheadernamel=Cache-Control&blobheadervalue1=private&blobcol=urldata&blobtable=MungoBlobs.

¹⁶⁹⁶ See 1/2011 “Deep Water: The Gulf Oil Disaster and the Future of Offshore Drilling,” Report to the President, prepared by the National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, <http://www.gpo.gov/fdsys/pkg/GPO-OILCOMMISSION/pdf/GPO-OILCOMMISSION.pdf>.

¹⁶⁹⁷ See 9/15/2010 prepared testimony of EPA Administrator Lisa P. Jackson, “Enbridge Pipeline Oil Spill near Marshall, Michigan,” hearing before the House Committee on Transportation and Infrastructure, http://www.epa.gov/enbridgespill/pdfs/enbridge_lpj_testimony_20100915.pdf.

¹⁶⁹⁸ See 5/1989 “The Exxon Valdez Oil Spill: Report to the President,” prepared by the National Response Team, http://www.akrrt.org/archives/response_reports/exxonvaldez_nrt_1989.pdf.

¹⁶⁹⁹ See 2/1/2013 “Safety Data Sheet: Crude Oil, Sweet or Sour,” prepared by JPMorgan Ventures Energy Corp., JP Morgan website, at 3, https://www.jpmorgan.com/cm/BlobServer/commodities_crudeoil.pdf?blobkey=id&blobwhere=1320592138413&blobheader=application/pdf&blobheadernamel=Cache-Control&blobheadervalue1=private&blobcol=urldata&blobtable=MungoBlobs.

Recently, railway transport of oil has also emerged as an environmental and safety issue. New oilfields using hydraulic fracturing techniques, particularly in the North Dakota Bakken shale formation, often have no pipeline access, and railroads have increasingly been used to carry unprecedented volumes of crude oil across the country. According to the National Transportation Safety Board (NTSB), the amount of crude oil transported by rail has increased from about 10,000 carloads in 2005, to 400,000 carloads in 2013.¹⁷⁰⁰ At a recent forum, the NTSB described nine “significant” crude oil railway accidents since 2006, involving 2.8 million gallons of oil.¹⁷⁰¹ One of the deadliest oil train crashes occurred in Lac-Mégantic, Quebec, on July 6, 2013, when 63 railcars jumped the rails, setting off a chain of explosions and sending burning oil rolling through the small town, resulting in 47 deaths.¹⁷⁰² The majority of the crude oil accidents identified by the NTSB occurred in the last eighteen months, five of them since the July 2013 accident: Aliceville, Alabama (November 2103); Casselton, North Dakota (December 2013); New Augusta, Mississippi (January 2014); Plaster Rock, New Brunswick (January 2014); and Vandergrift, Pennsylvania (February 2014).¹⁷⁰³ Explosions, fires, and oil spills caused extensive property and environmental damage. While some railroads have voluntarily strengthened their safety procedures and retrofitted their tank cars and equipment, others have not.¹⁷⁰⁴

(2) Morgan Stanley Involvement with Oil

For more than 25 years, Morgan Stanley has been an active participant in physical and financial oil markets. Acting as an

¹⁷⁰⁰ See undated “Rail Accidents Involving Crude Oil and Ethanol Releases,” NTSB report, NTSB website, at slide 2, <https://www.nts.gov/news/events/2014/railsafetyforum/presentations/Opening%20Presentation%20Rail%20Accidents%20Involving%20Crude%20Oil%20and%20Ethanol%20Releases.pdf>.

¹⁷⁰¹ Id. at slide 5. The NTSB reported 16 crude oil and ethanol accidents since 2006. The combined accidents resulted in “48 fatalities, 281 [derailed tank cars], 2.8 million gallons of crude oil released, 2.0 million gallons of ethanol released, [and] fires and environmental damage.” Id.

¹⁷⁰² See 1/21/2014 National Transportation Safety Board Safety Recommendations, at 2, 6-7, <http://www.nts.gov/doclib/reletters/2014/R-14-004-006.pdf> (discussing Lac-Mégantic railway derailment). See also “Who’s liable for the Lac-Mégantic disaster,” *Montreal Gazette*, Adam Kovac and Riley Sparks (8/10/2013), <http://www.montrealgazette.com/news/liable+Mégantic+disaster/8775349/story.html>; “The Dark Side of the Oil Boom,” *Politico*, Kathryn A. Wolfe and Bob King, (6/8/2014), <http://www.politico.com/story/2014/06/exploding-oil-trains-energy-environment-107966.html>.

¹⁷⁰³ See undated “Rail Accidents Involving Crude Oil and Ethanol Releases,” NTSB report, NTSB website, at slide 4, <https://www.nts.gov/news/events/2014/railsafetyforum/presentations/Opening%20Presentation%20Rail%20Accidents%20Involving%20Crude%20Oil%20and%20Ethanol%20Releases.pdf>. See also “The Dark Side of the Oil Boom,” *Politico*, Kathryn A. Wolfe and Bob King, (6/8/2014) (analyzing 40 years of federal data showing a dramatic increase in oil train incidents over the past five years).

¹⁷⁰⁴ See, e.g., 9/2014 “Moving Crude Oil by Rail,” prepared by Association of American Railroads, Association of American Railroads website, <https://www.aar.org/keyissues/Documents/Background-Papers/Crude%20oil%20by%20rail.pdf>.

investment bank, the firm began buying and selling both oil futures and physical barrels of oil in the mid-1980s. Over the next 10 years, Morgan Stanley gradually increased its involvement in the physical side of the oil industry, purchasing or leasing oil storage facilities and pipelines; expanding into refined oil products such as heating oil, diesel, gasoline, and jet fuel; and chartering oil transport ships. From 2006 to 2008, it purchased companies involved with oil exploration, storage, distribution, pipelines, blending, and even gasoline service stations. When the financial crisis began roiling markets worldwide, Morgan Stanley converted to a bank holding company on an emergency basis in September 2008. Despite its new status as a holding company restricted to the business of banking, with implied taxpayer backing, Morgan Stanley continued its physical oil activities. In a 2011 internal analysis, the Federal Reserve wrote that Morgan Stanley “controls a ‘vertically-integrated model’ spanning crude oil production, distillation, storage, land and water transport, and both wholesale and retail distribution.”¹⁷⁰⁵

That same year, Morgan Stanley began to reduce its physical oil activities. By 2012, its revenues were less than half of what they were in 2008.¹⁷⁰⁶ In 2013, Morgan Stanley began exiting some of its physical oil activities, and in 2014, took steps to sell major assets.¹⁷⁰⁷ It has not yet, however, completely exited the physical oil business, due in part to international conflicts, and may require another year to do so.

(a) Building a Physical Oil Business

Morgan Stanley first registered with the CFTC as a commodities trader in 1982, initiating its career as an oil trader in the financial commodity markets.¹⁷⁰⁸ In a 2010 letter to the Federal Reserve, Morgan Stanley wrote:

“Morgan Stanley has been trading as principal in crude oil since 1984 and in refined products since 1985. Over the past 25 years, Morgan Stanley has grown into one of the preeminent energy trading firms, serving an expansive cross-section of US and foreign corporations, municipalities and others seeking to access these

¹⁷⁰⁵ 6/21/2011 “Section 4(o) of the Bank Holding Company Act – Commodity-related Activities of Morgan Stanley and Goldman Sachs,” prepared by the Federal Reserve, FRB-PSI-200936 - 941, at 937.

¹⁷⁰⁶ See 2/11/2013 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-02-000001 - 004, at 002.

¹⁷⁰⁷ See discussion in the overview of Morgan Stanley, above.

¹⁷⁰⁸ See undated “Morgan Stanley & Co. LLC,” National Futures Association BASIC website, <http://www.nfa.futures.org/basicnet/Details.aspx?entityid=UpygXzt3Ct4%3d&rn=N>. See also 10/10/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-17-000001 - 003, at 001.

markets and, as such, Morgan Stanley provides significant liquidity to these markets.”¹⁷⁰⁹

Morgan Stanley became active in the physical oil markets around the same time. According to one oil historian, it began trading crude oil under Louis Bernard, a senior partner at the firm, and Neal Shear, a commodities trader recruited from J. Aron & Co.¹⁷¹⁰ As part of that effort, the firm also hired two oil traders from oil companies, John Shapiro from Conoco, and Nancy Kropp from Sun Oil.¹⁷¹¹ The oil historian wrote that, at the same time Morgan Stanley launched its oil futures trading operation, “[t]o ensure a constant stream of information about the market’s movements ahead of its rivals,” it leased “a few oil storage containers” in Cushing, Oklahoma.¹⁷¹² As a result, “[h]our by hour, the traders in New York would be aware of whether there was a surplus or a shortage” of the West Texas Intermediate crude oil that provided the benchmark price for crude oil futures traded on the NYMEX.¹⁷¹³

Trading primarily in crude oil, Morgan Stanley gradually increased the size of its oil desk until, by 1990, it reportedly included 40 people.¹⁷¹⁴ In March 1990, Morgan Stanley hired Olav Refvik, an oil trader from Statoil who, together with John Shapiro, provided the leadership for its oil commodity activities over the next decade.¹⁷¹⁵ By 1993, Morgan Stanley expanded its oil trading efforts into Canada, Europe and Asia, opening trading desks in Calgary, London, Singapore, and Tokyo.¹⁷¹⁶

Becoming “King of New York Harbor.” At the suggestion of Mr. Refvik, Morgan Stanley began to lease substantial oil storage facilities, not only in Cushing, Oklahoma, but also in New York, New Jersey, and Connecticut.¹⁷¹⁷ Those facilities were used to store oil transported to the United States by ship until needed at nearby refineries

¹⁷⁰⁹ 7/8/2010 letter from Morgan Stanley to the Federal Reserve, FRB-PSI-200173 - 182, at 174. See also 5/4/2009 “Morgan Stanley Commodities Risk Control Validation Target Exam,” prepared by the Federal Reserve Board of New York, FRB-PSI-304627 - 645, 631 [sealed exhibit] (stating that “Morgan Stanley is one of the largest players in the physical and financial commodities trading space,” trades “Oil Liquids,” and has been “an active player in the commodities markets for over 25 years”).

¹⁷¹⁰ *Oil: Money, Politics and Power in the 21st Century*, Tom Bower (Grand Central Publishing 2010), at 48 and 49.

¹⁷¹¹ *Id.* at 49.

¹⁷¹² *Id.*

¹⁷¹³ *Id.* See also “Morgan Stanley Trades Energy Old-Fashioned Way: In Barrels,” *Wall Street Journal*, Ann Davis (3/2/2005), <http://online.wsj.com/news/articles/SB110971828745967570> (indicating that, in 1986, Mr. Shapiro convinced Morgan Stanley to lease oil storage tanks in Cushing, store low-priced crude oil, and wait for increased prices).

¹⁷¹⁴ Bower, at 136.

¹⁷¹⁵ *Id.*

¹⁷¹⁶ *Id.* at 146.

¹⁷¹⁷ *Id.*; 10/10/14 letter from Morgan Stanley’s legal counsel to the Subcommittee, PSI-MorganStanley-17-000001 - 003, at 001.

or shipment to clients via pipelines that supplied the East Coast. They also enabled Morgan Stanley to store oil while waiting for better prices. Morgan Stanley told the Subcommittee that it entered into its first oil storage agreement in the New York-New Jersey-Connecticut area with Wyatt Inc. in the late 1980s or early 1990s.¹⁷¹⁸ By 1994, it also had oil storage agreements with IMTT-Bayonne in New Jersey and GATX Terminal Corp. in Staten Island, New York.¹⁷¹⁹ Mr. Refvik was eventually dubbed “King of New York Harbor,”¹⁷²⁰ and reportedly helped integrate Morgan Stanley’s physical and financial oil trading efforts.¹⁷²¹

Morgan Stanley records show that, in the month of September 1997, among other activities, it bought and sold about 7 million of barrels of heating oil, gasoline, and diesel with over two dozen counterparties in the Northeast.¹⁷²² That same month, it bought and sold about 5.7 million barrels of gasoline with over 40 counterparties in Texas.¹⁷²³ It also leased storage facilities for heating oil, diesel, and kerosene, and at the end of the month, paid taxes on an inventory of nearly 2 million barrels of heating oil and 951,000 barrels of diesel.¹⁷²⁴ In 1997, Morgan Stanley also entered into contracts to “process, refine, blend or otherwise alter crude oil into refined products,” and to transport oil via pipelines and chartered vessels.¹⁷²⁵

(b) Conducting Physical Oil Activities

Morgan Stanley’s physical oil activities continued to expand over the years and continued to include storing, supplying, transporting, and processing oil. It conducted those activities through both its Liquids Oil Desk in the Commodities group and through business subsidiaries owned by Morgan Stanley Capital Group, its primary commodities trading arm.

Storing Oil. One of Morgan Stanley’s primary physical oil activities was to store vast quantities of oil in facilities located within the United States and abroad. According to Morgan Stanley, in the New York-New Jersey-Connecticut area alone, by 2011, it had leases on oil

¹⁷¹⁸ *Id.*

¹⁷¹⁹ *Id.*

¹⁷²⁰ See “Morgan Stanley Trades Energy Old-Fashioned Way: In Barrels,” *Wall Street Journal*, Ann Davis (3/2/2005), <http://online.wsj.com/news/articles/SB110971828745967570>; “The Merchants of Wall Street: Banking, Commerce, and Commodities,” Saule T. Omarova, 98 MINN. L. REV. 265, 314 (2013).

¹⁷²¹ “Noble Oil Desk Says Goodbye to Refvik, the ‘King of NY Harbor,’” Reuters, David Sheppard (10/23/2012), <http://www.reuters.com/article/2012/10/23/noble-refvik-idAFL1E8LNNH2M20121023>.

¹⁷²² 7/8/2010 letter from Morgan Stanley to the Federal Reserve, FRB-PSI-200173 - 182, at 174.

¹⁷²³ *Id.* at 175.

¹⁷²⁴ *Id.*

¹⁷²⁵ *Id.* at 176.

storage facilities with a total capacity of 8.2 million barrels, increasing to 9.1 million barrels in 2012, and then decreasing to 7.7 million barrels in 2013.¹⁷²⁶ Morgan Stanley also had storage facilities in Europe and Asia.¹⁷²⁷ According to the Federal Reserve, by 2012, Morgan Stanley held “operating leases on over 100 oil storage tank fields with 58 million barrels of storage capacity globally.”¹⁷²⁸

Morgan Stanley leased its storage facilities from its wholly-owned subsidiary, TransMontaigne which specialized in oil storage and transport services, and from unrelated third parties. Morgan Stanley told the Subcommittee that, of the 40 to 50 million barrels of storage capacity it leased in 2013, it estimated that about 15 million barrels were leased from TransMontaigne and about 35 million barrels were leased from unrelated third parties.¹⁷²⁹

Morgan Stanley used its storage facilities to build inventories with millions of barrels of different types of oil. The following chart provides the total Morgan Stanley inventories for five types of oil products from 2008 to 2012:

**Morgan Stanley Physical Oil Inventories
2008-2012**

	2008	2009	2010	2011	2012
Crude Oil	1.1 million	633,000	12.3 million	1.0 million	1.7 million
Heating Oil	7.3 million	15.2 million	11.4 million	9.0 million	5.8 million
Jet/Kerosene	4.6 million	10.6 million	6.6 million	5.8 million	4.0 million
Gasoline	4.5 million	7.6 million	5.3 million	7.5 million	6.2 million
Fuel Oil	974,000	1.8 million	1.9 million	1.4 million	1.7 million

In Barrels

Source: 3/4/2013 letter from Morgan Stanley legal counsel to Subcommittee, at PSI-MorganStanley-03-000002, 007.

Supplying Oil. In addition to storing oil, over the years, Morgan Stanley became an oil supplier for a variety of end users. From 2008 to 2013, for example, it supplied crude oil to several refineries. One contract was with a major European oil and chemical company, Ineos Group Ltd., which had oil refineries in France and Scotland.¹⁷³⁰ Under

¹⁷²⁶ 10/17/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-19-000001 - 005, at 001-002.

¹⁷²⁷ See, e.g., 5/4/2009 “Morgan Stanley Commodities Risk Control Validation Target Exam,” prepared by Federal Reserve Bank of New York, FRB-PSI-304627 - 645, at 634 [sealed exhibit].

¹⁷²⁸ 10/3/2012 “Physical Commodity Activities at SIFIs,” prepared by the Federal Reserve Bank of New York Commodities Team, (hereinafter, “2012 Summary Report”), FRB-PSI-200477 - 510, at 485 [sealed exhibit]. See also 2/11/2013 “Morgan Stanley Commodities Business Overview,” prepared by Morgan Stanley for the Subcommittee, PSI-MorganStanley-01-000001 - 027, at 008 (indicating that, in 2013, Morgan Stanley had “~50 million bbl [barrels] of leased oil liquids storage capacity”).

¹⁷²⁹ Subcommittee briefing by Morgan Stanley (2/11/2013).

¹⁷³⁰ See, e.g., undated “Company: Ineos at a glance,” Ineos website,

<http://www.ineos.com/company/>; 7/23/2007 Ineos press release, “Ineos and Morgan Stanley announce oil refining agreement,” <http://www.ineos.com/news/ineos-group/ineos-and-morgan->

their agreement, from 2008 to 2012, Morgan Stanley provided the Ineos refineries with a total of about 500 million barrels of crude oil.¹⁷³¹ Morgan Stanley also entered into crude oil supply agreements with the Toledo Refining Company LLC in March 2011, and with Delaware City Refining Company LLC in April 2011, both of which were later assigned to PBF Holding Company LLC.¹⁷³² Both agreements have since concluded. In addition, in August 2012, Morgan Stanley entered into an agreement with Paulsboro Refining Company LLC to purchase its refined oil products; that contract was also later assigned to PBF Holding Company LLC and has since ended.¹⁷³³ Currently, according to Morgan Stanley, it has no oil supply contracts with any refineries.

Morgan Stanley also has a long history of supplying home heating oil and diesel to utilities and other customers in the Northeast. According to one oil historian, Mr. Refvik was responsible for increasing Morgan Stanley's involvement with refined oil products like heating oil, diesel, and jet fuel.¹⁷³⁴ Refined oil products represent a complex market with a variety of logistical, operational, and financial risks, since over 100 types of crude oil are produced worldwide, require differing refining procedures in summer and winter, and must be delivered to an appropriate refinery able to serve specific markets.¹⁷³⁵

In 1991, Mr. Refvik reportedly led Morgan Stanley to purchase an insolvent oil refinery in Connecticut, and use it to supply heating oil and diesel on a daily basis to customers in the Northeast.¹⁷³⁶ Over the next few years, Morgan Stanley leased additional oil storage facilities in New Jersey and Connecticut.¹⁷³⁷ In 2001, during an unexpected cold snap, Morgan Stanley became a leading supplier of home heating oil in the region, reportedly able to sell oil when others ran out.¹⁷³⁸ Since 2008,

stanley-announce-oil-refining-agreement/?business=INEOS+Group; "Morgan Stanley to Supply Crude Oil to Ineos," Reuters, (7/23/2007), <http://www.reuters.com/article/2007/07/23/morgan-stanley-ineos-idUSL2388575320070723>.

¹⁷³¹ See 2009 "Morgan Stanley Global Commodities Overview," FRB-PSI-618889 – 908. See also 10/24/2014 email from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-22-000001 - 003, at 002. See also, e.g., "ChinaOil Takes over Morgan Stanley's Ineos Marketing Deal," Reuters, Chen Aizhu (3/14/2012), <http://www.reuters.com/article/2012/03/14/us-morgan-ineos-petrochina-idUSBRE82D06E20120314>.

¹⁷³² 10/24/2014 email from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-22-000001 - 003, at 001.

¹⁷³³ Id.

¹⁷³⁴ Bower, at 136; "Morgan Stanley Trades Energy Old-Fashioned Way: In Barrels," Wall Street Journal, Ann Davis (3/2/2005), <http://online.wsj.com/news/articles/SB110971828745967570>.

¹⁷³⁵ See, e.g., 12/2/2009 "A Detailed Guide on the Many Different Types of Crude Oil,"

Oilprice.com website, <http://oilprice.com/Energy/Crude-Oil/A-Detailed-Guide-On-The-Many-Different-Types-Of-Crude-Oil.html>.

¹⁷³⁶ Bower at 138-139.

¹⁷³⁷ See "Morgan Stanley Trades Energy Old-Fashioned Way: In Barrels," Wall Street Journal, Ann Davis (3/2/2005), <http://online.wsj.com/news/articles/SB110971828745967570>.

¹⁷³⁸ Id.

Morgan Stanley has held an inventory of millions of barrels of home heating oil with a total dollar value of as much as \$1.3 billion at a time.¹⁷³⁹ In 2011 alone, Morgan Stanley purchased 950,000 barrels of home heating oil from the U.S. Heating Reserve when the reserve switched to a different fuel.¹⁷⁴⁰

From at least 2003 to the present, Morgan Stanley has also been a routine supplier of physical jet fuel to airlines operating in the United States, as described in more detail below. In addition, it became the major oil supplier to TransMontaigne, which keeps a variety of fuels at its storage sites across the country to service client needs.¹⁷⁴¹ For example, under a “Terminal Servicing Agreement,” Morgan Stanley Capital Group sold physical refined oil products on a “just-in-time” basis to TransMontaigne affiliates which then re-sold them to their customers.¹⁷⁴²

Transporting Oil. In connection with its physical oil storage and supply activities, Morgan Stanley also became an active participant in the transportation of oil.¹⁷⁴³ It focused in particular on oil tankers, purchasing ownership interests in companies that handled the logistics for chartering vessels, including the Heidmar Group and Global Energy International, described below. According to Morgan Stanley, its shipping operation enabled it to transport physical oil products from less to more expensive markets and to meet its oil supply obligations.¹⁷⁴⁴ According to the Federal Reserve, in 2009, Morgan Stanley “was ranked

¹⁷³⁹ See 7/16/2013 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-07-000001 - 034, at 003; 3/4/2013 letter from Morgan Stanley legal counsel to Subcommittee, at PSI-MorganStanley-03-000001 - 006, at 007.

¹⁷⁴⁰ See 2/3/2011 DOE press release, “DOE Accepts Bids for Northeast Home Heating Oil Stocks,” <http://energy.gov/fe/articles/doe-accepts-bids-northeast-home-heating-oil-stocks>; 2/10/2011 DOE press release, “DOE Completes Sale of Northeast Home Heating Oil Stocks,” <http://energy.gov/fe/articles/doe-completes-sale-northeast-home-heating-oil-stocks>. The U.S. Heating Reserve was established in 2000, to ensure available supplies at a reasonable cost in the event of an emergency. See undated “Heating Oil Reserve,” U.S. Department of Energy Office of Fossil Energy website, <http://energy.gov/fe/services/petroleum-reserves/heating-oil-reserve>. In 2011, the U.S. Heating Reserve was reduced from 2 million to 1 million barrels, and replaced all of the heating oil with diesel, a cleaner burning fuel. See undated “Heating Oil Reserve,” U.S. Department of Energy Office of Fossil Energy website, <http://energy.gov/fe/services/petroleum-reserves/heating-oil-reserve>.

¹⁷⁴¹ See, e.g., 11/3/2009 “Morgan Stanley ISG Commodity Operations Summary for Physical Energy Products Support,” prepared by Morgan Stanley, FRB-PSI-619109 - 129, at 124.

¹⁷⁴² Id.

¹⁷⁴³ See 6/21/2013 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-06-000001 - 006, at 002.

¹⁷⁴⁴ Subcommittee briefing by Morgan Stanley (2/11/2013); 2/11/2013 “Morgan Stanley Commodities Business Overview,” prepared by Morgan Stanley for the Subcommittee, PSI-MorganStanley-01-000001 - 027, at 016; 5/4/2009 “Morgan Stanley Commodities Risk Control Validation Target Exam,” prepared by Federal Reserve Bank of New York, FRB-PSI-304627 - 645, at 634, 636 [sealed exhibit].

9th globally in shipping oil distillates,” and by 2012, had “over 100 ships under time charters or voyages for movement of oil product.”¹⁷⁴⁵

In addition to oil transport ships, Morgan Stanley, through its wholly-owned subsidiary, TransMontaigne, moved oil via pipelines, trucks, and railroad cars.¹⁷⁴⁶ In each mode of transportation, Morgan Stanley focused on leasing, rather than owning, the vessels, vehicles, or railways used to move the oil.

Producing and Processing Oil. In addition to storing, supplying, and transporting oil, Morgan Stanley devoted a small portion of its physical oil business to oil exploration and production. Rather than purchase companies directly engaged in oil exploration or production, Morgan Stanley acquired a company that provided financing to those companies. In 2006, Morgan Stanley became the 99.5% owner of Wellbore Capital, LLC, a Dallas firm which “invest[s] in oil and natural gas exploration and development projects.”¹⁷⁴⁷ According to its website, in 2010, Wellbore Capital’s portfolio was valued at \$100 million and included oil and gas working interest investments, including about 90 wells and 65,000 net acres in Texas, Oklahoma, and Louisiana.¹⁷⁴⁸ In addition, in 2009, Morgan Stanley acquired a 43.75% ownership interest in a Wellbore subsidiary, Big C Gathering LLC, which ran a processing facility for raw crude oil and natural gas.¹⁷⁴⁹

Acquiring Oil Related Businesses. To conduct its physical oil activities, Morgan Stanley purchased a number of companies involved in different sectors of the oil market. According to a 2009 Federal Reserve examination, Morgan Stanley’s “Strategic Transactions Group,” which designed principal investments for Morgan Stanley within the “Global Commodities Investments” group, purchased 15 companies from 2006 to 2009.¹⁷⁵⁰ Three key acquisitions were TransMontaigne, Olco Petroleum, and Heidmar.

TransMontaigne. On September 1, 2006, in a major expansion of its physical oil activities, Morgan Stanley purchased TransMontaigne Inc., a company based in Denver, Colorado and engaged in oil sales,

¹⁷⁴⁵ 2012 Summary Report, at 486 [sealed exhibit]. See also 2/11/2013 “Morgan Stanley Commodities Business Overview,” prepared by Morgan Stanley for the Subcommittee, PSI-MorganStanley-01-000001 - 027, at 008 (indicating that, in 2013, Morgan Stanley had “~100 vessels on average under time and spot charter”).

¹⁷⁴⁶ See, e.g., TransMontaigne website, <http://www.transmontaignepartners.com/map/>, and information below.

¹⁷⁴⁷ 7/16/2013 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-07-000001 - 034, at 008, 034.

¹⁷⁴⁸ See undated “Investments,” Wellbore Capital LLC website, <http://www.wellborecapital.com/investments.html>.

¹⁷⁴⁹ See 7/16/2013 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-07-000001 - 034, at 031.

¹⁷⁵⁰ See 5/4/2009 “Morgan Stanley Commodities Risk Control Validation Target Exam,” prepared by Federal Reserve Bank of New York, FRB-PSI-304627 - 645, at 636 [sealed exhibit].

storage, and transport.¹⁷⁵¹ TransMontaigne became a wholly-owned subsidiary of Morgan Stanley Capital Group, the major commodities arm of the financial holding company, and Morgan Stanley employees took a majority of the seats on TransMontaigne's Board of Directors. TransMontaigne became a key contributor to Morgan Stanley's physical oil storage, supply, and transport activities.

Through various subsidiaries and affiliates, the TransMontaigne group of companies offered multiple oil-related supply, storage, and transport services. TransMontaigne Inc. described itself as "a leading wholesale fuel provider," offered a variety of unbranded fuels for sale, and also provided fuel transport services and commercial marine fuel supply.¹⁷⁵² Its affiliate, TransMontaigne Partners, provided "integrated terminaling, storage, transportation and related services for customers engaged in the distribution and marketing of" a variety of oil and chemical products.¹⁷⁵³ Those products included "gasolines, diesel fuels, heating oil and jet fuels," as well as "residual fuel oils and asphalt."¹⁷⁵⁴ TransMontaigne's policy was not to purchase or market the products that it handled or transported.¹⁷⁵⁵

According to its SEC filings, TransMontaigne maintained storage facilities throughout the United States, primarily in the Midwest, along the Mississippi and Ohio Rivers, in Texas, along the Gulf Coast, and in the Southeast.¹⁷⁵⁶ Its five key operations involved: (1) receiving refined oil products from pipeline, ship, barge, or railcar sources and transferring them to storage tanks located at TransMontaigne terminals; (2) storing the refined oil products in TransMontaigne tanks; (3) monitoring the volume of the refined products in the tanks; (4) disbursing the refined oil products out of the tanks using pipelines and other distribution equipment; and (5) heating residual fuel oils and asphalt stored in the tanks.¹⁷⁵⁷ In 2013, Montaigne had nearly 50 storage facilities with a total storage capacity of about 24 million barrels.¹⁷⁵⁸ It also had about 140 miles of pipeline.¹⁷⁵⁹ In addition, the website

¹⁷⁵¹ See 7/16/2013 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-07-000001 - 034, at 029 - 030.

¹⁷⁵² See undated "About TMG," TransMontaigne Inc. website, <http://www.transmontaigne.com/about-tmg/>.

¹⁷⁵³ 2013 TransMontaigne, L.P. Annual Report, filed with the SEC on 3/11/2014, at 5, <http://www.sec.gov/Archives/edgar/data/1319229/000104746914002098/a2218768z10-k.htm>.

¹⁷⁵⁴ Id.

¹⁷⁵⁵ 7/16/2013 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-07-000001 - 034, at 013.

¹⁷⁵⁶ See 2013 TransMontaigne, L.P. Annual Report, filed with the SEC on 3/11/2014, at 10, <http://www.sec.gov/Archives/edgar/data/1319229/000104746914002098/a2218768z10-k.htm>.

¹⁷⁵⁷ Id.

¹⁷⁵⁸ See undated "Operations Map," prepared by TransMontaigne, TransMontaigne website, <http://www.transmontaigne.com/map/>; Subcommittee briefing by Morgan Stanley (2/4/2014).

¹⁷⁵⁹ See undated "Pipeline Safety," TransMontaigne website, <http://www.transmontaignepartners.com/about-transmontaigne-limited-partners/pipeline-safety/>.

indicated that a number of the storage sites could accept or arrange oil delivery or transport via tanker truck, railway, or vessel.¹⁷⁶⁰

Morgan Stanley told the Subcommittee that, over the years, it typically utilized 60% to 70% of TransMontaigne's available storage.¹⁷⁶¹ In its 2013 annual SEC filing, TransMontaigne LP reported that "Together, Morgan Stanley Capital Group and TransMontaigne [are] our largest customer and we receive a substantial majority of our revenue from them."¹⁷⁶² According to Morgan Stanley, in 2012, TransMontaigne – together with all of its subsidiaries – generated net revenues totaling nearly \$475 million in revenue.¹⁷⁶³

TransMontaigne Inc. is the parent corporation in the TransMontaigne group of companies. Until 2014, it was 100% owned by Morgan Stanley Capital Group Inc. which is, in turn, wholly owned by the Morgan Stanley financial holding company.¹⁷⁶⁴ Its key subsidiary was TransMontaigne LP, a publicly traded master limited partnership, over 20% of whose ownership was retained by Morgan Stanley and TransMontaigne. TransMontaigne LP owned over a dozen subsidiaries involved in oil storage, distribution, and transportation. The following chart depicts its ownership structure in 2013.¹⁷⁶⁵

¹⁷⁶⁰ Id.

¹⁷⁶¹ Subcommittee briefing by Morgan Stanley (2/4/2014).

¹⁷⁶² 2013 TransMontaigne, L.P. Annual Report, filed with the SEC on 3/11/2014, at 36,

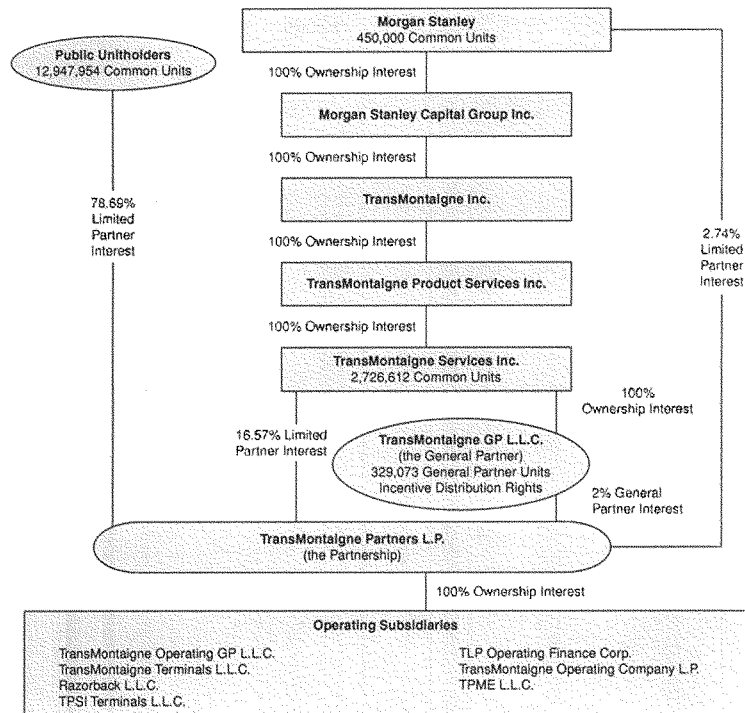
<http://www.sec.gov/Archives/edgar/data/1319229/000104746914002098/a2218768z10-k.htm>.

¹⁷⁶³ 7/16/2013 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-07-000001 - 034, at 017.

¹⁷⁶⁴ 2013 TransMontaigne, L.P. Annual Report, filed with the SEC on 3/11/2014, at 6,

<http://www.sec.gov/Archives/edgar/data/1319229/000104746914002098/a2218768z10-k.htm>

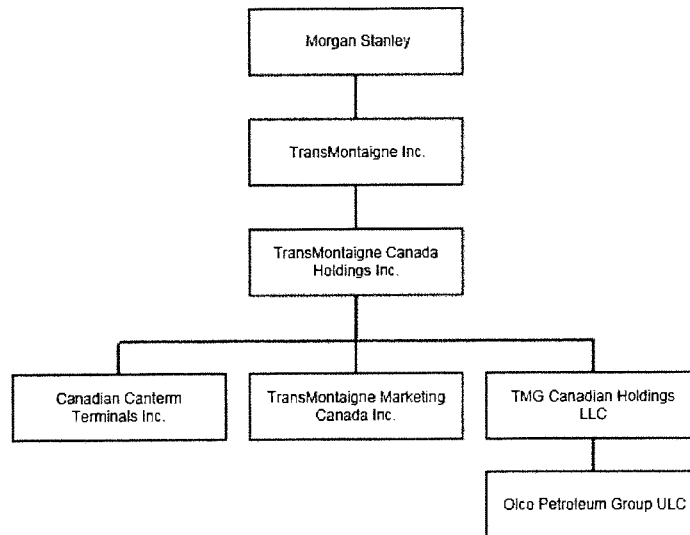
¹⁷⁶⁵ Id.



TransMontaigne also had operations in Canada, held since 2010 through a wholly-owned subsidiary, TransMontaigne Canada Holdings Inc. The Canadian operations included over 60 oil terminals, plants, and pipeline operations.¹⁷⁶⁶ By 2013, TransMontaigne Canada Holdings Inc. had three subsidiaries: Canadian Canterm Terminals Inc. (CanTerm), TransMontaigne Marketing Canada Inc. (TMCI), and TMG Canadian Holdings LLC. The first two subsidiaries were acquired from Olco Petroleum, described below. The following chart depicts the Canadian companies.¹⁷⁶⁷

¹⁷⁶⁶ See undated "Corporate Structure," TransMontaigne Marketing Canada Inc. website, <http://web.archive.org/web/20131209060736/http://transmontaignecanada.ca/index-1.html>.

¹⁷⁶⁷ Id.



Source: 10/17/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-19-000001-005, at 002.

CanTerm operated two marine terminals in Montreal and Quebec City, as well as land terminals to store petroleum, chemical, and other bulk commodities.¹⁷⁶⁸ Its marine terminals offered pipeline, dock lines, truck, and railway connections as well as oil blending operations.¹⁷⁶⁹ TMCI marketed and distributed oil products like gasoline, biodiesel, and heating oil on a wholesale basis.¹⁷⁷⁰ TMG Canadian Holdings LLC owned Olco Petroleum, described below.

In March 2014, Morgan Stanley sold CanTerm to Vopak Terminals QC Inc.¹⁷⁷¹ On July 1, 2014, Morgan Stanley sold the rest of TransMontaigne – other than its Canadian holdings – to NGL Energy

¹⁷⁶⁸ See 3/27/2014 Vopak press release, “Vopak acquires two distribution terminals in Canada,” http://www.vopak.com/uploads/tx_vopak/news/03-27_Press_release_Canterm_UK.pdf. See also Canterm Canadian Terminals, Inc. website,

<http://web.archive.org/web/20130823051055/http://canterm.com/canterm/en/index.htm>.

¹⁷⁶⁹ See undated “Vopak Terminals of Canada - Montreal, Quebec,” Vopak website, <http://www.vopak.com/north-america/vopak-terminals-of-canada-montreal-quebec-cbm.html>. See also undated, “Vopak Terminals of Canada - Quebec City,”

<http://www.vopak.com/overview/terminal-overview/north-americanorth-america/canada/north-americanavopak-terminals-of-canada-quebec-city-cbm.html>.

¹⁷⁷⁰ See 4/2/2013 Parkland Fuel Corporation press release, “Parkland Fuel Corporation Enters Quebec Market with New Supply Agreement and Assumption of TransMontaigne Business,” http://www.parkland.ca/investors/news/news_post?source=http://parkland.mwnewsroom.com/press-releases/parkland-fuel-corporation-enters-quebec-market-wit-tsx-pki-201304020864113001&type=1 (describing TMCI assets).

¹⁷⁷¹ 10/17/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-19-000001-005, at 002.

Partners LP for \$200 million plus an additional \$347 million for inventory transferred at closing.¹⁷⁷² NGL Energy Partners is a publicly-traded company that owns and operates a variety of energy businesses focused on oil logistics, water treatment services, and retail propane.¹⁷⁷³ Morgan Stanley told the Subcommittee that it sold TransMontaigne as part of its larger decision to exit the physical oil merchanting business.¹⁷⁷⁴

Olco Petroleum. A few months after purchasing TransMontaigne, on December 15, 2006, Morgan Stanley acquired a 60% ownership stake in Olco Petroleum Group Inc. (Olco Petroleum).¹⁷⁷⁵ Founded in 1986, Olco Petroleum was a Canadian company which blended, marketed, and distributed refined oil products in Ontario and Quebec, including gasoline, propane, and biodiesel fuels.¹⁷⁷⁶ At the time of purchase, it owned a network of over 200 retail gasoline stations, some with convenience stores or carwashes, in eastern Canada.¹⁷⁷⁷ Its holdings included CanTerm, the oil marketing, terminal, and blending company, described above.¹⁷⁷⁸

In 2006, Morgan Stanley Capital Group, Inc., through TransMontaigne, Inc., took possession of the Olco shares.¹⁷⁷⁹ In September 2008, the same month Morgan Stanley became a bank holding company, it acquired the remaining 40% of Olco Petroleum, making Olco Petroleum a wholly-owned subsidiary of TransMontaigne, Inc.¹⁷⁸⁰ Olco's gasoline stations were gradually sold, but its Canadian storage, marketing, and distribution services continued.¹⁷⁸¹

¹⁷⁷² See 7/2/2014 NGL Energy Partners press release, "NGL Energy Partners LP announces completion of acquisition of TransMontaigne GP and related assets," <http://www.nglenergypartners.com/investor-relations/news/>. See also "Morgan Stanley to sell oil business TransMontaigne to NGL Energy," *The Wall Street Journal*, Justin Baer (06/09/2014), <http://online.wsj.com/articles/morgan-stanley-sells-stake-in-transmontaigne-to-ngl-1402316959>.

¹⁷⁷³ See undated "About Us," NGL Energy Partners website, <http://www.nglenergypartners.com/about-us/>.

¹⁷⁷⁴ Subcommittee briefing by Morgan Stanley (2/14/2014).

¹⁷⁷⁵ 10/17/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-19-000001-005, at 002; 2/28/2007 Morgan Stanley Quarterly Report, filed with the SEC on 4/6/2007, at 34,

<http://www.sec.gov/Archives/edgar/data/895421/000119312507075695/d10q.htm>. See also

"Morgan Stanley bought 60 pct of Olco Petroleum," Reuters (2/13/2007),

<http://www.reuters.com/article/2007/02/13/idUSN1316645820070213>.

¹⁷⁷⁶ See undated "Company Overview of OLCO Petroleum Group Inc.," *Bloomberg Businessweek*,

<http://investing.businessweek.com/research/stocks/private/snapshot.asp?privcapid=875628>.

¹⁷⁷⁷ Id.

¹⁷⁷⁸ 10/17/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-19-000001-005, at 002.

¹⁷⁷⁹ Id.

¹⁷⁸⁰ Id.; See 2009 TransMontaigne LP Annual Report, filed with the SEC on 3/8/2010, at 12,

<http://www.sec.gov/Archives/edgar/data/1319229/000104746910001852/a2197078z10-k.htm>

¹⁷⁸¹ Subcommittee briefing by Morgan Stanley (2/4/2014).

In 2010, Morgan Stanley reorganized Olco, which became Olco Petroleum Group ULC.¹⁷⁸² That same year, TransMontaigne reorganized its Canadian holdings, creating the new holding company, TransMontaigne Canada Holdings, Inc.¹⁷⁸³ One of the subsidiaries of the new holding company was TMG Canadian Holdings LLC, which became the holder of 100% of the Olco shares, as depicted in the chart above.¹⁷⁸⁴ In addition, Olco's subsidiary, CanTerm, was moved out of Olco to become a stand-alone subsidiary of TransMontaigne Canadian Holdings, Inc., again as shown in the chart above.¹⁷⁸⁵

As indicated earlier, Morgan Stanley sold CanTerm in March 2014. When Morgan Stanley sold TransMontaigne to NGL Energy Partners in July 2014, it retained TransMontaigne Canadian Holdings, Inc.¹⁷⁸⁶ As of October 2014, Morgan Stanley still owns that holding company, along with Olco Petroleum, continuing its involvement with physical oil storage facilities and pipelines in Canada.¹⁷⁸⁷

Heidmar. In 2006, a third key acquisition by Morgan Stanley was taking 100% ownership of the Heidmar Group, Inc., a Connecticut marine logistics company which provided chartering and scheduling services for a fleet of independently owned oil transport vessels.¹⁷⁸⁸ Two years later, in 2008, Morgan Stanley sold 49% of its ownership interest to Shipping Pool Investors, Inc. and another 2% to Heidmar executives, leaving Morgan Stanley with a 49% interest in the company.¹⁷⁸⁹ Morgan Stanley representatives sit on the Heidmar Board of Directors.

Founded in 1984, Heidmar Holdings, Inc. is "one of the world's leading commercial tanker operators with a fleet of approximately 100 ships."¹⁷⁹⁰ It helps deliver "crude oil and blending components which power the world's cars, planes, trains, trucks, and heat homes around the globe."¹⁷⁹¹ Heidmar does not own the ships it operates; it works with

¹⁷⁸² 10/17/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-19-000001-005, at 002.

¹⁷⁸³ Id.

¹⁷⁸⁴ Id.

¹⁷⁸⁵ Id.

¹⁷⁸⁶ Id.

¹⁷⁸⁷ Id.

¹⁷⁸⁸ See 5/15/2009 "Morgan Stanley Responses to Permissibility Analysis on Commodities Activities Follow-up," prepared by Morgan Stanley for the Federal Reserve, FRB-PSI-200405 - 418, at 412; 2009 "Morgan Stanley Global Commodities Overview," FRB-PSI-618889 - 908; 7/16/ 2013 letter from Morgan Stanley legal counsel to Subcommittee, PSI-Morgan Stanley-07-000001 - 034, at 007 and 030; 5/4/2009 "Morgan Stanley Commodities Risk Control Validation Target Exam," prepared by Federal Reserve Bank of New York, FRB-PSI-304627 - 645, at 637 [sealed exhibit].

¹⁷⁸⁹ 2012 Morgan Stanley Annual Report, filed with the SEC on 2/26/2013, at 3, <http://www.sec.gov/Archives/edgar/data/895421/000119312513077191/d484822d10k.htm>; undated "About," Heidmar Inc. website, <http://www.heidmar.com/history/>.

¹⁷⁹⁰ Undated "About," Heidmar Inc. website, <http://www.heidmar.com/what-we-do/>.

¹⁷⁹¹ Id.

independent owners to form pools of vessels that service certain geographic areas.¹⁷⁹² It then provides scheduling, chartering, and related logistics services for clients needing to charter a vessel either for a specific period of time or for a particular voyage.

Additionally, in 2008, Morgan Stanley purchased a “30% interest in Global Energy International Limited, a Singapore company that provides international marine services and supplies bunker fuel and other oil products through its own fleet of 23 vessels.”¹⁷⁹³

Morgan Stanley relied on the ships provided by Heidmar and Global Energy to meet its oil supply obligations and to locate, buy and transport oil cargoes around the world.¹⁷⁹⁴ In 2009, Morgan Stanley shipped about 16.3 million barrels of oil per month in about 165 vessel movements, using either ships or barges.¹⁷⁹⁵ Morgan Stanley told the Subcommittee that while it used to charter about 100 vessels per month, by 2014, it was down to leasing 10 to 15 vessels per month.¹⁷⁹⁶

Incidents. Morgan Stanley oil-related subsidiaries occasionally experienced accidents or incidents involving oil. Since 2006, TransMontaigne, has had 36 incidents recorded in the database kept by the U.S. Department of Transportation’s Pipeline and Hazardous Materials Safety Administration (PHSMA).¹⁷⁹⁷ Two incidents resulted in consent agreements with states. The first, on October 3, 2006, involved about 70,500 gallons of regular unleaded gasoline which overflowed the top of a tank in Rogers, Arkansas; the tank was owned and operated by TransMontaigne Partners LP and its subsidiary Razorback, LLC.¹⁷⁹⁸ According to the consent agreement with the Arkansas Department of Environmental Quality (DOEQ), about 9,000 cubic yards of contaminated soil had to be excavated and treated on site.¹⁷⁹⁹ Another 17,800 gallons of gasoline were also removed.¹⁸⁰⁰ Another incident took place on January 28, 2010, when a pipeline ruptured in Fairfax County, Virginia and discharged about 280 gallons of diesel fuel into a nearby body of water.¹⁸⁰¹ TransMontaigne paid a

¹⁷⁹² Id.

¹⁷⁹³ 7/16/2013 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-07-000001 - 034, at 007.

¹⁷⁹⁴ 5/4/2009 “Morgan Stanley Commodities Risk Control Validation Target Exam,” prepared by Federal Reserve Bank of New York, FRB-PSI-304627 - 645, at 634 [sealed exhibit].

¹⁷⁹⁵ Id.

¹⁷⁹⁶ Subcommittee briefing by Morgan Stanley (2/4/2014).

¹⁷⁹⁷ See 10/27/2014 “Incident Reports Database Search,” PHSMA Office of Hazardous Materials Safety website, <https://hazmatonline.phmsa.dot.gov/IncidentReportsSearch/search.aspx> (using search term “TransMontaigne” in the classification of “Shipper/Officer”).

¹⁷⁹⁸ *In re TransMontaigne Partners, L.P.*, Arkansas Department of Environmental Quality, Consent Administrative Order, at 2 (5/19/2010), http://www.adeq.state.ar.us/ftpoot/Pub/WebDatabases/Legal/CAO/LIS_Files/10-086.pdf.

¹⁷⁹⁹ Id.

¹⁸⁰⁰ Id.

¹⁸⁰¹ State Water Control Board Enforcement Action – Order by Consent Issued to TransMontaigne Operating Company L.P. at 3, Virginia Department of Environmental Quality

civil fine of about \$114,000.¹⁸⁰² Of the 36 incidents, six involved cargo tank crashes or derailments in which gasoline or diesel fuel were released and were considered “serious incidents” by the Hazardous Materials Information System (HMIS).¹⁸⁰³ There were no hazardous materials-related injuries or fatalities in those six incidents, and the total amount of damages ranged between \$146,000 to \$553,000.¹⁸⁰⁴

(c) Exiting the Physical Oil Business

Morgan Stanley told the Subcommittee that, in 2013, it decided that it would refocus its commodities activities to become more “customer driven.”¹⁸⁰⁵ As part of that decision, Morgan Stanley told the Subcommittee that “Morgan Stanley has decided to exit certain of its physical commodities business lines, including its global physical oil merchandising business and its investment in TransMontaigne, Inc.”¹⁸⁰⁶

Declining Revenues. In 2009, a Federal Reserve examination reported that Morgan Stanley’s global oil business had produced nearly 60% of the revenues generated by the Commodities group and called it “the most important source of revenues.”¹⁸⁰⁷ According to Morgan Stanley, while its oil liquids business has generated revenues and profits in every fiscal year since 2008, its revenues and profits have steadily declined.¹⁸⁰⁸ The following chart shows the decline in revenues:

(8/4/2011), <http://www.deq.virginia.gov/Portals/0/DEQ/Enforcement/FinalOrders/TransMontaigneOperatingAug042011.pdf>.

¹⁸⁰² Id. at 4.

¹⁸⁰³ See 10/27/2014 “Incident Reports Database Search,” PHMSA Office of Hazardous Materials Safety website, <https://hazmatonline.phmsa.dot.gov/IncidentReportsSearch/search.aspx> (using search term “TransMontaigne” in the classification of “Shipper/Officer,” and selecting for crashes or derailments).

¹⁸⁰⁴ Id.

¹⁸⁰⁵ Subcommittee briefings by Morgan Stanley (2/4/2014 and 9/11/2014).

¹⁸⁰⁶ 9/19/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-13-000001 - 009, at 003.

¹⁸⁰⁷ 5/4/2009 “Morgan Stanley Commodities Risk Control Validation Target Exam,” prepared by Federal Reserve Bank of New York, FRB-PSI-304627 - 645, at 633 [sealed exhibit]. See also 5/7/2009 “Global Commodities Overview,” prepared by Morgan Stanley, FRB-PSI-618889 - 908, at 897.

¹⁸⁰⁸ 7/1/2013 letter from Morgan Stanley to FRBNY, FRB-PSI-302759 - 768, at 768; 10/17/2014 letter from Morgan Stanley legal counsel to the Subcommittee, PSI-MorganStanley-19-000001 - 005, at 003.

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**Morgan Stanley Oil Desk Net Revenues
2008-2013**

Fiscal Year	Net Revenues
2008	\$1.3 billion
2009	\$1.2 billion
2010	\$822 million
2011	\$677 million
2012	\$676 million

Source: 7/16/2013 and 10/17/2014 letters from Morgan Stanley legal counsel to the Subcommittee, PSI-MorganStanley-07-000001 - 034, at 005 and PSI-MorganStanley-19-000001 - 005, at 003.

To implement its decision to exit the physical oil business, as explained earlier, in July 2014, Morgan Stanley sold TransMontaigne to NGL Energy Partners, although it retained some assets, including TransMontaigne's holdings in Canada.¹⁸⁰⁹ Morgan Stanley also attempted to sell to Rosneft Oil Company a number of the global physical oil assets held by Morgan Stanley Commodities, primarily through Morgan Stanley Capital Group, Inc. in the United States, and by Morgan Stanley International Holdings, Inc. internationally.¹⁸¹⁰

Morgan Stanley entered into a sales agreement with a subsidiary of Rosneft Oil Company on December 20, 2013.¹⁸¹¹ Rosneft is a Russian state-owned corporation that is the country's largest petroleum company and third largest gas producer.¹⁸¹² The agreement covered Morgan Stanley's physical oil inventories, storage leases, shipping charters, blending services, supply contracts, and its 49% stake in Heidmar, among other assets.¹⁸¹³ The transaction was expected to close during the second half of 2014, after regulatory approvals.¹⁸¹⁴ The Federal Trade

¹⁸⁰⁹ See 10/17/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-19-000001 - 005, at 002.

¹⁸¹⁰ See 10/10/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-17-000001 - 003, at 002.

¹⁸¹¹ See 12/20/2013 Morgan Stanley press release, "Morgan Stanley to Sell Global Oil Merchanting Business to Rosneft," <http://www.morganstanley.com/about/press/articles/00ddb583-1c3c-4dd9-b27f-6023c884aac3.html>.

¹⁸¹² See 7/16/2014 U.S. Department of the Treasury press release, "Announcement of Treasury Sanctions on Entities Within the Financial Services and Energy Sectors of Russia, Against Arms or Related Material Entities, and those Undermining Ukraine's Sovereignty," <http://www.treasury.gov/press-center/press-releases/Pages/jl2572.aspx>.

¹⁸¹³ Subcommittee briefing by Morgan Stanley (2/14/2014). See also 6/30/2014 Morgan Stanley Quarterly Report, filed with the SEC on 8/5/2014, at 113, <http://www.sec.gov/Archives/edgar/data/895421/000119312514295874/d763478d10q.htm>; 12/20/2013 Morgan Stanley press release, "Morgan Stanley to Sell Global Oil Merchanting Business to Rosneft," <http://www.morganstanley.com/about/press/articles/00ddb583-1c3c-4dd9-b27f-6023c884aac3.html>.

¹⁸¹⁴ See 6/30/2014 Morgan Stanley Quarterly Report, filed with the SEC on 8/5/2014, at 113, <http://www.sec.gov/Archives/edgar/data/895421/000119312514295874/d763478d10q.htm>.

Commission provided its approval on June 17, 2014.¹⁸¹⁵ The European Commission provided its approval on September 4, 2014.¹⁸¹⁶

In March 2014, however, as a result of Russia's incursion into Ukraine's Crimean peninsula, the United States Government imposed sanctions on a number of Russian individuals and entities, including companies that operate in the energy sector.¹⁸¹⁷ In September 2014, the United States expanded the sanctions, specifically naming Rosneft as one of the energy companies.¹⁸¹⁸ Morgan Stanley has indicated publicly that, because of the sanctions, the sale may not be finalized.¹⁸¹⁹ If the sale is not concluded, Morgan Stanley has indicated it will continue to look for a buyer.

(3) Issues Raised by Morgan Stanley's Crude Oil Activities

Morgan Stanley's physical oil activities raise multiple concerns, including the wholesale mixing of banking and commerce; financial, operational and catastrophic event risks; insufficient capital and insurance coverage to protect against potential losses; conflicts of interest arising from controlling crude oil supplies while trading crude oil financial instruments; and the need for stronger safeguards.

(a) Mixing Banking with Commerce

Morgan Stanley spent 25 years building a vast physical oil business, involving producing, refining, storing, transporting and supplying oil products. That vast commercial physical oil enterprise is not the type of financial activity that, under U.S. law and practice, was envisioned as appropriate for a bank or bank holding company.

¹⁸¹⁵ 6/17/2014 "20141062: Rosneft Oil Company; Morgan Stanley," Federal Trade Commission Premerger Notification Program, FTC website, <http://www.ftc.gov/enforcement/premerger-notification-program/early-termination-notice/20141062>.

¹⁸¹⁶ "EU executive clears acquisition of Morgan Stanley's oil unit by Rosneft," Reuters, (9/4/2014), <http://www.reuters.com/article/2014/09/04/us-rosneft-morgan-stanley-idUSKBN0GZ0ZP20140904>.

¹⁸¹⁷ See undated "Ukraine and Russia sanctions," U.S. Department of State website, <http://www.state.gov/e/eb/tfs/spi/ukrainerussia/>.

¹⁸¹⁸ See 9/12/2014 U.S. Department of the Treasury press release, "Announcement of Expanded Treasury Sanctions within the Russian Financial Services, Energy, and Defense or Related Material Sectors," <http://www.treasury.gov/press-center/press-releases/pages/jl2629.aspx>. "Treasury has also imposed sanctions that prohibit the exportation of goods, services (not including financial services), or technology in support of exploration or production for Russian deepwater, Arctic offshore, or shale projects that have the potential to produce oil, to five Russian energy companies – Gazprom, Gazprom Neft, Lukoil, Surgutneftegas, and Rosneft – involved in these types of projects." *Id.*

¹⁸¹⁹ See, e.g., "Morgan Stanley says 'no assurance' Rosneft deal will close," Reuters (10/10/2014), <http://www.reuters.com/article/2014/10/10/morgan-stanley-rosneft-idUSL2N0S524L20141010>.

Because Morgan Stanley was immersed in physical oil activities prior to 1997, and was still engaged in them when it converted to a bank holding company in 2008, those activities are more appropriately protected from divestiture by the Gramm-Leach-Bliley grandfather clause than, for example, its compressed natural gas venture which was begun five years after it became a bank holding company. But even those Morgan Stanley commercial business activities that are protected by grandfather status raise the same concerns that led to bans on mixing banking with commerce in the first place. Those concerns include, as discussed in Chapter 2, unfair economic advantages due to the bank holding company's access to inexpensive credit from its subsidiary bank; unfair informational advantages due to the bank holding company's access to non-public information from its commercial and client activities; conflicts of interest that can arise between the bank holding company and its clients when competing commercially; potential distortions of credit decisions by an affiliated bank that wants to support its holding company; the dangers of market manipulation; increased bank and systemic risks arising from industrial activities; and the undue concentration of economic power that results when a bank holding company becomes a major player, not only in the provision of credit, but also in a vital energy sector. On top of those concerns is the reality of a bank holding company with so many complex enterprises in so many geographic areas that it becomes too big to manage or regulate.

In its 2012 report, the FRBNY Commodities Team that conducted the broad review of financial holding company involvement with physical commodities expressed “[s]upervisory [c]oncerns” that their engagement in “commercial/physical commodity activities breaches the separation of banking and commerce and place[s] industrial activities within the federal safety net.”¹⁸²⁰

As stated earlier, to conduct its physical oil activities, Morgan Stanley has relied on the grandfather clause. The grandfather clause has one built-in safeguard – a volume limit prohibiting grandfathered activities from exceeding 5% of the holding company's consolidated assets. For Morgan Stanley, that limit is so high – 5% of \$833 billion or \$41 billion – that it functions as no limit at all.¹⁸²¹ While the Federal Reserve could have imposed a lower limit to ensure grandfathered activities are operated in a safe and sound manner, it has not yet done so.

¹⁸²⁰ 2012 Summary Report, at FRB-PSI-200477 – 510, at 482 [sealed exhibit]. See also undated but likely early 2011 “Comparison of Risks of Commodity Activities at Morgan Stanley and Goldman Sachs between 1997 to Present,” prepared by Federal Reserve, FRB-PSI-200428 – 454, at 429 [sealed exhibit] (expressing concern about “industrial activities [that have] created new and increased potential liability for firms with access to the federal safety net supporting the banking system”).

¹⁸²¹ See 6/30/2014 “Consolidated Financial Statements for Holding Companies,” Form FR Y-9C, filed by Morgan Stanley with the Federal Reserve, Federal Reserve website, http://www.fdic.gov/nicpubweb/nicweb/FinancialReport.aspx?parID_RSSD=2162966&parDT=20140630&parRptType=FRY9C&redirectPage=FinancialReport.aspx.

The details of Morgan Stanley's physical oil activities illustrate how far financial holding companies have been allowed to cross the line between banking and commerce. While Morgan Stanley is currently reducing its physical oil activities, other banks may attempt to enter the physical oil business, unless better safeguards are put in place.

(b) Multiple Risks

Morgan Stanley's physical oil business creates multiple risks that don't normally confront a bank. Oil products are flammable and explosive. Oil spill and other catastrophic event risks surround multiple aspects of Morgan Stanley's physical oil activities, from oil transport ships, tanker trucks, and railway cars, to ruptured pipelines and storage facilities. Financial risks also pose a threat, especially in the case of huge oil inventories. From September to October 2014, crude oil prices fell 20%, from about \$100 to \$80 per barrel, immediately depressing the dollar value of physical inventories and disrupting the economics of oil transport and supply contracts.

Valuation risks are another area of concern. In 2009, Federal Reserve examiners reviewing Morgan Stanley's physical commodities activities wrote:

"Examiners noted complex risks around valuation and risk measurement of the oil storage business. Market risk involved appears material; as per 2008 backtesting results, the Firm lost \$152 [million] on a single trading day ... attributable to market movements in oil storage. Furthermore, differences exist in the income recognition regimes between GAAP accounting, which requires marking oil in storage to spot prices, and Morgan Stanley's internal economic valuation based on the oil storage model"¹⁸²²

Still another set of concerns involves Morgan Stanley's efforts to mitigate the risks posed by its physical oil activities, including from an oil-related incident. The Federal Reserve Commodities Team found that Morgan Stanley, among other financial holding companies, had allocated insufficient levels of capital and insurance to cover potential losses. The 2012 Summary Report noted at one point that, while Morgan Stanley had calculated a potential oil spill risk of \$360 million, through "aggressive assumptions" and "diversification benefits," it had reduced that total by nearly 70% to \$54 million, allocating risk capital for only that much smaller amount.¹⁸²³ The 2012 Summary Report also noted that insurance for catastrophic events in oil shipping is typically capped at \$1 billion, "and firms cannot cover any amount beyond the

¹⁸²² 5/4/2009 "Morgan Stanley Commodities Risk Control Validation Target Exam," prepared by Federal Reserve Bank of New York, FRB-PSI-304627 - 645, at 629 [sealed exhibit].

¹⁸²³ 2012 Summary Report, at FRB-PSI-200477 - 510, at 493 - 494 [sealed exhibit].

cap through insurance.”¹⁸²⁴ In addition, the Federal Reserve Commodities Team determined that the potential losses associated with an “extreme loss scenario” at four financial holding companies, including Morgan Stanley, would exceed the capital and insurance coverage at each financial holding company by \$1 billion to \$15 billion.¹⁸²⁵ That shortfall leaves the Federal Reserve, and U.S. taxpayers, at risk of having to provide financial support to Morgan Stanley should a catastrophic event occur.

In addition to the catastrophic event, valuation, insurance and capital concerns, the Morgan Stanley case history shows how a multi-million-dollar sale of oil assets can collapse from unrelated political events. Even exiting the business has risks.

(c) Conflicts of Interest

Morgan Stanley has stated openly that its physical oil activities provide valuable market information to its traders in the financial markets. Here’s how one 2005 article described Morgan Stanley’s physical commodity activities and comments by one of its leaders, John Shapiro:

“Having access to barges and storage tanks and pipelines gives the bank additional options, to move or store commodities, that most energy traders don’t pursue. And by having its finger on the pulse of the business, it hopes to get a more subtle feel for the market, a crucial asset to a trader.

‘Being in the physical business tells us when markets are oversupplied or undersupplied,’ says Mr. Shapiro. ‘We’re right there seeing terminals filling up and emptying.’”¹⁸²⁶

A Federal Reserve analysis made a similar point, noting:

“The relationship of the firms [Morgan Stanley and Goldman] with their wholly and partially owned companies is not that of a passive investor. In addition to the financial return, these direct investments provide MS [Morgan Stanley] ... with important asymmetrical information on conditions in the physical markets such as production and supply/demand information, etc., which a

¹⁸²⁴ Id. at 491.

¹⁸²⁵ Id. at 498, 509. The 2012 Summary Report also noted that commercial firms engaged in oil and gas businesses had a capital ratio of 42%, while bank holding company subsidiaries had a capital ratio of, on average, 8% to 10%. Id. at 499.

¹⁸²⁶ “Morgan Stanley Trades Energy Old-Fashioned Way: In Barrels,” *Wall Street Journal*, Ann Davis (3/2/2005), <http://online.wsj.com/news/articles/SB110971828745967570>.

market participant without physical global infrastructure would not necessarily be privy to.”¹⁸²⁷

While U.S. commodities laws do not bar the use of non-public information by traders in the financial markets in the same way as securities laws, concerns about unfair trading advantages deepen when the commodities trader is a major financial institution with access to significant non-public information.

Additional questions involve whether any Morgan Stanley personnel ever stepped over the line by playing the physical markets off the financial markets to manipulate oil prices.¹⁸²⁸ Those types of suspicions would not arise if Morgan Stanley were not trading in both the physical and financial oil markets at the same time.

(4) Analysis

The three financial holding companies examined by the Subcommittee were heavily involved with both financial and physical oil activities. While Morgan Stanley is currently reducing those activities, it still operates a vast physical oil business. Physical oil activities raise a host of troubling questions, from catastrophic event risks to valuation problems to financial risks to market manipulation issues. The risks permeating the physical oil business call out for increased capital and insurance to cover potential losses and protect taxpayers from being asked to step in after a disaster. Market manipulation opportunities require additional oversight and preventative safeguards. It is past time for the Federal Reserve to provide guidance on the scope of the grandfather clause and enforce overdue safeguards on this high risk physical commodity activity.

¹⁸²⁷ Undated but likely early 2011 “Comparison of Risks of Commodity Activities at Morgan Stanley and Goldman Sachs between 1997 to Present,” prepared by Federal Reserve, FRB-PSI-200428 - 454, at 439 [sealed exhibit].

¹⁸²⁸ See, e.g., “U.S. Suit Sees Manipulation of Oil Trades,” *New York Times*, Graham Bowley (5/24/2011), http://www.nytimes.com/2011/05/25/business/global/25oil.html?_r=0 (discussing cases charging market manipulation of oil prices).

D. Morgan Stanley Involvement with Jet Fuel

Morgan Stanley has sometimes explained the benefits of its participation in physical oil activities by highlighting its role in providing jet fuel to an airline during and after bankruptcy.¹⁸²⁹ Morgan Stanley has been involved with physical jet fuel for many years, as a subset of the physical oil activities examined in the prior section. While its jet fuel supply, transport, credit intermediation, and hedging services have sometimes benefited airlines, they have also at times imposed costs that hurt rather than helped the airlines involved. In two specific cases reviewed by the Subcommittee, the airlines appear to have determined that Morgan Stanley's services were not worth the cost and have discontinued their participation in jet fuel agreements with Morgan Stanley.

(1) Background on Jet Fuel

Jet fuel is one of several specialized types of fuel derived from crude oil.¹⁸³⁰ During the refining process, a complex separation procedure divides crude oil into materials needed for several types of refined oil products, including jet fuel.¹⁸³¹ The separation process takes place at crude oil refineries which then store the resulting jet fuel until it is shipped.¹⁸³² Due to the many different crude oils and refining procedures available, many different grades of jet fuel can be produced. Morgan Stanley has identified 80 different jet fuel markets around the world.¹⁸³³

The primary commercial end-users of jet fuel are airlines. In recent years, jet fuel has also become the largest annual expense for many airlines. One major domestic airline told the Subcommittee that its fuel costs were by far its largest expense, totaling \$12 billion in 2013, roughly 34% of its total annual expenses.¹⁸³⁴ A non-U.S. airline also

¹⁸²⁹ See, e.g., 4/17/2014 public comment letter submitted by Morgan Stanley to the Federal Reserve in connection with the Federal Reserve's Advance Notice of Proposed Rulemaking on Complementary Activities, Merchant Banking Activities, and Other Activities of Financial Holding Companies Related to Physical Commodities (hereinafter, "2014 Morgan Stanley Public Comment Letter"), at 6, http://www.federalreserve.gov/SECRS/2014/April/20140421/R-1479/R-1479_041814_124930_510776321432_1.pdf.

¹⁸³⁰ 10/24/2011 presentation, "An Introduction to Petroleum Refining and the Production of Ultra Low Sulfur Gasoline and Diesel Fuel," prepared by MathPro, Inc. for the International Council on Clean Transportation, at 2, http://www.theicct.org/sites/default/files/publications/ICCT05_Refining_Tutorial_FINAL_R1.pdf.

¹⁸³¹ Id.

¹⁸³² Id.

¹⁸³³ 2014 Morgan Stanley Public Comment Letter, at 6.

¹⁸³⁴ Subcommittee briefing by United Airlines (10/9/2014). See also 2/20/2014 United Airlines 10-K filing with the SEC, at 6, http://ir.unitedcontinentalholdings.com/phoenix.zhtml?c=83680&p=irol-SECText&TEXT=aHR0cDovL2FwaS50ZW5rd2l6YXJkLmNvbS9maWxpbnmcueG1sP2lwYWdIPTk0MTAxMzgmRNFUT0wJINFUT0wJINREVTQz1TRUNUSU9OX0VOVEISRZzdWJzaWQ9NTc%3d#tx624298_10 (listing its 2013 jet fuel-related expenses as \$13.14 billion and its total operating expenses in 2013 as \$37 billion).

identified jet fuel as its largest expense, reporting 2013 jet fuel costs of nearly \$8.35 billion, 39% of its operating costs.¹⁸³⁵

Supplying and Transporting Jet Fuel. Most jet fuel suppliers are large oil or refining companies, including BP, Chevron, Exxon, Shell and Valero, which are not only involved in the production of jet fuel, but also typically have arrangements in place to transport the fuel to the airports where it is needed.¹⁸³⁶

Jet fuel is most commonly transported via pipelines, oil transport vessels, or tanker trucks.¹⁸³⁷ After being refined, jet fuel suppliers typically transport the fuel to one of several large oil storage facilities in the United States.¹⁸³⁸ From there, the fuel is typically transported to storage tanks at airports.¹⁸³⁹ Since each phase of transportation and storage could corrupt the quality of the fuel, each phase is heavily regulated, and the jet fuel is closely monitored.¹⁸⁴⁰

Transporting jet fuel requires adherence to a special set of operation and maintenance requirements.¹⁸⁴¹ For example, jet fuel transportation pipelines must operate within strict parameters for flow rate, pressurization, filtration, and internal coating to mitigate corrosion.¹⁸⁴² Jet fuel is also classified as a “static accumulator,” and requires treatment with certain additives while in transit to prevent issues with its electrical conductivity.¹⁸⁴³ Airports are also subject to extensive regulation regarding how jet fuel is to be delivered, stored, and dispensed for end use.¹⁸⁴⁴

Jet Fuel Prices. Jet fuel prices have a history of volatility. Jet fuel prices vary across the country and experienced 20% price swings in 2013.¹⁸⁴⁵ Typically, the price of jet fuel is determined by referencing the

¹⁸³⁵ 10/14/2014 letter from Emirates airline legal counsel to Subcommittee, PSI-Emirates-02-000001 - 007, at 001; See 2013 - 2014 Annual Report, Emirates Group, at 52, http://content.emirates.com/downloads/ek/pdfs/report/annual_report_2014.pdf.

¹⁸³⁶ Subcommittee briefing by United Airlines (10/9/2014).

¹⁸³⁷ “Jet Fuel Pipelines and Storage Require Special Operation, Maintenance Considerations,” Anup Sera & Mott MacDonald, *Pipeline and Gas Journal*, Volume 236 No. 12 (December 2009), <http://www.pipelineandgasjournal.com/jet-fuel-pipelines-and-storage-require-special-operation-maintenance-considerations?page=show>.

¹⁸³⁸ *Id.*

¹⁸³⁹ *Id.*

¹⁸⁴⁰ *Id.*

¹⁸⁴¹ *Id.*

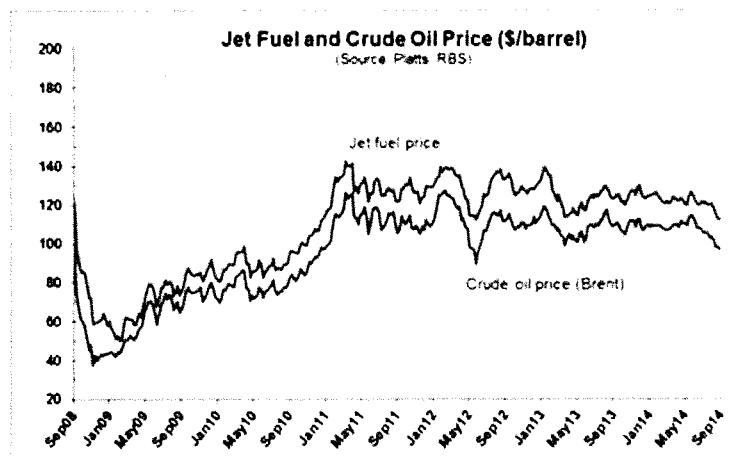
¹⁸⁴² *Id.*

¹⁸⁴³ *Id.*

¹⁸⁴⁴ See, e.g., “Standard for Aircraft Fuel Servicing,” National Fire Prevention Association §407(4)-(5) (2012); “Standard for Jet Fuel Quality Control at Airports,” Air Transport Association of America, Specification 103, Revision 2006.1 (2006); see also “Are You Complying With Jet Fuel Regulations?,” Millennium Systems International (10/3/2014), http://www.millenniumsystemsintl.com/techarticles/airbeat_julaug03.htm.

¹⁸⁴⁵ See “US Airlines Find Fuel for Less in 2013 ... But Not Everywhere,” Platts: The Barrel Blog, Matt Kohlman (8/2/2013), <http://blogs.platts.com/2013/08/02/jet-shifts/>. See also “Spot Prices: Crude Oil in Dollars per Barrel, Products in Dollars per Gallon,” U.S. Energy

average price from the previous week as recorded by Platts, an information company that provides benchmark price assessments for a variety of commodities.¹⁸⁴⁶ Because the jet fuel market is relatively small, analysts often use the price of crude oil as an indicator for the price of jet fuel. The recent 20% drop in crude oil prices could translate into lower jet fuel prices as well.¹⁸⁴⁷ The following chart tracks the jet fuel price changes over the past five years.



Source: "Jet Fuel Price," AirportWatch (10/8/2014), http://www.airportwatch.org.uk/?page_id=2092.

In the financial markets, jet fuel can be traded through futures, options, swaps, and forwards, both on exchange and over-the-counter. The New York Mercantile Exchange (NYMEX) lists several types of jet fuel options and futures.¹⁸⁴⁸ The IntercontinentalExchange (ICE) lists 19 different jet fuel swap contracts.¹⁸⁴⁹ The financial market for jet fuel is substantially smaller than the financial market for crude oil, with fewer participants and outstanding contracts.¹⁸⁵⁰

Information Administration website (10/29/2014), http://www.eia.gov/dnav/pet/pet_pri_spt_s1_d.htm.

¹⁸⁴⁶ Subcommittee briefing by United Airlines (10/9/2014).

¹⁸⁴⁷ "Spot Prices: Crude Oil in Dollars per Barrel, Products in Dollars per Gallon," U.S. Energy Information Administration website (10/29/2014), http://www.eia.gov/dnav/pet/pet_pri_spt_s1_d.htm.

¹⁸⁴⁸ See "CME Group All Products – Codes and Slate," CME Group (10/2/2014), <http://www.cmegroup.com/trading/products/#pageNumber=1&sortField=oi&sortAsc=false&subGroup=18>.

¹⁸⁴⁹ See "ICE OTC Products List: Crude Oil and Refined Products," Intercontinental Exchange (8/2012), https://www.theice.com/publicdocs/ICE_OTC_Cleared_Product_List.pdf.

¹⁸⁵⁰ Compare "Gulf Coast Jet (Platts) Up-Down Volume," CME Group (10/20/2014), http://www.cmegroup.com/trading/energy/refined-products/gulf-coast-jet-fuel-vs-ny-mex-no-2-heating-oil-platts-spread-swap_quotes_volume_voi.html (listing 100 total jet fuel futures contracts traded on the NYMEX October 20, 2014); with "Crude Oil Volume," CME Group (October 20, 2014), <http://www.cmegroup.com/trading/energy/crude-oil/light-sweet->

U.S. airlines are active in both the physical and financial jet fuel markets. The Subcommittee was told that, today, U.S. airlines employ a number of different methods to hedge their jet fuel costs. Many airlines hedge only a portion of their fuel for only specified periods of time. Of the major U.S. airlines, for example, United Airlines generally hedges a portion of its jet fuel costs for the next year; Southwest Airline generally hedges a portion of its jet fuel costs for the next four to five years; and Delta Airlines, which purchased its own jet fuel refinery in 2012, trades aggressively in the jet fuel markets on an ongoing basis; while U.S. Airways and American Airlines have generally stopped hedging altogether.¹⁸⁵¹ Those differing approaches indicate there is no consensus among end-users on how to effectively control jet fuel price risks.

Jet Fuel Incidents. In addition to financial risks, jet fuel poses both safety and environmental risks. Jet fuel is categorized as a combustible, highly toxic material subject to regulation under the federal Toxic Substances Control Act.¹⁸⁵² It is extremely flammable both as a liquid and a gas, and exposure to certain oxidizing agents or sources of ignition can result in a flash fire or explosion.¹⁸⁵³ Handling the fuel involves exposure to toxic substances and can result in physical infirmities.¹⁸⁵⁴ Transporting high volumes of jet fuel carries the risk of a large-scale environmental incident, such as an oil spill. Jet fuel incidents cover a variety of fact patterns. Incidents include a tanker truck crash that released 10,000 gallons of jet fuel that ignited and engulfed a highway ramp,¹⁸⁵⁵ a 2010 spill of jet fuel from a tanker truck crash in Massachusetts,¹⁸⁵⁶ an emergency release of 5,000 gallons of jet fuel into U.S. waters by an aircraft during an emergency landing,¹⁸⁵⁷ the theft of a

crude_quotes_volume_voi.html?foi=O&41927.50656= (listing almost 595,000 total crude oil futures and options traded on the NYMEX during the same time frame).

¹⁸⁵¹ See, e.g., “US Airlines are Taking the Hedge Off on Jet Fuel,” Platts, Matthew Kohlman, David Elward, and Su Yeen Chong (9/1/2014), <http://blogs.platts.com/2014/09/01/us-airlines-hedging/>; “How Delta Bought A Refinery And Wound Up Saving Its Rivals A Ton Of Cash,” Business Insider, Benjamin Zhang (9/1/2014), <http://www.businessinsider.com/delta-airlines-fuel-prices-2014-8#ixzz3GhARNyYq>; “The ‘Fixer’ at Southwest Airlines,” CNBC, Kate Kelly (5/2/2012), <http://www.cnbc.com/id/47254760#>; Subcommittee briefing by United Airlines (10/9/2014).

¹⁸⁵² “Jet Fuel/Kerosene Hazards Identification,” J.P. Morgan Ventures Energy Corporation (6/2/2008), at 9-11, https://www.jpmorgan.com/cm/BlobServer/commodities_jetfuel.pdf?blobkey=id&blobwhere=1158593470387&blobheader=application/pdf&blobheadername1=Cac he-Control&blobheadervalue1=private&blobcol=urldata&blobtable=MungoBlobs.

¹⁸⁵³ Id. at 7.

¹⁸⁵⁴ Id. at 5-9.

¹⁸⁵⁵ 3/13/2001 Rhode Island Department of Environmental Management press release, “Driver of Tanker Truck Charged; Tipover Caused Major Jet Fuel Spill Last Summer,”

<http://www.dem.ri.gov/news/2001/pr/0313012.htm>.

¹⁸⁵⁶ See, e.g., 6/2010 “After Incident Report[.] Foxboro Jet Fuel Tanker Spill,” prepared by MassDEP Field Assessment and Support Team, <http://www.mass.gov/eea/docs/dep/cleanup/sites/fox610.pdf>.

¹⁸⁵⁷ See, e.g., 5/6/2009 Washington State Department of Ecology press release, “Ecology will not take enforcement action against Asiana Airlines,” <http://www.ecy.wa.gov/news/2009news/2009-102.html>.

jet fuel tanker truck from a Houston airport;¹⁸⁵⁸ and a jet fuel contamination event that caused landing difficulties for an aircraft carrying 322 passengers.¹⁸⁵⁹

(2) Morgan Stanley Involvement with Jet Fuel

Morgan Stanley has been participating in physical jet fuel activities since at least 2003. Since then it has stored and transported millions of barrels of jet fuel per year, while participating in financial transactions to hedge volatile jet fuel costs. Over a ten-year period from 2003 to 2013, Morgan Stanley became the primary jet fuel supplier for United Airlines. For a four-year period, from 2004 to 2008, it entered into a series of hedges with the airline Emirates to manage its price risks. In both cases, Morgan Stanley's activities produced mixed results for the airlines. United eventually ended its fuel supply agreement with Morgan Stanley, after determining it could procure its own jet fuel at a lower cost. Emirates eventually ended its jet fuel hedging with Morgan Stanley after its hedging led to an unexpected \$440 million expense for the airline.

(a) Storing, Supplying, and Transporting Jet Fuel Generally

Morgan Stanley has acted as a jet fuel supplier for airlines since at least 2003, when it won a contract to supply jet fuel to United Airlines.¹⁸⁶⁰ In 2005, a media report provided this description of its efforts:

“United Airlines, fighting intense financial pressure, decided in late 2003 it needed a better way to get fuel to its planes. To get that job done, it went to an unusual place: Morgan Stanley.

Now, employees of the bank scour the world for jet fuel for the airline. They charter barges, lease pipelines and schedule tanker trucks, delivering more than a billion gallons a year to United's

¹⁸⁵⁸ See, e.g., “Trespasser jumps fence, steals truck with jet fuel from Hobby Airport,” KHOU.com news station (7/24/2014), <http://www.khou.com/story/news/investigations/2014/07/29/12673286/>.

¹⁸⁵⁹ Undated description of 4/13/2010 incident, “A333, Hong Kong China, 2010 (LOC RE GND FIRE),” Skybrary, [http://www.skybrary.aero/index.php/A333,_Hong_Kong_China,_2010_\(LOC_RE_GND_FIRE\)](http://www.skybrary.aero/index.php/A333,_Hong_Kong_China,_2010_(LOC_RE_GND_FIRE)).

See also undated “Misfueling,” prepared by AOPA Air Safety Foundation, <http://www.aopa.org/-/media/Files/AOPA/Home/Pilot%20Resources/ASI/Safety%20Briefs/SB04.pdf>.

¹⁸⁶⁰ Subcommittee briefing by Morgan Stanley (2/4/2014). In a 2010 letter to the Federal Reserve, Morgan Stanley asserted that it had engaged in physical and financial trading of jet fuel “as of September 30, 1997,” but did not provide any specific evidence showing that it handled physical jet fuel on or before that date. See 7/8/2010 letter from Morgan Stanley to the Federal Reserve, FRB-PSI-200173 - 182, at 174.

hubs. They even send inspectors to make sure no one tampers with the stuff.”¹⁸⁶¹

Morgan Stanley told the Subcommittee that, between 2008 and 2012, it maintained jet fuel inventories of between 4 million and 10.6 million barrels per year.¹⁸⁶² The following chart shows those jet fuel inventories peaking in 2009, maintaining high volumes in 2010 and 2011, and then declining in 2012:

**Morgan Stanley Physical Jet Fuel Inventories
2008-2012**

Jet Fuel/ Kerosene	2008	2009	2010	2011	2012
Barrels in Storage	4.6 million	10.6 million	6.6 million	5.8 million	4.0 million
Dollar Value	\$272 million	\$934 million	\$703 million	\$713 million	\$521 million
Barrels in Transit	2.6 million	6.6 million	6.5 million	5.7 million	4.1 million
Dollar Value	\$165 million	\$594 million	\$700 million	\$709 million	\$532 million

Source: 7/16/2013 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-03-000002 - 003.

Morgan Stanley told the Subcommittee that it stored its jet fuel at over 50 storage facilities across the United States, Canada, Europe, and Asia.¹⁸⁶³ They included a small number of facilities managed by its then wholly-owned subsidiary, TransMontaigne, which had multiple sites in the United States;¹⁸⁶⁴ by its indirect subsidiary, Canterm Canadian Terminals, which had storage facilities in Canada;¹⁸⁶⁵ and by Aircraft Fuel Supply B.V., a Dutch company which stored jet fuel in the Netherlands and in which Morgan Stanley held a minority ownership interest.¹⁸⁶⁶

Morgan Stanley also indicated that, between 2008 and 2012, it transported up to 6.6 million barrels of jet fuel per year, as shown in the above chart.¹⁸⁶⁷ Morgan Stanley told the Subcommittee that it purchased jet fuel in markets around the world, and often transported the fuel by ship to other markets, including ships chartered through its subsidiaries,

¹⁸⁶¹ “Morgan Stanley Trades Energy Old-Fashioned Way: In Barrels,” *Wall Street Journal*, Ann Davis (3/2/2005), <http://online.wsj.com/article/0,,SB110971828745967570,00.html>.

¹⁸⁶² 7/16/2013 Letter from Morgan Stanley legal counsel to the Subcommittee, PSI-MorganStanley-07-000001 - 034, at 002 - 003, 022.

¹⁸⁶³ 4/12/2013 letter from Morgan Stanley legal counsel to the Subcommittee, PSI-MorganStanley-04-000001 - 007, at 005 - 007; Subcommittee briefing by Morgan Stanley (2/4/2014).

¹⁸⁶⁴ See discussion in prior section about TransMontaigne.

¹⁸⁶⁵ See discussion in prior section about Canterm.

¹⁸⁶⁶ 8/1/2013 Letter from Morgan Stanley legal counsel to the Subcommittee, PSI-MorganStanley-08-000001.

¹⁸⁶⁷ 7/16/2013 Letter from Morgan Stanley legal counsel to the Subcommittee, PSI-MorganStanley-07-000001 - 034, at 002-003, 022.

Heidmar and Global Energy International.¹⁸⁶⁸ Its search for lower-cost jet fuel cargoes was illustrated in a 2011 news report which noted that Morgan Stanley had purchased two jet fuel cargoes in Singapore, each containing “100,000 barrels at 10 cents a barrel over benchmark quotes, the smallest premium in a week.”¹⁸⁶⁹ Morgan Stanley was reported as obtaining lower prices than two other firms described in the article.¹⁸⁷⁰

According to Morgan Stanley, since 2003, it has supplied jet fuel to a variety of airlines, including United Airlines, US Airways, American Airlines, Emirates, Southwest Airlines, and Societe Air France. To better understand Morgan Stanley’s involvement with jet fuel, the Subcommittee examined more closely its interactions with two of those airlines, United and Emirates.

(b) Supplying Jet Fuel to United Airlines

Morgan Stanley, through its subsidiary Morgan Stanley Capital Group Inc., first entered into a long-term contract to supply jet fuel to United Airlines in 2003.¹⁸⁷¹ Prior to that agreement, United Airlines had been procuring jet fuel for its own operations,¹⁸⁷² and, according to Morgan Stanley, maintaining up to a month’s inventory of fuel which was “creating significant operational overhead and a need for costly financing.”¹⁸⁷³ In 2003, while United Airlines was maintaining that inventory and transporting jet fuel, its parent corporation was undergoing bankruptcy reorganization.¹⁸⁷⁴ In an effort to free up the cash required to maintain its fuel supply operations, United Airlines issued a general solicitation seeking bids on a contract to take over that

¹⁸⁶⁸ Subcommittee briefing by Morgan Stanley (2/4/2014). See also discussion in prior section about Heidmar and Global Energy International; 2014 Morgan Stanley Public Comment Letter, at 6, http://www.federalreserve.gov/SECRS/2014/April/20140421/R-1479/R-1479_041814_124930_510776321432_1.pdf.

¹⁸⁶⁹ “Morgan Stanley Buys Jet Fuel at Reduced Premium: Oil Products,” Bloomberg, Yee Kai Pin (10/20/2011), <http://www.bloomberg.com/news/2011-10-20/morgan-stanley-buys-jet-fuel-at-reduced-premium-oil-products.html>.

¹⁸⁷⁰ Id.

¹⁸⁷¹ Feb. 2013 Morgan Stanley Commodities: Business Overview, PSI-MorganStanley-01-000001 - 027, at 010; 11/3/2009 “Morgan Stanley ISG Commodity Operations Summary for Physical Energy Products Support,” prepared by Morgan Stanley, FRB-PSI-619109 - 129, at 122; Subcommittee briefing by United Airlines (10/9/2014).

¹⁸⁷² Subcommittee briefing by United Airlines (10/9/2014). See also “Morgan Stanley Trades Energy Old-Fashioned Way: In Barrels,” *Wall Street Journal*, Ann Davis (3/2/2005), <http://online.wsj.com/article/0,,SB110971828745967570,00.html>.

¹⁸⁷³ 2014 Morgan Stanley Public Comment Letter, at 6, http://www.federalreserve.gov/SECRS/2014/April/20140421/R-1479/R-1479_041814_124930_510776321432_1.pdf.

¹⁸⁷⁴ Subcommittee briefing by United Airlines (10/9/2014). See also “Morgan Stanley Trades Energy Old-Fashioned Way: In Barrels,” *Wall Street Journal*, Ann Davis (3/2/2005), <http://online.wsj.com/article/0,,SB110971828745967570,00.html>.

function.¹⁸⁷⁵ Morgan Stanley won the contract, which was finalized in early 2004, and approved by the bankruptcy court.¹⁸⁷⁶

Supplying the Jet Fuel. The agreement originally had a term of three years.¹⁸⁷⁷ Under the agreement, United transferred virtually all of its jet fuel assets to Morgan Stanley, including a jet fuel inventory then worth several hundred million dollars, storage tanks at various locations, pipeline space, supply agreements, and trading activity, in exchange for a large cash payment from Morgan Stanley.¹⁸⁷⁸ Morgan Stanley, for its part, promised to supply jet fuel to United at market prices using the average jet fuel price during the prior week published by Platts, with a differential added for certain locations.¹⁸⁷⁹ United generally paid Morgan Stanley shortly before delivery of the fuel.¹⁸⁸⁰

Morgan Stanley agreed to deliver the jet fuel at specified locations, including directly to storage tanks at some airports.¹⁸⁸¹ Morgan Stanley also agreed to purchase any excess stored jet fuel from United.¹⁸⁸² Morgan Stanley bore title and all “risk of loss” for the jet fuel stored at an airport location until United removed the jet fuel from the airport storage facility.¹⁸⁸³

United and Morgan Stanley told the Subcommittee that, under the agreement, Morgan Stanley supplied “most” of United’s domestic fuel needs, but not all.¹⁸⁸⁴ United explained that, for example, at O’Hare Airport where it had substantial fuel requirements, Morgan Stanley typically delivered a two-week fuel supply right to the airport and

¹⁸⁷⁵ Subcommittee briefing by United Airlines (10/9/2014).

¹⁸⁷⁶ Id. See also *In re UAL Corp.*, Case No. 02-B-48191, “Order Authorizing the Debtors to Enter Into a Jet Fuel Supply Agreement With Morgan Stanley Capital Group Inc. Pursuant to 11 U.S.C. §§363 and 365 and Fed. R. Bankr. P. 6004 and 6006,” (Bankr. E.D. Ill. 2003).

¹⁸⁷⁷ See 9/2003 “Jet Fuel Supply Agreement between Morgan Stanley Capital Group Inc. and United Air Lines, Inc. and United Aviation Fuels Corporation,” (hereinafter, “2003 United-Morgan Stanley Supply Contract”), at 20, ¶ 10.1, PSI-UnitedAirlines-01-000003 - 044, at 022.

¹⁸⁷⁸ Subcommittee briefing by United Airlines (10/9/2014); 11/3/2009 “Morgan Stanley ISG Commodity Operations Summary for Physical Energy Products Support,” prepared by Morgan Stanley, FRB-PSI-619109 - 129, at 122 (“Under the agreement MSGC owns and manages the inventories required to support deliveries to UAL and has been assigned from them, the storage and transportation agreements needed to support this business.”).

¹⁸⁷⁹ Subcommittee briefings by United Airlines (10/9/2014) and Morgan Stanley (2/4/2014).

¹⁸⁸⁰ Subcommittee briefing by United Airlines (10/9/2014); 11/3/2009 “Morgan Stanley ISG Commodity Operations Summary for Physical Energy Products Support,” prepared by Morgan Stanley, FRB-PSI-619109 - 129, at 122 (“Deliveries are via in tank stock transfers and are settled on a prepay basis, one business day prior to delivery.”).

¹⁸⁸¹ Subcommittee briefings by United Airlines (10/9/2014) and Morgan Stanley (2/4/2014).

¹⁸⁸² Subcommittee briefing by United Airlines (10/9/2014); see also 2003 United-Morgan Stanley Supply Contract, at 18, ¶ 5.6, PSI-UnitedAirlines-01-000003 - 044, at 020.

¹⁸⁸³ 2003 United-Morgan Stanley Supply Contract, ¶ 2.8, PSI-UnitedAirlines-01-000003 - 044, at 016.

¹⁸⁸⁴ Subcommittee briefings by United Airlines (10/9/2014) and Morgan Stanley (2/4/2014). See also 11/3/2009 “Morgan Stanley ISG Commodity Operations Summary for Physical Energy Products Support,” prepared by Morgan Stanley, FRB-PSI-619109 - 129, at 122 (describing the supply agreement as “intended to cover the majority of United’s demand for fuel at airport locations in the United States”).

allowed United to draw it down as needed, while charging United a financing fee for holding the fuel.¹⁸⁸⁵ At other airports, United explained that it helped negotiate supply arrangements with unrelated jet fuel suppliers, working with Morgan Stanley to ensure the lowest-cost arrangements.¹⁸⁸⁶ United said those other jet fuel providers included BP, Chevron, Exxon, Shell and Valero, among others.¹⁸⁸⁷ United also explained that, at the O'Hare Airport, United sometimes sold excess fuel to other airlines, generally once per week to a foreign airline on a spot basis, making a small profit from the sales, and Morgan Stanley continued that practice.¹⁸⁸⁸

According to United, under another contract provision, any profits earned from physical jet fuel trading in connection with the supply contract were split evenly between United and Morgan Stanley, while any losses from that trading were allocated solely to Morgan Stanley.¹⁸⁸⁹

According to Morgan Stanley and United, the supply contract was extended several times, resulting in Morgan Stanley's acting as United's primary jet fuel supplier for ten years, from 2003 to 2013.¹⁸⁹⁰ Overall, under the agreement, Morgan Stanley supplied United with between \$1 billion and \$3 billion of jet fuel per year.¹⁸⁹¹

To meet its contractual obligations, Morgan Stanley maintained an extensive jet fuel inventory at multiple locations.¹⁸⁹² To protect against price changes in the value of that inventory and in its ability to meet United's needs on a cost effective basis, Morgan Stanley told the Subcommittee that it hedged its fuel holdings with short futures using similar oil products, such as home heating oil, the price of which tended to rise and fall in tandem with the price of jet fuel.¹⁸⁹³ In addition, Morgan Stanley charged United margin "on a daily basis, taking into account both the outstanding exposure for financial and physical trades as well as the profit sharing balance that may be owed" to the airline.¹⁸⁹⁴

Morgan Stanley told the Subcommittee that one of the main benefits from the arrangement for United was that Morgan Stanley's

¹⁸⁸⁵ Subcommittee briefing by United Airlines (10/9/2014).

¹⁸⁸⁶ Id.

¹⁸⁸⁷ Id.

¹⁸⁸⁸ Id.

¹⁸⁸⁹ Id.

¹⁸⁹⁰ Subcommittee briefings by United Airlines (10/9/2014) and Morgan Stanley (2/4/2014).

¹⁸⁹¹ 10/24/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-24-000001 - 004, at 001-002, [sealed exhibit].

¹⁸⁹² See prior chart and discussion of storage facilities. See also 12/3/2008 memorandum from Federal Reserve, "Commodities Overview Meeting Minutes," FRB-PSI-304806 - 807 (noting that Morgan Stanley provided United "with 50% of its jet fuel via Transmontaigne.").

¹⁸⁹³ Subcommittee briefing by Morgan Stanley, (2/4/2014); Oil: Money, Politics and Power in the 21st Century, Tom Bower ((Grand Central Publishing 2010), at 137.

¹⁸⁹⁴ 11/3/2009 "Morgan Stanley ISG Commodity Operations Summary for Physical Energy Products Support," prepared by Morgan Stanley, FRB-PSI-619109 - 129, at 122.

stronger credit profile enabled it to buy fuel at less expensive prices than United, which in 2003, was still in bankruptcy proceedings.¹⁸⁹⁵ Morgan Stanley said that it sold the fuel to United at better prices than United paid previously.¹⁸⁹⁶

Morgan Stanley told the Subcommittee that when the contract began ten years ago, it had to import most of the jet fuel from Europe and Asia, but that U.S. refineries later began producing more of the fuel, reducing its cost and price volatility.¹⁸⁹⁷ Morgan Stanley indicated that it purchased some of the jet fuel from the European refinery with which it had a crude oil supply contract, Ineos, as well as from a refinery in the United States.¹⁸⁹⁸ It noted that after United emerged from bankruptcy, it became less reliant on Morgan Stanley's credit support.¹⁸⁹⁹

Exiting the Supply Contract. In 2010, United merged with Continental Airlines, and as part of that merger, Continental managers initiated a review of United's fuel operations.¹⁹⁰⁰ According to United, the new management team determined that Morgan Stanley's jet fuel services were costly due to various management and financing fees, and that its credit support was no longer needed to obtain better fuel prices. Ultimately, the team decided that United would be better off supplying its own jet fuel and managing its own jet fuel assets.¹⁹⁰¹

United told the Subcommittee that it began phasing out Morgan Stanley as its primary fuel supplier in 2011, and formally ended the contract in 2013.¹⁹⁰² According to United, it now issues annual contracts on a location-by-location basis and accepts competitive bids from private companies to meet its jet fuel needs for the year.¹⁹⁰³ United explained that it generally selected more than one supplier at each location to prevent supply disruptions and encourage competitive prices.¹⁹⁰⁴ United told the Subcommittee that while Morgan Stanley no longer managed its fuel needs, Morgan Stanley continued to provide it with physical fuel. United indicated that, as of October 2014, Morgan

¹⁸⁹⁵ Subcommittee briefing by Morgan Stanley (2/4/2014). See also 2014 Morgan Stanley Public Comment Letter, at 6, http://www.federalreserve.gov/SECRS/2014/April/20140421/R-1479/R-1479_041814_124930_510776321432_1.pdf.

¹⁸⁹⁶ 2014 Morgan Stanley Public Comment Letter, at 6, http://www.federalreserve.gov/SECRS/2014/April/20140421/R-1479/R-1479_041814_124930_510776321432_1.pdf.

¹⁸⁹⁷ Subcommittee briefing by Morgan Stanley (2/4/2014).

¹⁸⁹⁸ Id.

¹⁸⁹⁹ Id.

¹⁹⁰⁰ Subcommittee briefing by United Airlines (10/9/2014).

¹⁹⁰¹ Id.

¹⁹⁰² Id.

¹⁹⁰³ Id.

¹⁹⁰⁴ Id.

Stanley was the fifth-largest supplier of jet fuel to United, providing roughly 6% of United's fuel purchases.¹⁹⁰⁵

(c) Hedging Jet Fuel Prices with Emirates

A second jet fuel relationship involves Morgan Stanley's role in working with Emirates, a state-owned airline in the United Arab Emirates (UAE), to manage the airline's jet fuel price risk.¹⁹⁰⁶

Emirates operates a transportation hub in Dubai and conducts flights to multiple airports in the United States.¹⁹⁰⁷ In 2004, the airline's Chief Executive Officer and Chairman of the Board was Sheikh Ahmed bin Saeed Al Maktoum, uncle to the current ruler of Dubai, Sheikh Mohammed bin Rashid.¹⁹⁰⁸

For at least a decade, fuel costs have been the airline's largest single expense.¹⁹⁰⁹ In 2005, its fuel bill exceeded AED 3 billion.¹⁹¹⁰ In 2013, its jet fuel costs totaled nearly \$8.35 billion, representing 39% of the airline's total operating costs.¹⁹¹¹ According to Emirates, it had engaged in a variety of hedging strategies over the years with a variety of counterparties to manage its price risk, including crude oil hedges with Morgan Stanley.¹⁹¹² The airline indicated that, prior to 2009, it often had "multiple hedges in place at any one time, covering multiple future periods."¹⁹¹³

Initiating the Hedging. According to both Morgan Stanley and the airline, they began participating in crude oil hedges to limit Emirates' jet fuel price risk in 2004.¹⁹¹⁴ Morgan Stanley devised and

¹⁹⁰⁵ Id.

¹⁹⁰⁶ The Morgan Stanley-Emirates airline relationship was discussed in a book released in 2014. See *The Secret Club That Rules the World: Inside the Fraternity of Commodities Traders*, Kate Kelly (Penguin Group 2014), at 79-81.

¹⁹⁰⁷ See, e.g., "Featured Destinations," Emirates airline website, http://www.emirates.com/us/english/destinations_offers/destinations/america/index.aspx.

¹⁹⁰⁸ See 2009 - 2010 Annual Report, Emirates Group, at 1, 10, http://content.emirates.com/downloads/ek/pdfs/report/annual_report_2010.pdf.

¹⁹⁰⁹ See 10/14/2014 letter from Emirates airline legal counsel to Subcommittee, PSI-Emirates-02-000001 - 007, at 001.

¹⁹¹⁰ See 4/16/2005 report, "Independent auditors' report to the Government of Dubai," prepared for Emirates airline by PricewaterhouseCoopers, PSI-Excerpt2005EmiratesAuditor'sReport-000001 - 027, at 014 (AED stands for United Arab Emirates Dirham).

¹⁹¹¹ See 10/14/2014 letter from Emirates airline legal counsel to Subcommittee, PSI-Emirates-02-000001 - 007, at 001. See also 2013 - 2014 Annual Report, Emirates Group, at 52, http://content.emirates.com/downloads/ek/pdfs/report/annual_report_2014.pdf (reported in UAE dirhams).

¹⁹¹² See 10/14/2014 letter from Emirates airline legal counsel to Subcommittee, PSI-Emirates-02-000001 - 007, at 002 - 003.

¹⁹¹³ Id. at 001 - 004.

¹⁹¹⁴ 9/29/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-15-000001 - 004, at 002; 10/14/2014 letter from Emirates airline legal counsel to Subcommittee, PSI-Emirates-02-000001 - 007, at 002 - 003.

Emirates agreed to participate in those hedges from 2004 to 2008.¹⁹¹⁵ Morgan Stanley told the Subcommittee that the hedges were designed and executed by its commodities traders based in its London and New York offices.¹⁹¹⁶ Morgan Stanley described the hedges as including a “capped double-down swap,”¹⁹¹⁷ while Emirates said it used “cap-swap double-down extendable hedges” as part of the hedging strategy.¹⁹¹⁸

The hedges were complex financial structures which included put and call options, contracts for differences, and other financial instruments.¹⁹¹⁹ According to Morgan Stanley, the hedges were designed with the expectation that crude oil would trade within a specified price range,¹⁹²⁰ which varied from a range of about \$7 to about \$40, with the exact prices and price ranges varying from year to year.¹⁹²¹ According to the airline, if crude oil prices stayed within the specified price range, the airline was paid by the counterparty, Morgan Stanley, the hedge was successful, and the airline saved money on its fuel costs.¹⁹²² If oil prices traded below the specified range, the airline was required to pay Morgan Stanley.¹⁹²³

Emirates told the Subcommittee that it made money from its fuel hedging strategy “in most years,” including the three years preceding the fiscal year at issue, and that it saved a total of about \$600 million over that three-year period,¹⁹²⁴ or an average of \$200 million per year. In 2008, however, crude oil prices spiked, climbing as high as \$147 per barrel in July and exceeding the \$110 upper bound specified in the hedging agreement then in place between the airline and Morgan Stanley.¹⁹²⁵ Crude oil prices then plummeted over the next few months.

¹⁹¹⁵ 9/29/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-15-000001 - 004, at 002; 10/14/2014 letter from Emirates airline legal counsel to Subcommittee, PSI-Emirates-02-000001 - 007, at 004.

¹⁹¹⁶ 9/29/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-15-000001 - 004, at 002. See also 10/14/2014 letter from Emirates airline legal counsel to Subcommittee, PSI-Emirates-02-000001 - 007, at 004 (“The hedge products and pricing were devised by Morgan Stanley and presented to Emirates. Emirates decided which of these products best matched its needs, and for what timeframe, and so it was ultimately responsible for implementing the hedge.”).

¹⁹¹⁷ 9/29/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-15-000001 - 004, at 002.

¹⁹¹⁸ 10/14/2014 letter from Emirates airline legal counsel to Subcommittee, PSI-Emirates-02-000001 - 007, at 004.

¹⁹¹⁹ 9/29/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-15-000001 - 004, at 002.

¹⁹²⁰ Id.

¹⁹²¹ Id. See also 10/14/2014 letter from Emirates airline legal counsel to Subcommittee, PSI-Emirates-02-000001 - 007, at 004.

¹⁹²² See 10/14/2014 letter from Emirates airline legal counsel to Subcommittee, PSI-Emirates-02-000001 - 007, at 004.

¹⁹²³ Id.

¹⁹²⁴ 10/14/2014 letter from Emirates airline legal counsel to Subcommittee, PSI-Emirates-02-000001 - 007, at 005.

¹⁹²⁵ 9/29/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-15-000001 - 004, at 003.

By early 2009, oil prices were in the \$40 range,¹⁹²⁶ below the lower bound specified in the hedge.¹⁹²⁷

Incurring a \$440 Million Loss. Emirates told the Subcommittee that, as a result of the oil price swings, it incurred substantial losses from the hedge, which gradually added up to hundreds of millions of dollars owed to Morgan Stanley.¹⁹²⁸ When those unexpected losses began to accumulate, Morgan Stanley could have but did not offer to renegotiate the terms of the hedging agreement. Instead, in November 2008, Morgan Stanley's Chief Executive Officer John Mack flew to Dubai with Georges Makhoul, then President of Morgan Stanley's Middle East and Africa group, and Marc Murre, then Vice Chairman of Morgan Stanley's Global Commodities group, to meet with the airline about its financial obligations under the hedge.¹⁹²⁹ The Morgan Stanley executives met with Sheikh Ahmed bin Saeed Al Maktoum, head of the airlines, and may have also met with his nephew, Sheikh Mohammed bin Rashid, ruler of Dubai.¹⁹³⁰ In January 2009, the Investment Company of Dubai provided a credit guarantee to Morgan Stanley representatives in support of the airline.¹⁹³¹

The airline settled the hedge by paying Morgan Stanley and other counterparties a total of \$440 million.¹⁹³² This hedging loss is recorded primarily in its financial statement for the 2008-2009 fiscal year as a \$428 million loss, due to timing issues and accounting requirements.¹⁹³³ Emirates told the Subcommittee that it was the first time in which a loss had been recorded on its fuel-related hedges with Morgan Stanley.¹⁹³⁴ The airline described the loss as "unusual" and "large," and said that it

¹⁹²⁶ See "Spot Prices: Crude Oil in Dollars Per Barrel, Products in Dollars Per Gallon," U.S. Energy Information Administration (10/22/2014), http://www.eia.gov/dnav/pet/pet_pri_spt_s1_d.htm.

¹⁹²⁷ 10/14/2014 letter from Emirates airline legal counsel to Subcommittee, PSI-Emirates-02-000001 - 007, at 005 - 006.

¹⁹²⁸ *Id.*

¹⁹²⁹ Subcommittee briefings by United Airlines (10/9/2014) and Morgan Stanley (2/4/2014); 9/29/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-15-000001 - 004, at 003.

¹⁹³⁰ 9/29/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-15-000001 - 004, at 003 ("A meeting took place in November 2008 between Sheikh Ahmed bin Saeed Al Maktoum, John Mack, George Makhoul, and Marc Murre."); 10/14/2014 letter from Emirates airline legal counsel to Subcommittee, PSI-Emirates-02-000001 - 007, at 006 (indicating that the client "understands that such a meeting may have taken place"). See also The Secret Club That Rules the World: Inside the Fraternity of Commodities Traders, Kate Kelly (Penguin Group 2014), at 81 (stating that the meeting included Sheikh Mohammed bin Rashid).

¹⁹³¹ 9/29/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-15-000001 - 004, at 003.

¹⁹³² *Id.* at 004; See also 10/14/2014 letter from Emirates airline legal counsel to Subcommittee, PSI-Emirates-02-000001 - 007, at 005.

¹⁹³³ 10/14/2014 letter from Emirates airline legal counsel to Subcommittee, PSI-Emirates-02-000001 - 007, at 005. The fiscal year for the Emirates airline was from April 1, 2008 to March 31, 2009.

¹⁹³⁴ *Id.*

“had a material impact on Emirates’ annual profit for that financial year, but it did not threaten the long-term financial viability of the airline.”¹⁹³⁵

Ending Fuel-Related Hedging. Emirates told the Subcommittee that after incurring the \$440 million loss, it changed its policy and stopped entering into hedges related to jet fuel prices.¹⁹³⁶ The airline wrote: “Emirates is no longer hedging its fuel costs and so it is not trading with Morgan Stanley on the fuel side.”¹⁹³⁷ The airline has maintained this policy since 2009.

Supplying Physical Jet Fuel. Although Emirates ended its fuel hedging relationship with Morgan Stanley, the relationship between the two has continued in other capacities. For example, since 2010, after winning a public competitive bidding process, Morgan Stanley has supplied Emirates with physical jet fuel at several U.S. airports, including three during 2014.¹⁹³⁸ Morgan Stanley indicated that, since 2010, it has provided about 42 million gallons of jet fuel per year to Emirates, delivering the fuel directly to the airports.¹⁹³⁹ The airline also uses other jet fuel suppliers in the United States.¹⁹⁴⁰

(3) Issues Raised by Morgan Stanley’s Involvement with Jet Fuel

Morgan Stanley has told the Federal Reserve that its physical jet fuel activities benefit the airlines and demonstrate why financial holding companies should be permitted to engage in physical commodity activities.¹⁹⁴¹ The activities involving United Airlines and Emirates, however, provide anecdotal evidence of instances in which Morgan Stanley’s fuel supply and hedging activities lost, rather than saved, the airlines money.

(a) Thin Benefits

Morgan Stanley has attempted to portray itself as an ally of airlines seeking access to jet fuel and protection from jet fuel price risks. Citing its dealings with United, Morgan Stanley has asserted that its ability to purchase, store, and transport physical jet fuel saved United a significant amount of overhead expenses and the need to obtain expensive financing.¹⁹⁴² Morgan Stanley also claimed that its stronger credit

¹⁹³⁵ Id.

¹⁹³⁶ Id. at 001, 006.

¹⁹³⁷ Id. at 001 - 007.

¹⁹³⁸ Id.; 10/9/2014 letter from Emirates airline legal counsel to Subcommittee, PSI-Emirates-01-000001 - 004, at 002 (stating Morgan Stanley supplies physical jet fuel to the Emirates airline at airports in Los Angeles, San Francisco, and Washington D.C.).

¹⁹³⁹ Id.

¹⁹⁴⁰ Id.

¹⁹⁴¹ See 2014 Morgan Stanley Public Comment Letter, at 6, http://www.federalreserve.gov/SECRS/2014/April/20140421/R-1479/R-1479_041814_124930_510776321432_1.pdf.

¹⁹⁴² Id.

profile enabled it to buy jet fuel at lower prices and pass those savings onto the airline.¹⁹⁴³

In reality, those benefits appear to have been limited to the period during which United was experiencing financial distress. Morgan Stanley's jet fuel supply activities assisted the airline while the parent corporation was going through bankruptcy proceedings. Once the airline emerged from bankruptcy and regained its financial footing, it decided that Morgan Stanley's fuel assistance, with its fees and financing charges, was actually more expensive than if the airline were to procure its own fuel directly. It began to phase out Morgan Stanley's role in 2011, and ended it in 2013. United's action indicates that Morgan Stanley was no longer saving the airline money on its fuel operations.

The results of the jet fuel hedging provided by Morgan Stanley to Emirates were also mixed. The complex hedging structures that Morgan Stanley provided to the airline over a four-year period, from 2004 to 2008, saved the airline money, but cost it significant losses in 2009. The hedges appeared to reduce the airline's fuel expenses by about \$200 million per year between 2005 and 2008, but then cost the airline \$440 million in the next year – an unanticipated, material loss. In response, in 2009, Emirates decided to stop hedging its fuel prices altogether, a policy it has maintained for five years.

The market response to Morgan Stanley's jet fuel activities is clear: one airline terminated its fuel supply contract; the other terminated its hedging relationship. Those results detract from the strength of Morgan Stanley's claims that its physical jet fuel activities provide significant commercial and financial benefits that should be continued. The facts also suggest that the benefits provided by Morgan Stanley were neither unique nor long-lasting. Other market participants now compete for the annual fuel supply contracts issued by United Airlines. Still others offer hedging strategies to Emirates. While Morgan Stanley now provides jet fuel to both United Airlines and Emirates, plenty of other fuel providers are doing the same.

(b) Operational and Catastrophic Event Risks

Morgan Stanley's jet fuel activities also continue to carry environmental and catastrophic event risks. Storing and transporting jet fuel is risky. Fires, explosions, and leaks present threats that traditional banks and bank holding companies do not confront. Volatile fuel prices also continually threaten to disrupt the economics of jet fuel supply operations; the 20% drop in crude oil prices in one month, from September to October 2014, illustrate the price risk. Still another risk is

¹⁹⁴³ Id.

the small size of the jet fuel market whose limited participants make preventing or recovering from a financial loss especially difficult.

(4) Analysis

Morgan Stanley is not the only financial holding company to have engaged in physical jet fuel activities. Goldman has supplied jet fuel to Delta Airlines;¹⁹⁴⁴ and JPMorgan acquired substantial jet fuel inventories when it purchased RBS Semptra in 2010,¹⁹⁴⁵ and held jet fuel inventory at 28 locations across the United States, Asia, and Europe in 2013.¹⁹⁴⁶ Both financial holding companies are incurring the same kinds of risks as Morgan Stanley. Those financial, environmental, and catastrophic event risks make physical jet fuel activities inappropriate for banks and bank holding companies. It is past time for the Federal Reserve to enforce needed safeguards on this high risk physical commodity activity.

¹⁹⁴⁴ See, e.g., 10/28/2011 Goldman presentation to the Goldman Board of Directors, "Global Commodities Physicals Activities," FRB-PSI-700011 – 022, at 019 ("We are contracted to supply jet fuel to Delta Airlines on a just-in-time basis, reducing the need for them to maintain a large inventory[.]").

¹⁹⁴⁵ 5/26/2010 letter from JPMorgan to the Federal Reserve Bank of New York, FRB-PSI-301884 - 886 (listing the acquisition of jet fuel inventories from RBS Semptra) and FRB-PSI-302308 - 322, at 311 - 312.

¹⁹⁴⁶ 9/13/2013 JPMorgan response to Subcommittee questionnaire, JPM-COMM-PSI-000001 - 019, at 003-004.

VI. JPMORGAN CHASE

JPMorgan Chase & Co. (JPMorgan), one of the largest financial institutions in the United States, conducted among the largest physical commodity activities of any U.S. financial holding company until its recent decision to exit the area. Prior to 2014, JPMorgan conducted activities involving crude oil, natural gas, coal, industrial metals, metals storage facilities, and electrical power generation. At the same time, it was the largest commodities trader of any U.S. financial institution. This case study focuses on JPMorgan's acquisition of multiple electrical power plants, including one that led to a \$410 million penalty for manipulating electricity prices; its extensive copper activities, which operate outside of normal size limits and include a proposal for a copper-backed exchange traded fund which has raised conflict of interest and market manipulation concerns among industrial copper users; and its actions to circumvent prudential limits on the size of its physical commodity activities.

A. JPMorgan Overview

JPMorgan Chase & Co. is a global financial services firm incorporated under Delaware law and headquartered in New York City.¹⁹⁴⁷ It is listed on the New York Stock Exchange (NYSE) under the ticker symbol "JPM."¹⁹⁴⁸ In addition to being the largest financial holding company in the United States, JPMorgan conducts operations in more than 60 countries with over 260,000 employees.¹⁹⁴⁹ As of December 31, 2013, it had a market capitalization of \$211 billion and consolidated assets totaling more than \$2.4 trillion.¹⁹⁵⁰ In 2013, JPMorgan reported net revenues nearing \$97 billion and net income of almost \$18 billion.¹⁹⁵¹

JPMorgan Leadership. The Chairman of the Board and Chief Executive Officer of JPMorgan Chase & Co. is Jamie Dimon, who has held those posts since 2006.¹⁹⁵² The Chief Operating Officer is Matthew Zames, and the Chief Financial Officer is Marianne Lake.¹⁹⁵³ The head

¹⁹⁴⁷ 7/1/2014 JPMorgan Chase & Co. Resolution Plan Public Filing (hereinafter "2014 JPMorgan Resolution Plan"), at 4, <http://www.federalreserve.gov/bankinforeg/resolution-plans/jpmorgan-chase-1g-20140701.pdf>; "Holding Companies with Assets Greater Than \$10 Billion," (as of 6/30/2014), National Information Center (using Federal Reserve data), <http://www.ffiec.gov/nicpubweb/nicweb/Top50Form.aspx>.

¹⁹⁴⁸ Undated "About Us," JPMorgan website, <http://www.jpmorganchase.com/corporate/About-JPMC/about-us.htm>.

¹⁹⁴⁹ Id.

¹⁹⁵⁰ 2014 JPMorgan Resolution Plan, at 4.

¹⁹⁵¹ 2013 JPMorgan Chase & Co. Annual Report, filed with SEC on 2/20/2014, at 62, <http://www.sec.gov/Archives/edgar/data/19617/000001961714000289/corp10k2013.htm>.

¹⁹⁵² 2014 JPMorgan Resolution Plan, at 30; undated "Members of the Board," JPMorgan website, <http://www.jpmorganchase.com/corporate/About-JPMC/board-of-directors.htm>.

¹⁹⁵³ 2014 JPMorgan Resolution Plan, at 30.

of the Global Commodities Group, from 2006 to 2014, was Blythe Masters.¹⁹⁵⁴ She was recently replaced by two co-heads of the group, John Anderson and Mike Camacho.¹⁹⁵⁵ John Anderson is also the Chief Executive Officer of J.P. Morgan Ventures Energy Corporation.¹⁹⁵⁶ Until he retired in 2013, Francis Dunleavy was the head of Principal Investing within the Commodities Group.¹⁹⁵⁷

(1) Background

The modern JPMorgan is the product of a merger between J.P. Morgan & Co. and The Chase Manhattan Corp. in 2000.¹⁹⁵⁸ Both J.P. Morgan & Co. and the Chase Manhattan Corp. were themselves the culmination of multiple bank mergers and acquisitions over time. J.P. Morgan & Co. was originally Drexel, Morgan & Co., founded by John Piermont Morgan and Anthony Drexel in New York in 1871, as a merchant banking partnership.¹⁹⁵⁹ After the Glass-Steagall Act required the separation of banks and securities firms in 1933, the company chose to continue operating as a commercial bank.¹⁹⁶⁰ The Chase Manhattan Corp. was a product of The Bank of The Manhattan Co., which was founded in 1799, by former U.S. Senator and future U.S. Vice President Aaron Burr.¹⁹⁶¹ Over time, The Bank of The Manhattan Co. merged with a number of other banks, including the Chemical Banking Corp. in 1996.¹⁹⁶² After the merger that produced JPMorgan Chase & Co. in 2000, additional acquisitions followed, including Bank One Corp., a major Midwestern bank in 2004. During the financial crisis, JPMorgan also acquired, in 2008, the Bear Stearns Companies Inc.¹⁹⁶³

Financial Holding Company Status. On March 13, 2000, pursuant to the Gramm-Leach-Bliley Act, JPMorgan Chase & Co.

¹⁹⁵⁴ See 4/2011 “Global Commodities - Operating Risk,” prepared by JPMorgan, FRB-PSI-623086 - 127, at 125 (listing Global Commodities Group executives). See also “The Legacy of JPMorgan’s Blythe Masters,” *Bloomberg Businessweek*, Sheelah Kolhatkar (4/3/2014), <http://www.businessweek.com/articles/2014-04-03/the-legacy-of-jpmorgans-blythe-masters>.

¹⁹⁵⁵ 9/19/2014 letter from JPMorgan legal counsel to the Subcommittee, “JPMorgan Chase & Co’s Responses to Follow-Up Questions,” PSI-JPMorgan-12-000001 - 003, at 001.

¹⁹⁵⁶ 6/5/2014 letter from JPMorgan legal counsel to the Subcommittee, “JPMorgan Chase & Co’s April 23, 1024 Briefing Follow-Up,” PSI-JPMC-11-000001 - 002, at 001.

¹⁹⁵⁷ See 4/2011 “Global Commodities - Operating Risk,” prepared by JPMorgan, FRB-PSI-623086 - 127, at 125 (listing Global Commodities Group executives). See also “JPMorgan energy exec at center of power-market flap retires,” *Reuters*, (11/7/2013), <http://www.reuters.com/article/2013/11/07/us-jpmorgan-commodity-dunleavy-idUSBRE9A616H20131107>.

¹⁹⁵⁸ “The History of JPMorgan Chase & Co.,” JPMorgan website, at 19 (hereinafter, “History of JPMorgan Chase & Co.”), <http://www.jpmorganchase.com/corporate/About-JPMC/document/shorthistory.pdf>.

¹⁹⁵⁹ *Id.* at 5.

¹⁹⁶⁰ *Id.* at 12.

¹⁹⁶¹ *Id.* at 2.

¹⁹⁶² *Id.* at 19.

¹⁹⁶³ *Id.*

elected to become a financial holding company.¹⁹⁶⁴ The holding company owns several banks. Its principal U.S. bank subsidiary is JPMorgan Chase Bank, N.A., a large national bank with branches in 23 states.¹⁹⁶⁵ Another key U.S. bank subsidiary is Chase Bank USA, N.A., which is JPMorgan's credit card-issuing bank.¹⁹⁶⁶

Key Subsidiaries. Two key nonbank U.S. subsidiaries are J.P. Morgan Securities LLC, its primary registered U.S. broker-dealer, investment advisor, and futures commission merchant; and J.P. Morgan Ventures Energy Corporation, which conducts commodities derivatives transactions as well as physical commodities transactions.¹⁹⁶⁷ A key U.K. subsidiary is J.P. Morgan Securities PLC (formerly J.P. Morgan Securities Ltd.) which, among other activities, deals in commodity derivatives.¹⁹⁶⁸

Major Business Lines. In its 2014 Resolution Plan, JPMorgan identified five major business segments. The first is its Corporate and Investment Bank, which provides services related to fixed income, equities, commodities, and global investment banking, among other areas.¹⁹⁶⁹ The second business segment is Commercial Banking, which provides financing, investment banking, and asset management services to large clients, including corporations, municipalities, and financial institutions.¹⁹⁷⁰ The third is Asset Management, which provides institutional, high-net-worth, and retail investors with global investment services, and currently manages client assets totaling \$2.3 trillion.¹⁹⁷¹ The fourth is Corporate/Private Equity, a segment that includes JPMorgan's treasury functions, Chief Investment Office, and other major corporate units for the holding company and bank.¹⁹⁷² The last is

¹⁹⁶⁴ See "Institution History for JPMorgan Chase & Co.," National Information Center (using Federal Reserve data), http://www.ffiec.gov/nicpubweb/nicweb/InstitutionHistory.aspx?parID_RSSD=1039502&parDT_END=99991231 (showing it was actually The Chase Manhattan Corporation that elected to become a financial holding company on March 13, 2000; following its merger later that year with JPMorgan, the financial holding company changed its name to J.P. Morgan Chase & Co.).

¹⁹⁶⁵ See 2014 JPMorgan Resolution Plan, at 5, <http://www.federalreserve.gov/bankinfo/reg/resolution-plans/jpmorgan-chase-1g-20140701.pdf>; 2013 JPMorgan Chase & Co. Annual Report, filed with SEC on 2/20/2014, at 1, <http://www.sec.gov/Archives/edgar/data/19617/000001961714000289/corp10k2013.htm>.

¹⁹⁶⁶ 2014 JPMorgan Resolution Plan, at 6; 2013 JPMorgan Chase & Co. Annual Report, filed with SEC on 2/20/2014, at 1, <http://www.sec.gov/Archives/edgar/data/19617/000001961714000289/corp10k2013.htm>.

¹⁹⁶⁷ 2014 JPMorgan Resolution Plan, at 5.

¹⁹⁶⁸ 9/19/2014 letter from JPMorgan legal counsel to Subcommittee, "JPMorgan Chase & Co's Responses to Follow-Up Questions," PSI-JPMorgan-12-000001 - 003, at 002; 2014 JPMorgan Resolution Plan, at 5-6.

¹⁹⁶⁹ 2014 JPMorgan Resolution Plan, at 7-8.

¹⁹⁷⁰ Id. at 7, 9.

¹⁹⁷¹ Id. at 7, 9-10.

¹⁹⁷² Id. at 7, 10.

Consumer and Community Banking, which includes JPMorgan's retail banking, credit card, mortgage, and lending services.¹⁹⁷³

Commodities Activities. The Corporate and Investment Bank includes the Global Commodities Group (GCG), which is JPMorgan's leading commodities-related business unit.¹⁹⁷⁴ In 2012, the Group had over 600 employees.¹⁹⁷⁵ GCG is organized around four categories of physical commodities: metals, energy, agricultural, and environmental.¹⁹⁷⁶ GCG personnel conduct financial trades involving those commodities using a variety of financial instruments, including swaps, forwards, futures, and options. They also provide clients with commodities-related risk management services, market intelligence, financing, structuring, market-making, and other services.¹⁹⁷⁷

GCG personnel also conducted the bulk of JPMorgan's physical commodity activities. Those activities included, at times, the purchase, sale, transport, and storage of various commodities, including oil products, natural gas products, coal, metals, electricity, and agricultural products.¹⁹⁷⁸ In addition, GCG provides clients with a range of physical commodity services, including risk management solutions, commodity-linked financing, physical hedging solutions, off-take and supply agreements, and transportation and storage of assets.¹⁹⁷⁹ In 2014, JPMorgan reported that the GCG had over 2,200 active clients.¹⁹⁸⁰

The key legal entity executing activities on behalf of the Global Commodities Group is J.P. Morgan Ventures Energy Corporation (JPMVEC).¹⁹⁸¹ JPMVEC was formed in 2005, as a Delaware corporation. It has no U.S. or European employees or offices of its own,

¹⁹⁷³ Id. at 7-8.

¹⁹⁷⁴ 11/4/2009 "JPM Energy Ventures Energy Corporation [:] Control Validation Target Exam," prepared by Federal Reserve, FRB-PSI-200611 - 632, at 613 [sealed exhibit]; undated "Commodities," JPMorgan website, <https://www.jpmorgan.com/pages/jpmorgan/investbk/solutions/commodities>.

¹⁹⁷⁵ 1/2012 "JP Morgan Commodity Capabilities," prepared by JPMorgan, FRB-PSI-301538 - 592, at 546. The number of employees has since decreased. See, e.g., 9/2013 "Self Assessment," prepared by JPMorgan, FRB-PSI-301370 - 378, at 374.

¹⁹⁷⁶ See undated "Commodities," JPMorgan website, <https://www.jpmorgan.com/pages/jpmorgan/investbk/solutions/commodities>.

¹⁹⁷⁷ See undated "J.P. Morgan Global Commodities Group – Client Solutions Provider," prepared by JPMorgan, FRB-PSI-200822 - 826, at 822; 2014 JPMorgan Resolution Plan, at 9.

¹⁹⁷⁸ 2014 JPMorgan Resolution Plan, at 9.

¹⁹⁷⁹ 4/2011 "Our Commodities Franchise and Our Competitive Advantages," prepared by J.P.Morgan, FRB-PSI-623086 - 127, at 089.

¹⁹⁸⁰ 2014 JPMorgan Resolution Plan, at 9. This figure is down nearly one-third from the 3,000 clients JPMorgan reported in 2011. See 4/2011 "Our Commodities Franchise and Our Competitive Advantages," prepared by J.P.Morgan, FRB-PSI-623086 - 127, at 089.

¹⁹⁸¹ See, e.g., 9/16/2005 letter from JPMorgan's legal counsel to the Federal Reserve Bank,

"Notice Pursuant to Section 4(k)(1)(B)," PSI-FederalReserve-01-000481 - 536 (discussing JPMVEC's activities).
Subcommittee briefing by JPMorgan (4/23/2014).

and instead acts through GCG employees.¹⁹⁸² JPMVEC is the key legal entity that actually executes the bulk of JPMorgan's financial and physical commodities trading as well as other commodities-related activities, either directly or through subsidiaries or affiliates.¹⁹⁸³

One example of the physical commodity activities undertaken by JPMorgan is what the bank has referred to as "Project Liberty."¹⁹⁸⁴ In 2012, using its complementary authority, JPMVEC entered into a long term oil supply agreement with Philadelphia Energy Solutions Refining and Marketing (PESRM), a joint venture between the Carlyle Group and Sunoco to operate one of the largest oil refineries in the United States.¹⁹⁸⁵ According to JPMorgan, under a five-year contract, JPMVEC agreed to supply "100% of the crude oil and feedstocks" required by the refinery and to purchase "the majority of the refined products" as they were produced.¹⁹⁸⁶ JPMVEC then sold "around half of the refinery products back to Sunoco for its retail distribution network" and sold the rest to third parties.¹⁹⁸⁷ To implement the agreement, JPMVEC leased or subleased about 14.5 million barrels of storage for crude and refined products on and around the refinery premises.¹⁹⁸⁸ The crude oil and feedstocks provided by JPMVEC "arrive[d] via ship and rail."¹⁹⁸⁹ This project illustrates JPMorgan's intimate involvement with buying, transporting, storing, and selling key physical commodities.¹⁹⁹⁰

¹⁹⁸² Subcommittee briefing by JPMorgan (4/23/2014).

¹⁹⁸³ *Id.* See also, e.g., 9/16/2005 letter from JPMorgan legal counsel to Federal Reserve, "Notice Pursuant to Section 4(k)(1)(B)," PSI-FederalReserve-01-000481 - 536, at 486 (discussing JPMVEC's activities); 12/30/2009 "Notice to the Board of Governors of the Federal Reserve System by JPMorgan Chase & Co. Pursuant to Section 4(k)(1)(B) of the Bank Holding Company Act of 1956," prepared by JPMorgan, PSI-FederalReserve-02-000012 - 033, at 014 ("JPMVEC currently engages as principal in commodity derivatives transactions and offers a full range of derivatives to its clients across the spectrum of crude oil, coal, electricity and natural gas-related risks. In addition, JPMVEC enters into physical transactions in the natural gas, crude oil, coal and electricity markets and makes and takes delivery of these commodities.").

¹⁹⁸⁴ See 1/24/2013 "Commodities Physical Operating Risk," prepared by JPMorgan, FRB-PSI-301379 - 382, at 381 (chart entitled, "Physical Operating Risk Review of Project Liberty") (hereinafter, "2013 Project Liberty Chart"); 10/6/2014 letter from JPMorgan legal counsel to Subcommittee, "JPMorgan Chase & Co's Responses to Follow-Up Questions," PSI-JPMorganChase-14-000001 - 009.

¹⁹⁸⁵ 10/6/2014 letter from JPMorgan legal counsel to Subcommittee, "JPMorgan Chase & Co's Responses to Follow-Up Questions," PSI-JPMorganChase-14-000001 - 009, at 001, 006.

JPMorgan undertook this activity after obtaining permission from the Federal Reserve to use a "third party to alter or refine commodities" on its behalf. See 11/25/2008 "Notice to the Board of Governors of the Federal Reserve System by JPMorgan Chase & Co.," prepared by JPMorgan, PSI-FederalReserve-01-000553 - 558 (requesting that authority); 4/20/2009 letter from Federal Reserve to JPMorgan, PSI-FRB-11-000001 - 002 (granting JPMorgan's request).
¹⁹⁸⁶ 2013 Project Liberty Chart, FRB-PSI-301379 - 382, at 381.

¹⁹⁸⁷ *Id.*; 10/6/2014 letter from JPMorgan's legal counsel to the Subcommittee, "JPMorgan Chase & Co's Responses to Follow-Up Questions," PSI-JPMorganChase-14-000001 - 009, at 002.

¹⁹⁸⁸ *Id.*

¹⁹⁸⁹ 2013 Project Liberty Chart, prepared by JPMorgan, FRB-PSI-301379 - 382, at 381.

¹⁹⁹⁰ In October 2014, JPMorgan sold Project Liberty to Bank of America. Subcommittee briefing by JPMorgan (10/10/2014).

Commodities-Related Merchant Banking. In addition to GCG, JPMorgan has engaged in commodity-related activities through certain investment funds and merchant banking activities undertaken in other areas of the bank. For example, JPMorgan Infrastructure Investments Group, located within the Global Real Assets section of the Asset Management business segment, oversees investment funds focused on infrastructure projects.¹⁹⁹¹ The Group, through JPMorgan Investment Management, Inc., has 35 investment professionals who advise and help manage the JPMorgan Infrastructure Investments Fund.¹⁹⁹² The Fund, which was established in 2006, and whose general partner is JPMorgan IIF Acquisitions LLC, has raised \$3 billion for investments in power plants, oil and gas pipelines, and electricity distribution assets, among other projects.¹⁹⁹³ The Fund operates with capital raised from third party investors; according to JPMorgan, it has not contributed any of its own money to the Fund.¹⁹⁹⁴ Additional commodity-related projects have been funded by J.P. Morgan Partners LLC, formerly known as JPMorgan Capital Partners, a “private equity division of JPMorgan & Co.” that raises capital from third party investors.¹⁹⁹⁵

In June 2014, JPMorgan reported to the Federal Reserve that it held merchant banking investments with a total value of about \$10 billion, but it is unclear how many of those were commodity related and whether the total included any projects administered by the Infrastructure Investments or J.P. Morgan Partners funds.¹⁹⁹⁶

Commodities Trading. At the same time it conducts a wide range of physical commodity activities, JPMorgan trades commodities-related

¹⁹⁹¹ See 10/21/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-15-000001 - 008, at 003 - 004. For more information about JPMorgan’s Global Real Assets section, see 12/3/2012 “Virginia Port Partners Proposal for Port of Virginia PPTA,” prepared by J.P. Morgan Asset Management for Virginia’s Office of Transportation Public-Private Partnerships, at 4, http://www.vappta.org/resources/RREEF%20and%20JPMorgan_Detailed%20Proposal.pdf.

¹⁹⁹² See 10/21/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-15-000001 - 008, at 003 - 004; 12/3/2012 letter from JPMorgan IIF Acquisitions LLC and Maher Terminals LLC to Virginia Office of Transportation Public-Private Partnerships, at 1, and 12/3/2012 “Virginia Port Partners Proposal for Port of Virginia PPTA,” at 3 - 4, http://www.vappta.org/resources/RREEF%20and%20JPMorgan_Detailed%20Proposal.pdf.

¹⁹⁹³ See 10/21/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-15-000001 - 008, at 004; 12/3/2012 letter from JPMorgan IIF Acquisitions LLC and Maher Terminals LLC to Virginia Office of Transportation Public-Private Partnerships, at 1, and 12/3/2012 proposal at 4, http://www.vappta.org/resources/RREEF%20and%20JPMorgan_Detailed%20Proposal.pdf.

¹⁹⁹⁴ See 10/21/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-15-000001 - 008, at 004.

¹⁹⁹⁵ “J.P. Morgan Partners,” JPMorgan website,

<https://www.jpmorgan.com/pages/jpmorganpartners>. In addition, some J.P. Morgan Partners professionals formed CCMP Capital Advisors, LLC and Panorama Capital, LLC which “manage the JPMP investments pursuant to a management agreement entered into with JPMorgan Chase & Co.” Id.

¹⁹⁹⁶ See 6/30/2014 “Consolidated Holding Company Report of Equity Investments in Nonfinancial Companies - FR Y-12,” filed by JPMorgan with the Federal Reserve, FRB-PSI-800005 - 008, at 006.

financial instruments, including futures, swaps, and options, involving billions of dollars each day. JPMorgan is the largest financial institution in the United States trading financial commodity instruments, according to Coalition Development Ltd., a company that collects commodity trading statistics.¹⁹⁹⁷ OCC data indicates it is also among the largest financial institution trading commodity-related derivatives.¹⁹⁹⁸

Commodity Revenues. According to JPMorgan, at the end of 2013, it had commodity-related contracts, including swaps, futures, options, and forwards, with a total dollar value of \$763 billion, down from a 2012 year-end total of \$1 trillion.¹⁹⁹⁹ Separately, JPMorgan reported that, in 2013, its physical commodities activities had a total dollar value of about \$10.2 billion, down from \$16.2 billion the year before.²⁰⁰⁰

(2) Historical Overview of Commodities Activities

According to JPMorgan Chase & Co., in a short history of the bank, the company was “built on the foundation of more than 1,000 predecessor institutions.”²⁰⁰¹ They include such well-known banks as J.P. Morgan & Co., The Chase Manhattan Bank, Bank One, Manufacturers Hanover Trust Co., Chemical Bank, The First National Bank of Chicago, and National Bank of Detroit.²⁰⁰²

At times, JPMorgan’s predecessor banks were involved with securities or commodity activities that led to the bank’s being subjected to Congressional scrutiny. As explained earlier, the 1912 Pujo money trust hearings held by the U.S. House of Representatives focused, in part, on actions taken by J. Pierpont Morgan and J.P. Morgan and Co. to form “trusts” that acted as holding companies for massive commercial enterprises, including businesses that handled physical commodities, such as railroads, oil companies, steel manufacturers, and shipping and mining ventures.²⁰⁰³ After the 1929 stock market crash, the Pecora

¹⁹⁹⁷ See 9/2014 “Global & Regional Investment Bank League Tables-1H2014,” prepared by Coalition Development Ltd., PSI-Coalition-01-00019 - 025, at 020.

¹⁹⁹⁸ 2013 “OCC’s Quarterly Report on Bank Trading and Derivatives Activity Fourth Quarter 2013,” prepared by OCC, at Tables 1 and 2, <http://www.occ.gov/topics/capital-markets/financial-markets/trading/derivatives/dq413.pdf>.

¹⁹⁹⁹ 2014 JPMorgan Resolution Plan, at 23,

<http://www.federalreserve.gov/bankinfo/reg/resolution-plans/jpmorgan-chase-1g-20140701.pdf>.

²⁰⁰⁰ See 12/31/2012 “Consolidated Financial Statements for Bank Holding Companies—FR Y-9C, Schedule HC-D, Item M.9.a.(2),

http://www.ffiec.gov/nicpubweb/NICDataCache/FRY9C/FRY9C_1039502_20121231.PDF. See also 12/31/2013 “JPMorgan FR Y-9C Consolidated Financial Statements for Bank Holding Companies—FR Y-9C,” Schedule HC-D, Item M.9.a.(2),

http://www.ffiec.gov/nicpubweb/NICDataCache/FRY9C/FRY9C_1039502_20131231.PDF.

²⁰⁰¹ Undated “The History of JPMorgan Chase & Co.,” JPMorgan website, at 1,

<http://www.jpmorganchase.com/corporate/About-JPMC/document/shorhistory.pdf>.

²⁰⁰² Id.

²⁰⁰³ See “Money Trust Investigation: Financial and Monetary Conditions in the United States,” hearing before a subcommittee of the House Committee on Banking and Currency, HRG-1912-

hearings in the U.S. Senate took testimony from J. P. (“Jack”) Morgan and highlighted actions taken by J. P. Morgan & Co. in the underwriting and trading of questionable securities, including securities related to utility companies, and providing new stocks at below market prices to government officials.²⁰⁰⁴ In 1935, in response to the Glass-Steagall Act’s mandating the separation of banks and securities firms, J.P. Morgan & Co. decided to remain a bank and spun off its securities activities to a newly formed company, Morgan Stanley, discussed above.²⁰⁰⁵

JPMorgan Chase Bank. Fifty years later, JPMorgan Chase Bank, began to conduct financial and, later, physical commodity trades. The bank’s involvement with commodities followed actions taken by the OCC during the 1980s, permitting national banks to engage in an increasingly large array of commodity activities. As discussed earlier, the first step was in 1982, when the OCC explicitly authorized national banks to execute and clear trades in futures contracts.²⁰⁰⁶ A JPMorgan bank affiliate, J.P. Morgan Futures, Inc., registered as a futures commission merchant that same year.²⁰⁰⁷ In 1986, the OCC authorized national banks to trade commodity-related futures for themselves and on behalf of clients, act as broker-dealers and market makers for exchange traded options, and provide margin financing to clients trading commodities.²⁰⁰⁸ Also in 1986, Chase Manhattan Bank – another JPMorgan predecessor bank – entered into reportedly the first oil-related swap with Koch Industries, introducing the concept of swaps linked to

0017?accountid=45340 (first of multiple days of hearings continuing into 1913); The House of Morgan, Ron Chernow (Grove Press 1990), at 67-68 (railroad trusts), 81-86 (U.S. Steel trust), 100-103 (shipping trust), and 123 (copper trust), 150-156 (Pujo hearings).

²⁰⁰⁴ See, e.g., “Stock Exchange Practices,” report of the U.S. Senate Committee on Banking and Currency, S.Hrg. 73-1455, (6/6/1934), https://www.senate.gov/artandhistory/history/common/investigations/pdf/Pecora_FinalReport.pdf, and associated hearings from January 1933 to May 1934 (known as the Pecora hearings); The House of Morgan, Ron Chernow (Grove Press 1990), at 352-373.

²⁰⁰⁵ See, e.g., The House of Morgan, Ron Chernow (Grove Press 1990), at 385.

²⁰⁰⁶ Undated OCC Interpretive Letter (7/23/1982), unpublished, PSI-OCC-01-000011 - 012.

²⁰⁰⁷ See JP Morgan Futures Inc. FCM information, NFA BASIC website, <http://www.nfa.futures.org/basicnet/Details.aspx?entityid=jSzQxZANWxY%3d&m=Y>. That FCM license was withdrawn in 2011. Id. In addition, JP Morgan Securities LLC currently holds an FCM license that Bear Stearns obtained in 1982. See JP Morgan Securities LLC FCM information, NFA BASIC website, <http://www.nfa.futures.org/BasicNet/Details.aspx?entityid=7YD6PX%2bm0vo%3d>.

²⁰⁰⁸ See, e.g., OCC Interpretive Letter No. 356 (1/7/1986), PSI-OCC-01-000026 - 028 (authorizing a bank subsidiary to trade agricultural and metal futures for clients seeking to hedge bank loans); OCC Interpretive Letter No. 372 (11/7/1986) PSI-OCC-01-000043 - 044 (authorizing a bank subsidiary to act as a broker-dealer and market maker for exchange-traded options for itself, its affiliated bank, and clients); OCC Interpretive Letter No. 380 (12/29/1986) PSI-OCC-01-000046-061, at 047 - 048, 060, reprinted in Banking L. Rep. CCH ¶ 85,604 (authorizing a bank to provide margin financing to its clients to trade commodities; and to execute and clear client transactions involving futures and options on exchanges and over the counter).

the price of physical commodities.²⁰⁰⁹ In 1987, the OCC authorized national banks to engage in transactions involving commodity price index swaps.²⁰¹⁰

The OCC continued to broaden bank authority to engage in commodity activities during the 1990s. In 1993, the OCC authorized national banks to hedge permissible banking activities by making or taking physical delivery of commodities, and to engage in related physical commodity activities such as “storing, transporting, and disposing of the commodities.”²⁰¹¹ In 1995, the OCC gave banks broad authority to engage in physically-settled transactions involving metals, as well as “ancillary activities” such as storing, transporting, and disposing of them.²⁰¹²

JPMorgan Chase Bank took advantage of each of the OCC grants of authority to expand the bank’s commodities activities.²⁰¹³ In addition to trading commodity futures, forwards, and options, the bank also conducted derivatives transactions, including derivatives related to commodities. It was later discovered that, from 1992 to 2001, JPMorgan Chase Bank entered into twelve energy trades with Enron involving \$3.7 billion, in transactions later exposed as hidden loans that disguised the extent of Enron’s indebtedness.²⁰¹⁴ JPMorgan Chase Bank eventually became the largest swaps dealer in the United States.

JPMorgan Holding Company. In 1999, when the Gramm-Leach-Bliley Act expanded permissible activities for bank holding companies, JPMorgan took advantage of the changes in the law and, in 2000, elected to become a financial holding company under the Act.²⁰¹⁵ Over time, the holding company also became involved with commodities.

²⁰⁰⁹ See 7/2009 “Oil Derivatives: In the Beginning,” *EnergyRisk* magazine (July 2009), at 31, http://db.riskwaters.com/data/energyrisk/EnergyRisk/Energyrisk_0709/markets.pdf. The swap was a bilateral contract in which, for a four-month period, one party agreed to make payments to the other for 25,000 barrels of oil per month using a fixed price per barrel, while the other party agreed to make payments using the average monthly spot price for oil.

²⁰¹⁰ See OCC No-Objection Letter No. 87-5 (7/20/1987), PSI-OCC-01-000100-106, at 106. This letter was requested by Chase Manhattan Bank, a predecessor to JPMorgan.

²⁰¹¹ OCC Interpretive Letter No. 632 (6/30/1993), PSI-OCC-01-000358 - 366, at 365.

²⁰¹² See OCC Interpretive Letter No. 684 (8/4/1995), PSI-OCC-01-000368-374, at 372 - 374; OCC Interpretive Letter No. 1073 (10/19/2006), PSI-OCC-01-000425 - 432, at 425 (allowing banks and their foreign branches to engage in “customer-driven, metal derivative transactions that settle in cash or by transitory title transfer”); OCC Interpretive Letter No. 693 (11/14/1995), PSI-OCC-01-000135 - 141 (allowing banks to buy and sell physical copper).

²⁰¹³ See 9/16/2005 letter from JPMorgan legal counsel to Federal Reserve Bank, “Notice Pursant to Seciton 4(k)(1)(B),” PSI-FederalReserve-01-000481 - 536 (describing OCC and New York Banking Department approvals and its physical commodity activities over the years).

²⁰¹⁴ See “The Role of the Financial Institutions in Enron’s Collapse-Volume 1,” Permanent Subcommittee on Investigations, S. Hrg. 107-618, (July 23 and 30, 2002), at 231, 264.

²⁰¹⁵ See “Institution History for JPMorgan Chase & Co.,” National Information Center (using Federal Reserve data), http://www.ffiec.gov/nicpubweb/nicweb/InstitutionHistory.aspx?parID_RSSD=1039502&parDT_END=99991231.

In 2003, due in part to the growing role of banks in commodities under OCC supervision, the Federal Reserve began to relax its rules regarding commodity activities by financial holding companies. One of the Federal Reserve's earlier steps was to give bank holding companies more leeway to participate in physically settled transactions, allowing them to take or make delivery of documents giving title to physical commodities on an "instantaneous pass-through basis," for commodities approved by the CFTC for trading on an exchange.²⁰¹⁶ Also in 2003, the Federal Reserve began granting requests by financial holding companies to engage in complementary commodity activities under the Gramm-Leach-Bliley Act. JPMorgan applied for and received a complementary order in 2005.²⁰¹⁷

In 2004, JPMorgan acquired Bank One Corporation, a major Midwestern bank. Prior to that purchase, both JPMorgan Chase & Co. and JPMorgan Chase Bank had the Federal Reserve as their primary regulator. After the acquisition, JPMorgan Chase Bank was classified as a national bank, and its primary regulator became the OCC.²⁰¹⁸

Bear Stearns Acquisition. The physical commodity profile of JPMorgan expanded dramatically four years later. In March 2008, in the midst of the financial crisis and essentially at the request of the Federal Reserve, JPMorgan acquired The Bear Stearns Companies Inc. (Bear Stearns), a large investment bank that was then nearly insolvent.²⁰¹⁹ At the time, Bear Stearns had extensive physical commodity holdings and was active in a number of physical spot markets.²⁰²⁰ Bear Stearns was especially active in the energy markets and used its subsidiary, Bear Energy, to acquire ownership interests in dozens of power plants.²⁰²¹

²⁰¹⁶ See 68 Fed. Reg. 39,807, 39,808 (7/3/2003); 12 C.F.R. §225.28(b)(8)(ii)(B).

²⁰¹⁷ See 7/21/2005 letter from JPMorgan legal counsel to Federal Reserve Bank of New York, "JPM Chase Application for Compl[e]mentary Authority," PSI-FederalReserve-01-000004 - 028; 9/16/2005 letter from JPMorgan legal counsel to Federal Reserve, "JPM Chase Application for Compl[e]mentary Authority," PSI-FederalReserve-01-000478 - 536. 11/18/2005 Federal Reserve "Order Approving Notice to Engage in Activities Complementary to a Financial Activity," in response to a request by JPMorgan Chase & Co., 92 Fed. Res. Bull. C57 (2006), http://fraser.stlouisfed.org/docs/publications/FRB/2000s/frb_2006comp_p2.pdf.

²⁰¹⁸ See "Institution Directory for JPMorgan Chase Bank, National Association," Federal Deposit Insurance Corporation website, https://www2.fdic.gov/idasp/confirmation_outside.asp?inCert1=628.

²⁰¹⁹ See undated Federal Reserve press release, "Bear Stearns, JPMorgan Chase, and Maiden Lane LLC," http://www.federalreserve.gov/newsevents/reform_bearstearns.htm.

²⁰²⁰ See, e.g., 7/31/2008 "Supervisory Plan, Risk Assessment Program & Institutional Overview of JPMorgan Chase & Co." prepared by the Federal Reserve, FRB-PSI-305013-030 (identifying Bear Stearns assets being integrated into JPMorgan) [sealed exhibit].

²⁰²¹ See 1/2012 "JPM Commodity Capabilities," prepared by JPMorgan, FRB-PSI-301538 -592, at 547; 7/17/2008 memorandum from the OCC to the File, "Quarterly review of risk, performance and significant developments" for JPMorgan, FRB-PSI-303773 - 818, at 779 - 780 [sealed exhibit](listing Bear Energy assets as of 2008, including tolling and load agreements, gas storage facilities, gas transport facilities, and power plants). See also "Bear Stearns's Trading Unit Draws Interest," *Wall Street Journal*, Ann Davis (4/5/2008), http://online.wsj.com/news/articles/SB120735754695191559?mod=googlenews_wsj&mg=reno64-wsj.

Through its acquisition of Bear Stearns, JPMorgan gained control of a vast number of new physical commodity assets and activities.

UBS Acquisition. In 2009, JPMorgan further expanded its physical commodity activities when it acquired UBS Commodities Canada Ltd. and UBS AG's agricultural trading business.²⁰²² Those purchases gave JPMorgan an increased presence in the Canadian natural gas, power and crude oil physical and financial markets, and enlarged its agricultural commodity holdings.²⁰²³

Refining Authority. Also in 2009, JPMorgan requested, and the Federal Reserve approved, complementary authority for JPMorgan to "engage a third party to alter or refine commodities" on its behalf.²⁰²⁴ JPMorgan later used this authority to sell crude oil to a refinery and buy back the refined products.²⁰²⁵ It has also used the authority to hire third parties to blend heating oil, jet kerosene, and gasoline fuels to produce oil products that meet specific national, regional, or client standards.²⁰²⁶

RBS Semptra Acquisition. In 2010, JPMorgan again substantially increased its physical commodities profile when, in two separate transactions in July and October, for \$1.6 billion, it acquired the ownership stake of the Royal Bank of Scotland (RBS) in RBS Semptra, a joint venture between RBS and Semptra Energy, a U.S. energy company.²⁰²⁷ The two acquisitions provided JPMorgan with extensive North American and European energy and commodity operations involving oil, natural gas, metals, coal, plastics, agricultural products, emissions, and electricity.²⁰²⁸ JPMorgan's expanded physical commodity operations included more than 130 new storage and warehousing facilities in ten countries.²⁰²⁹

²⁰²² 1/2012 "JPM Commodity Capabilities," prepared by JPMorgan, FRB-PSI-301538 - 592, at 547.

²⁰²³ Id.; "J.P. Morgan to Acquire UBS' Canadian Energy and Global Agricultural Businesses," prepared by JPMorgan, <http://www.bloomberg.com/apps/news?pid=newsarchive&sid=aHoYAtmF5ydo>.

²⁰²⁴ See 4/20/2009 letter from the Federal Reserve to JPMorgan, PSI-FRB-11-000001 - 002 [sealed exhibit].

²⁰²⁵ See information on Project Liberty, above.

²⁰²⁶ 9/10/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorganChase-06-000001 - 013, at 006.

²⁰²⁷ JPMorgan Chase & Co., Form 10-K for the fiscal year ending December 31, 2011, at 184, <http://sec.gov/Archives/edgar/data/19617/000001961712000163/corp10k2011.htm#s508731DA912EFD440782294EA306391>. See also 1/2012 "JPM Commodity Capabilities," prepared by JPMorgan, FRB-PSI-301538 - 592, at 547.

²⁰²⁸ See 1/2012 "JPM Commodity Capabilities," prepared by JPMorgan, FRB-PSI-301538 - 592, at 547; 7/1/2010 JPMorgan press release, "J.P. Morgan completes commodities acquisition from RBS Semptra," https://www.jpmorgan.com/cm/cs?pagename=JPM_redesign/JPM_Content/C/Generic_Detail_Page_Template&cid=1277505237241.

²⁰²⁹ 7/1/2010 JPMorgan press release, "J.P. Morgan completes commodities acquisition from RBS Semptra," https://www.jpmorgan.com/cm/cs?pagename=JPM_redesign/JPM_Content/C/Generic_Detail_Page_Template&cid=1277505237241.

Henry Bath Acquisition. As part of the RBS Sempra acquisition, JPMorgan took ownership of Henry Bath & Sons, Ltd., which owned and managed a worldwide network of commodity storage warehouses licensed by the London Metal Exchange.²⁰³⁰ The Henry Bath storage facilities facilitated the holding, making delivery, and taking delivery of physical commodities, primarily metals but also other commodities.²⁰³¹ Through its ownership of Henry Bath, JPMorgan gained warehousing operations in 19 port locations across the United States, Europe, Asia, and Middle East.²⁰³²

London Metal Exchange. JPMorgan extended its reach again by inheriting shares and buying an ownership stake in the London Metals Exchange (LME), the leading futures market in metals.²⁰³³ JPMorgan became the LME's largest shareholder, holding an 11% ownership stake,²⁰³⁴ until the LME was sold to a Hong Kong exchange in 2012, when JPMorgan sold all of its shares to the exchange.²⁰³⁵ In 2013, JPMorgan was appointed a member of a key LME advisory group that deals directly with the LME Board.²⁰³⁶ In addition, J.P. Morgan Securities plc, a U.K. subsidiary, has remained a "Category 1 ring-dealing member" of the LME exchange, with special trading status on the LME floor.²⁰³⁷

In January 2012, in a presentation prepared by JPMorgan for its clients, it described its "growth" in commodities over the prior few years as "consistent and dramatic."²⁰³⁸ It stated that its commodities personnel had acquired "deep expertise across all commodity types (600 employees in 20+ locations worldwide)" and an "[e]xpansive financial

²⁰³⁰ See id.; undated "Merchant Banking Investment in Henry Bath," FRB-PSI-000580 - 582. See also undated "Introduction to JPM Commodities & Steel Hedging," prepared by JPMorgan, FRB-PSI-200822 - 826, at 824 (listing the licensing authorities as the London Metal Exchange, the London International Financial Futures, Options Exchange, and Intercontinental Exchange).

²⁰³¹ See undated "Introduction to JPM Commodities & Steel Hedging," prepared by JPMorgan, FRB-PSI-200822 - 826, at 824.

²⁰³² See 1/2012 "JPM Commodity Capabilities," prepared by JPMorgan, FRB-PSI-301538 -592, at 552; undated "Introduction to JPM Commodities & Steel Hedging," prepared by JPMorgan, FRB-PSI-200822 - 826, at 824.

²⁰³³ 2/13/2013 OCC email from OCC staff to OCC staff, "Commodities Quarterly Update," OCC-PSI-00000374.

²⁰³⁴ 6/5/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMC-11-000001 - 002, at 001.

²⁰³⁵ See, e.g., 12/6/2012 London Metal Exchange press release, "HKEx and LME announce completion of transaction," <http://www.lme.com/en-gb/news-and-events/press-releases/press-releases/2012/12/hkex-and-lme-announce-completion-of-transaction/>.

²⁰³⁶ See, e.g., "LME Starts User Advisory Group After \$2.2 Billion Takeover," Bloomberg, Agnieszka Troszkiewicz (1/8/2013), <http://www.bloomberg.com/news/2013-01-08/lme-starts-user-advisory-group-after-2-2-billion-takeover-1-.html> (indicating JPMorgan was one of 14 members of the advisory committee).

²⁰³⁷ See undated "Membership[:] Ring dealing," LME website, http://www.lme.com/en-gb/trading/membership/category-1-ring-dealing/j_p_morgan-securities-plc/.

²⁰³⁸ 1/2012 "JPM Commodity Capabilities," prepared by JPMorgan, FRB-PSI-301538 -592, at 547.

and physical platform.”²⁰³⁹ It stated that “J.P. Morgan’s Global Commodities Group offer[ed] clients a comprehensive set of market making, structuring, risk management, financing and warehousing capabilities across the full spectrum of commodity asset classes.”²⁰⁴⁰

(3) Current Status

When the Federal Reserve initiated its special review of financial holding company involvement with physical commodities in 2010, JPMorgan was one of the ten banks it examined in detail. JPMorgan was also featured in the October 2012 Summary Report issued by the Federal Reserve’s Commodities Team summarizing the findings of the special review.²⁰⁴¹

The 2012 Summary Report described JPMorgan’s wide-ranging physical commodity activities. It stated that JPMorgan had a “significant global oil storage portfolio (25 [million barrel] capacity) ... along with 19 Natural Gas storage facilities on lease with an average tenor of 2.8 years”,²⁰⁴² “14 tolling agreements ... of which one is for a power plant that generates 6% of the maximum total output in the California Electricity grid, and potentially up to 12% of average electricity demand;”²⁰⁴³ “direct ownership of 4 power plants”,²⁰⁴⁴ direct ownership of the Henry Bath global network of metals warehouses,²⁰⁴⁵ and an industrial metal inventory that “was as high as \$8 [billion].”²⁰⁴⁶ The 2012 Summary Report also noted that JPMorgan and Goldman together had a “total of 20-25 ships under time charters or voyages transporting oil [and] Liquified Natural Gas.”²⁰⁴⁷

In addition, the 2012 Summary Report identified multiple concerns with JPMorgan’s physical commodity operations. One concern was that JPMorgan had insufficient capital and insurance to cover potential losses from a catastrophic event. The report noted at one point that, while JPMorgan had calculated a potential oil spill risk of \$497 million, through “aggressive assumptions” and “diversification benefits,” it had reduced that total by nearly 90% to \$50 million, allocating risk capital for only that smaller amount.²⁰⁴⁸ The 2012 Summary Report also noted

²⁰³⁹ Id. at 546.

²⁰⁴⁰ Id. at 547.

²⁰⁴¹ See 10/3/2012 “Physical Commodity Activities at SIFIs,” prepared by Federal Reserve Bank of New York Commodities Team” (hereinafter, “2012 Summary Report”), FRB-PSI-200477-510 [sealed exhibit].

²⁰⁴² Id. at 485.

²⁰⁴³ Id.

²⁰⁴⁴ Id.

²⁰⁴⁵ Id. at 486.

²⁰⁴⁶ Id.

²⁰⁴⁷ Id. See also 4/2011 “Global Commodities – Operating Risk,” prepared by JPMorgan, FRB-PSI-623086 - 127, at 095 (indicating JPMorgan then had “13 Time Chartered Vessels”).

²⁰⁴⁸ 2012 Summary Report, at FRB-PSI-200477 - 510, at 493 [sealed exhibit].

that JPMorgan had determined that the “operational and event risks of owning power facilities” was capped at the dollar value of those facilities in the event of their total loss, with some insurance to cover “the death and disability of workers” and some facility replacement costs, but leaving all other expenses, including a “failure to deliver electricity under contract,” to be paid by the holding company.²⁰⁴⁹ At another point, the 2012 Summary Report compared the level of JPMorgan’s capital and insurance reserves against estimated costs associated with “extreme loss scenarios,” and found that “the potential loss exceeds capital and insurance” by \$1 billion to \$15 billion dollars.²⁰⁵⁰ If JPMorgan were to incur losses from its physical commodity activities while maintaining insufficient capital and insurance protections, the Federal Reserve, and ultimately U.S. taxpayers, could be asked to rescue the firm.

The 2012 Summary Report expressed concerns about JPMorgan attempts to expand its physical commodity activities still further. It described several recent instances in which the Federal Reserve had denied JPMorgan requests for new activities, including trading oil products not approved by the CFTC for trading on exchanges, and keeping rather than divesting its ownership of the Henry Bath warehouses.²⁰⁵¹ The 2012 Summary Report also noted that JPMorgan had booked “significant amounts of base metals in the national bank entity” that, together with the bank’s other physical commodities, produced aggregate holdings of “10.0% of tier 1 capital as of Sept ’12 ... an all time high in physical holdings.”²⁰⁵² As discussed below, a JPMorgan report to the Federal Reserve, together with other information provided to the Subcommittee, indicates that, in September 2012, it actually had about \$17.4 billion in physical commodity assets (excluding its holdings of gold, silver, and commodity-related merchant banking assets), which was then equal to nearly 12% of its Tier 1 capital.²⁰⁵³ At the time, JPMorgan was subject to a Federal Reserve limit that prohibited its physical commodity assets from exceeding 5% of its Tier 1 capital, but JPMorgan had interpreted that limit to allow it to exclude major categories of assets, bringing its total below the 5% limit.²⁰⁵⁴

²⁰⁴⁹ Id. at 497.

²⁰⁵⁰ Id. at 498, 509. The 2012 Summary Report also noted that commercial firms engaged in oil and gas businesses had a capital ratio of 42%, while bank holding company subsidiaries had a capital ratio of, on average, 8% to 10%. Id. at 499.

²⁰⁵¹ Id. at 505.

²⁰⁵² Id. at 506.

²⁰⁵³ See 9/26/2013 “Fed/OCC/FDIC Quarterly Meeting,” prepared by JPMorgan for a meeting with its regulators, FRB-PSI-301383 - 396, at 387. See also discussion of JPMorgan’s compliance with the 5% limit, below, including its decision to exclude its bank’s assets when calculating its physical commodity holdings for purposes of complying with the Federal Reserve’s 5% limit.

²⁰⁵⁴ For more information, see discussion below on JPMorgan’s involvement with size limits.

In 2013, when the Subcommittee asked JPMorgan about its physical commodity activities, the financial holding company provided information that, consistent with the Federal Reserve's 2012 Summary Report, illustrated its far-reaching commodity operations. JPMorgan reported trading in the physical commodities of cocoa, coffee, aluminum, copper, gold, lead, nickel, palladium, platinum, silver, tin, zinc, coal, crude oil, electricity, heating oil, gasoline, jet kerosene, and natural gas.²⁰⁵⁵ JPMorgan also reported maintaining inventories of many physical commodities. In 2011 (the last complete year of figures provided to the Subcommittee), those inventories included, at various times, as much as 3.3 million metric tons of aluminum (an amount which is more than half of U.S. aluminum consumption that year²⁰⁵⁶), 200,000 metric tons of copper, 100,000 metric tons of lead, 6.4 million barrels of crude oil, 3.6 million barrels of heating oil, 900,000 barrels of gasoline, 3.4 million barrels of jet kerosene, and 51.9 billion cubic feet of natural gas.²⁰⁵⁷ In addition, JPMorgan reported owning or controlling tolling agreements at 31 power plants.²⁰⁵⁸

When JPMorgan first met with the Subcommittee, it indicated that the holding company was in the process of exiting the physical commodity business. In 2013, it sold about half its power plants.²⁰⁵⁹ In March 2014, JPMorgan announced publicly that it had reached agreement to sell a large portion of its physical commodities operations, including its physical oil, gas, power, warehousing facilities, and energy transportation operations, to Mercuria Energy Group Ltd. for approximately \$3.5 billion.²⁰⁶⁰ When the sale was finalized in October 2014, only about one-third of the assets actually went to Mercuria, at a cost of about \$800 million.²⁰⁶¹ JPMorgan told the Subcommittee that it

²⁰⁵⁵ 9/10/2013 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorganChase-06-000001-013, at 002 - 005. See also 9/2013 "Global Commodities Compliance Self Assessment," prepared by JPMorgan, FRB-PSI-301370 - 378, at 372.

²⁰⁵⁶ See undated "Primary Aluminum Consumption, 2011-2013," European Aluminum Association website, <http://www.alueurope.eu/consumption-primary-aluminium-consumption-in-world-regions/> (indicating that North American primary aluminum consumption in 2011 was 5.1 million metric tons).

²⁰⁵⁷ 3/22/2013 JPMorgan legal counsel letter to Subcommittee, JPM-COMM-PSI-000015 - 019, at 018.

²⁰⁵⁸ See 2014 JPMorgan chart, "Power Plants Owned or Controlled via Tolling Agreements, 2008 to present," JPM-COMM-PSI-000022 - 025.

²⁰⁵⁹ 7/26/2013 "J.P. Morgan to Explore Strategic Alternatives for its Physical Commodities Business," <https://investor.shareholder.com/jpmorganchase/releasedetail.cfm?releaseid=780681>; "From Refineries To Power Plants - A Rundown Of JP Morgan's Huge Portfolio Of Physical Assets," Reuters, Jonathan Leff and David Sheppard (7/28/2013), <http://www.businessinsider.com/jp-morgan-portfolio-of-physical-assets-2013-7>.

²⁰⁶⁰ 3/19/2014 JPMorgan press release, "J.P. Morgan announces sale of its physical commodities business to Mercuria Energy Group Limited," https://www.jpmorgan.com/cm/cs?pagename=JPM_redesign/JPM_Content_C/Generic_Detail_Page_Template&cid=1394963095027&c=JPM_Content_C; 2014 JPMorgan Resolution Plan, at 9.

²⁰⁶¹ 10/3/2014 JPMorgan press release, "J.P. Morgan Completes Sales of Physical Commodities Assets," <http://investor.shareholder.com/jpmorganchase/releasedetail.cfm?releaseid=874514>; Subcommittee briefing by JPMorgan (10/10/2014).

had sold most of the remaining two-thirds to other buyers, including its metals inventory, oil supply contract with a Philadelphia refinery, and other assets.²⁰⁶² JPMorgan told the Subcommittee that, as of October 2014, it had dramatically reduced its involvement with physical commodities.²⁰⁶³

²⁰⁶² Subcommittee briefing by JPMorgan (10/10/2014).

²⁰⁶³ Id. See also “JPMorgan has not ‘exited physical commodities’ despite sale,” *Financial Times*, Neil Humes (11/3/2014), <http://www.ft.com/intl/cms/s/0/00a2ae9e-60e7-11e4-894b-00144feabdc0.html#axzz3IF0BzSSM> (quoting John Anderson, co-head of the JPMorgan Global Commodities Group: “It’s a bit of a misnomer to say we have exited physical commodities. ... We won’t move crude around anymore but we will finance oil in tanks.”).

B. JPMorgan Involvement with Electricity

JPMorgan is an active trader in the physical and financial electricity markets. It entered the power plant business for the first time in 2008, when in the midst of the financial crisis, at the request of the Federal Reserve, JPMorgan acquired the assets of Bear Stearns. Bear Stearns controlled over two dozen power plants at the time. As part of that transaction, JPMorgan acquired “tolling agreements” that enabled it to supply fuel to the power plants and then sell the power they produced to wholesalers. JPMorgan also acquired direct ownership interests in a number of power plants. In 2010, JPMorgan increased its power plant activities by acquiring control over four more power plants, including two from a larger acquisition of physical commodity assets from RBS Semptra. At its height, JPMorgan owned or had rights to the energy output of 31 power plants across the country. According to one 2013 press report, JPMorgan controlled “more than 2,950 megawatts of electricity through such deals, enough to power every one of Indiana’s 2.8 million homes.”²⁰⁶⁴

When JPMorgan acquired its power plants, it did not have authority to own or operate them, and sought broad authority from the Federal Reserve to conduct power plant activities. The Federal Reserve eventually authorized JPMorgan to enter into tolling agreements, energy management contracts, and long-term supply contracts with power plants, but declined to authorize JPMorgan to take direct ownership of a commercial power plant as a complementary activity. JPMorgan responded by asserting merchant banking authority to retain its direct ownership of the three power plants. JPMorgan also entered into several disputes with state and federal electricity regulators over how it was conducting its power plant activities. In July 2013, JPMorgan paid \$410 million to the Federal Energy Regulatory Commission (FERC) to settle charges that it used manipulative bidding tactics that produced excessive wholesale electricity payments in California and Michigan. Also in 2013, FERC ordered JPMorgan to stop blocking the modification of two California power plants to improve grid reliability. In 2014, under pressure from the Federal Reserve, JPMorgan began exiting the power plant business.

JPMorgan’s power plant activities raise multiple concerns, including market manipulation, insufficient capital and insurance to protect against catastrophic event risks, and inadequate safeguards to stop financial holding company involvement with impermissible physical commodity assets.

²⁰⁶⁴ “JPMorgan’s U.S. power plants and energy trading deals,” Reuters (7/25/2013), <http://www.reuters.com/article/2013/07/25/jpmorgan-ferc-idUSL1N0FV0KF20130725>.

(1) Background on Electricity

Electricity is a physical product that is produced from the conversion of natural resources such as oil, gas, uranium, solar energy, water, or wind into a flow of electrons.²⁰⁶⁵ Electricity is a personal and commercial necessity today, providing lighting and heating for residential homes, businesses, and governments, while powering computers, electronic devices, machines, and an increasing number of vehicles. Since electricity is produced by a flow of electrons, it is not easily stored and, in most cases, must be produced as required. Supply and demand change continuously, leading to great variations in price.

Electricity Production. Electricity is different from most physical commodities in that it is a secondary energy source – that is, it is produced through the conversion of other commodities, including coal and natural gas.²⁰⁶⁶ According to the U.S. Energy Information Administration, in 2013, about 39% of the 4 trillion kilowatt-hours of electricity generated in the United States came from power plants fueled by coal.²⁰⁶⁷ Power plants fueled by natural gas provided roughly 27% of the U.S. electricity supply.²⁰⁶⁸ Other prominent sources of electricity in the United States include nuclear energy, hydropower, and renewable energy sources such as solar and wind energy.²⁰⁶⁹

Electricity Infrastructure. The process of providing electricity for end users in the United States involves three major types of infrastructure. First, electricity is produced at one of the 5,800 major power plants across the country or at one of many smaller generation facilities.²⁰⁷⁰ Second, the electricity is transported across a series of high voltage transmission lines to more localized population centers across the country.²⁰⁷¹ As of 2008, the United States contained approximately 450,000 miles of those power lines.²⁰⁷² Third, local distribution systems transport the electricity to its final destination in homes, businesses, and government offices, either by overhead power lines or underground

²⁰⁶⁵ “Energy Primer: A Handbook of Energy Market Basics,” Staff report of the Division of Energy Market Oversight, Office of Enforcement, Federal Energy Regulatory Commission (7/2012), at 1, <http://www.ferc.gov/market-oversight/guide/energy-primer.pdf>.

²⁰⁶⁶ *Id.* at 1.

²⁰⁶⁷ “Electricity in the United States,” U.S. Energy Information Administration (8/12/2014), http://www.eia.gov/energyexplained/index.cfm?page=electricity_in_the_united_states.

²⁰⁶⁸ *Id.*

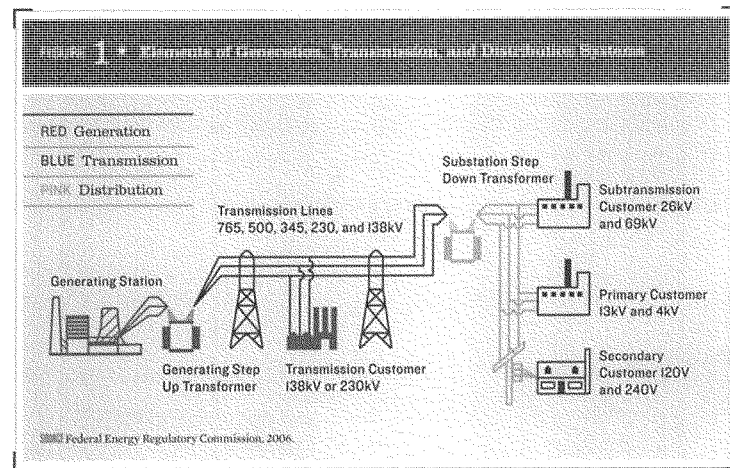
²⁰⁶⁹ “What is U.S. electricity generation by energy source?,” U.S. Energy Information Administration (8/12/2014), <http://www.eia.gov/tools/faqs/faq.cfm?id=427&t=3>.

²⁰⁷⁰ “Failure to Act: The Economic Impact of Current Investment Trends in Electricity Infrastructure,” American Society of Civil Engineers (2011), at 15, http://www.asce.org/uploadedFiles/Infrastructure/Failure_to_Act/SCE41%20report_Final-Lores.pdf.

²⁰⁷¹ *Id.*

²⁰⁷² *Id.*

cables.²⁰⁷³ This three-step process is summarized in the following graphic:



Source: Federal Energy Regulatory Commission website, http://www.asce.org/uploadedFiles/Infrastructure/Failure_to_Act/SCE41%20report_Final-lores.pdf

Electricity has been generated and transported in this fashion since the development of interconnected power lines in the 1920s.²⁰⁷⁴ Due to the complexity of the system and aging infrastructure, the United States currently faces increasing grid reliability problems.²⁰⁷⁵

Electricity Markets. Electricity markets have two main components: retail and wholesale.²⁰⁷⁶ As the names suggest, the retail market concerns the sale of electricity to end-users or consumers, while the wholesale market involves the sale of electricity between producers, distributors, traders, and electric utilities.²⁰⁷⁷ Within the wholesale market, electricity is traded like any other commodity in both physical and financial trading venues.

Physical electricity is traded in two primary markets: the day-ahead market and the real-time market. As its name suggests, the day-ahead market produces binding schedules for the production and

²⁰⁷³ Id.

²⁰⁷⁴ Id. at 16.

²⁰⁷⁵ See, e.g., "U.S. Electrical Grid Gets Less Reliable as Outages Increase and R&D Decreases," Professor Massoud Amin, Director of the Technological Leadership Institute, University of Minnesota (2011 with updates), <http://tli.umn.edu/blog/security-technology/u-s-electrical-grid-gets-less-reliable-as-outages-increase-and-rd-decreases/>.

²⁰⁷⁶ "Energy Primer: A Handbook of Energy Market Basics," Staff report of the Division of Energy Market Oversight, Office of Enforcement, Federal Energy Regulatory Commission (7/2012), at 37, <http://www.ferc.gov/market-oversight/guide/energy-primer.pdf>.

²⁰⁷⁷ Id.

consumption of electricity one day before it is needed.²⁰⁷⁸ Because of the difficulty inherent in storing electricity, the day-ahead market is as forward-looking a market as exists in the electricity markets. The real-time market operates to cover the differences between what is provided for in the day-ahead market and the amount of electricity actually needed by end-users during the day.²⁰⁷⁹ The real-time market is significantly smaller than the day-ahead market, accounting for only about 5% of total scheduled energy use.²⁰⁸⁰ Both the day-ahead and real-time markets are subject to oversight by Regional Transmission Organizations (RTOs) and independent system operators (ISOs),²⁰⁸¹ which are independent, membership-based, non-profit organizations that “ensure reliability and optimize supply and demand bids for wholesale electric power.”²⁰⁸²

In addition to the physical markets, electricity can be traded in financial markets, using a variety of financial products, including electricity-related futures, swaps, and options. Electricity-related financial products are available on regulated exchanges and over the counter. The Chicago Mercantile Exchange (CME), for example, has offered electricity futures since 1996.²⁰⁸³ One of the more widely traded is a financially-settled futures contract tracking prices for 40 megawatts-hours of electricity during real-time peak hours, which can be traded electronically or by open outcry on the floor of the NYMEX.²⁰⁸⁴ Electricity futures, options, and swaps are also available on the Intercontinental Exchange²⁰⁸⁵ and Nodal Exchange, a CFTC-registered exchange focused on electricity financial products for North American power markets.²⁰⁸⁶ Participants in the electricity financial markets include power providers and suppliers seeking to hedge price risk, as well as speculators seeking to profit from changes in electricity prices.²⁰⁸⁷ While much smaller than the crude oil and natural gas

²⁰⁷⁸ Id. at 64.

²⁰⁷⁹ Id. at 65.

²⁰⁸⁰ Id.

²⁰⁸¹ Id. at 64.

²⁰⁸² “About 60% of the U.S. Electric Power Supply is Managed by RTOs,” U.S. Energy Information Administration, (4/4/2011), <http://www.eia.gov/todayinenergy/detail.cfm?id=790>.

²⁰⁸³ 3/9/2012 presentation, “The Evolution of the CME Group Electricity Complex,” CME Group, at 6, http://www.hks.harvard.edu/hepg/Papers/2012/Leach_Brad.pdf.

²⁰⁸⁴ See contract specifications for the “PJM Western Hub Real-Time Peak Calendar-Month 2.5 MW Futures,” CME website, http://www.cmegroup.com/trading/energy/electricity/pjm-peak-calendar-month-lmp-swap-futures_contract_specifications.html.

²⁰⁸⁵ See, e.g., electricity listings on the Intercontinental Exchange website, <https://www.theice.com/products/Futures-Options/Energy/Electricity>.

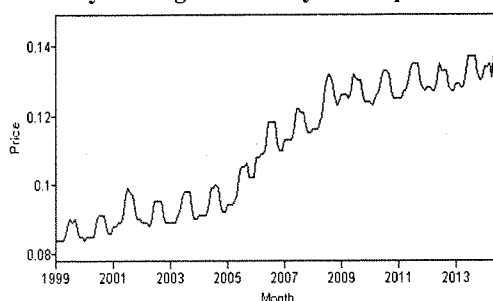
²⁰⁸⁶ See electricity listings on the Nodal Exchange website, <http://www.nodalexchange.com/>.

²⁰⁸⁷ See, e.g., “Utilities Turn to Global Markets to Hedge Commodity Risks,” Black & Veatch, Samuel Glasser (2014), <http://bv.com/Home/news/solutions/security-and-risk-management/utilities-turn-to-global-markets-to-hedge-commodity-risks>.

markets, electricity markets are nevertheless active, with many participants.²⁰⁸⁸

Electricity Prices. Electricity prices are typically volatile in the short term, due to the inability to store electricity and sudden swings in demand and supply due to weather, plant shutdowns, and other factors.²⁰⁸⁹ Electricity prices have also been subject to high profile cases of price and supply manipulation, such as cases involving Enron²⁰⁹⁰ and, more recently, major financial institutions.²⁰⁹¹ The following graph,²⁰⁹² prepared by the U.S. Bureau of Labor Statistics, illustrates the volatility and overall increase in electricity prices from 1999 to 2013:

U.S. City Average Electricity Prices per Kilowatt



Power Plants. The United States currently has about 5,800 major power plants across the country as well as smaller generation facilities that produce electricity.²⁰⁹³ Many sell their electricity output directly to distributors or end-users. Alternatively, many power plants sell their

²⁰⁸⁸ Subcommittee analysis based on data provided by CFTC and other sources.

²⁰⁸⁹ See, e.g., "Big bets on power cleared by regulator," *Financial Times*, Gregory Meyer (1/21/2014), <http://www.ft.com/intl/cms/s/0/9a3d69d2-81f8-11e3-87d5-00144feab7de.html#axzz3FwLSMWhx> ("Electricity is typically the most volatile commodity market because it cannot be easily stored, forcing huge price swings to balance supply and demand. Peak prices more than doubled overnight when extreme cold gripped the northern US in early January.").

²⁰⁹⁰ See, e.g., *United States v. Belden*, Criminal Case No. CR 02-0313 MJJ (USDC ND Calif. 2002), Plea Agreement, <file:///C:/Users/eb45550/Downloads/usbelden101702plea.pdf>; "Enron Forced Up California Prices, Documents Show," *New York Times*, Richard A. Oppel, Jr. and Jeff Gerth (5/7/2002), <http://www.nytimes.com/2002/05/07/business/enron-forced-up-california-prices-documents-show.html>.

²⁰⁹¹ See discussion, below.

²⁰⁹² U.S. Bureau of Labor Statistics Data, "Databases, Tables & Calculators by Subject," Series Id. No. APU000072610, U.S. city average, Electricity per kilowatt (10/14/2014).

²⁰⁹³ "Failure to Act: The Economic Impact of Current Investment Trends in Electricity Infrastructure," American Society of Civil Engineers (2011), at 15, http://www.asce.org/uploadedFiles/Infrastructure/Failure_to_Act/SCE4I%20report_Final-lores.pdf.

electricity output to third parties via “tolling agreements,” who market the electricity to others.

A tolling agreement typically requires the “toller” to make periodic payments to the power plant owner to cover the plant’s operating costs plus a fixed profit margin.²⁰⁹⁴ In exchange, the power plant gives the toller the right to all or part of the plant’s power output. As part of the agreement, the toller typically supplies or pays for the fuel used to run the plant. Since the toller has the right to the electricity output, it also determines the price at which to sell it.

Some power plants have also entered into Volumetric Production Payment (VPP) agreements with financial holding companies. VPP agreements typically require the financial holding company to provide upfront financing to the power plant for the purchase of fuel, in exchange for a designated share of the electricity produced when production occurs.²⁰⁹⁵ According to JPMorgan, VPP agreements are usually between three and seven years in length, and typically give the financial holding company the right to receive title to the fuel.²⁰⁹⁶ VPP transactions can be viewed as short term loans using electricity production as security for the loan.

Financial holding companies involved with power plants typically use tolling agreements or VPP agreements to obtain and sell electricity on the physical markets.

Power Plant Incidents. Power plants, like other industrial worksites, are subject to a variety of operational and catastrophic event risks. They include mechanical and electrical failure of equipment, fires associated with lack of maintenance, insufficient training of key individuals, and the use of substandard material.²⁰⁹⁷ Since power plants vary in size, location, fuel source, age, and design, their risks are particular to the specific plant involved.

One of the worst power plant incidents in recent years involved the Tennessee Valley Authority (TVA) Kingston Fossil Plant in Tennessee. The coal-fueled Kingston Plant was built in the 1950s, to supply the

²⁰⁹⁴ See 2008 Federal Reserve “Order Approving Notice to Engage in Activities Complementary to a Financial Activity,” in response to a request by Royal Bank of Scotland Group plc, 94 Fed. Res. Bull. C60, C64 (2008) (hereinafter “RBS Order”), http://fraser.stlouisfed.org/docs/publications/FRB/2008s/frb_2008comp.pdf. The order authorized both the Royal Bank of Scotland and a joint venture called RBS Sempra Commodities that the Royal Bank of Scotland had formed with Sempra Energy, a U.S. energy company, to enter into tolling agreements.

²⁰⁹⁵ 10/26/2004 letter from JPMorgan Chase legal counsel to the Office of the Comptroller of the Currency, “Commodity Derivative Activities of JPMorgan Chase Bank (the ‘Bank’),” OCC-PSI-00000266 - 298, at 272.

²⁰⁹⁶ *Id.*

²⁰⁹⁷ See, e.g., “Keeping power plants online with risk management,” *Utility Week*, Paul Newton (3/2/2011), http://www.utilityweek.co.uk/news/Keeping-power-plants-online-with-risk-management/795972#.VBb9_2ORKUw.

nearby Oak Ridge atomic energy installations with electricity.²⁰⁹⁸ On December 22, 2008, the walls of a containment dike holding coal ash gave way, suddenly releasing 5.4 million cubic yards of material into the surrounding area,²⁰⁹⁹ enough to fill three football stadiums.²¹⁰⁰ Within an hour, approximately 300 acres were affected, as the fast moving ash destroyed homes and altered the natural landscape.²¹⁰¹ Fortunately, no fatalities resulted. TVA has reportedly spent approximately \$1.1 billion on cleanup costs, fines, and legal fees associated with the spill, with cleanup work scheduled to continue well into 2015.²¹⁰² To cover the costs, TVA imposed a surcharge on customer electricity bills, projected to continue until 2024.²¹⁰³

Another major power plant incident occurred at the Kleen Energy Systems power station in Middletown, Connecticut, which experienced a major explosion during the construction of the plant in February 2010. The blast killed five and injured dozens, and tremors with earthquake force could be felt across much of the state.²¹⁰⁴ Early estimates from property damage and business interruption alone put the losses at \$150 million, which did not include liabilities resulting from death and injuries due to the accident.²¹⁰⁵

Other events, such as power plant fires, are more common. Earlier this year, for example, a four-alarm fire at a power plant in Colorado Springs, Colorado substantially damaged the plant, injured one worker, caused a brief power loss for 22,000 customers, and closed the plant.²¹⁰⁶ The fire chief predicted that the plant would be “inoperable for some time,” and utilities officials indicated that the plant would have to

²⁰⁹⁸ See “Executive Summary for Root Cause Analysis of Kingston Dredge Cell Failure,” TVA website (6/26/2009), at 1, http://www.tva.gov/kingston/rca/FINAL-062609_Executive_Summary-REV3.pdf.

²⁰⁹⁹ *Id.*

²¹⁰⁰ “The Spill: What happened and why?” educational video on TVA website, <http://www.tva.gov/kingston/education/index.htm>.

²¹⁰¹ See “Executive Summary for Root Cause Analysis of Kingston Dredge Cell Failure,” TVA website (6/26/2009), at 1, http://www.tva.gov/kingston/rca/FINAL-062609_Executive_Summary-REV3.pdf; “Ash Slide at TVA Kingston Fossil Plant,” Tennessee Department of Environment & Conservation, <http://tn.gov/environment/kingston/>.

²¹⁰² “TVA deserves credit for coal-ash spill cleanup efforts,” *Knoxville News Sentinel*, editorial, (7/2/2013), <http://www.knoxnews.com/opinion/editorials/editorial-tva-deserves-credit-for-coal-ash-spill>. See also “Coal Ash Spill Cleanup Could Cost \$825 Million,” *NBC News*, (2/12/2009), http://www.nbcnews.com/id/29166267/ns/us_news-environment/t/coal-ash-spill-cleanup-could-cost-million/#.VDRTTaPD9aQ.

²¹⁰³ “TVA deserves credit for coal-ash spill cleanup efforts,” *Knoxville News Sentinel*, editorial, (7/2/2013), <http://www.knoxnews.com/opinion/editorials/editorial-tva-deserves-credit-for-coal-ash-spill>.

²¹⁰⁴ See, e.g., “5 Dead, Dozens Hurt in Connecticut Power Plant Blast,” *New York Times*, Robert D. McFadden (2/7/2010), http://www.nytimes.com/2010/02/08/nyregion/08explode.html?pagewanted=all&_r=0.

²¹⁰⁵ “Munich Re leads coverage on Kleen Energy Explosion” *Business Insurance*, Michael Bradford And Zack Phillips (2/14/2010), <http://www.businessinsurance.com/article/20100214/ISSUE01/302149988>.

²¹⁰⁶ “Drake Power Plant fire will be costly; hard to say how much,” *The Gazette* (5/6/2014), <http://gazette.com/drake-power-plant-fire-will-be-costly-hard-to-say-how-much/article/1519474>.

purchase replacement power from other sources at a higher cost.²¹⁰⁷ The plant had previously experienced another fire in 2002.

Regulatory Framework. Electrical power plants are subject to regulation by multiple agencies at the federal, regional, and state levels. The primary federal regulator is the Federal Energy Regulatory Commission (FERC), which oversees interstate wholesale electricity rates, the reliability of the electrical grid, and the stability of energy markets in the United States.²¹⁰⁸ Regional transmission organizations (RTOs) and independent system operators (ISOs), formed at the regional or state level, also have key oversight responsibility for power plant facilities and electricity rates.²¹⁰⁹ Their responsibilities include tariff administration, monitoring of wholesale electricity markets, and management of the transmission system.²¹¹⁰

(2) JPMorgan Involvement with Power Plants

Over the course of three years, from 2008 to 2010, JPMorgan acquired 31 power plants across the country. JPMorgan has valued its power plant tolling agreements at more than \$2 billion,²¹¹¹ with related capacity payments worth \$1.2 billion.²¹¹² At the time of acquisition, JPMorgan did not have authority to enter into a tolling agreement with a power plant, much less own one, and petitioned the Federal Reserve for broad authority to conduct power plant activities. The Federal Reserve eventually authorized JPMorgan to enter into tolling agreements, energy management contracts, and long-term supply contracts with power plants, but declined to authorize JPMorgan to take direct ownership of a commercial power plant, as an impermissible mixing of banking and commerce. JPMorgan responded by asserting that it would retain its direct ownership of three power plants through its merchant banking authority. JPMorgan also entered into a number of regulatory battles with state and federal regulators over its power plant activities. Among other penalties, JPMorgan was barred from bidding in the California wholesale electricity market for six months in 2013, and, in July 2013, paid \$410 million to settle charges that it had manipulated wholesale electricity prices in California and Michigan. That same year, JPMorgan

²¹⁰⁷ *Id.*

²¹⁰⁸ Subcommittee briefing by FERC (7/30/2013); 7/29/2014 testimony of FERC Acting Chairman Cheryl A. LaFleur before the House Committee on Energy and Commerce, Subcommittee on Energy and Power, “FERC Perspective: Questions Concerning EPA’s Proposed Clean Power Plan and other Grid Reliability Challenges,” <http://www.ferc.gov/CalendarFiles/20140729091732-LaFleur-07-29-2014.pdf>.

²¹⁰⁹ “Energy Primer: A Handbook of Energy Market Basics,” Staff report of the Division of Energy Market Oversight, Office of Enforcement, Federal Energy Regulatory Commission (7/2012), at 60 - 62, <http://www.ferc.gov/market-oversight/guide/energy-primer.pdf>.

²¹¹⁰ *Id.* at 63 - 65.

²¹¹¹ See, e.g., 9/26/2013 “Fed/OCC/FDIC Quarterly Meeting,” prepared by JPMorgan, FRB-PSI-301382 -396, at 387.

²¹¹² See 9/30/2014 letter from JPMorgan legal counsel to Subcommittee, chart at JPM-COMM-PSI-000048.

was ordered by FERC to stop blocking plant modifications to improve grid reliability. JPMorgan told the Subcommittee it has now determined to exit the power plant business, but will need four more years to do so.

(a) Acquiring Power Plants

JPMorgan acquired control of 31 power plants over a two-year period from 2008 to 2010. In most instances, it acquired a tolling agreement to purchase the plant's electricity output; in some cases, it acquired a direct ownership interest in the power plant. It acquired the power plants in three phases, in transactions involving Bear Stearns, AES, and RBS Semptra.

2008 Bear Stearns Acquisition. JPMorgan first entered the power plant business in 2008, when at the request of the Federal Reserve, it purchased The Bear Stearns Companies, Inc. which was then under financial distress.²¹¹³ As part of that acquisition, JPMorgan acquired Bear Energy LP which owned or held tolling agreements with 27 power plants across the country.²¹¹⁴

Bear Energy, formed in 2006, was located in Houston.²¹¹⁵ By 2008, it was engaged in a wide range of physical and financial energy-related commodity activities. They included energy and electricity trading, power plant management, and power plant restructuring services. It held ownership interests in or tolling agreements with over two dozen power plants.²¹¹⁶ The acquisition of Bear Energy gave JPMorgan a significant presence in the power plant business.

Of the 27 power plants that Bear Energy transferred to JPMorgan in May 2008, 16 were located in California.²¹¹⁷ Three were located in Colorado, and one each in Alabama, Florida, Louisiana, Maine, Michigan, New Jersey, Pennsylvania, and Texas.²¹¹⁸ One was a coal-fired plant; the rest were fueled by natural gas.²¹¹⁹ According to the head of Bear Energy, Paul Posoli, who was hired by JPMorgan to

²¹¹³ See 11/4/2009 memorandum, "Control Validation Target Exam," prepared by JPMC Ventures Energy Corporation, FRB-PSI-200611 - 632, at 627; 8/2/2013 Federal Reserve press release, "Bear Stearns, JPMorgan Chase, and Maiden Lane LLC," http://www.federalreserve.gov/newsevents/reform_bearstearns.htm.

²¹¹⁴ See undated 2014 JPMorgan chart, "Power Plants Owned or Controlled via Tolling Agreements, 2008 to present," (hereinafter, "JPMorgan Power Plants Chart"), JPM-COMM-PSI-000022 - 025.

²¹¹⁵ Subcommittee briefing by JPMorgan (2/11/2014). See also "Bear Stearns's Trading Unit Draws Interest," *Wall Street Journal*, Ann Davis (4/5/2008), <http://online.wsj.com/articles/SB120735754695191559>.

²¹¹⁶ Subcommittee briefing by JPMorgan (2/11/2014); 7/17/2008 "Quarterly review of risk, performance and significant developments," prepared by OCC regarding JPMorgan, FRB-PSI-303773 - 818, at 777 (listing Bear Stearns power plant assets acquired by JPMorgan) [sealed exhibit].

²¹¹⁷ JPMorgan Power Plant Chart, JPM-COMM-PSI-000022 - 025.

²¹¹⁸ Id.

²¹¹⁹ Subcommittee briefing by JPMorgan (10/10/2014).

continue to run the Houston operation: “At the time of the merger, Bear Energy was managing over 9,000MW [megawatts] of generation ... and [had] a very established national presence.”²¹²⁰

JPMorgan used its key commodities subsidiary, J.P. Morgan Ventures Energy Corporation (JPMVEC), to conduct its power plant business.²¹²¹ Of the 27 power plants transferred from Bear Energy, JPMVEC assumed tolling agreements for 17. JPMVEC also took a direct ownership interest in eight power plants. Of those eight, it took a 100% ownership interest in two power plants in Colorado; a 50% ownership share in another Colorado power plant; a 30% ownership share in three power plants in California; a 14% ownership share in one power plant in Texas; and a 1% ownership share in a power plant in Maine.²¹²² In addition, in one instance involving a power plant in California, rather than take an ownership interest or tolling agreement, JPMorgan simply assumed a lease for the plant.²¹²³ Finally, through its Global Commodities Group Principal Investments unit, JPMorgan took a 100% ownership stake in one power plant in Florida, Central Power & Lime.²¹²⁴ Ownership was held through a subsidiary of JPMVEC.²¹²⁵ To conduct its new power plant activities, JPMorgan retained the head of Bear Energy and many of its employees in a new JPMorgan “Houston Energy” office.²¹²⁶

2010 Huntington Acquisitions. Almost two years later, JPMorgan acquired short-term tolling agreements on the electricity output of two more Southern California power plants, Huntington Beach 3 and 4.²¹²⁷ JPMorgan entered into the new tolling agreements with AES Corporation, the owner of the plants.²¹²⁸ JPMorgan told the

²¹²⁰ “JP Morgan’s integration of Bear Energy,” Risk.net (1/13/2009), <http://www.risk.net/energy-risk/feature/1523435/jp-morgan-integration-bear-energy>.

²¹²¹ See, e.g., 12/30/2009 “Notice to the Board of Governors of the Federal Reserve System by JPMorgan Chase & Co. Pursuant to Section 4(k)(1)(B) of the Bank Holding Company Act of 1956,” (hereinafter “JPM Notice Requesting Tolling Agreements”), prepared by JPMorgan, PSI-FederalReserve-02-000012 - 033, at 014, footnote 2.

²¹²² JPMorgan Power Plants Chart, JPM-COMM-PSI-000022 - 025.

²¹²³ Id. at 025; Subcommittee briefing by JPMorgan (10/10/2014). The lease expired in June 2010, and JPMorgan terminated its relationship with the power plant at that time.

²¹²⁴ See JPMorgan Power Plants Chart, at JPM-COMM-PSI-000022 - 025; 10/2009 “Global Commodities Deep Dive Risk Review,” prepared by JPMorgan, FRB-PSI-200634 - 655, at 644 (identifying Central Power as a 100% owned equity asset in a list of assets in the “Global Commodities Principal Investments Portfolio”); Subcommittee briefing by JPMorgan (10/10/2014).

²¹²⁵ See 10/21/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-15-000001 -008, at 002.

²¹²⁶ See, e.g., 7/17/2008 “Quarterly review of risk, performance and significant developments,” prepared by OCC regarding JPMorgan, FRB-PSI-303773 - 780, at 777.

²¹²⁷ JPMorgan Power Plants Chart, at JPM-COMM-PSI-000022 - 025; In Re Make-Whole Payments and Related Bidding Strategies, Docket Nos. IN11-8-000 and IN13-5-000, FERC “Order Approving Stipulation and Consent Agreement (7/30/2013), at 4, ¶ 19, and “Stipulation and Consent Agreement” (7/30/2014) at 3, ¶ 8, 144 FERC ¶ 61,068; Subcommittee briefing by JPMorgan (4/23/2014).

²¹²⁸ Subcommittee briefing by JPMorgan legal counsel (10/29/2014).

Subcommittee that it entered into the tolling agreements, in part, because it had already acquired tolling agreements with the two sister power plants on the same site, Huntington Beach 1 and 2, through the 2008 Bear Stearns acquisition.²¹²⁹ JPMorgan stipulated in legal pleadings with FERC that it entered into the tolling agreements for the two plants “to develop experience with the California market before the AES 4000 plants [the California power plants JPMorgan had previously acquired from Bear Stearns] began returning to JPMVEC’s control in January 2011.”²¹³⁰ JPMVEC assumed control of the Huntington Beach 3 and 4 tolling agreements in January 2010. Those tolling agreements increased JPMorgan’s portfolio to 29 power plants.

2010 RBS/Sempra Acquisition. Six months later, in July 2010, JPMorgan expanded its power plant activities yet again when it purchased energy-related commodity assets from RBS Sempra, a joint venture between the Royal Bank of Scotland Group (RBS) and Sempra Energy, for \$1.7 billion.²¹³¹ Along with other assets, it acquired two more power plants, one in Washington state and one in Maryland.²¹³² Both were fueled with natural gas.²¹³³ JPMVEC assumed a tolling agreement with the plant in Washington.²¹³⁴ In contrast, through its Global Commodities Group Principal Investments unit, JPMorgan took direct ownership of the Panda Brandywine plant in Maryland, acquiring a 100% ownership stake. JPMorgan held ownership through its subsidiary, JPMVEC.²¹³⁵ JPMorgan then leased the plant back to the owners who agreed to run it, and entered into a tolling agreement to acquire 100% of the plant’s electricity output.²¹³⁶ This complex arrangement raised a number of issues over time.

Two months later, in September 2010, separate from the RBS Sempra transaction, JPMorgan acquired 100% of the shares of the Kinder Jackson power plant in Jackson, Michigan, becoming a direct owner of the plant.²¹³⁷ JPMorgan already had a tolling agreement with the plant, which it acquired in 2008, as part of the Bear Stearns acquisition. In 2010, when the plant was put up for sale, JPMorgan’s Global Commodities Group Principal Investments unit arranged for the outright purchase of the power plant from Kinder Morgan Power

²¹²⁹ Subcommittee briefing by JPMorgan (4/23/2014). See also JPMorgan Power Plants Chart, at JPM-COMM-PSI-000022 - 025.

²¹³⁰ *In Re Make-Whole Payments and Related Bidding Strategies*, Docket Nos. IN11-8-000 and IN13-5-000, “Stipulation and Consent Agreement” (7/30/2013), at 3, ¶8, 144 FERC ¶ 61,068.

²¹³¹ Subcommittee briefing by JPMorgan (2/11/2014).

²¹³² JPMorgan Power Plants Chart, JPM-COMM-PSI-000022 - 025, at 025; Subcommittee briefing by JPMorgan (4/23/2014).

²¹³³ Subcommittee briefing by JPMorgan (10/10/2014).

²¹³⁴ JPMorgan Power Plants Chart, at JPM-COMM-PSI-000022 - 025.

²¹³⁵ See 10/21/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-15-000001 -008, at 002.

²¹³⁶ Subcommittee briefing by JPMorgan (10/10/2014).

²¹³⁷ JPMorgan Power Plants Chart, at JPM-COMM-PSI-000022 - 025.

Company and others for about \$143 million.²¹³⁸ Ownership of the plant was held through a subsidiary of JPMVEC.²¹³⁹

Generally, when JPMorgan entered into a tolling agreement with a power plant, it promised, not just to buy the electricity produced, but also to supply natural gas to the plant for the duration of the tolling agreement.²¹⁴⁰ In addition, JPMorgan entered into specific long-term fuel supply agreements with three power plants acquired from Bear Stearns.²¹⁴¹

Inadequate Oversight. About a year after JPMorgan assumed control of the Houston office that formerly belonged to Bear Energy and which JPMorgan was using to oversee its power plant assets, the Federal Reserve conducted an examination to “gain a better understanding of the firm’s physical energy trading activities and the processes in place to control and manage risks.”²¹⁴² The examination tested, in part, whether JPMorgan had adequately extended its “corporate compliance program” to include the new Houston office.²¹⁴³ The Federal Reserve concluded it had not.²¹⁴⁴ A 2010 internal Federal Reserve examination document also noted that JPMorgan’s own internal audit team had found that JPMVEC did not have the technical capability to evaluate its power plants’ compliance with “technical, operational and engineering suitability standards”:

“For power plants in which JPMVEC has an equity interests, internal audit indicated that it does not have the technical, operations or engineering capability to review the compliance programs of such power plants.”²¹⁴⁵

In response to the Federal Reserve’s supervisory letter raising the issue, JPMorgan formulated a plan to strengthen its compliance oversight of the Houston office and its supervision of JPMVEC’s power plants.²¹⁴⁶

²¹³⁸ See 8/13/2010 memorandum, “KJ Toll Disposition Plan,” prepared by JPMorgan Commodity Principal Investment Team for the Commodities Principal Investment Committee, FRB-PSI-300066 - 093, at 066.

²¹³⁹ See 10/21/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-15-000001 -008, at 002.

²¹⁴⁰ *Id.*

²¹⁴¹ *Id.*

²¹⁴² 1/5/2010 report, “Combined Scope/Product Memo[:] JPMC Energy Ventures Corporation Corporate Compliance,” prepared by the Federal Reserve Bank of New York, FRB-PSI-300210 - 220, at 212 [sealed exhibit].

²¹⁴³ *Id.*

²¹⁴⁴ See 1/28/2010 supervisory letter from Federal Reserve Bank of New York to JPMorgan, FRB-PSI-300332 - 334 [sealed exhibit].

²¹⁴⁵ 1/5/2010 report, “Combined Scope/Product Memo[:] JPMC Energy Ventures Corporation Corporate Compliance,” prepared by the Federal Reserve Bank of New York, FRB-PSI-300210 - 220, at 217 [sealed exhibit].

²¹⁴⁶ 3/15/2010 letter from JPMorgan to Federal Reserve Bank of New York, “JPMorgan Chase & Co. Houston Energy,” FRB-PSI-301163 - 168.

734

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31 Power Plants. The following chart summarizes JPMorgan's two-year acquisition effort which, by 2010, produced its portfolio of 31 power plants.

Power Plants Owned or Controlled Via Tolling Agreements by JPMorgan Since 2008

Power Plant	Location	MW Capacity	Fuel	Date JPM Assumed Control	JPM Entity	Owned or Trolled by JPM	Percentage of JPM ownership	Current Status
OLS Camarillo	Camarillo, California	29	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Owned	30%	Sold
OLS Chino	Chino, California	29	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Owned	30%	Sold
Carson Cogeneration	Carson, California	49	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Owned	33%	Sold
Grays Harbor	Satsop, Washington	480 (Summer) 520 (Winter)	Gas	12/1/2010 (RBS/Sempra Acquisition)	JPMVEC	Tolled	N/A	Terminated
Greeley Cogen	Greeley, Colorado	32	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Owned	100%	Sold
Thermo Cogen	Ft. Lupton, Colorado	272	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Owned	100%	Sold
Brush Cogeneration	Brush, Colorado	70	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Owned	50%	Sold
Gregory Power Partners	Gregory, Texas	345	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Owned	14%	Sold
Evangeline (Cleco)	Evangeline, Louisiana	758	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Tolled	N/A	Terminated
Ironwood	South Lebanon, Pennsylvania	664	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Tolled	N/A	Sold
Red Oak	Sayreville, New Jersey	764	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Tolled	N/A	Sold
Rumford Cogen	Rumford, Maine	85	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Owned	1%	Sold
Mojave Cogeneration	Boron, California	55	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Leased	100%	Lease Not Renewed
Alamitos 1	Long Beach, California	184	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Tolled	N/A	Tolling Agreement until end of 2018
Alamitos 2	Long Beach, California	184	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Tolled	N/A	Tolling Agreement until end of 2018

Alamitos 3	Long Beach, California	336	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Tolled	N/A	Tolling Agreement until end of 2018
Alamitos 4	Long Beach, California	336	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Tolled	N/A	Tolling Agreement until end of 2018
Alamitos 5	Long Beach, California	504	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Tolled	N/A	Tolling Agreement until end of 2018
Alamitos 6	Long Beach, California	504	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Tolled	N/A	Tolling Agreement until end of 2018
Huntington Beach 1	Huntington Beach, California	225.8	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Tolled	N/A	Tolling Agreement until end of 2018
Huntington Beach 2	Huntington Beach, California	225.8	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Tolled	N/A	Tolling Agreement until end of 2018
Huntington Beach 3	Huntington Beach, California	225	Gas	1/1/2010 (AES Contract)	JPMVEC	Tolled	N/A	Taken Offline
Huntington Beach 4	Huntington Beach, California	227	Gas	1/1/2010 (AES Contract)	JPMVEC	Tolled	N/A	Taken Offline
Redondo Beach 5	Redondo Beach, California	183.8	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Tolled	N/A	Tolling Agreement until end of 2018
Redondo Beach 6	Redondo Beach, California	183.8	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Tolled	N/A	Tolling Agreement until end of 2018
Redondo Beach 7	Redondo Beach, California	504	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Tolled	N/A	Tolling Agreement until end of 2018
Redondo Beach 8	Redondo Beach, California	504	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Tolled	N/A	Tolling Agreement until end of 2018
Lindsay Hill (Tennaska)	Billingsley, Alabama	844	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Tolled	N/A	Sold to Mercuria
Kinder Jackson	Jackson, Michigan	545	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Owned	100%	Expected sale in 2016
Central Power & Lime	Brooksville, Florida	60	Biomass	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Owned	100%	Operated by Florida Power & Development JPM energy mgmt contract; 3d party operator
Panda Brandywine	Brandywine, Maryland	230	Gas Oil	12/1/201 (RBS/Sempra Acquisition)	JPMVEC	Owned	100%	

Source: JPMorgan Power Plants Chart, JPM-COMM-PSI-000022-025

(b) Requesting Broad Authority for Power Plant Activities

JPMorgan got into the power plant business as a result of the larger Bear Stearns acquisition during the financial crisis. At that time, JPMorgan did not have authority to conduct power plant activities, but the Federal Reserve Bank of New York gave JPMorgan a two-year grace period to decide how to handle the Bear Stearns assets. A little over a year after it acquired the power plants, JPMorgan asked the Federal Reserve for broad complementary authority to own and manage them. While the Federal Reserve agreed to provide JPMorgan with complementary authority to enter into tolling agreements, energy management, and long-term supply contracts with the power plants, the Federal Reserve declined to allow JPMorgan simply to buy power plants outright or engage in so-called “financial restructuring” of power plants it owned. JPMorgan responded in part by asserting that it would nevertheless retain direct ownership of three power plants by treating them as merchant banking investments. After the Federal Reserve expressed increasing concern about its power plant activities and JPMorgan entered into multiple regulatory disputes over how it was conducting those activities, JPMorgan decided to exit the business over the next four years.

Two-Year Grace Period. Prior to acquiring the Bear Energy power plants in 2008, JPMorgan had never engaged in power plant activities, and never sought complementary authority to enter into a tolling agreement or other contract with a power plant. JPMorgan’s 2005 complementary order did not explicitly address either power plants or electricity. As part of the Bear Stearns transaction, the Federal Reserve Bank of New York gave JPMorgan a letter stating that “any assets or activities acquired from Bear Stearns that JPMorgan is not currently permitted to own or engage in shall be treated as permissible assets or activities for a period of two years.”²¹⁴⁷ That two-year grace period applied to the 27 power plants acquired from Bear Stearns, deeming them “permissible” assets. JPMorgan conducted power plant activities involving the Bear Stearns power plants throughout the two-year grace period, which extended from March 2008 to March 2010, while it sought an official grant of complementary authority to cover its power plant assets.

About two weeks after the Bear Stearns transaction in March 2008, the Federal Reserve issued the Royal Bank of Scotland (RBS) a complementary order that provided broader authority for physical commodity activities than prior complementary orders and, for the first

²¹⁴⁷ 3/16/2008 letter from FRBNY to JPMorgan, PSI-FRB-19-000001 - 003 at 002. See also 10/21/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-15-000001 - 008, at 003. During that two-year grace period, JPMorgan sometimes referred to the power plants and related activities as “grandfathered activities,” but that was a reference to their being allowed under the grace period; the assets were never held under the Gramm-Leach-Bliley grandfather clause since JPMorgan was ineligible to rely on that statutory authority for its physical commodity activities.

time, explicitly authorized activities involving power plants and electricity.²¹⁴⁸ Specifically, the RBS order allowed RBS to enter into tolling agreements with power plant owners, energy management contracts with power generation facilities, and long-term electricity supply contracts with large industrial and commercial customers.²¹⁴⁹

Request for Tolling and Energy Management Authority. On December 30, 2009, JPMorgan submitted two separate applications to the Federal Reserve to expand its 2005 complementary authority to match the authority provided to RBS for power plants and electricity.

The first application requested complementary authority to enter into tolling agreements with power plant owners.²¹⁵⁰ In its application, JPMorgan provided the following expansive definition of the authority it was seeking, explaining that tolling agreements:

“may involve, among other things, purchasing fuel used to produce electricity, entering into agreements for the transportation of fuel, entering into options to purchase electricity, taking title to electricity and entering into agreements for the transmission and sale of electricity.”²¹⁵¹

JPMorgan wrote that one reason the Federal Reserve should grant the authority was that it would provide JPMorgan with access to “important market information”:

“The Complementary Activities will further complement the Existing Business by providing JPMVEC [JPMorgan’s subsidiary] with important market information. The ability to be involved in the supply end of the commodities markets through tolling agreements provides access to information regarding the full array of actual producer and end-user activity in those markets. The information gathered through this increased participation will help improve JPMVEC’s understanding of market conditions and trends while supplying vital price and risk management information that JPMVEC can use to improve its financial commodities derivative offerings. ...

²¹⁴⁸ See RBS Order, at 94 Fed. Res. Bull. C60. The order applied to both the Royal Bank of Scotland and a joint venture called RBS Semptra Commodities that the Royal Bank of Scotland had formed with Semptra Energy, a U.S. energy company.

²¹⁴⁹ *Id.*

²¹⁵⁰ JPM Notice Requesting Tolling Agreements, PSI-FederalReserve-02-000012 - 059. See also *In Re Make-Whole Payments and Related Bidding Strategies*, FERC Docket Nos. IN11-8-000 and IN13-5-000, FERC “Order Approving Stipulation and Consent Agreement (7/30/2013), 144 FERC ¶ 61,068, (hereinafter “Order Approving Stipulation and Consent Agreement”) at 2, <http://www.ferc.gov/EventCalendar/Files/20130730080931-IN11-8-000.pdf>.

²¹⁵¹ JPM Notice Requesting Tolling Agreements, at 013.

[B]y participating in the widest possible variety of commodities markets and transactions, JPMVEC will gain access to price and related market information and acquire more experience in the markets for physical commodities that it can use to better serve its customers and manage its own risks, which will lead to increased revenues and lower costs, all of which will improve JPMVEC's and JPM Chase's profits and enhance their soundness."²¹⁵²

JPMorgan offered to accept the same limitations on the new authority as appeared in the RBS order. The key limitation was that JPMorgan would continue to limit the aggregate market value of all of its physical commodities resulting from physical commodity trading to no more than 5% of its Tier 1 capital, and that when calculating that aggregate value, it would include the present value of all capacity payments made in connection with any energy tolling agreement.²¹⁵³

The second application requested complementary authority to enter into "energy management" agreements with power generators.²¹⁵⁴ In its application, JPMorgan provided a broader definition of energy management contracts than appeared in the RBS order.²¹⁵⁵ JPMorgan wrote:

"Under an EMA [energy management agreement], energy traders, schedulers, and related support personnel provide asset optimization services and accounting services to a power plant owner. The energy trader will provide market information and recommend hedging strategies, including capacity and transmission management services and advice regarding switching between fuel inputs. Energy traders and schedulers assist the plant owner with the acquisition and delivery of fuel inputs to the plant. In addition, the energy trader will provide interface services for the power plant owners with independent system operators ('ISOs')/regional transmission organizations ('RTOs') and will schedule plant output to ISOs/RTOs and other power purchasers based on energy prices in the open market. ... An energy trader may also provide credit intermediation services to the power plant owner with respect to the owner's counterparties. For example, in connection with such credit services, the energy trader might post

²¹⁵² Id. at 019 - 020, 032.

²¹⁵³ Id. at 032 - 033.

²¹⁵⁴ 12/30/2009 "Notice to the Board of Governors of the Federal Reserve System by JPMorgan Chase & Co. Pursuant to Section 4(k)(1)(B) of the Bank Holding Company Act of 1956," prepared by JPMorgan, PSI-FederalReserve-01-000561 - 567.

²¹⁵⁵ The RBS order described the approved energy management contracts as follows:

"[T]he energy manager provides transactional and advisory services to power plant owners. The transactional services consist of SET [Semptra Energy Trading Corporation] acting as a financial intermediary, substituting its credit and liquidity for those of the owner to facilitate the owner's purchase of fuel and sale of power. SET's advisory services include providing market information to assist the owner in developing and refining a risk-management plan for the plant. SET also provides a variety of administrative services to support these transactions."

RBS Order, at 94 Fed. Res. Bull. C65.

collateral to an ISO or RTO on behalf of a plant owner as part of a credit arrangement to ensure delivery The energy trader, in turn, will collect money from the ISO or RTO and those funds will be available to the energy trader as a part of the plant owner's collateral arrangement with the energy trader."²¹⁵⁶

JPMorgan offered to accept several limitations on the new energy management authority, modeled after the RBS order. The first was to ensure that "revenues attributable to JPMVEC's Energy Management Services will not exceed 5 percent of JPM Chase's total consolidated operating revenues."²¹⁵⁷ That 5% limit is substantially higher than the cap normally included in complementary orders limiting the market value of physical commodity holdings to no more than 5% of Tier 1 capital, but it was the same limit as provided to RBS.

Request for One-Year Extension. About a month later, on February 5, 2010, in the absence of a Federal Reserve ruling on its December 2009 applications, JPMorgan sent a letter to the Federal Reserve asking for a one-year extension of the Bear Stearns grace period so that it could continue to engage in "energy tolling, energy management and the purchase and financial restructuring of power plants," that would otherwise be impermissible activities.²¹⁵⁸ The request, which was eventually granted, enabled JPMorgan to continue its power plant activities until March 2011. In the meantime, it acquired additional power plant assets in January and July 2010, as described above.

Request for Abrogation of Volume Limits. In addition to requesting a one-year extension of the grace period, the February 2010 letter made several other requests to expand JPMorgan's power plant activities as well as its other physical commodity activities as a whole. First, the letter asked the Federal Reserve essentially to eliminate any limit on JPMorgan's complementary physical commodity activities, including the cap linked to 5% of its Tier 1 capital.²¹⁵⁹ The letter asserted that the 5% cap might "curtail not only its tolling activities but also its other physical trading activities going forward," putting JPMorgan at a competitive disadvantage.²¹⁶⁰ The letter also objected to the much higher limit on its energy management services of 5% of its total consolidated operating revenues, contending "such limitations are not necessary from a safety and soundness perspective since the main components of this activity involve activities similar to those already conducted by JPMC."²¹⁶¹ The letter

²¹⁵⁶ 12/30/2009 "Notice to the Board of Governors of the Federal Reserve System by JPMorgan Chase & Co. Pursuant to Section 4(k)(1)(B) of the Bank Holding Company Act of 1956," (hereinafter "JPM Notice to Provide Energy Management"), prepared by JPMorgan, PSI-FederalReserve-01-000561 - 567, at 564 - 565.

²¹⁵⁷ *Id.* at 566.

²¹⁵⁸ 2/5/2010 letter from JPMorgan to the Federal Reserve, FRB-PSI-300286 - 290, at 286.

²¹⁵⁹ *Id.* at 287.

²¹⁶⁰ *Id.*

²¹⁶¹ *Id.*

proposed allowing its physical commodity activities to proceed without any volume limit, “pursuant to robust risk management processes subject to regulatory examination.”²¹⁶²

Request for Restructuring Authority. In addition to requesting elimination of all volume limits, the February 5 letter asked the Federal Reserve to allow it to continue to engage in another power plant activity which it called “financial restructuring.”²¹⁶³ The letter described the activity as “purchasing equity interests in power plants and subsequently restructuring and renegotiating the power plant’s commodity purchase agreements and energy sale agreements with a view to making the plant more efficient.”²¹⁶⁴ The letter explained that the new activity was “a natural outgrowth of the energy management activities” and used the same expertise to restructure “the input and output contracts entered into by power plants.”²¹⁶⁵ JPMorgan wrote:

“[T]his activity involves investing for a financial return in a way that allows JPMC to gain valuable insight into the power market which can enhance JPMC’s overall commodities business. ... JPMC conducts this activity as a component of its overall commodities trading and client business. JPMC’s goal is to augment its financial trading and not run the operation of the plant as a commercial venture in a vacuum. As such, JPMC views this activity as complementary to JPMC’s core commodities business.”²¹⁶⁶

The letter also indicated that JPMorgan might need to take ownership of power plants while the restructuring was going on, with a view toward selling the plants one to two years later. It explained that “[s]ubjecting this activity to merchant banking restrictions may not be feasible unless broad authority to renegotiate and act as counterparty to contracts with the plant is determined not to constitute day to day management of the plant.”²¹⁶⁷

In response to the letter, the Federal Reserve granted the one-year extension, allowing JPMorgan to continue to treat its power plant activities as permissible activities, including restructuring activities, until March 16, 2011, while it considered the other requests for expanded authority to conduct power plant and other physical commodity activities.²¹⁶⁸

New Complementary Authority. On June 30, 2010, 18 months after JPMorgan submitted its applications and more than two years after it initiated its power plant activities, the Federal Reserve granted some, but

²¹⁶² Id.

²¹⁶³ Id. at 288 - 289.

²¹⁶⁴ Id. at 288.

²¹⁶⁵ Id.

²¹⁶⁶ Id.

²¹⁶⁷ Id. at 289.

²¹⁶⁸ See 3/3/2011 “Outstanding Issues,” prepared by Federal Reserve examiners, FRB-PSI-304601 - 604, at 602 [sealed exhibit]; Subcommittee briefing by JPMorgan (4/23/2014).

not all, of the new authority JPMorgan had sought.²¹⁶⁹ By letter, the Federal Reserve authorized JPMorgan to enter into tolling agreements and energy management contracts with power plant owners.²¹⁷⁰ The letter also “confirmed” JPMorgan’s complementary authority to enter into long-term electricity supply contracts, but “only with large commercial and industrial end-users.”²¹⁷¹ The Federal Reserve letter reasoned that the restriction to large customers would ensure JPMorgan transacted with financially sophisticated purchasers and remained a wholesale intermediary.²¹⁷² The letter also imposed a number of restrictions on the authorities it granted to ensure JPMorgan conducted its power plant activities in a safe and sound manner. The restrictions included limiting its tolling payments to not more than 5% of JPMorgan’s Tier 1 capital, and limiting its energy management contract revenues to not more than 5% of JPMorgan’s total consolidated operating revenues.²¹⁷³

By allowing JPMorgan to hold tolling agreements, energy management contracts, and long term supply contracts with the power plants acquired from Bear Energy, the June 30 letter made the vast majority of its power plant activities permissible. In the case of three power plants that JPMorgan owned outright, however, the Central Power & Lime plant in Florida, Panda Brandywine plant in Maryland, and Kinder Jackson plant in Michigan, the new complementary order did not authorize their direct ownership as either a financial or complementary activity. In addition, the Federal Reserve did not provide any restructuring authority, because according to the Federal Reserve, JPMorgan never submitted a formal application requesting it.²¹⁷⁴ According to JPMorgan, the Federal Reserve did not want JPMorgan managing power plants, which the restructuring authority would have necessitated, so it dropped the effort.²¹⁷⁵

Switch to Merchant Banking Authority. On February 23, 2011, JPMorgan notified the Federal Reserve that, rather than rely on complementary authority for the three power plants it owned outright, JPMorgan intended to assert merchant banking authority to continue owning them.²¹⁷⁶ A March 2011 internal Federal Reserve examination

²¹⁶⁹ 6/30/2010 letter from the Federal Reserve to JPMorgan, FRB-PSI-302571 - 580.

²¹⁷⁰ *Id.*

²¹⁷¹ *Id.* at 575. The Federal Reserve told the Subcommittee that JPMorgan did not formally request authority to enter into long-term electricity supply contracts, because it viewed its 2005 complementary order as already providing it; the Federal Reserve explained that the June 30 letter clarified that JPMorgan did have that authority. Subcommittee briefing by the Federal Reserve (10/16/2014).

²¹⁷² 6/30/2010 letter from the Federal Reserve to JPMorgan, at FRB-PSI-302571- 580, at 574 - 575.

²¹⁷³ *Id.* at 573.

²¹⁷⁴ 11/17/2014 email from Federal Reserve to Subcommittee, PSI-FRB-21-000001 - 002.

²¹⁷⁵ Subcommittee briefing by JPMorgan (4/23/2014).

²¹⁷⁶ See 3/3/2011 “Outstanding Issues,” prepared by Federal Reserve examiners, FRB-PSI-304601 - 604 [sealed exhibit]. See also undated document, prepared by JPMorgan for the Federal Reserve, FRB-PSI-300352 - 353 (describing how JPMorgan planned to move from engaging in plant restructuring to merchant banking with respect to the affected power plants); Subcommittee briefing by JPMorgan (4/23/14).

document stated that JPMorgan had taken the new stance, “because they believe [the Federal Reserve Board of Governors] staff is not inclined to consider financial restructuring of power plants to be a complementary activity.”²¹⁷⁷ This document suggests that JPMorgan’s assertion of merchant banking authority was a direct response to, as well as an effort to circumvent, the Federal Reserve’s decision not to permit direct ownership of power plants as a complementary activity. JPMorgan told the Subcommittee that its assertion of merchant banking authority was permissible, because it was not running any of the three power plants directly, but was relying on third parties to operate them.²¹⁷⁸

After noting JPMorgan’s revised justification for its ongoing direct ownership of the power plants, the 2011 Federal Reserve examination document noted that JPMorgan had indicated that it intended to divest itself of all three power plants.²¹⁷⁹ As of 2014, however, more than three years after making that representation to the Federal Reserve, JPMorgan still retains possession of all three.

Of those three plants, JPMorgan acquired its ownership interest in the Central Power & Lime plant in Florida in 2008, as part of the Bear Energy acquisition.²¹⁸⁰ In the case of the Panda Brandywine plant in Maryland, JPMorgan acquired its shares as part of the RBS Sempra acquisition in July 2010, leased the plant back to the same owners to run, and then entered into a tolling agreement with the leaseholders.²¹⁸¹ With respect to the Kinder Jackson plant in Michigan, JPMorgan originally held a tolling agreement with the plant, but when it became available for sale in September 2010, JPMorgan purchased it outright from the owners.²¹⁸² JPMorgan took each of these actions without having authority to take direct ownership of a commercial enterprise like a power plant; it bought the latter two plants while awaiting a response to its request for appropriate complementary authority. Its ownership of the three power plants has now extended from four to six years.

A Federal Reserve examination document expressed frustration with JPMorgan’s stance. It stated: “JPM has pressed on the boundaries of permissible activities including integrating merchant banking investments into trading activities and pursuing activity that may appear ‘commercial in

²¹⁷⁷ 3/3/2011 “Outstanding Issues,” prepared by Federal Reserve examiners, FRB-PSI-304601 - 604, at 602 [sealed exhibit].

²¹⁷⁸ Subcommittee briefings by JPMorgan (4/23/2014 and 10/10/2014).

²¹⁷⁹ 3/3/2011 “Outstanding Issues,” prepared by Federal Reserve examiners, FRB-PSI-304601 - 604, at 602 [sealed exhibit]; Subcommittee briefing by JPMorgan (10/10/2014).

²¹⁸⁰ JPMorgan Power Plant Chart, JPM-COMM-PSI-000022 - 025.

²¹⁸¹ Id.

²¹⁸² 8/13/2010 memorandum, “KJ Toll Disposition Plan,” prepared by JPMorgan Commodity Principal Investment Team for the JPMorgan Commodities Principal Investment Committee, FRB-PSI-300066 - 093.

nature,’ as well as pushed regulatory limits and their interpretation.”²¹⁸³
 With respect to JPMorgan’s power plant activities, it stated:

“JPMC holds power plants (Panda Brandywine and Kinder Morgan/Jackson) under a combination of authorities. FRB has previously indicated to the firm this is impermissible and is [in] discussion with the firm about conforming or divesting of these activities.”²¹⁸⁴

JPMorgan told the Subcommittee, and the Federal Reserve confirmed, that the Federal Reserve has never explicitly determined that JPMorgan lacked merchant banking authority to own the three power plants.²¹⁸⁵ JPMorgan explained that, prior to the Federal Reserve making that determination, JPMorgan informed the Federal Reserve that it was planning on selling all of its power plant holdings, which rendered the issue moot. As of October 2014, JPMorgan still has not completely divested itself of its ownership interests in the three power plants.

(c) Conducting Power Plant Activities

For six years, from 2008 to 2014, JPMorgan owned or controlled between 15 and 31 power plants across the country. In most cases, it held a long-term tolling agreement with the power plants. To carry out those tolling agreements, in most cases JPMorgan supplied the natural gas that fueled the plants and then took control of the plants’ electricity output and sold it. JPMorgan used its wholly owned subsidiary, JPMorgan Ventures Energy Corporation (JPMVEC), to execute the vast majority of its electricity and natural gas trades supporting its power plant activities.²¹⁸⁶

A large block of JPMorgan’s power plants, 18 in all, were located in California. JPMorgan has sold some of those plants and currently holds a tolling agreement for 12, all of which are owned by AES Corporation (AES). The tolling agreement between JPMorgan and AES runs through 2018 at which time it will terminate.²¹⁸⁷ JPMorgan told the Subcommittee that it has re-tolled all 12 power plants to Southern California Edison,²¹⁸⁸ and has asked the plant owner, AES, to release it

²¹⁸³ Undated but likely in the second half of 2013 examination document, “Commodities Focused Regulatory Work at JPM,” prepared by the Federal Reserve, FRB-PSI-300299 - 302, at 299 [sealed exhibit].

²¹⁸⁴ Id. at 301.

²¹⁸⁵ Subcommittee briefing by JPMorgan (4/23/2014); email from the Federal Reserve to the Subcommittee (11/6/2014).

²¹⁸⁶ See, e.g., JPM Notice Requesting Tolling Agreements, PSI-FederalReserve-02-000012 - 059, at 014, 018-019, 026.

²¹⁸⁷ Subcommittee briefing by JPMorgan (10/10/2014).

²¹⁸⁸ Id. See also 2/15/2013 Advice Letter No. 2853-E (U 338-E), filed by Southern California Edison with the Public Utilities Commission of the State of California, Energy Division, “Bilateral Capacity Sale and Tolling Agreement Between Southern California Edison Company and BE CA LLC” (seeking Commission approval of JPMorgan’s re-tolling agreements with Southern California Edison).

from the tolling agreement, but AES has declined, preferring to rely on JPMorgan's creditworthiness to ensure the tolling payments are made.²¹⁸⁹ For that reason, JPMorgan told the Subcommittee that it expects the tolling agreement to continue for the next four years until the termination date in 2018.²¹⁹⁰

Regulatory Disputes. During the six years it has had control of the California power plants, JPMorgan has entered into multiple regulatory disputes with the California Independent System Operation Corporation (CAISO), California Public Utilities Commission (CPUC), and Federal Energy Regulatory Commission (FERC) over its power plant activities.

In one set of disputes, it battled state and federal regulators over the regulators' assertion that JPMorgan had made inaccurate statements and failed to provide requested information in an investigation into the pricing practices at some of its California plants during 2010 and 2011.²¹⁹¹ To punish and deter that misconduct, FERC suspended for six months, from April to October 2013, JPMorgan's ability to sell electricity at market rates in California and elsewhere in the United States, costing it potentially millions of dollars.²¹⁹² In a related regulatory dispute, described more fully below, in July 2013, JPMorgan paid \$410 million to settle charges by FERC that some of its plants used improper bidding tactics that manipulated California and the Midwest's wholesale electricity markets.²¹⁹³ JPMorgan's improper bidding tactics also caused CAISO and CPUC to make numerous rule and tariff changes to prevent similar practices in the future.

A third dispute involved an effort by CAISO to modify two power plants near Los Angeles, Huntington Beach 3 and 4, to increase electrical grid reliability.²¹⁹⁴ CAISO had entered into a contract with the owner of the plants, AES, to convert both plants into "synchronous condensers" that provide voltage support to move electricity through the grid and increase grid reliability.²¹⁹⁵ That contract was to take effect in January 2013, but

²¹⁸⁹ Subcommittee briefing by JPMorgan (10/10/2014).

²¹⁹⁰ *Id.*

²¹⁹¹ See, e.g., FERC v. J.P. Morgan Ventures Energy Corporation, Civil Case No. 1:2012-MC-00352-DAR (USDC DC), "Memorandum in Support for Petition by [FERC] for an Order to Show Cause Why this Court Should Not Enforce Subpoenas for Production of Documents" (7/2/2012).

²¹⁹² See In re J.P. Morgan Ventures Energy Corporation, FERC Docket No. EL12-103-000, "Order Suspending Market-Based Rate Authority," (11/14/2012), 141 FERC ¶ 61,131. See also "JPMorgan's California energy dealings draw more fire," Los Angeles Times, Marc Lifsher (11/16/2012), <http://articles.latimes.com/2012/nov/16/business/la-fi-jpmorganchase-power-20121116>.

²¹⁹³ See Order Approving Stipulation and Consent Agreement; "JP Morgan to pay \$410m in penalties for manipulating electricity prices," Associated Press (7/30/2013), <http://www.theguardian.com/business/2013/jul/30/jpmorgan-ferc-penalty-energy-prices>.

²¹⁹⁴ See In re California Independent System Operator Corporation, FERC Docket No. EL13-21-000, FERC "Order on Petition for Declaratory Order" (1/4/2013), 142 FERC ¶ 61,016. See also "JPMorgan reduces presence in California power market, Reuters, Scott DiSavino (5/10/2013), http://articles.chicagotribune.com/2013-05-10/news/sns-rt-utilities-jpmorganedisoninternational-update-20130510_1_aes-corp-southern-california-edison-ferc.

²¹⁹⁵ See In re California Independent System Operator Corporation, FERC Docket No. EL13-21-000, FERC "Order on Petition for Declaratory Order" (1/4/2013), 142 FERC ¶ 61,016, at 1-3.

JPMorgan claimed that, due to certain tolling and supplemental agreements it had with AES, CAISO had to obtain JPMorgan's consent to the plant modifications, which it declined to provide, even though both plants had been taken out of service.²¹⁹⁶ JPMorgan cited construction costs, harm to the economic value of its power plant investments, alternative solutions, and the unlikelihood of grid problems as reasons for not proceeding.²¹⁹⁷ CAISO eventually brought the dispute to FERC, which ruled that JPMorgan could not use its tolling agreement with AES to continue to block the proposed modifications to improve grid reliability.²¹⁹⁸

In each of those three regulatory disputes, JPMorgan incurred substantial legal expense as well as ill will from regulators, utilities, wholesalers, and the California public.²¹⁹⁹

Current Status. In addition to the 12 California power plants with which it has tolling agreements and re-tolled to Southern California Edison, JPMorgan still owns power plants in Michigan, Maryland, and Florida. JPMorgan told the Subcommittee that it has arranged for the sale of the Kinder Jackson plant in Michigan, but the transaction cannot take place for another year, until early 2016.²²⁰⁰ JPMorgan indicated that the second plant, located in Florida, was converted by JPMorgan from a coal-fired plant to a biomass facility, is being run by an unrelated third party, and has been up for sale, but not yet sold. According to JPMorgan, the third plant, Panda Brandywine, located in Maryland, is run by a JPMorgan subsidiary, KMC Thermo, and is also up for sale.²²⁰¹

JPMorgan told the Subcommittee that it intends to exit the power plant business.²²⁰² Despite that intent, JPMorgan expects to continue in the tolling agreement for the 12 California power plants for the next four years, plants to hold the Michigan plant for another year, and is uncertain when it will be able to sell the Florida and Maryland plants.

(3) Issues Raised by JPMorgan's Involvement with Electricity

JPMorgan's power plant activities raise multiple concerns. First and foremost are concerns that JPMorgan used some of its power plants to engage in a manipulative scheme to receive excessive payments for electricity from Independent Systems Operators in California and Michigan.

²¹⁹⁶ Id. at 3-4.

²¹⁹⁷ Id. at 10, 12.

²¹⁹⁸ Id. at 20. JPMorgan appealed FERC's decision, but later re-tolled its California power plants to Southern California Edison, including its consent rights for the Huntington Beach power plants. It then dropped the litigation.

²¹⁹⁹ See, e.g., "State's power-plant fight with JPMorgan Chase is a legacy of deregulation mess,"

Sacramento Bee, Dale Kasler (12/10/2012),

<http://www.melatchydc.com/2012/12/10/176938/californias-power-plant-fight.html>.

²²⁰⁰ Subcommittee briefing by JPMorgan (10/10/2014).

²²⁰¹ JPMorgan Power Plant Chart, JPM-COMM-PSI-000022 - 025, at 025.

²²⁰² Subcommittee briefing by JPMorgan (4/23/2014).

Additional issues include JPMorgan's allocating insufficient capital and insurance to protect against catastrophic event risks, and the Federal Reserve's failure to impose adequate safeguards to prevent misconduct and protect taxpayers.

(a) Manipulating Electricity Prices

The most important issue illustrated by JPMorgan's power plant activities is how physical commodity activities can involve a financial holding company in price and market manipulation misconduct, leading to consumers paying excessive electricity charges, violations of law, penalties, legal expenses, and reputational damage.

Overview of Price Manipulation. In July 2013, JPMorgan paid \$410 million to settle charges brought by the Federal Energy Regulatory Commission (FERC) that it used multiple pricing schemes to manipulate electricity payments to the power plants it controlled in California and Michigan.²²⁰³ JPMorgan admitted to an agreed set of facts, did not admit to violations of law, but agreed to disgorge "unjust profits" and pay a multi-million-dollar fine.²²⁰⁴ The manipulative bidding practices that were the focus of the case were employed by JPMorgan's subsidiary, JPMorgan Ventures Energy Corporation (JPMVEC). The misconduct involved power plants in California and Michigan, from 2010 through 2012, in the electricity markets overseen by the California Independent System Operator (CAISO) and by the Midwest (now Midcontinent) Independent System Operator (MISO). The Enforcement staff of FERC found that between September 2010 and November 2012, JPMVEC engaged in 12 types of improper bidding strategies.²²⁰⁵ In the process, FERC determined that JPMVEC violated the Commission's "Anti-Manipulation Rule" and employed fraudulent schemes that resulted in "a fraud on electricity market participants in CAISO and MISO."²²⁰⁶

FERC Enforcement alleged that JPMVEC exploited loopholes in the electricity pricing regulations in California and Michigan, and engaged in manipulative trading schemes "to make profits from power plants that were

²²⁰³ See Order Approving Stipulation and Consent Agreement; 7/30/2013 FERC press release, "FERC, JP Morgan Unit Agree to \$410 Million in Penalties, Disgorgement to Ratepayers," <http://www.ferc.gov/media/news-releases/2013/2013-3/07-30-13.asp#VEAgZ6PD9aR>. The FERC Consent Agreement followed a filed claim in the U.S. District Court for the District of Columbia. *FERC v. J.P. Morgan Ventures Energy Corporation*, Civil Case No. 1:2012-MC-00352-DAR (USDC DC 2012), "Memorandum in Support for Petition by [FERC] for an Order to Show Cause Why this Court Should Not Enforce Subpoenas for Production of Documents" (7/2/2012). See also "JP Morgan to Pay \$410 million in U.S. settlement" Bloomberg, Brian Wingfield and Dawn Kopecki (7/30/2013), <http://www.bloomberg.com/news/2013-07-30/jpmorgan-to-pay-410-million-in-u-s-ferc-settlement.html>.

²²⁰⁴ FERC Consent Agreement, at 15-19.

²²⁰⁵ 7/30/2013 FERC news release, "FERC, JPMorgan Unit Agree to \$410 Million in Penalties, Disgorgement to Ratepayers," <http://www.ferc.gov/media/news-releases/2013/2013-3/07-30-13.asp#VC8CUKPD9aQ>.

²²⁰⁶ *Id.*; FERC Consent Agreement at 13-14. See also FERC Anti-Manipulation Rule, 18 C.F.R. §1c.2 (2012) (stating it is unlawful to fraudulently manipulate the energy market).

usually out of the money [i.e., unprofitable] in the marketplace.” FERC also alleged that JPMVEC’s bidding strategies were “designed to create artificial conditions that forced the regulators to pay JPMVEC above the market at premium rates.”²²⁰⁷

To turn its usually unprofitable power plants into profitable ones, JPMVEC traders submitted electronic bids that were calculated to falsely appear to be attractive to the bidding software used by California and Michigan electricity authorities, but were designed to result in above-market rate payments. To initiate the bidding scheme, JPMVEC’s traders submitted bids that offered to sell electricity at rates well below JPMVEC’s cost in generating the electricity, which meant the offers usually lost money, if accepted. JPMVEC was willing to make those artificially low offers, which were really nothing more than loss leaders, so that it could then participate in CAISO’s and MISO’s “make-whole” payment mechanisms.²²⁰⁸ Those mechanisms allow CAISO and MISO to compensate generators at above-market prices to provide an incentive for plant owners to participate in the bidding auctions and ensure grid reliability. JPMVEC used the make-whole payments in connection with its bidding strategies to more than make up for the money it lost at market rates, frequently receiving, in the end, twice its costs plus the same market payments that other market participants received, without adding any grid reliability benefits.²²⁰⁹

JPMVEC’s bidding schemes caused California and Michigan electricity authorities to pay approximately \$124 million in “excessive” payments to JPMorgan.²²¹⁰ When CAISO and MISO officials realized what JPMVEC was doing, they objected and asked JPMVEC to stop. According to FERC, JPMVEC continued creating new bidding schemes more than a year after it had been notified it was under investigation – even as CAISO and MISO were re-writing the bidding rules to address the prior schemes.²²¹¹ For example, after CAISO shut down one bidding scheme in April 2011, JPMorgan began two new schemes that led to another CAISO intervention in June 2011 to halt them as well.²²¹²

Power Plants Involved with the Bidding. JPMVEC used several power plants in its bidding schemes. Most prominent were a set of power plants, located in California, which were owned by the AES Corporation

²²⁰⁷ 7/30/2012 FERC news release, “FERC, JPMorgan Unit Agree to \$410 Million in Penalties, Disgorgement to Ratepayers,” <http://www.ferc.gov/media/news-releases/2013/2013-3/07-30-13.asp#VC8CUKPD9aQ>.

²²⁰⁸ In the CAISO system, make-whole payments are called “Bid Cost Recovery” or “BCR” payments. MISO has several different types of make-whole payments.

²²⁰⁹ FERC Consent Agreement, at 11-13.

²²¹⁰ *Id.* at 15.

²²¹¹ Order Approving Stipulation and Consent Agreement, at 2, 5 (indicating that the FERC investigation began in August 2011, but that JPMVEC continued implementing new bidding strategies until November 2012).

²²¹² FERC Consent Agreement, at 10.

(AES) and were part of the Bear Energy acquisition in 2008.²²¹³ JPMVEC also used the Kinder Jackson power plant in Michigan, another plant acquired through the 2008 Bear Energy acquisition. In each case, JPMorgan, through its subsidiary, JPMVEC, had acquired Bear Stearns' long-term tolling agreement with the plant.²²¹⁴ The tolling agreements gave JPMVEC the right to sell the plants' electricity output and keep the profits from the sales.²²¹⁵

When JPMVEC first acquired the tolling agreement involving the AES power plants in California, all of the tolling rights had been subleased to Southern California Edison.²²¹⁶ Starting in 2011, as the subleased tolling agreements began to expire, JPMVEC began to re-gain control of the plants. On January 1, 2011, JPMVEC re-gained control of four power plants. By January 1, 2012, JPMVEC had re-gained control of six more.²²¹⁷ In addition, in a separate transaction in January 2010, JPMVEC acquired from the plant owner, AES, short-term tolling rights with two additional California power plants, Huntington Beach 3 and 4, which JPMorgan took on to gain experience in the California market.²²¹⁸

Development of Bidding Strategies. According to FERC, the bidding strategies at issue were developed by JPMVEC personnel based in a JPMorgan office in Houston.²²¹⁹ The Houston office was run by Francis Dunleavy, who reported directly to Blythe Masters, the head of JPMorgan's Global Commodities Group.²²²⁰ At the time the bidding schemes were developed, JPMVEC's California and Michigan plants could not compete profitably with other electricity plants in the CAISO and MISO markets.²²²¹ According to FERC, "[Blythe] Masters kept close tabs on the California and Michigan plants, in part, because she viewed the AES ... plants as 'our largest risk position.'"²²²² JPMorgan's senior management expected Mr. Dunleavy to find a way to make the California and Michigan plants profitable and to generate an "'appropriate return' which meant a 17% return on equity."²²²³ In 2010, after JPMorgan took over the Huntington Beach 3 and 4 power plants, it began pursuing ways for them to become more profitable.

²²¹³ Id. at 1.

²²¹⁴ Id.

²²¹⁵ Id.

²²¹⁶ Id. at 2.

²²¹⁷ Id.

²²¹⁸ Id. at 3.

²²¹⁹ 3/13/2013 report, "In Re Make-Whole Payments and Related Bidding Strategies," prepared by FERC Enforcement Staff, PSI-FERC-02-000113 - 182, at 117 [sealed exhibit].

²²²⁰ Id. See also 3/14/2011 email exchange between Francis Dunleavy, JPMorgan, and Blythe Masters, JPMorgan, "Privileged and Confidential – CAISO update," PSI-FERC-02-000067 (showing Mr. Dunleavy discussing the CAISO matter with Ms. Masters).

²²²¹ 3/13/2013 report, "In Re Make-Whole Payments and Related Bidding Strategies," prepared by FERC Enforcement Staff, PSI-FERC-02-000113 - 182, at 117-119 [sealed exhibit].

²²²² Id. at 118.

²²²³ Id. at 119.

In 2010, JPMVEC hired a new employee who would become a key designer of its improper bidding strategies. On April 29, 2010, the resume of John Bartholomew made its way to the attention of Mr. Dunleavy.²²²⁴ Mr. Bartholomew was then employed at Southern California Edison and had previously interned at FERC.²²²⁵ On his resume, he stated that he had identified a “flaw in the market mechanism ... causing CAISO to misallocate millions of dollars.”²²²⁶ Mr. Bartholomew indicated that it was possible to profit by gaming the system, rather than selling electricity at a profit at market rates.²²²⁷ In a matter of hours after Mr. Bartholomew sent his resume to the Houston office, Mr. Dunleavy instructed others to “get him in ASAP.”²²²⁸ Mr. Bartholomew began working at JPMVEC in July 2010.²²²⁹

Shortly after starting, Mr. Bartholomew began to develop manipulative bidding strategies focused on CAISO’s make-whole mechanism, called Bid Cost Recovery or BCR payments. The strategies were designed to cause CAISO and MISO to make payments at premium prices above the market rates, and produce millions of dollars in profits for JPMorgan.²²³⁰

Regional Electricity Markets. To understand the bidding strategies, some background on the CAISO and MISO electricity markets is necessary. CAISO and MISO are Independent System Operators (ISOs) that operate regional wholesale markets for electricity, and are regulated by FERC.²²³¹ In their wholesale electricity markets, the sellers – who are generally power plants or parties like JPMVEC who control power plant output – and the buyers – who are generally distributors that provide electricity to retail customers – submit bid and offer prices at which they are willing to transact.²²³² CAISO and MISO both operate “Day Ahead” and Real Time” regional markets for physical electricity.²²³³ As explained earlier, the Day Ahead market is a forward market that allows participants buy and sell one day ahead of the date on which the electricity is actually delivered; the Real

²²²⁴ See 4/29/2010 email exchange between Francis Dunleavy, JPMorgan, and Rob Cauthen, JPMorgan, “Resume for Power,” PSI-FERC-02-000009 - 010, at 009.

²²²⁵ Id.

²²²⁶ 3/13/2013 report, “In Re Make-Whole Payments and Related Bidding Strategies,” prepared by FERC Enforcement Staff, PSI-FERC-02-000113 - 182, at 120 [sealed exhibit]. The Bartholomew resume stated: “Identified flaw in the market mechanism Bid Cost Recovery that is causing the CAISO to misallocate millions of dollars.” 4/29/2010 email exchange between Francis Dunleavy, JPMorgan, and Rob Cauthen, JPMorgan, “Resume for Power,” PSI-FERC-02-000009 - 010, at 009.

²²²⁷ See 4/29/2010 email exchange between Francis Dunleavy, JPMorgan, and Rob Cauthen, JPMorgan, “Resume for Power,” PSI-FERC-02-000009 - 010, at 009.

²²²⁸ Id.

²²²⁹ FERC Consent Agreement, at 2.

²²³⁰ 3/13/2013 report, “In Re Make-Whole Payments and Related Bidding Strategies,” prepared by FERC Enforcement Staff, PSI-FERC-02-000113 - 182, at 120 [sealed exhibit].

²²³¹ FERC Consent Agreement, at 3.

²²³² Id.

²²³³ Id.

Time market operates on the day the electricity is transmitted.²²³⁴ In general, CAISO and MISO provide the power seller with an “award” if the ISO agrees to buy electricity from the seller.²²³⁵ Even if a seller receives an ISO Day Ahead “award,” it may not produce all of the energy called for in the award.²²³⁶ If the ISO does not, in the end, instruct the generator to produce all of the energy specified in the award, the generator can “buy back” the unneeded portion of the award in the Real Time market.²²³⁷

Because of this system, in the Real Time market, some sellers/power generators become potential buyers of electricity in the Day Ahead market.²²³⁸ If a generator receives an award in the Day Ahead market and then buys back a portion of the award in the Real Time market, the generator is said to be receiving a ‘decremental’ or reduced energy award.

Payments to Generators. ISOs such as CAISO and MISO pay power generators for electricity. When CAISO and MISO pay power generators, they ordinarily do so at market rates.²²³⁹ As noted above, in certain circumstances, they also pay power generators “make-whole” payments under applicable market rules designed to ensure grid reliability.²²⁴⁰ Under CAISO’s BCR mechanism, CAISO generally guarantees payments to cover a plant’s costs for starting up and running its plants at the lowest level – called “minimum load” – if the plant gets a Day Ahead award, even if the plant later buys back in the Real Time market the entire portion of the award above its minimum load. The BCR payments, again, provide an incentive for power sellers to participate in electricity markets and increase grid reliability. BCR payments “provide additional compensation to generators when market revenues are insufficient to cover the ‘bid cost’ of a resource the ISO has committed.”²²⁴¹ In the CAISO system, the BCR rules allow bidders to be paid up to twice their real costs for running a minimum load, which can result in electricity customers paying excessive electricity charges.

JPMVEC Manipulation. According to the stipulated facts, on September 8, 2010, JPMVEC began to implement one of its bidding strategies in the CAISO market.²²⁴² The strategy had been developed by Mr. Dunleavy, Mr. Bartholomew, and Andrew Kittell in JPMorgan’s Houston office. The strategy was used in connection with the Huntington

²²³⁴ Id. at 4 (explaining that due to the two different markets, the prices from each exchange for the same hour may differ). See also “Energy Primer: A Handbook of Energy Market Basics,” Staff report of the Division of Energy Market Oversight, Office of Enforcement, Federal Energy Regulatory Commission (7/2012), at 65, <http://www.ferc.gov/market-oversight/guide/energy-primer.pdf> (describing the markets generally).

²²³⁵ FERC Consent Agreement, at 4.

²²³⁶ Id.

²²³⁷ Id.

²²³⁸ Id. at 5.

²²³⁹ Id.

²²⁴⁰ Id.

²²⁴¹ Id. “Bid cost” refers to the price the power generating unit has submitted to the ISO.

²²⁴² Id. at 6.

Beach 3 and 4 plants and, eventually, other AES plants as JPMVEC regained control of them.²²⁴³ As part of the strategy, in the Day Ahead market, JPMVEC submitted the lowest bid allowed under CAISO rate schedules.²²⁴⁴ The bid was generally at the rate of -\$30 per megawatt hour, which meant that JPMVEC was offering a negative bid and was willing to pay the buyer to take the electricity, despite the costs involved in producing it.²²⁴⁵ Its bids were reviewed by electronic software, which did not grasp the intent behind JPMVEC's below-cost bids. JPMVEC's -\$30 bids were well below where the Day Ahead Market actually settled, which was typically in the positive range of \$30 - \$35 per megawatt hour, so the bids routinely secured Day Ahead awards from CAISO.²²⁴⁶ JPMVEC was then given a Day Ahead award at the prevailing market price regardless of its initial low bid price.²²⁴⁷ In addition, its traders knew that if JPMVEC won a Day Ahead award, JPMVEC could also qualify for a BCR payment on its minimum load equal to twice its costs, resulting in a total payment well in excess of market prices.²²⁴⁸

To obtain the BCR payment, the bidding strategy required JPMVEC to place a followup bid in the Real Time market. On the days that it received Day Ahead awards, JPMVEC submitted followup bids in the Real Time market, generally above the market price by only a small amount to ensure its bids were taken.²²⁴⁹ In each bid, JPMVEC sought to reduce its award in the Day Ahead market to no more than its minimum load, which it knew would elicit a BCR payment. After the close of bids in the Real Time market, CAISO's electronic system generally provided a decremental electricity award to JPMVEC, reducing the actual amount of energy it was required to produce to its minimum load. For that minimum load amount, the software typically awarded JPMVEC a BCR payment equal to twice its costs for producing the electricity. In essence, JP Morgan sold high priced electricity to CAISO, received a BCR payment equal to twice its costs, and also received a payment at the prevailing marketplace price for the electricity provided – in effect, it was paid three times for the same electricity.

Unjust Profits. The result of the bidding strategy was an immediate increase in JPMVEC power plant revenues, which totaled several million dollars in just the first month.²²⁵⁰ By the second month in October 2010,

²²⁴³ Id. at 5-6.

²²⁴⁴ Id. at 6. CAISO's rate schedules are often referred to as the "tariff." See "Help – Glossary," FERC website (8/20/2013), <http://www.ferc.gov/help/glossary.asp#T> (defining "tariff" as "[a] compilation of all effective rate schedules of a particular company or utility. Tariffs include General Terms and Conditions along with a copy of each form of service agreement").

²²⁴⁵ FERC Consent Agreement, at 7. Sellers can have legitimate reasons to make a negative bid, such as wind farms which may be entitled to tax credits greater than their negative bid.

²²⁴⁶ Id.

²²⁴⁷ Id.

²²⁴⁸ 3/13/2013 report, "In Re Make-Whole Payments and Related Bidding Strategies," prepared by FERC Enforcement Staff, PSI-FERC-02-000113 - 182, at 123 [sealed exhibit].

²²⁴⁹ FERC Consent Agreement, at 7.

²²⁵⁰ Id. at 6.

JPMVEC estimated that the bidding strategy could produce profits of between \$1.5 and \$2 billion through 2018.²²⁵¹ According to the stipulated facts, in the six-month period between September 8, 2010 and March 10, 2011, the two Huntington Beach power plants produced market revenues of \$21.9 million, while accruing costs of \$29.5 million, producing a loss of \$7.6 million.²²⁵² During the same period, however, the two plants collected BCR payments totaling \$34.6 million, resulting in an overall six-month profit of \$27 million – from inefficient plants that usually could not compete successfully in the marketplace.²²⁵³ As evidence of the success of this strategy, in the midst of that stretch, a JPMVEC employee sent an email to several colleagues with an image of Oliver Twist extending a bowl and the subject line: “Please sir! mor BCR!!!!”²²⁵⁴

In addition to this scheme, which was its most profitable, FERC Enforcement found that JPMVEC engaged in 11 other manipulative bidding strategies from September 2010 through November 2012, in both the CAISO and MISO markets. FERC officials told the Subcommittee that in the years since Congress gave FERC enhanced anti-manipulation authority in the Energy Policy Act of 2005, the CAISO and MISO regulators had never before witnessed the degree of blatant rule manipulation and gaming strategies that JPMorgan used to win electricity awards and elicit make-whole payments.²²⁵⁵

Penalties. To settle the manipulation charges, JPMorgan agreed to disgorge \$124 million in “unjust profits” to CAISO to be allocated for the benefit of current CAISO ratepayers; \$1 million in “unjust profits” to MISO for the benefit of current MISO ratepayers; and a civil penalty of \$285 million to the United States Treasury.²²⁵⁶

Other Financial Institutions. JPMorgan is not the only financial holding company that has been charged with manipulating electricity prices. In July 2013, FERC issued an order assessing civil penalties against Barclays and its traders for manipulating electricity prices in California from 2006 to 2008, directing it to pay compensatory damages, interest and penalties totaling \$435 million.²²⁵⁷ Specifically, FERC found that Barclays

²²⁵¹ Id.

²²⁵² Id. at 7-8.

²²⁵³ Id.

²²⁵⁴ 11/22/2010 email from Luis Davila, JPMorgan, to John Rasmussen and Ryan Martin, JPMorgan, “Please sir! mor BCR!!!!,” PSI-FERC-02-000042. The image of Oliver Twist in the body of the email can be viewed at this website:

<http://sb.westfordk12.us/pages/8gweb/8gla/charweb/4/04OliverTwist/gruel.jpg>.

²²⁵⁵ Subcommittee briefing by FERC (7/11/2013).

²²⁵⁶ FERC Stipulation and Consent Agreement, at 15 - 19.

²²⁵⁷ *FERC v. Barclays Bank PLC*, Docket No. IN08-8-000, Order Assessing Civil Penalties, 144 FERC ¶ 61,041 (7/16/2013). The CFTC has also charged hedge funds with market manipulation, demonstrating that financial firms have the means to manipulate commodity futures and swap prices. See, e.g., *CFTC v. Amaranth Advisors, LLC*, Case No. 07-CV-6682 (DC) (USDC SDNY)(7/25/2007); 8/12/2013 CFTC press release, “Amaranth Entities Ordered to Pay a \$7.5 Million Civil Fine in CFTC Action Alleging Attempted Manipulation of Natural Gas Futures Prices,” (describing how, in 2009, the CFTC collected \$7.5 million in fines from a hedge fund, Amaranth

and its traders manipulated “prices on 655 product days over 35 product months in the ... regulated physical markets at the four most liquid trading points in the western United States.”²²⁵⁸ According to FERC, Barclays and its traders carried out this scheme “by building substantial monthly physical index positions in the opposite direction of the financial swap positions they assembled at the same points”²²⁵⁹ By building physical positions in the index, Barclays was able to move the index price so that its financial swap positions would benefit.²²⁶⁰ FERC found that Barclays’ trading in physical index positions “was ‘not intended to get the best price on those trades’ and was ‘not responding to supply and demand fundamentals,’ but instead was intended to ‘benefit’ Barclays’ related Financial Swap positions.”²²⁶¹ Barclays is contesting both the charges and penalty.

In addition, in January 2013, Deutsche Bank agreed to pay \$1.6 million to settle FERC charges that it manipulated electricity markets in California in 2010.²²⁶² FERC alleged that the manipulation involved using physical positions to benefit derivative positions in financial markets.²²⁶³

Together, the JPMorgan, Barclays and Deutsche Bank cases demonstrate a variety of ways in which financial holding companies have taken advantage of their power plant activities to manipulate electricity prices to their benefit. They also demonstrate the critical importance of regulatory oversight and enforcement to stop unfair practices.

(b) Allocating Insufficient Capital and Insurance to Cover Potential Losses

A completely different set of issues raised by JPMorgan’s power plant activities involves its exposure to the catastrophic event risks associated with commercial industrial ventures. Power plants are large industrial complexes subject to a wide range of catastrophic event risks. Many are powered with natural gas, which is flammable and explosive. Over a two-year period, JPMorgan gained exposure to 31 natural gas and coal-fueled power plants across the country, at a time when it knew virtually nothing about the business. Federal Reserve examiners found that JPMorgan did

Advisors LLC, and its Canadian subsidiary for attempted manipulation of natural gas futures prices in 2006); *CFTC v. Moncada*, Case No. 09-CV-8791 (USDC SDNY)(12/4/2012)(describing how, in 2012, the CFTC charged two related hedge funds, BES Capital LLC and Serdika LLC, with attempted manipulation of wheat futures prices in 2009; they are contesting the charges).

²²⁵⁸ *FERC v. Barclays Bank PLC*, Docket No. IN08-8-000, Order Assessing Civil Penalties, 144 FERC ¶ 61,041, at 3 (7/16/2013).

²²⁵⁹ *Id.*

²²⁶⁰ *Id.*

²²⁶¹ *Id.* at 4.

²²⁶² See *In re Deutsche Bank Energy Trading, LLC*, FERC Case No. IN12-4-000, “Order Approving Stipulation and Consent Agreement,” (1/22/2013), 142 FERC ¶ 61,056, <http://www.ferc.gov/EventCalendar/Files/20130122124910-IN12-4-000.pdf>.

²²⁶³ 1/22/2013 FERC news release, “FERC Approves Market Manipulation Settlement with Deutsche Bank,” <http://www.ferc.gov/media/news-releases/2013/2013-1/01-22-13.asp>

²²⁶³ *Id.*

not have the technical, operations or engineering capability to review the power plants' compliance with regulatory standards, and the Federal Reserve Commodities Team found that JPMorgan's capital and insurance levels were insufficient to protect it against potential losses from a catastrophic event.

Placing accurate values on power plants, tolling agreements, and related assets are critical to financial holding companies allocating adequate capital and insurance to cover potential losses. The 2012 Summary Report prepared by the Federal Reserve Commodities Team warned, however, that the valuation techniques being used by financial holding companies for their physical commodity activities were not consistent, comprehensive, or reliable. The 2012 Summary Report looked in particular at how financial holding companies were valuing power plants. It determined that most held the plants on their books as an investment at cost, and used tolling agreements to capture the ongoing economic value. Tolling agreements typically capture the value of the difference between a plant's fuel inputs (coal or gas) and its output (electricity). The 2012 Summary Report determined that, while that approach provided a liquid derivative representation of an illiquid, hard-to-value asset, it also had weaknesses that would not be reflected in stress tests.²²⁶⁴ It pointed out, for example, that depending upon how a tolling agreement was worded, a financial holding company might have to make payments to buy output from a power plant that wasn't producing any power, or have to buy all of the production of a facility whose output is no longer valuable, expenses that might not be disclosed in a typical stress test.

In addition, the 2012 Summary Report found that the insurance coverage at the financial holding companies appeared to be insufficient. It noted that "[p]hysical commodities is a notoriously fat-tailed business with [the] insurer only covering limited losses for some risks."²²⁶⁵ The 2012 Summary Report found that "[i]n all cases ... insurance for ... catastrophic events is capped at a certain level (typically US \$1 billion) and firms cannot cover any amount beyond the cap through insurance."²²⁶⁶ It also noted that the financial holding companies used "aggressive assumptions" to minimize estimated losses from a catastrophic event.²²⁶⁷ In the 2010 Deepwater Horizon oil spill case, BP had reportedly self-insured for up to \$700 million,²²⁶⁸ but projections now place its liability at \$42 billion, with

²²⁶⁴ 10/3/2012 report, "Physical Commodity Activities at SIFIs," prepared by Federal Reserve Bank of New York Commodities Team (hereinafter, "2012 Summary Report"), FRB-PSI-200477 - 510, at 482 [sealed exhibit].

²²⁶⁵ Id. at 509. See also id. at 500 (noting that insurance companies "do not have comfortable ways to assess the tail risk and thus avoid insuring the tails" for catastrophic events, such as multi-billion dollar oil spills).

²²⁶⁶ Id. at 491.

²²⁶⁷ Id. at 493 - 494.

²²⁶⁸ See "BP Oil Spill Damages to Stretch Insurance Coverage," Oilprice.com, Gloria Gonzalez (8/2/2010), <http://oilprice.com/The-Environment/Oil-Spills/BP-Oil-Spill-Damages-To-Stretch-Insurance-Coverage.html>.

another possible \$18 billion in fines, almost 85 times greater than what BP had self-insured for.

With respect to JPMorgan, the 2012 Summary Report stated that JPMorgan had determined that the “operational and event risks of owning power facilities” were capped at the dollar value of those facilities in the event of their total loss, with some insurance to cover “the death and disability of workers” and some facility replacement costs, but leaving all other expenses, including a “failure to deliver electricity under contract,” to be paid by the holding company.²²⁶⁹ At another point, the 2012 Summary Report prepared a chart comparing the level of capital and insurance coverage at four financial holding companies, including JPMorgan, against estimated costs associated with “extreme loss scenarios.” It found that at each institution, including JPMorgan, “the potential loss exceed[ed] capital and insurance” by \$1 billion to \$15 billion.²²⁷⁰

Still another problem involves JPMorgan’s direct ownership of three power plants. Although JPMorgan has contracted with third parties to operate those plants, it still owns 100% of their shares. U.S. federal law attaches liability for catastrophic environmental events to both owners and operators. By choosing to become the direct owner of the three power plants, instead of holding tolling agreements with them as permitted under its complementary authority, JPMorgan has increased the financial holding company’s liability for damages, should disaster strike.

Even well-run power plants carry catastrophic event risks. If the worst case scenario should occur, JPMorgan should be prepared to cover the potential losses, without U.S. taxpayer assistance.

(c) Erecting Inadequate Safeguards

A final set of issues involves the absence of effective regulatory safeguards and enforcement related to financial holding company involvement with power plants. One key regulatory gap is the Federal Reserve’s lack of procedures to handle market manipulation problems. Because banks have a limited history of involvement with physical commodities, and market manipulation violations are typically detected and enforced by non-banking regulators such as the CFTC, SEC, or FERC, the Federal Reserve has few mechanisms in place to educate or alert examiners to signs of market manipulation. At the same time, the 2012 Summary Report warned that virtually every financial holding company it examined

²²⁶⁹ 2012 Summary Report, at FRB-PSI-200477 – 510, at 494 [sealed exhibit]. See also 5/18/2011 presentation, “Commodities Operational Risk Capital,” prepared by JPMorgan, FRB-PSI-300727 - 736, at 729.

²²⁷⁰ 2012 Summary Report, at FRB-PSI-200477 – 510, at 498, 509 [sealed exhibit]. The 2012 Summary Report also noted that commercial firms engaged in oil and gas businesses had a capital ratio of 42%, while bank holding company subsidiaries had a capital ratio of, on average, 8% to 10%. Id. at 499.

had been “accused or charged” with “manipulating markets.”²²⁷¹ Those charges can lead to violations of law, reimbursement of excessive consumer electricity bills, multi-million-dollar fines, and reputational damage. Regulatory safeguards should be erected to ensure bank examiners act against improper practices by establishing examination procedures, implementing preventative measures, and strengthening coordination with enforcement agencies.

A second problem exposed by JPMorgan’s power plant activities is how financial holding companies are permitted to retain and profit from the impermissible holding of physical commodity assets for years at a time. JPMorgan had no legal authority to directly own a power plant, yet it acquired one in 2008, and two more in 2010, and still has them years later. When JPMorgan’s application for complementary authority to own those plants was turned down, it asserted its merchant banking authority to keep them. At the same time, knowing of the Federal Reserve’s concern about its direct ownership of a commercial enterprise like a power plant, JPMorgan promised to exit the power plant business, but plans to take years to do so. JPMorgan told the Subcommittee that its tolling agreement for 12 California power plants will take another four years to finish, its planned sale of a Michigan plant is on hold for another year, and its attempts to locate buyers for two other power plants are moving slowly. Despite the passage of years and multiple warnings about directly owning the power plants, and the increased liability attached to direct ownership, the Federal Reserve has yet to force JPMorgan to divest itself of those assets. More broadly, the Federal Reserve appears to have a track record of repeatedly extending deadlines for the sale of impermissible assets, in the end allowing banks to retain them for multiple years. Today, safeguards to ensure the sale of impermissible physical commodity assets appear dysfunctional, with little certainty to protect U.S. taxpayers at risk when financial holding companies ignore the restrictions on their activities.

(4) Analysis

When the Subcommittee investigation examined financial holding company involvement with electricity, it found multiple levels of involvement affecting power generation in the United States and around the world. All three financial holding companies examined by the Subcommittee traded electricity, had tolling agreements or ownership interests in power plants around the world, supplied fuel to power plants, and engaged in some form of power plant energy management. Their power plant activities ranged widely, from capturing the energy output of alternative energy plants using wind, solar, hydropower, and other energy sources; to installing residential rooftop solar systems; to building wind farms; to becoming the primary supplier of coal, natural gas, or uranium to multiple utilities. Power plant activities are fraught with market

²²⁷¹ Id. at 492.

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manipulation issues, operational and catastrophic event risks, and impermissible commercial activities. It is past time for the Federal Reserve to impose needed safeguards to limit financial holding company involvement with this high risk physical commodity activity.

C. JPMorgan Involvement with Copper

For many years, JPMorgan has engaged in a wide range of physical copper activities. Because federal bank regulators currently treat copper as “bullion,” equivalent to gold or silver, JPMorgan has been permitted to accumulate copper holdings without the normal size limits that apply to other metals and has amassed, at times, copper inventories exceeding \$2 billion. JPMorgan has also participated in copper-related physical and financial trading, and proposed a copper-backed exchange traded fund that some industrial copper users allege raises conflict of interest and market manipulation concerns.

(1) Background on Copper

Copper is a naturally occurring metal which, due to its “high ductility, malleability, and thermal and electrical conductivity, and its resistance to corrosion,” has become “a major industrial metal, ranking third after iron and aluminum in terms of quantities consumed.”²²⁷² Copper is widely used in the electrical, construction, and electronics industries,²²⁷³ which together comprise approximately 56% of global industrial copper consumption.²²⁷⁴ It is also important to the defense industry, transportation, and industrial machinery.²²⁷⁵

When mined, copper is produced as part of a mixture of materials that usually includes iron and sulfur.²²⁷⁶ Producing pure copper metal requires a multistage process which typically includes concentrating the copper found in low-grade ore; smelting – heating and chemically treating – the ore to extract the copper; and then applying electrolytic refining to produce a “copper cathode,” meaning copper material with a purity of 99.95%.²²⁷⁷ Another way copper can be purified is through the “acid leaching of oxidized ores.”²²⁷⁸ Copper recycling contributes a significant share of copper supply worldwide.²²⁷⁹

²²⁷² Undated “Copper Statistics and Information,” U.S. Geologic Survey website, <http://minerals.usgs.gov/minerals/pubs/commodity/copper/>.

²²⁷³ See Form S-1 Registration Statement, JPM XF Physical Copper Trust, Amendment No. 8 (4/5/2013), at 33, Securities and Exchange Commission (SEC) website, <http://www.sec.gov/Archives/edgar/data/1278680/000119312505011426/ds1a.txt>.

²²⁷⁴ See 9/19/2014 “Production and Consumption,” LME website, <http://www.lme.com/metals/non-ferrous/copper/>; <http://www.lme.com/en-gb/metals/non-ferrous/copper/production-and-consumption/>.

²²⁷⁵ See undated “Copper Statistics and Information,” U.S. Geologic Survey website, <http://minerals.usgs.gov/minerals/pubs/commodity/copper/>.

²²⁷⁶ See undated “What is a Copper Cathode?” <http://www.wisegeek.com/what-is-a-copper-cathode.htm>.

²²⁷⁷ See undated “Copper Statistics and Information,” U.S. Geologic Survey website, <http://minerals.usgs.gov/minerals/pubs/commodity/copper/>; undated “What is a Copper Cathode?” <http://www.wisegeek.com/what-is-a-copper-cathode.htm>.

²²⁷⁸ Undated “Copper Statistics and Information,” U.S. Geologic Survey website, <http://minerals.usgs.gov/minerals/pubs/commodity/copper/>.

²²⁷⁹ Id.

Most of the world's copper comes from Chile, whose mines produced 5.7 million metric tons of copper in 2013.²²⁸⁰ The next largest copper producers are China, with 1.7 million metric tons in 2013; Peru with 1.3 million metric tons, and the United States with 1.2 million metric tons.²²⁸¹ In 2013, U.S. production accounted for about 7% of global annual copper production.²²⁸² Despite rising copper prices, copper mines have increased production only modestly, due in part to declining extractions from old mines and delays in new mining projects.²²⁸³

In the physical markets, according to copper manufacturers, about 85% of the copper produced annually is sold via long-term supply contracts.²²⁸⁴ Those contracts typically specify the amount of copper to be delivered on specific dates, at prices linked to benchmark copper prices that vary over time.²²⁸⁵ The most common benchmark price is the copper futures price established on the London Metal Exchange (LME), the largest financial market for metals. Physical contracts also typically specify a "locational premium," reflecting storage and transportation expenses associated with providing copper at a specified location.²²⁸⁶ Collectively, the benchmark price and locational premium typically comprise the "all-in" price for copper.

Copper Prices. Over the last decade, copper prices have experienced significant volatility, including "unpredictable" fluctuations,²²⁸⁷ creating price risks for producers and end users.²²⁸⁸ As shown in the chart below, prices per metric ton fell from \$8,500 in 2008, to under \$3,000 in 2009, and then spiked to over \$10,000 in December 2010 and January 2011, reaching all-time highs. Over a three-month period from August through October 2014, copper prices fluctuated

²²⁸⁰ See 2/2014 "U.S. Geological Survey, Mineral Commodity Summaries," U.S. Geological Survey website, at 48-49, <http://minerals.usgs.gov/minerals/pubs/mcs/2014/mcs2014.pdf>.

²²⁸¹ *Id.*

²²⁸² See 2/2014 "Mineral Commodity Summaries," U.S. Geological Survey website, at 48, <http://minerals.usgs.gov/minerals/pubs/mcs/2014/mcs2014.pdf>.

²²⁸³ See 4/5/2013 Form S-1 Registration Statement, JPM XF Physical Copper Trust, Amendment No. 8, at 38, SEC website, http://www.sec.gov/Archives/edgar/data/1503754/000095010313002224/dp37414_s1a8.htm

²²⁸⁴ See 7/18/2012 letter from Copper Manufacturers to SEC, "Re: File Number SR-NYSEArca-2-12-66 PSI-VandenbergFeliu_to_SEC(July2012)-000001-005, at 004-005.

²²⁸⁵ *Id.*

²²⁸⁶ See 4/16/2012 SEC "Notice of Filing of Proposed Rule Change to List and Trade Shares of the JPM XF Physical Copper Trust," Release No. 34-66816, File No. SR-NYSEArca-2012-28, at 13 (hereinafter "SEC Notice"), SEC website, <http://www.sec.gov/rules/sro/nysearca/2012/34-66816.pdf>.

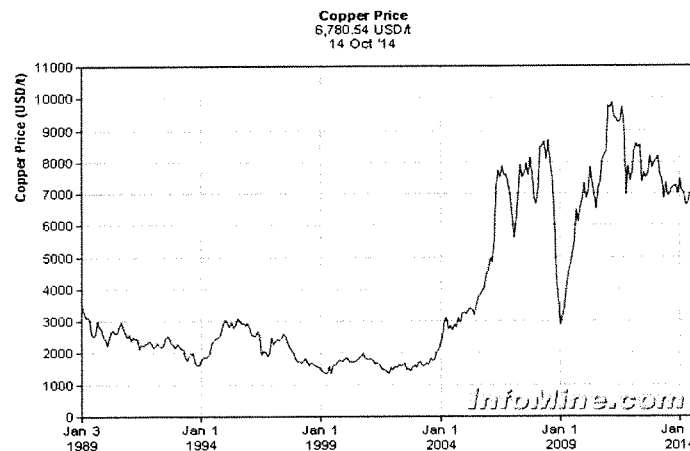
²²⁸⁷ 4/5/2013 Form S-1 Registration Statement, JPM XF Physical Copper Trust, Amendment No. 8, at 15, SEC website, <http://www.nasdaq.com/markets/ipos/filing.ashx?filingid=8803483>.

²²⁸⁸ See 7/18/2012 letter from Copper Manufacturers to SEC, "Re: File Number SR-NYSEArca-2-12-66 PSI-VandenbergFeliu_to_SEC(July2012)-000001-005, at 004-005.

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between \$7,100 and \$6,600 per metric ton, a difference of nearly 10%.²²⁸⁹



Source: "Historical Copper Prices and Price Chart," InfoMine Inc. (10/14/2014), <http://www.infomine.com/investment/metal-prices/copper/all/>.

In the financial markets, copper can be traded through a variety of financial instruments, including futures, swaps, options, and forwards. The most active copper trading takes place on the LME.²²⁹⁰ The LME identifies four categories of metals: "precious metals," which include gold and silver; "non-ferrous" or "base" metals, which include copper, aluminum, nickel, and zinc, among others; "steel billet," which includes steel, and "minor metals," which include cobalt and molybdenum.²²⁹¹ The LME provides multiple copper futures contracts for trading.²²⁹² The standardized LME futures contracts involve 25 metric tons of "Grade A Copper," and may be settled financially or by delivery of physical copper.²²⁹³ In 2013, copper was among the most actively traded base

²²⁸⁹ See undated "Historical price graph for Copper," LME website, <https://www.lme.com/en-gb/metals/non-ferrous/copper/> (showing copper futures prices from August 1 to October 21, 2014).

²²⁹⁰ See LME website, <https://www.lme.com/> ("More than 80% of global non-ferrous business is conducted here and the prices discovered on our three trading platforms are used as the global benchmark.").

²²⁹¹ See undated "Metals," LME website, <https://www.lme.com/en-gb/metals/>. The LME is planning to add platinum, and palladium to its precious metals category by the end of 2014. See 10/16/2014 LME press release, "LME wins bid for provision of London Platinum and Palladium Prices," <https://www.lme.com/news-and-events/press-releases/press-releases/2014/10/lme-wins-bid-for-provision-of-london-platinum-and-palladium-prices/>.

²²⁹² See undated "Copper," LME website, <https://www.lme.com/en-gb/metals/non-ferrous/copper/>.

²²⁹³ See undated "LME Copper physical specification," LME website, <https://www.lme.com/metals/non-ferrous/copper/contract-specifications/physical/>, and "2013 Trading Volumes," LME website, <https://www.lme.com/metals/reports/monthly-volumes/annual/2013/>.

metal futures on the LME.²²⁹⁴ LME prices provide the global price benchmarks used in contracts around the world for the physical purchase or sale of copper.²²⁹⁵

Copper as Bullion. Although for more than 100 years, copper has been traded on world markets and in the United States as a base metal with industrial uses,²²⁹⁶ both the Federal Reserve and the U.S. Office of the Comptroller of the Currency (OCC) currently classify copper as a type of “bullion,” a classification normally reserved for precious metals like gold and silver. That regulatory decision affects how financial holding companies are allowed to trade copper.

The National Bank Act expressly authorizes U.S. national banks “to exercise ... all such incidental powers as shall be necessary to carry on the business of banking,” including the “buying and selling of exchange, coin, and bullion.”²²⁹⁷ “Bullion” is not defined in the Act. Instead, the OCC, which regulates national banks, has defined the term through interpretative letters, and the Federal Reserve has defined it through regulation.

For many years, the OCC defined “bullion” as “uncoined gold or silver in bar or ingot form.”²²⁹⁸ In 1991, at the request of a bank, the OCC issued a letter which expanded the definition to include platinum.²²⁹⁹ Four years later, in 1995, again at the request of a bank, the OCC expanded the definition to include palladium.²³⁰⁰ While platinum and palladium – like gold and silver – have industrial uses, all four have traditionally been traded internationally as precious metals, held primarily for their exchange value rather than industrial use.

A few months after the palladium decision, however, once again at the request of a bank, the OCC expanded the definition of “bullion” a third time to include – for the first and only time – a base metal: copper.²³⁰¹ While copper has been used in coins, it has never been traded internationally as a precious metal; it has always been classified

²²⁹⁴ See, e.g., “2013 Trading Volumes,” LME website, <https://www.lme.com/metals/reports/monthly-volumes/annual/2013/>.

²²⁹⁵ See LME website, <https://www.lme.com/> (“More than 80% of global non-ferrous business is conducted here and the prices discovered on our three trading platforms are used as the global benchmark.”); 1/17/2013 Form S-1 Registration Statement, JPM XF Physical Copper Trust, Amendment, at 40.

²²⁹⁶ See, e.g., undated “Production and consumption,” LME website, <https://www.lme.com/metals/non-ferrous/copper/production-and-consumption/> (indicating copper began trading on the LME in 1877).

²²⁹⁷ 12 U.S.C. §24 (Seventh).

²²⁹⁸ See, e.g., Banking Circular 58 (Rev.), OCC (11/3/1981), <http://www.occ.gov/static/news-issuances/bulletins/pre-1994/banking-circulars/bc-1981-58.pdf>.

²²⁹⁹ See OCC Interpretive Letter No. 553 (5/2/1991), PSI-OCC-01-000112-113.

²³⁰⁰ OCC Interpretive Letter No. 693 (11/14/1995), PSI-OCC-01-000135 - 141, at 137 (citing OCC Interpretive Letter No. 683 (7/28/1995) (approving palladium within the definition of “bullion”)).

²³⁰¹ Id. at 135.

and traded as a “base,” “non-ferrous,” or “industrial” metal. Since adding copper to the definition in 1995, the OCC has not added any other metal to the definition of “bullion.”

The OCC’s inclusion of copper in the definition of “bullion” materially altered its regulatory treatment for commodity purposes. Prior to its inclusion, copper was subject to all of the limitations imposed by the OCC on bank involvement with physical commodities, including the 5% limit placed by the OCC on physical commodities acquired as hedges for derivative transactions.²³⁰² Once defined as “bullion,” however, copper could be treated in the same way as gold and silver, and exempted from a number of physical commodities restrictions, including size limits.²³⁰³

The Federal Reserve has also designated copper as “bullion” in a regulation stating that “[b]uying, selling and storing” physical copper is a “permissible” nonbank activity.²³⁰⁴ The Federal Reserve explained to the Subcommittee that physical copper could be held and traded by financial holding companies under that regulatory authority and thereby avoid any size limits applicable to complementary, merchant banking, or grandfathering activities.²³⁰⁵ The Federal Reserve also indicated that financial holding companies would not have to include their copper holdings when reporting the market value of their physical commodity assets to the Federal Reserve.²³⁰⁶ By treating copper as bullion, the OCC and Federal Reserve have enabled banks and their holding companies to hold physical copper outside of the limits that apply to all other base metals.

(2) JPMorgan Involvement with Copper

JPMorgan is an active trader of physical and financial copper. In recent years, it has engaged in physical copper activities that included outsized transactions and massive copper inventories. JPMorgan also designed and proposed a copper-backed exchange traded fund (ETF), a controversial investment fund which was to be the first ETF backed by a physical industrial metal in the United States. The ETF was designed to acquire copper, place it in storage, and sell investment securities whose value would be tied to copper prices. Some industrial users of copper

²³⁰² See OCC Interpretive Letter No. 684 (8/4/1995), PSI-OCC-01-000368 - 374.

²³⁰³ OCC Interpretive Letter No. 693 (11/14/1995), PSI-OCC-01-000135 - 141, (citing 12 U.S.C. §24 (Seventh)). For more information, see discussion of JPMorgan’s involvement with size limits, below.

²³⁰⁴ See 12 C.F.R. §225.28(b)(8)(iii) (2/28/1997) (stating that permissible nonbank activities include: “Buying, selling and storing bars, rounds, bullion, and coins of gold, silver, platinum, palladium, copper, and any other metal approved by the Board, for the company’s own account and the account of others, and providing incidental services such as arranging for storage, safe custody, assaying, and shipment.”).

²³⁰⁵ 10/28/2014 email from the Federal Reserve to Subcommittee, PSI-FRB-16-000001 - 002.

²³⁰⁶ *Id.*

opposed the proposed ETF, alleging it would artificially restrict copper supplies and raise copper prices and price volatility, unconnected to fundamental forces of supply and demand. JPMorgan has since placed its ETF proposal on hold, but has not withdrawn its proposed registration statement with the Securities and Exchange Commission (SEC). JPMorgan's physical copper activities raise financial risk, conflict of interest, and market manipulation concerns.

(a) Trading Copper

JPMorgan has been trading metals, including copper, for many years.²³⁰⁷ JPMorgan conducts its copper activities through its Global Metals Group which, according to JPMorgan, is a "core component" of its Global Commodities Group.²³⁰⁸ The Global Commodities Group, and its Global Metals Group, are part of the financial holding company.²³⁰⁹ For years, however, the majority of JPMorgan's metals trading has been booked, not through the financial holding company, but through JPMorgan Chase Bank.²³¹⁰ The OCC told the Subcommittee that JPMorgan Chase Bank is the only national bank that, in recent years, has engaged in extensive physical metals trading and maintained a large physical metals inventory.²³¹¹

Two legal entities actually execute metal trades for the bank. The first is a U.K. bank subsidiary, J.P. Morgan Securities PLC, which is a market maker for metals on the LME as well as an LME "Category 1 ring dealer" which gives it special trading status on the exchange.²³¹² The second is JPMorgan Ventures Energy Corporation (JPMVEC), a U.S. subsidiary of the financial holding company.²³¹³ JPMVEC has employees who work for both the holding company and the bank, and handle both financial and physical commodity activities, in an arrangement that has been disclosed to and permitted by the Federal Reserve.²³¹⁴

²³⁰⁷ See, e.g., 1/2012 "JPM Commodity Capabilities," prepared by JPMorgan, FRB-PSI-200832 - 865, at 838 (indicating the Global Metals Group has been transacting business with clients "over the past 30 years").

²³⁰⁸ Id.

²³⁰⁹ Id.

²³¹⁰ Subcommittee briefing by JPMorgan (10/10/2014); 10/23/2014 email from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-16-000001.

²³¹¹ Subcommittee briefing by OCC (9/22/2014).

²³¹² 10/23/2014 email from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-16-000001.

²³¹³ Id.

²³¹⁴ See 7/21/2005 "Notice to the Board of Governors of the Federal Reserve System by JPMorgan Chase & Co. Pursuant to Section 4(k)(1)(B) of the Bank Holding Company Act of 1956," prepared by JPMorgan (requesting a complementary order to conduct physical commodity activities), PSI-FederalReserve-01-000004 - 028, at 012 - 013 (discussing JPMVEC).

The Global Metals Group operates a metals trading desk that conducts both financial and physical copper activities.²³¹⁵ Its financial activities include trading copper futures, swaps, options, and forwards, as well as financing arrangements, structured transactions, and hedging transactions for clients. Physical activities include buying and selling physical copper on the spot market and through LME warrants.²³¹⁶ Although the Global Metals Group is located within the financial holding company, the traders on its metals trading desk are employed by the bank or J.P. Morgan Securities PLC, the bank's subsidiary.²³¹⁷ The metals desk traders are also "empowered to act for other legal entities within the JPM group through service agreements that are in place between entities and through 'dual-hatting' arrangements, whereby individuals can be officers of more than one legal entity in the group."²³¹⁸ In other words, the same traders on the metals trading desk can book metals trades for both the bank and the financial holding company.

JPMorgan's physical metal holdings increased after its acquisition of Bear Stearns in 2008²³¹⁹ and RBS Semptra in 2010.²³²⁰ As part of the RBS Semptra acquisition, JPMorgan gained ownership of the Henry Bath & Sons global network of warehouses, most of which were certified by the London Metal Exchange to store LME metals, including copper.²³²¹ JPMorgan began marketing Henry Bath warehousing services along with its other financial and physical activities involving metals, including copper.²³²² JPMorgan is also, through J.P. Morgan Securities PLC, a "ring dealing" member of the LME, meaning that its traders can

²³¹⁵ See, e.g., excerpts from undated JP Morgan presentation, "Introduction to JPM Commodities & Steel Hedging/JP Morgan Global Commodities Group," FRB-PSI-301538 - 592, at 592; 1/2012 JPMorgan presentation, "JPM Commodity Capabilities," FRB-PSI-200832 - 865, at 838.

²³¹⁶ See, e.g., undated JPM presentation, "Introduction to JPM Commodities and Steel Hedging," at FRB-PSI-301538 - 592, at 592; 1/2012 JPMorgan presentation, "JPM Commodity Capabilities," FRB-PSI-200832 - 865.

²³¹⁷ 10/23/2014 email from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-I6-000001.

²³¹⁸ Id. See also 7/21/2005 "Notice to the Board of Governors of the Federal Reserve System by JPMorgan Chase & Co. Pursuant to Section 4(k)(1)(B) of the Bank Holding Company Act of 1956," prepared by JPMorgan, PSI-FederalReserve-01-000004 - 028, at 012 - 013 (indicating JPMVEC employees can work for both the bank and holding company).

²³¹⁹ See, e.g., 7/31/2008 "Supervisory Plan, Risk Assessment Program & Institutional Overview of JPMorgan Chase & Co." prepared by the Federal Reserve, FRB-PSI-305013-030 (identifying Bear Stearns assets being integrated into JPMorgan) [sealed exhibit].

²³²⁰ See, e.g., "2010 CA Quarterly Summary Global Commodities Group," prepared by JPMorgan, FRB-PSI-300645 - 649, at 645; 1/2012 JPMorgan presentation, "JPM Commodity Capabilities," FRB-PSI-200832 - 865, at 836; 7/1/2010 JPMorgan press release, "J.P. Morgan completes commodities acquisition from RBS Semptra," https://www.jpmorgan.com/cm/cs?page.name=JPM_redesign/JPM_Content_C/Generic_Detail_Page_Template&cid=1277505237241.

²³²¹ See, e.g., 4/2011 "Global Commodities - Operating Risk," prepared by JPMorgan, FRB-PSI-623086 - 127, at 101.

²³²² See, e.g., 1/2012 JPMorgan presentation, "JPM Commodity Capabilities," FRB-PSI-200832 - 865, at 838, 841.

trade copper and other metals on the floor of the LME, and a member of the LME Copper Committee.²³²³

In 2011, JPMorgan described its “base metals” trading activities as “[c]lient-focused trading of aluminium, copper, zinc, lead, nickel and tin in Asia, Europe and the Americas.”²³²⁴ It noted that, during 2010, it had executed transactions involving more than 1 million metric tons of metal with a value of \$4 billion; and, in 2011, held “1.2 million metric tonnes of [metals] inventory in various global locations with a value of \$4.2 [billion].”²³²⁵ In 2012, in a presentation prepared for clients, JPMorgan stated that it was “a member of all the world’s leading metals exchanges,” traded “metal forwards and options including long dated contracts,” had experience with “larger transactions,” and was a “leading trader in physical metal.”²³²⁶ JPMorgan also noted that, in 2013, its metals business had 650 “[f]inancial” and 166 “[p]hysical” clients.²³²⁷

JPMorgan’s physical metal activities resulted in its holding multi-billion-dollar inventories of various metals, including inventories that experienced significant volatility. For example, in 2010, JPMorgan’s inventory of nickel peaked at nearly \$2.2 billion, only to fall nearly 85% soon after.²³²⁸ Similarly, in 2011, JPMorgan’s platinum holdings peaked at nearly \$1.5 billion, only to fall sharply after its peak.²³²⁹ In the largest single base metals holding seen by the Subcommittee, in January 2012, JPMorgan held a nearly \$7.5 billion inventory of aluminum, consisting of a whopping 3.5 million metric tons of aluminum,²³³⁰ an amount exceeding over half of the entire North American annual consumption of aluminum that year.²³³¹

²³²³ See undated “LME Membership,” list of “Ring Dealing” members, LME website, http://www.lme.com/en-gb/trading/membership/category-1-ring-dealing/j_p_morgan-securities-plc/; LME Copper Committee, LME website, <https://www.lme.com/about-us/corporate-structure/committees/copper-committee/>.

²³²⁴ 4/2011 “Global Commodities - Operating Risk,” prepared by JPMorgan, FRB-PSI-623086 - 127, at 101.

See also “Commodities[:] Metals,” JPMorgan website (listing copper as a “base metal”), <https://www.jpmorgan.com/pages/jpmorgan/investbk/solutions/commodities/metals>

²³²⁵ 4/2011 “Global Commodities - Operating Risk,” prepared by JPMorgan, FRB-PSI-623086 - 127, at 101.

²³²⁶ 1/2012 JPMorgan presentation, “JPM Commodity Capabilities,” FRB-PSI-200832 - 865, at 840. See also 9/2013 “Global Commodities Compliance Self Assessment,” prepared by JPMorgan, FRB-PSI-301370 - 378, at 372.

²³²⁷ 6/24/2013 “Global Commodities BCC,” prepared by JPMorgan, FRB-PSI-301397 - 442, at 411.

²³²⁸ See 3/22/2013 letter from JPMorgan legal counsel to Subcommittee, JPM-COMM-PSI-000015 - 019.

²³²⁹ *Id.*

²³³⁰ 11/10/2014 email from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-23-000001 - 006.

²³³¹ See undated “Primary Aluminum Consumption, 2011-2013,” European Aluminum Association website, <http://www.alueurope.eu/consumption-primary-aluminium-consumption-in-world-regions/> (indicating that North American primary aluminum consumption in 2012 was 5.3 million metric tons).

JPMorgan Copper Inventories. In recent years, as part of its copper activities, JPMorgan has held substantial inventories of physical copper and sometimes conducted outsized transactions to build or reduce its holdings. JPMorgan told the Subcommittee that virtually all of its physical copper, like its other base metals, has been held in the name of JPMorgan Chase Bank.²³³²

JPMorgan provided the Subcommittee with information on the market value of its physical copper holdings each year between 2008 and 2013.²³³³ The following chart shows how its copper inventories increased tenfold in value over that time period, and how the size of its copper holdings varied significantly during the year:

**JPMorgan Physical Copper Inventories by Market Value
2008-2012**

	2008	2009	2010	2011	2012	2013**
Year-End Totals*	\$148 million	\$304 million	\$660 million	\$1.26 billion	\$1.13 billion	\$1.7 billion
Maximum During Year	\$242 million	\$551 million	\$1.65 billion	\$2.72 billion	\$1.22 billion	N/A

* Amounts as of the end of the fiscal year. ** As of June 28, 2013.

Data provided by JPMorgan uses monthly inventory values.

Source: Attachment to 3/22/2013 letter from JPMorgan legal counsel to Subcommittee, JPM-COMM-PSI-000015; 9/26/2013 "Fed/OCC/FDIC Quarterly Meeting," prepared by JPMorgan, page entitled: "Key Risk Positions – as of June 28, 2013[:] Key Risk Positions in Bank," at FRB-PSI-301388.

In December 2010, several media reports named JPMorgan as the undisclosed trader behind a \$1.5 billion copper transaction that allegedly led to a single trader holding, as indicated in an LME daily report on warrants, between 50% and 80% of the existing LME warrants for copper, then representing about 350,000 metric tons of copper.²³³⁴ JPMorgan told the Subcommittee that, while it did purchase substantial amounts of copper in November and December 2010, it did so through multiple transactions on behalf of more than 50 clients, and the "trade data does not appear to support the theory that J.P.Morgan's copper

²³³² Subcommittee briefing by JPMorgan (10/10/2014).

²³³³ See 3/22/2013 letter from JPMorgan legal counsel to Subcommittee, JPM-COMM-PSI-000015; 9/26/2013

"Fed/OCC/FDIC Quarterly Meeting," prepared by JPMorgan, page entitled: "Key Risk Positions – as of June 28, 2013[:] Key Risk Positions in Bank," at FRB-PSI-301382 - 396, at 388.

²³³⁴ See, e.g., "JP Morgan revealed as mystery trader that bought £1bn-worth of copper on LME," *The Telegraph*, Louise Armitstead and Rowena Mason (12/4/2010), <http://www.telegraph.co.uk/finance/newsbysector/industry/8180304/JP-Morgan-revealed-as-mystery-trader-that-bought-1bn-worth-of-copper-on-LME.html>; "A Single Trader, JP Morgan, Holds 90% Of LME Copper," *Zero Hedge*, Tyler Durden (12/21/2010), <http://www.zerohedge.com/article/single-trader-jp-morgan-holds-90-lme-copper>. See also 12/15/2010 LME daily "Warrant Banding Report," PSI-LME-06-000001 - 003 (showing a single trader holding between 50% and 80% of total LME warrants for copper at that time); 10/31/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-18-000001 - 008, at 002 (indicating LME copper warrants totaled 350,000 metric tons at the time).

warrant position was the result of a single large trade.”²³³⁵ JPMorgan also told the Subcommittee that its copper trading decisions were completely unrelated to its proposal for a copper-based exchange traded fund (ETF), described below, noting that the copper trading decisions were made by the metals trading desk, which was completely separate from the “Commodity Investor Products” group that was designing the ETF.²³³⁶

JPMorgan indicated that according to its records, in December 2010, its copper inventory, which included both LME warrants and a small amount of non-LME warranted copper, “ranged from approximately 198,000 metric tonnes to 213,000 metric tonnes” of copper during the month, which was “approximately 57% to 61%” of all LME copper warrants available at the time.²³³⁷ The market value of its inventory, shown in the above chart, peaked at about \$1.65 billion. The increases in JPMorgan’s copper inventory took place at the same time copper prices were reaching all-time highs, and as the copper market was anticipating JPMorgan’s proposed copper-backed ETF.²³³⁸

An April 2011 internal analysis by JPMorgan of the operating risks facing its Global Commodities group took particular note of the size of its copper holdings during November 2010, which it described as representing “approx[imately] 52% of the published LME stock,” observing that the large position had triggered LME scrutiny of the trading desk.²³³⁹ Federal Reserve records indicate that JPMorgan may have had even more copper than its trading data shows for December 2010. A 2011 Federal Reserve document that was part of the preparation for its special physical commodities review noted that, in December 2010, JPMorgan had reported holding about “332,000 tons of

²³³⁵ 10/31/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-18-000001 - 008, at 002. See also Subcommittee briefing by JPMorgan legal counsel (10/29/2014).

²³³⁶ Subcommittee briefing by JPMorgan legal counsel (10/29/2014); 10/31/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-18-000001 - 008, at 005; 11/13/2014 email from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-24-000001. Both the metals trading desk and the Commodity Investor Products group are, however, located within the Global Commodities Group at JPMorgan.

²³³⁷ 10/31/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan - 18-000001 - 008, at 002.

²³³⁸ See, e.g., “JP Morgan revealed as mystery trader that bought £1bn-worth of copper on LME,” *The Telegraph*, Louise Armitstead and Rowena Mason (12/4/2010), <http://www.telegraph.co.uk/finance/newsbysector/industry/8180304/JP-Morgan-revealed-as-mystery-trader-that-bought-1bn-worth-of-copper-on-LME.html> (“Traders said JP Morgan’s name had been circulating the market all day as the most likely buyer, especially since it is about to launch a physically-backed ‘exchange-traded fund’ (ETF) in copper imminently. One metals broker dealing on the LME said: ‘The story is that they’re positioning themselves in front of the ETF. There’s been a lot of speculation it’s them.’”).

²³³⁹ 4/2011 “Global Commodities – Operating Risk,” prepared by JPMorgan, FRB-PSI-623086 - 127, at 120.

copper (over 50% of available physical inventory) in their own storage facilities.”²³⁴⁰

Regardless of the exact amount of JPMorgan’s copper holdings in late 2010, the facts indicate that JPMorgan held a significant portion of the physical copper available for trading in the United States. JPMorgan told the Subcommittee that, due to its large position in copper, it received LME guidance instructing it to lend some of its holdings to the market.²³⁴¹ On December 15, 2010, JPMorgan used the bulk of its copper warrants to settle other obligations, and substantially reduced its inventory to 56,000 tons which represented “roughly 16% of LME copper warrants at that time.”²³⁴² At the time of the December transactions, copper prices were near all-time highs.²³⁴³

After reducing its copper holdings in December, in the first three months of the next year, 2011, JPMorgan re-built its physical copper inventory, attaining a market value even larger than before.²³⁴⁴ At one point during 2011, as indicated in the chart above, its copper inventory peaked with a market value of \$2.7 billion. JPMorgan then sold a large amount of copper, reducing its inventory by about half so that, by the end of the fiscal year, the market value of its remaining copper holdings was about \$1.26 billion.²³⁴⁵ In September 2012, according to JPMorgan, the dollar value of its copper holdings had dropped slightly to about \$1.1 billion.²³⁴⁶ As of June 2013, JPMorgan reported to its regulators that its physical copper inventory had increased once more, to about \$1.7 billion, which JPMorgan described as a “key risk position” in the bank.²³⁴⁷ JPMorgan told the Subcommittee that, since then, it had substantially reduced its copper inventory so that, in September 2014, it had a market value of about \$368 million.²³⁴⁸

JPMorgan’s records show that, in recent years, the bank regularly engaged in massive copper trades that built and reduced its billion-dollar

²³⁴⁰ 2011 “Work Plan for Commodity Activities at SIFIs,” prepared by the Federal Reserve, FRB-PSI-200455 - 476, at 464 [sealed exhibit]; Subcommittee briefing by the Federal Reserve (11/27/2013).

²³⁴¹ 10/31/2014 letter from JPMorgan legal counsel to Subcommittee PSI-JPMorgan-18-000001 - 008, at 003.

²³⁴² *Id.*

²³⁴³ See, e.g., “Historical Copper Prices and Price Chart,” prepared by InfoMine Inc., <http://www.infomine.com/investment/metal-prices/copper/all/>.

²³⁴⁴ *Id.*; “JPMorgan Physical Copper Inventories by Market Value chart,” above.

²³⁴⁵ 3/22/2013 letter from JPMorgan legal counsel to Subcommittee, JPM-COMM-PSI-000015 - 019. See also 10/21/2014 letter from JPMorgan legal counsel to Subcommittee, JPM-COMM-PSI-000049.

²³⁴⁶ Attachment to 10/21/2014 letter from JPMorgan legal counsel to Subcommittee, JPM-COMM-PSI-000049.

²³⁴⁷ 9/26/2013 “Fed/OCC/FDIC Quarterly Meeting,” prepared by JPMorgan, page entitled: “Key Risk Positions – as of June 28, 2013[.] Key Risk Positions in Bank,” FRB-PSI-301382 - 396, at 388.

²³⁴⁸ Attachment to 10/21/2014 letter from JPMorgan legal counsel to Subcommittee, JPM-COMM-PSI-000049.

copper inventories. Due to the regulators' classification of copper as bullion, those activities operated outside of the OCC and Federal Reserve size limits on physical commodity activities to reduce risk.

(b) Proposing Copper ETF

In addition to trading copper in the physical and financial markets, in October 2010, JPMorgan filed a registration statement seeking to establish a copper-backed Exchange Traded Fund (ETF) which would have been the first ETF in the United States backed by a physical industrial metal.²³⁴⁹ The proposed ETF was designed to purchase physical copper, store it in the Henry Bath warehouses owned by JPMorgan, and issue securities linked to the value of that copper. The securities could then be sold and traded on U.S. securities exchanges. The proposed ETF stirred controversy among industrial end-users of copper who viewed it as likely to cause artificial supply shortages and higher and more volatile copper prices by removing large amounts of copper from the marketplace for indeterminate amounts of time.²³⁵⁰ While JPMorgan characterized the ETF as providing "a simple and cost-effective means of making an investment similar to an investment in copper,"²³⁵¹ others compared it to the Hunt Brothers' silver scandal and characterized it as an attempt to legally corner and squeeze the copper market to raise prices.²³⁵² The proposal went through a lengthy review process at the SEC which, in 2012, approved a rule change to allow the ETF to be listed on an exchange for trading, but JPMorgan then placed the project on hold.²³⁵³

Commodity-based ETFs. Exchange traded funds enable investors to buy and sell interests in a fund on a stock exchange in the same way that investors can use the stock exchange to buy and sell shares in a corporation.²³⁵⁴ The first ETF issuing securities linked to commodity prices appeared on a U.S. stock exchange in 2004, when

²³⁴⁹ See 10/22/2010 Form S-1 Registration Statement, J.P. Morgan Physical Copper Trust, filed by JPMorgan, SEC website,

<http://www.sec.gov/Archives/edgar/data/1503754/000119312510234452/ds1.htm>.

²³⁵⁰ See, e.g., 1/9/2013 letter from Robert B. Bernstein, Eaton & Van Winkle LLP, filed with the SEC on behalf of copper end-users and a copper merchant, File Number SR-NYSEArca-2012-28, SEC website, <http://www.sec.gov/comments/sr-nysearca-2012-28/nysearca201228-30.pdf>.

²³⁵¹ 4/5/2013 Form S-1 Registration Statement, JPM XF Physical Copper Trust, Amendment No. 8, at 3, SEC website,

http://www.sec.gov/Archives/edgar/data/1503754/000095010313002224/dp37414_s1a8.htm.

²³⁵² See, e.g., "Who Cornered the Copper Market? (JPM, JJC, COPX, SCCO, FCX)," 247WallStreet (12/23/2010), <http://247wallst.com/commodities-metals/2010/12/23/who-cornered-the-copper-market-jpm-jjc-copx-scco-fcx/>; "Copper: Part 2, The Next ETF," Jack H. Barnes website (12/4/2010), <http://jackhbarnes.wordpress.com/2010/12/04/copper-part-2-the-next-etf/>.

²³⁵³ Subcommittee briefing by JPMorgan (10/10/2014).

²³⁵⁴ 3/11/2013 letter from Senator Carl Levin to SEC, "JPM XF Physical Copper Trust, Form S-1 Registration Statement," (hereinafter, 2013 Levin letter), PSI to SEC (March 11 2013)-000001 - 015, at 002.

interests in an ETF linked to gold prices began trading.²³⁵⁵ Commodity-related ETFs can attract smaller investors more easily than commodity exchanges which use standardized futures and swaps contracts requiring relatively large investments; for example, LME copper futures currently require an initial investment of about \$6,500 to purchase a single contract.²³⁵⁶ Interests in commodity-related ETFs typically trade for much less. Currently, retail investors and market participants can buy and sell interests in a wide variety of commodity-related ETFs, some of which reference a single commodity²³⁵⁷ and others of which track broad commodity indexes.²³⁵⁸

Commodity-related ETFs use several different methods to establish their value. Some track one or more commodity indexes; some acquire commodity-related futures or other financial instruments; others acquire an inventory of actual physical commodities; while still others may offer a combination of those techniques, in each case linking the ETF's value to the value of the specified commodities. By investing in commodity-related ETFs, investors gain or lose value according to the rise or fall in the relevant commodity prices.²³⁵⁹

JPMorgan Copper ETF. In October 2010, JPMorgan filed an S-1 registration statement with the Securities and Exchange Commission (SEC) proposing to create an ETF called the "J.P. Morgan Physical Copper Trust."²³⁶⁰ In 2011, the name was changed to "JPM XF Physical Copper Trust" (JPMorgan Copper ETF).²³⁶¹ The ETF was structured as a Cayman Island trust whose assets were limited to a single physical commodity, copper. Its investment objective was to reflect the spot price of copper, less trust expenses and fees.²³⁶² JPMorgan affiliates were to serve as the fund's investment adviser, administer the trust, acquire the copper, store it at JPMorgan-owned Henry Bath warehouses, and help sell securities to investors, among other services, all of whose costs would be borne by the investors in the fund.²³⁶³ JPMorgan also

²³⁵⁵ Id.; "How gold ETFs have transformed the market in 10 years," Market Watch, Myra P. Saefong (3/29/2013), <http://www.marketwatch.com/story/how-gold-etfs-have-transformed-market-in-10-years-2013-03-29>.

²³⁵⁶ See "Copper," LME website, <https://www.lme.com/en-gb/metals/non-ferrous/copper/>.

²³⁵⁷ See, e.g., "SPDR Gold Shares: An Exchange Traded Gold Security,"

<http://www.spdrgoldshares.com/>.

²³⁵⁸ See, e.g., "iShares S&P GSCI Commodity-Indexed Trust,"

<http://www.ishares.com/us/products/239757/ishares-sp-gsci-commodityindexed-trust-fund>.

²³⁵⁹ See 2013 Levin letter, PSI to SEC (March 11 2013)-000001 - 015, at 002.

²³⁶⁰ 10/22/2010 Form S-1 Registration Statement, J.P. Morgan Physical Copper Trust, SEC website, <http://www.sec.gov/Archives/edgar/data/1503754/000119312510234452/ds1.htm>.

²³⁶¹ 6/10/2011 Form S-1 Registration Statement, JPM XF Physical Copper Trust, Amendment No. 4, SEC website,

http://www.sec.gov/Archives/edgar/data/1503754/000095010311002278/dp23025_s1a4.htm.

²³⁶² See 4/5/2013 Form S-1 Registration Statement, JPM XF Physical Copper Trust, Amendment No. 8 (hereinafter, "JPMorgan Copper Trust Registration Statement, Amendment No. 8"), at 1, SEC website,

http://www.sec.gov/Archives/edgar/data/1503754/000095010313002224/dp37414_s1a8.htm.

²³⁶³ Id. at 83 - 84.

disclosed in the proposed registration statement that it planned to have the ETF indemnify JPMorgan and its affiliates from any lawsuit filed by an aggrieved investor.²³⁶⁴

According to the proposed registration statement, the JPMorgan Copper ETF would not sell individual securities in the investment fund; instead, it would sell large blocks, or “Creation Units,” of 2,500 securities each to “Authorized Participants” (APs) who were authorized to sell them to individual investors.²³⁶⁵ To obtain a block of securities, the AP would be required to deliver to the ETF a specified amount of physical copper whose dollar value would support the fund.²³⁶⁶ After delivering the copper, the AP could begin selling the ETF securities to investors who could, in turn, trade them on a U.S. stock exchange.²³⁶⁷ JPMorgan indicated in the registration statement that it planned to act as one of the Authorized Participants.

JPMorgan’s registration statement explained that, if copper prices increased, the value of the ETF securities would increase, and investors would gain; conversely, if prices dropped, the securities’ values would fall, and investors would lose.²³⁶⁸ If the fund attracted sufficient investment, the ETF could sell more blocks of securities to Authorized Participants in exchange for additional copper deliveries.²³⁶⁹ If investors left the fund, the ETF could reduce its copper holdings, selling the copper on the spot market or through other arrangements.²³⁷⁰

After several years of debate and controversy, on December 14, 2012, the SEC approved a proposed rule change by NYSE Arca Inc. to list the copper ETF for trading.²³⁷¹ A copper merchant and four industrial copper end-users sent a joint request for the SEC to reconsider its decision, warning that the ETF’s removal of physical copper from the market would disrupt supply and demand fundamentals, cause damaging price increases, and lead to commercial supply shortages.²³⁷² But in March 2013, the SEC reaffirmed its decision.²³⁷³

²³⁶⁴ Id. at 87. See also 2013 Levin letter, at PSI to SEC (March 11 2013)-000014.

²³⁶⁵ Id. at 85 - 86.

²³⁶⁶ See 2013 Levin letter, at PSI to SEC (March 11 2013)-000003.

²³⁶⁷ Id.

²³⁶⁸ See JPMorgan Copper Trust Registration Statement, Amendment No. 8, at 15.

²³⁶⁹ Id. at 78 - 79.

²³⁷⁰ See 2013 Levin letter, at PSI to SEC (March 11 2013)-000002.

²³⁷¹ See 12/14/2012 SEC Release No. 34-68440, File No. SR-NYSEArca-2012-28, “Self-Regulatory Organizations; NYSE Arca, Inc.; Notice of Filing of Amendment No. 1 and Order Granting Accelerated Approval of a Proposed Rule Change as Modified by Amendment No. 1 to List and Trade Shares of the JPM XF Physical Copper Trust Pursuant to NYSE Arca Equities Rule 8.201,” filed by the SEC, <http://www.sec.gov/rules/sro/nysearca/2012/34-68440.pdf>.

²³⁷² See 1/9/2013 letter from Robert B. Bernstein, Eaton & Van Winkle LLP, filed with the SEC, File Number SR-NYSEArca-2012-28, SEC website, <http://www.sec.gov/comments/sr-nysearca-2012-28/nysearca201228-30.pdf>.

²³⁷³ See 3/28/2013 SEC Release No. 34-69256, File No. SR-NYSEArca-2012-28, “Self-Regulatory Organizations; NYSE Arca, Inc.; Response to Comments Submitted After the

Challenges were also filed to JPMorgan's proposed registration statement, contending that it failed to provide sufficient information to investors about, among other matters, how JPMorgan's copper activities could affect the fund; what roles would be played by JPM affiliates in administering the fund, and how those affiliates would be compensated; whether JPMorgan's interests were aligned with or could adversely affect the fund's clients; and how the fund would handle conflict of interest and market manipulation issues.²³⁷⁴ Over the course of two years, JPMorgan amended its proposed registration statement eight times to address numerous concerns,²³⁷⁵ but the statement has yet to be deemed effective by the SEC.²³⁷⁶ JPMorgan told the Subcommittee that it has placed its copper ETF proposal on indefinite hold.²³⁷⁷

(3) Issues Raised by JPMorgan's Involvement with Copper

JPMorgan's copper activities raise two sets of concerns. The first focuses on the loophole in the regulatory rules for physical commodities that exempts copper from size limits and other safeguards to ensure physical commodity activities are carried out in a financially safe and sound manner. The second focuses on the conflict of interest and market manipulation concerns related to the proposed JPMorgan Copper ETF.

Issuance on December 14, 2012, of a Notice of Filing of Amendment No. 1 and Order Granting Accelerated Approval of a Proposed Rule Change as Modified by Amendment No. 1 to List and Trade Shares of the JPM XF Physical Copper Trust Pursuant to NYSE Arca Equities Rule 8.201," filed by the SEC, SEC website, <http://www.sec.gov/rules/sro/nysearca/2013/34-69256.pdf/>.

²³⁷⁴ See, e.g., 2013 Levin letter, PSI to SEC (March 11 2013)-000001 - 015.

²³⁷⁵ See 4/5/2013 JPMorgan Copper Trust Registration Statement, Amendment No. 8.

²³⁷⁶ Subcommittee briefing by the SEC (10/8/2014).

²³⁷⁷ Subcommittee briefing by JPMorgan (4/23/2014). The JPMorgan registration statement represents the largest proposed copper ETF to date, but it is not the only proposal. A second is the BlackRock iShares Copper Trust, which was proposed in 2011, and approved by the SEC in 2013, but still not finalized. See 9/2/2011 Form S-1 Registration Statement, iShares Copper Trust, Amendment No. 4, SEC website, <http://www.sec.gov/Archives/edgar/data/1504251/000119312511240231/ds1a.htm>; 2/22/2013 SEC Release No. 34-68973, File No. SR-NYSEArca-2012-66, "Self-Regulatory Organizations; NYSE Arca, Inc.; Notice of Filing of Amendments No. 1 and No. 2 and Order Granting Accelerated Approval of a Proposed Rule Change as Modified by Amendments No. 1 and No. 2 to List and Trade Shares of the iShares Copper Trust Pursuant to NYSE Arca Equities Rule 8.201," filed by SEC, <http://www.sec.gov/rules/sro/nysearca/2013/34-68973.pdf>. Additionally, a London-based investment firm called ETF Securities introduced a physical copper ETF in Europe that is similar to, but much smaller than, the JPMorgan and BlackRock proposals. It holds only about 3,400 metric tons of copper, while the JPMorgan and BlackRock proposals collectively seek to place in storage about 70% of the current copper stocks in LME warehouses. See "SEC Approves JPMorgan's Plan For Copper ETF, First in US," Reuters (12/17/2012), <http://www.moneynews.com/Markets/SEC-JPMorgan-Copper-ETF/2012/12/17/id/467985/>.

(a) Unrestricted Copper Activities

Over the past five years, JPMorgan has conducted massive copper trades, including some in late 2010 involving billions of dollars and over 50% of the LME's total copper warrants. In 2011, its physical copper inventory peaked at more than \$2.7 billion. To the Subcommittee's knowledge, JPMorgan is the only large U.S. financial holding company that conducts copper trading primarily through its federally insured national bank.

As discussed in the following section, both the OCC and the Federal Reserve impose size limits on physical commodity activities to ensure they do not threaten the safety and soundness of the financial institutions conducting those activities.²³⁷⁸ The OCC limits banks to settling no more than 5% of their derivative transactions by taking physical delivery of commodities. The Federal Reserve limits financial holding companies to conducting complementary physical commodity activities at no more than 5% of their Tier 1 capital. Activities involving "bullion," however, are exempted, not only from those limits, but also from any monitoring and reporting requirements related to the size of physical commodity activities.

JPMorgan informed the Subcommittee that it did not include any of its copper holdings when calculating the market value of its physical commodity holdings for purposes of complying with the OCC and Federal Reserve size limits.²³⁷⁹ JPMorgan indicated, for example, that when it added up the dollar value of its physical commodity holdings to gauge compliance with the OCC's derivatives limit, it omitted its copper holdings, which often exceeded \$1 billion.²³⁸⁰ JPMorgan explained that it also did not include copper – or any of the metal holdings at its bank – when calculating compliance with the Federal Reserve's complementary limit, because they were not held pursuant to its complementary authority from the Federal Reserve.²³⁸¹ When the Subcommittee asked the Federal Reserve about JPMorgan's exempting its copper holdings from the regulatory size limits, the Federal Reserve confirmed that copper trading activities are, in fact, conducted under a separate Federal Reserve grant of regulatory authority for "bullion,"²³⁸² and so were not conducted under JPMorgan's complementary authority and were not subject to the 5% limit.²³⁸³

²³⁷⁸ See discussion of JPMorgan's involvement with size limits, below.

²³⁷⁹ Subcommittee briefing by JPMorgan (10/10/2014).

²³⁸⁰ *Id.*

²³⁸¹ Subcommittee briefing by JPMorgan (10/10/2014). For more information about exempting its bank's holdings from the Federal Reserve's size limit, see discussion in the next section, below.

²³⁸² Subcommittee briefing by Federal Reserve (10/8/2014); 12 C.F.R. §225.28(b)(8)(iii).

²³⁸³ 10/30/2014 email from the Federal Reserve to the Subcommittee, PSI-JPMorgan-15-000001 - 008, at 002-003.

Exempting “bullion” from physical commodity limits and reporting requirements rests on the traditional role of banks using gold and silver as mediums of exchange; while anachronistic, that exception has been viewed as a limited one.²³⁸⁴ Extending the definition of “bullion” to copper dramatically stretched the exception. In its 1995 interpretative letter deciding that copper could be treated as “bullion,” the OCC ignored copper’s longstanding, worldwide trading status as a base metal, and instead highlighted other characteristics:

“Copper, like platinum and palladium, has been used to mint legal-tender coins. ... Additionally, copper, like platinum and palladium, is bought and sold as a metal in a mass standardized as to weight and purity.”²³⁸⁵

Focusing on the use of copper in coins and the use of standardized weight and purity requirements in copper trading does not explain, however, why copper merits special status. Other base metals, such as zinc, nickel, and even steel, have been used to make coins in the United States. In fact, the penny – the U.S. coin most closely associated with copper – has been composed of 97.5% zinc since 1984.²³⁸⁶ Moreover, a broad swath of base metals, including aluminum, lead, steel, and uranium, are traded using standardized weight and purity requirements.²³⁸⁷ Even today, more than 15 years after the OCC’s determination, banks – including JPMorgan Chase Bank,²³⁸⁸ trading firms,²³⁸⁹ analysts,²³⁹⁰ and exchanges²³⁹¹ continue to treat copper for

²³⁸⁴ The Subcommittee did not examine the gold, silver, platinum, and palladium trading undertaken by the financial institutions that are the subject of this Report, and has no data on the actual size of that trading activity.

²³⁸⁵ OCC Interpretive Letter No. 693 (11/14/1995), PSI-OCC-01-000135 - 141, 138.

²³⁸⁶ See undated “The Composition of the Cent,” United States Mint,

http://www.usmint.gov/about_the_mint/fun_facts/?action=fun_facts2.

²³⁸⁷ See “Metals Used in Coins and Medals,” Coins of the UK, Tony Clayton (3/9/2014),

<http://www.coins-of-the-uk.co.uk/pics/metal.html>.

²³⁸⁸ See e.g., undated “Commodities,” JPMorgan website,

<https://www.jpmorgan.com/pages/jpmorgan/investbk/solutions/commodities/metals> (listing copper as a “base metal” on its Products & Solutions webpage); 9/26/2013 “FED/OCC/FDIC Quarterly Meeting,” prepared by JPMorgan, FRB-PSI-301383-396, at 388 (including copper, along with aluminum, nickel, and zinc, under the heading “Base Metal” and identifying a copper holding as one of the bank’s “Key Risk Positions”); 7/24/2013 “Mining commodities: The focus shifts to the supply side,” prepared by Goldman, http://ucore.com/Commodities_Supply_Side.pdf (explaining in a 2013 report on investment strategies that, because copper was expected to underperform zinc and lead: “Copper has shifted to [their] least preferred base metal on a 6-18 month view”); 12/10/2010 “2011 Outlook: A Commodity Bull Market,” prepared by Morgan Stanley, at 1 and 7, file:///C:/Users/am44209/Downloads/COMMODITIES_2011_OUTLOOK.pdf (describing copper as Morgan Stanley’s “favorite base metal,” with “copper fundamentals” that “remain the strongest in the base metal complex”).

²³⁸⁹ See, e.g., undated “Base Metals,” Mercuria Energy Trading,

<http://www.mercuria.com/trading/base-metals> (listing copper, along with aluminum, lead, zinc, nickel and tin, on its “base metals” information page); undated “Trading: Refined Metals: Products,” Trafigura website, <http://www.trafigura.com/trading/non-ferrous-and-bulk/refined-metals/> (describing its metals business as dealing “mainly in London Metal Exchange (LME) deliverable grades for the major base metal markets, including copper, lead, zinc, nickel and

trading and risk management purposes as a base metal, not a precious metal. U.S. bank regulators' contrary stance is out of alignment with worldwide trading norms.

Given copper's widely-accepted trading status as a base metal, the impact of copper price volatility on end-users, and financial holding company involvement with massive copper inventories and transactions, the Federal Reserve and OCC should treat copper as subject to all the same size limits and reporting requirements that apply to other base metals. Otherwise, copper will continue to provide a loophole that can be used to circumvent otherwise applicable physical commodity safeguards important to protecting U.S. taxpayers from risks related to physical commodity activities.

(b) ETF Conflicts of Interest

A second set of concerns involves JPMorgan's proposal to construct an Exchange Traded Fund (ETF) backed by physical copper. While this proposal is currently on hold, the relevant registration statement has not been withdrawn from the SEC by JPMorgan, and the registration process could be easily re-started.²³⁹² For that reason, the JPMorgan Copper ETF continues to raise conflict of interest and market manipulation concerns that need to be addressed.

One area of potential conflicts of interest involves JPMorgan's ownership of a significant copper inventory and its active copper trading activities at the same time it has been working to create a copper-backed ETF. As indicated earlier, JPMorgan's copper inventory fluctuated from 2010 to 2013, peaking at \$2.7 billion but rarely falling below \$1 billion in market value. JPMorgan told the Subcommittee that its massive

aluminium"); undated, "Base Metals[:] Copper," Metal Bulletin website, <http://www.metalbulletin.com/Base-metals/Copper.html#axzz3GEGCyEkl>.

²³⁹⁰ See, e.g., 4/9/2012 "CPM Group: Commodities Views-Apr 9," prepared by CPM Group, http://www.cmegroup.com/education/files/14-CPM_Commodities_Views_8-14_2012-04-09.pdf; undated, "Base Metals," CPM Group, <http://www.cpmgroup.com/our-commodities-coverage/base-metals> (listing copper as a base metal on the website and in the weekly commodities view report of CPM Group, a commodities research firm).

²³⁹¹ See, e.g., 9/4/2014, "New Products Briefing - LME and HKEx: Base Metals Seminar," LME website, http://www.lme.com/news-and-events/events/events/2014/09/new-products-briefing_-lme-and-hkex--singapore/ (announcing a new base metals seminar to launch London Metal mini contracts "in base metals such as copper, aluminum and zinc"); 9/5/2014, "Precious Metals Price Data and Matching and Clearing Services," LME website, http://www.lme.com/~media/Files/Notices/2014/2014_09/14%20269%20A261%20Precious%20Metals%20Price%20Data%20and%20Matching%20and%20Clearing%20Services.pdf (omitting copper from its precious metals price data and clearing services); undated, "Metals Product Slate," CME Group website, <http://www.cmegroup.com/trading/metals/> (listing copper and aluminum in its "base metal" subgroup and not under its "precious metals" subgroup.); undated "Commodity Market Commentary: Energy, Metals and the Soft Commodities," CME Group website, <http://www.cmegroup.com/education/featured-reports/cpm-group-commodities-views.html> (listing copper in the base metals subgroup).

²³⁹² Subcommittee briefing by the SEC (10/8/2014).

copper acquisitions were unrelated to its ETF.²³⁹³ Nevertheless, its copper-backed ETF was designed to acquire a large physical copper inventory, and its registration statement indicated that JPMorgan planned to be one of the Authorized Participants that would deposit physical copper with the fund in exchange for ETF securities. In late 2010, in the two months after the ETF registration was first filed with the SEC, JPMorgan initiated trades that led to its amassing an enormous copper inventory. Analysts at the time predicted copper prices would rise as a result of JPMorgan's large copper purchases.²³⁹⁴ Soon after, JPMorgan sold the bulk of its copper holdings over a short period of time, suddenly increasing the marginal amount of copper available for trading, while contributing to volatility and downward pressure on copper prices. Those large trades demonstrate how JPMorgan could impact the value of the copper placed in its copper-backed ETF and do so through trades that could be beneficial or adverse to potential ETF investors.

By forming and administering the ETF, JPMorgan would also have positioned itself to gain access to commercially valuable, non-public ETF information that could have been used to benefit its trading activities, again, at times, in ways that could have been adverse to ETF investors. JPMorgan had arranged for its affiliates to advise and administer the ETF, necessarily giving them access to the ETF's internal records on copper investments and physical copper movements. Those JPMorgan affiliates would have gained access, for example, to information about plans by an Authorized Participant to buy physical copper to place in the ETF, an action which, if known beforehand, could have provided JPMorgan traders with an opportunity to profit from marginal supply shortages and rising copper prices. Alternatively, information that ETF investors were leaving the fund and might trigger a release of copper into the marketplace could have provided JPMorgan traders with an opportunity to short copper futures and benefit from lower prices. In that instance, JPMorgan could have initiated trades against the interests of ETF investors seeking higher copper prices. The JPMorgan registration statement recognized that possibility, stating that it had "not established formal procedures to resolve potential conflicts of interest," which would protect investors in the event that JPMorgan affiliates traded against the interests of the ETF investors.²³⁹⁵

Still another set of issues involves potential manipulation of copper prices. By amassing large amounts of physical copper, the JPMorgan

²³⁹³ 10/31/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-18-000001 - 008, at 005.

²³⁹⁴ See, e.g., "Copper price set to rise further after JP Morgan bet," *The Telegraph*, Rowena Mason (12/6/2010), <http://www.telegraph.co.uk/finance/newsbysector/industry/mining/8182493/Copper-price-set-to-rise-further-after-JP-Morgan-bet.html>.

²³⁹⁵ JPMorgan Copper Trust Registration Statement, Amendment No. 8, at 23.

Copper ETF would have made the copper market more susceptible to being squeezed by speculators. In 1996, a major scandal over copper prices involved the purchase of massive amounts of copper by the Sumitomo Corporation's chief copper trader who used those copper holdings to corner and squeeze the market and artificially inflate copper prices.²³⁹⁶ Additional squeezes in the copper market by unnamed traders amassing large copper holdings have generated media reports over the last few years.²³⁹⁷ The JPMorgan Copper ETF could have made the market even more susceptible to squeezes, because it would have been used by market participants to remove copper from the available market supply which, in turn, could have inflated copper prices. JPMorgan's own registration statement acknowledged that the ETF, "as it grows, may have an impact on supply and demand for copper that ultimately may affect the price of the shares in a manner unrelated to other factors affecting the global markets for copper."²³⁹⁸ In other words, the ETF, by removing copper from the marketplace, could affect copper prices in a way unrelated to fundamental supply and demand forces and which could act effectively as a manipulation of the price.

The market manipulation problem would have been magnified by the fact that the ETF's activities would have taken place without oversight from commodities regulators, because ETFs operate in securities markets and are not currently subject to commodities regulation. Instead, because ETFs issue securities to their investors, ETFs are currently regulated solely by securities regulators like the SEC, and not by commodities regulators, like the LME or Commodity Futures Trading Commission (CFTC). By holding physical copper that is not subject to LME warrants, the JPMorgan Copper ETF could have positioned itself to control a substantial portion of the available supply of physical copper without triggering LME or CFTC surveillance, rules, or reporting requirements.

²³⁹⁶ See, e.g., *Global Derivative Debacles: From Theory to Malpractice*, Laurent L. Jacque (World Scientific 2010), Chapter 7, at 97–101; "The Copper King: An Empire Built On Manipulation," Investopedia, Andrew Beattie (undated), <http://www.investopedia.com/articles/financial-theory/08/mr-copper-commodities.asp>.

²³⁹⁷ See, e.g., "Copper market expects squeeze, big holding appears," Reuters, Eric Onstad, (7/2/2012), <http://www.reuters.com/article/2012/07/02/us-copper-tightness-idUSBRE8610XK20120702>; "The Big Squeeze - mystery hand scoops up copper," Reuters (12/20/2013), <http://www.reuters.com/article/2013/12/20/copper-squeeze-idUSL6N0JX2FG20131220> ("Someone has made a near billion-dollar bet on copper this week, virtually cornering the world's key stocks of the metal. That has stoked worries of a supply squeeze, as warehouses run low on a raw material vital to global industry, and has raised questions about commodity exchanges' efforts to curb attempts to manipulate prices by aggressively heavy trading."); "Single Firm Holds More Than 50% of Copper in LME Warehouses," *Wall Street Journal*, Sarah Kent, Ese Erheriene, Ira Iosebashvili (10/26/2014), <http://online.wsj.com/articles/single-firm-holds-more-than-50-of-copper-in-lme-warehouses-1414361984?cb=logged0.02992292078844988>.

²³⁹⁸ JPMorgan Copper Trust Registration Statement, Amendment No. 8, at 21.

How the ETF planned to detect and prevent its misuse as a means of market manipulation was not addressed in the JPMorgan Copper ETF registration statement. As Subcommittee Chairman Levin put it in a letter challenging the registration:

“The S-1 [registration statement] does not identify, discuss, or present actions that could be taken to address the legal issues that might arise if the ETF itself is seen as fostering price distortions, squeezes, corners, or other price manipulations in the copper market. Nor does the S-1 detail what policies and procedures JPMorgan would follow to ensure that its other trading and business interests are not impermissibly conflicted with those invested in [the JPMorgan Copper ETF]. ...

As currently configured, the [JPMorgan Copper ETF] Trust contains no provisions to prevent high investor demand from causing an increase in copper prices or, alternatively, a quick drop in demand from driving down copper prices. The risk of a bubble in the copper market creates a corresponding risk that the bubble will eventually burst. If that happens, investors may dump thousands of metric tons of copper back onto the market, swamping the market and depressing the price, impacting not only copper-reliant industries around the world, but also possibly producing large gains for any parties shorting the copper market.”²³⁹⁹

The many conflict of interest and market manipulation concerns raised by an ETF backed by physical commodities are not fully addressed or resolved in the JPMorgan Copper ETF registration statement or the existing regulatory framework. If a financial holding company were to be found to have engaged in market manipulation through an ETF, it could lead to copper price distortions, civil and criminal actions by law enforcement agencies, lawsuits by ETF investors, legal expenses, penalties, and other consequences.

(c) Potential Economic Impacts of a Copper ETF

Aside from conflict of interest and market manipulation concerns, a copper-backed ETF may have significant impacts on the broader economy, by increasing commodity costs and price volatility for consumers and producers. Some commentators have said the financialization of base metals would “wreak havoc on the US and global economy.”²⁴⁰⁰ Those commentators note that the intent of a commodity-based ETF is to provide speculators with a way to bet on the price of the underlying commodity. Two supply and demand curves

²³⁹⁹ 2013 Levin letter, at PSI to SEC (March 11 2013)-000008.

²⁴⁰⁰ “Copper ETF Plan Would ‘Wreak Havoc,’” *Financial Times*, Jack Farchy (3/23/2012), <http://www.ft.com/intl/cms/s/0/a7d32d4c-a4fb-11e1-b421-00144feabdc0.html#axzz3DOphziCJ>.

result – one for the physical commodity such as metal, and another for the financial product related to that metal. Although the two are integrally related, they are distinct. For example, investors in a copper ETF may not be interested in using the copper; their goal may simply be to profit from changes in copper prices. Their investments are likely to drive up prices for consumers who actually use physical copper by reducing the supply of copper available on the market.

The market impact of a copper ETF may be exacerbated by the fact that copper has not historically been held for investment purposes.²⁴⁰¹ Copper is expensive to store and difficult to transport.²⁴⁰² Its supply and demand functions have traditionally been set according to commercial and personal uses, and not as a store of value.²⁴⁰³ That means, if a copper ETF were to be established, manufacturers, fabricators, and other industrial businesses that use copper would be forced to compete with speculators holding copper as a passive asset, changing the market dynamics of copper's supply and demand functions and introducing greater volatility.²⁴⁰⁴

For those reasons, the acquisition and holding of copper for investment purposes may have a greater impact on physical markets²⁴⁰⁵ and the broader economy²⁴⁰⁶ than ETFs holding palladium, platinum, silver, or gold. At the same time, a commodity-backed ETF can have a significant impact on the price and volatility of the underlying commodity, even when a precious metal is involved. For example, gold-related ETFs first surfaced in 2004,²⁴⁰⁷ with dozens of similar ETFs springing up over time.²⁴⁰⁸ Today, it has become clear that significant movements in the gold-related ETFs have had direct impacts on the price of physical gold.²⁴⁰⁹ As one analyst in the field noted: "You watch the flow of money No matter what the supply-and-demand

²⁴⁰¹ See, e.g., 1/9/2013 letter from Robert B. Bernstein, Eaton & Van Winkle LLP, filed with the SEC, File Number SR-NYSEArca-2012-28, at 26 – 28, SEC website, <http://www.sec.gov/comments/sr-nysearca-2012-28/nysearca201228-30.pdf>.

²⁴⁰² See, e.g., JPMorgan Copper Trust Registration Statement, Amendment No. 1, at 40-41.

²⁴⁰³ See, e.g., 1/9/2013 letter from Robert B. Bernstein, Eaton & Van Winkle LLP, filed with the SEC, File Number SR-NYSEArca-2012-28, at 26-28, SEC website, <http://www.sec.gov/comments/sr-nysearca-2012-28/nysearca201228-30.pdf>.

²⁴⁰⁴ Id. See also 2013 Levin letter, at PSI to SEC (March 11 2013)-000003.

²⁴⁰⁵ See "Speculative Influences on Commodity Futures Prices," Christopher Gilbert (2010), http://unctad.org/en/docs/osgdp20101_en.pdf, at 8.

²⁴⁰⁶ See "The Growing Financialisation of Commodity Markets: Divergences between Index Investors and Money Managers," Journal of Developmental Studies, Vol. 48, Issue 6, (2012), Jörg Mayer (UNCTAD), at 752 - 753.

²⁴⁰⁷ 2013 Levin letter, at PSI to SEC (March 11 2013)-000002.

²⁴⁰⁸ See, e.g., Form S-1 Registration Statement, streetTRACKS Gold Trust, Amendment No. 5 (11/16/2004), Securities and Exchange Commission website, <http://www.sec.gov/Archives/edgar/data/1222333/000095013604004007/file001.htm>; Form S-1 Registration Statement, iShares COMEX Gold Trust, Amendment No. 4 (1/25/2005), Securities and Exchange Commission website, <http://www.sec.gov/Archives/edgar/data/1278680/000119312505011426/ds1a.txt>.

²⁴⁰⁹ "Does a Big ETF Drive Gold's Price?" *Wall Street Journal*, Rob Curran (5/5/2013), <http://online.wsj.com/news/articles/SB10001424127887324030704578426613352725022>.

fundamentals [for physical gold] may suggest, if that money's flowing, those prices are going to move."²⁴¹⁰ The Wall Street Journal cited as a possible explanation for the impact of gold ETFs on physical gold prices, the relatively small size of the gold market, estimated at \$236 billion in annual sales in 2012, and the ETFs' significant share of those sales.²⁴¹¹

A copper-based ETF could create a similar dynamic with copper prices, with potentially even more dramatic effects on copper producers and consumers around the world, because of the larger size of the copper market.

(d) Inadequate Safeguards

A final set of concerns involves the lack of regulatory safeguards applicable to both copper and copper-backed ETFs. The regulatory decision to treat copper as "bullion" has already exempted copper as a class from OCC and Federal Reserve size limits intended to reduce risk. Similar regulatory gaps apply to copper-backed ETFs. Because commodity-related ETFs issue securities to investors, they operate outside of all commodity regulation and oversight, even though they directly impact both commodity prices and commodity trading. In addition, physical metals like copper generally fall outside of federal regulation, which currently focuses on the financial market for metals rather than the physical market, even though contracts to buy metals like copper in the physical market may reference prices set in the LME futures market.

Federal banking regulators should treat ETFs backed by physical commodities as within the category of physical commodity activities subject to their oversight. ETFs backed by physical commodities carry conflict of interest and market manipulation risks that can threaten the safety and soundness of affiliated banks and their holding companies. Federal bank regulators should make it clear that those ETFs are physical commodity activities subject to review, and impose regulatory constraints to reduce their risks, including size limits and safeguards to prevent conflicts of interest and market manipulation. Commodity regulators like the CFTC should also work with the SEC to apply position limits or other restrictions to ETF owners, organizers, and authorized participants to prevent the misuse of ETFs backed by physical commodities to manipulate commodity prices.

²⁴¹⁰ Id.

²⁴¹¹ Id.

(4) Analysis

JPMorgan has a long history as an active trader in copper markets. At times, it has amassed copper holdings worth billions of dollars, carrying financial risks due to volatile copper prices. It is not the only financial holding company with large copper holdings; for example, in January 2011, according to the Federal Reserve, Goldman held copper worth \$2.3 billion.²⁴¹² Those copper holdings should be subject to the same size limits as all other physical commodities, but currently are not. Federal bank regulators should ensure that copper's status as "bullion" does not lead to federally insured banks and their holding companies engaging in copper activities on an unrestricted basis, but instead ensure they operate within limits that reduce the risks associated with investing in such a volatile commodity.

In addition, while JPMorgan has placed its plan to offer a copper-backed ETF on hold, it could revive that proposal at any time. If it were to obtain approval of its registration statement, the resulting copper-backed ETF could distort copper markets worldwide with artificial supply shortages and price swings, create conflicts of interest between JPMorgan and the ETF investors, and expose JPMorgan to possible legal actions to prevent or halt market manipulation. If allowed to proceed, JPMorgan could also set an ill-advised precedent for other bank-sponsored commodity-backed ETFs that could raise similar concerns and have similar negative impacts on commodity markets. Regulators should act now to make clear that ETFs backed by physical commodities will be treated as a physical commodity activity subject to oversight, and develop safeguards to detect and prevent conflicts of interest and market manipulation.

²⁴¹² 2011 "Work Plan for Commodity Activities at SIFIs," prepared by the Federal Reserve, FRB-PSI-200455 - 476, at 464 [sealed exhibit].

D. JPMorgan Involvement with Size Limits

This final part of the JPMorgan case study examines, not a particular commodity, but issues related to financial holding company compliance with regulatory limits on the size of their physical commodity holdings. Those size limits were established to reduce the risks associated with those activities, protect the safety and soundness of the banks and their holding companies, and ensure that the banks and their holding companies remain engaged primarily in the business of banking and conduct only a limited amount of physical commodity acti.

The Federal Reserve, which is the primary regulator for financial holding companies, imposes several distinct limits on physical commodity activities. Depending on which authority is being relied upon, the activity may be: (i) limited to not more than 5% of the financial holding company's Tier 1 capital; (ii) limited to not more than 5% of the financial holding company's total consolidated assets (a much larger number); or (iii) subject to no limit at all. In addition, the Office of the Comptroller of the Currency (OCC), which is the primary regulator for national banks, has its own size limit on physical commodity activities. It requires that physical commodities transactions be conducted in only a "nominal" amount, comprising "no more than 5%" of the bank's commodity derivative transactions. Neither regulator has issued formal guidance on how to implement their limits or, until recently, required regular reports tracking compliance. Nor are their limits coordinated in any comprehensive or coherent way.

The Federal Reserve and OCC size limits applicable to JPMorgan and JPMorgan Chase Bank respectively were the Federal Reserve's 5% limit on complementary activities, and the OCC 5% limit on commodity derivative transactions that are physically settled. For years, JPMorgan and its bank employed aggressive interpretations on how to interpret and apply those two limits, at times without alerting regulators to their actions. In some cases, JPMorgan and JPMorgan Chase Bank implemented their respective size limits in ways that were later – after the regulators learned of them – rejected by the Federal Reserve or OCC. In other circumstances, its aggressive interpretations and implementation methodologies were allowed to continue, even after regulators learned of them.

The end result was that JPMorgan maintained physical commodity holdings far larger than the limits would suggest. In September 2012, for example, JPMorgan held physical commodity assets – excluding gold, silver, and commodity-related merchant banking assets – that had a combined market value of \$17.4 billion, which at the time equaled nearly 12% of its Tier 1 capital of \$148 billion. JPMorgan asserted, however, that due to various exclusions allowing it to omit certain

categories of assets when calculating compliance, the market value of its physical commodity assets for purposes of the Federal Reserve's 5% limit was only \$6.6 billion or 4.5% of its Tier 1 capital. The Federal Reserve told the Subcommittee that it had not yet objected to the exclusions JPMorgan was using to claim compliance with the 5% limit. That JPMorgan could claim to be in compliance with a 5% limit when its physical commodities were, in fact, more than double that size demonstrates how the current regulatory limits are riddled with exclusions, poorly coordinated, and currently ineffective to protect taxpayers from financial holding companies engaging in excessive amounts of high risk physical commodity activities.

(1) Background on Size Limits

Financial holding companies and their banks, when engaged in physical commodity activities, are subject to several sets of prudential limits on size enforced by the Federal Reserve and OCC.

Federal Reserve Limits. As explained earlier, the Federal Reserve historically permitted very little involvement by bank holding companies in physical commodities markets.²⁴¹³ Then in 1999, the Gramm-Leach-Bliley Act created a new category of "financial holding companies" and authorized them to engage in complementary, grandfathered, and merchant banking activities that could include physical commodities. The Federal Reserve responded by broadening the physical commodity activities that bank holding companies could conduct.²⁴¹⁴

For a financial holding company to engage in complementary activities, it must first obtain permission from the Federal Reserve. Beginning in 2000, the Federal Reserve authorized over a dozen financial holding companies to engage in "complementary" activities involving physical commodities.²⁴¹⁵ In the orders and letters granting that complementary authority, the Federal Reserve typically noted that the intent of the Gramm-Leach-Bliley complementary provision was "to allow the [Federal Reserve] Board to permit FHCs [financial holding companies]" to engage in the specified commercial activities "on a limited basis."²⁴¹⁶

²⁴¹³ See discussion in Chapter 2, above, on the history of bank involvement with physical commodities.

²⁴¹⁴ See discussion in Chapter 3, above, describing Federal Reserve actions after the 1999 Gramm-Leach-Bliley Act.

²⁴¹⁵ See discussion in Chapter 3 above, describing the Federal Reserve grants of complementary authority to financial holding companies from 2000 to 2009.

²⁴¹⁶ See, e.g., 11/18/2005 Federal Reserve "Order Approving Notice to Engage in Activities Complementary to a Financial Activity," in response to a request by JP Morgan Chase & Co., 92 Fed. Res. Bull. C57 - C59, at C57 (2006) (hereinafter, "2005 JPMorgan Complementary Order"), http://fraser.stlouisfed.org/docs/publications/FRB/2000s/frb_2006comp_p2.pdf.

The Federal Reserve also imposed a number of limitations on the financial holding companies receiving complementary authority. One key limitation stated that, “to limit the potential safety and soundness risks of Commodity Trading Activities,” the “market value of commodities held” by the financial holding company “must not exceed 5 percent” of the financial holding company’s “consolidated tier 1 capital.”²⁴¹⁷ In addition, the financial holding company was required to notify the Federal Reserve if the market value of its physical commodities “exceeds 4 percent of its tier 1 capital.”²⁴¹⁸ The Federal Reserve imposed that same volume limit and reporting requirement on all of the financial holding companies given complementary authority to engage in physical commodity activities.²⁴¹⁹

A later internal Federal Reserve memorandum described the twin objectives of the 5% limit as:

“intended to both limit the level of activity that ‘appears commercial in nature’ and to address safety and soundness concerns related to non-traditional risk from industrial commodities activities.”²⁴²⁰

Physical commodity activities undertaken as complementary activities were not the only activities subject to limits. In addition, the Gramm-Leach-Bliley Act imposed a limit on the physical commodity activities that could be undertaken by firms that converted to bank holding companies under the so-called “grandfather clause.”²⁴²¹ The statute specified that physical commodity activities undertaken through the grandfather clause had to be limited to “not more than 5 percent of the total consolidated assets of the bank holding company.”²⁴²² In addition, the statute authorized financial holding companies to engage in “merchant banking” activities which, among other types of business, could include physical commodity activities.²⁴²³ Initially, the Federal Reserve imposed a limit on the overall size of merchant banking activities, generally capping them at no more than 30% of the financial holding company’s Tier 1 capital, but that cap was removed more than a decade ago.²⁴²⁴ Since then, physical commodity activities undertaken

²⁴¹⁷ *Id.* at C58.

²⁴¹⁸ *Id.*

²⁴¹⁹ See citations to the individual orders in Chapter 3. Neither Goldman nor Morgan Stanley has ever requested or received a complementary order; they rely instead on other authorities, including the Gramm-Leach-Bliley grandfather and merchant banking authorities, to conduct their physical commodity activities.

²⁴²⁰ Undated but likely the second half of 2013 memorandum, “Commodities Focused Regulatory Work at JPM,” prepared by Federal Reserve, FRB-PSI-300299 - 302, at 301 [sealed exhibit].

²⁴²¹ See discussion in Chapter 3, above, regarding the grandfather clause.

²⁴²² See Gramm-Leach-Bliley Act, §103(a).

²⁴²³ See discussion in Chapter 3, above, regarding merchant banking authority.

²⁴²⁴ See 12 C.F.R. §225.174 (restricting merchant banking investments to no more than 30% of the financial holding company’s Tier 1 capital, or 20% of its Tier 1 capital after excluding private equity funds); Capital; Leverage and Risk-Based Capital Guidelines; Capital Adequacy,

pursuant to the merchant banking provision have operated with no size limit at all.

Each of the size limits imposed on financial holding company involvement with physical commodities was intended, in part, to reduce the safety and soundness risks associated with those activities. The Federal Reserve, however, has not issued any written guidance on how each of the limits should be applied, or how they should be integrated so that they work together efficiently and effectively. Nor, until recently, did the Federal Reserve impose routine reporting requirements to determine whether financial holding companies were appropriately valuing their physical commodity assets and accurately reporting compliance with the 5% limit.²⁴²⁵ Instead, the Federal Reserve essentially relied on its examiners and the financial holding companies themselves to ensure the complementary, merchant banking, and grandfathering limits were implemented in appropriate ways.

OCC Limits. A second set of limits on physical commodity activities was imposed by the OCC, which regulates federally-insured national banks, in contrast to the bank holding companies regulated by the Federal Reserve.

Like bank holding companies, federally-chartered banks have historically held inventories of precious metals, such as gold or silver, but not other types of physical commodities in any significant quantities. In 1993, the OCC significantly altered this landscape when it issued an Interpretive Letter that deemed it permissible for national banks to hedge their commodity-linked derivative transactions by taking or making delivery of physical commodities, subject to certain limitations.²⁴²⁶ Two years later, in 1995, the OCC broadened and clarified this new physical commodity hedging authority with another Interpretive Letter.²⁴²⁷ The OCC explicitly limited this hedging authority by imposing a number of requirements and restrictions, including that the authorized transactions needed to be:

- “nominal,” and that “no more than 5% of its total transactions involving Eligible Commodities would involve actual physical delivery;”
- “Hedge Transactions” used to “manage risk” arising out of permissible commodity-linked financial transactions;

Guidelines; Capital Maintenance: Nonfinancial Equity Investments, 67 Fed. Reg. 3784 (1/25/2002) (adopting a final rule that ended the size limit while imposing specific capital requirements for merchant banking investments).

²⁴²⁵ While the Federal Reserve has long had access to, and general reporting regarding, financial holding companies’ commodities activities, the specifics regarding compliance with applicable size limits, were not, until recently, regularly provided to the regulators.

²⁴²⁶ OCC Interpretive Letter No. 632 (6/30/1993), PSI-OCC-01-000358 - 366.

²⁴²⁷ OCC Interpretive Letter No. 684 (8/4/1995), PSI-OCC-01-000368 - 374.

- made only with “Eligible Commodities,” meaning physical metals that were not deemed to be bullion and coin, including aluminum, copper, lead, nickel, tin, zinc, cobalt, platinum, iridium, palladium, and rhodium;²⁴²⁸
- “customer-driven;” and not “entered into for speculative purposes.”²⁴²⁹

The Interpretive Letter did not detail how the specified limitations and safeguards were to be implemented. For example, the letter did not detail how the 5% limit should be calculated or applied. In addition, since 1995, the OCC has not issued any formal guidance on its 5% limit, nor, until recently, required regular reporting on compliance with it. Instead, similar to the Federal Reserve, until very recently, the OCC essentially relied on its examiners and the financial holding companies themselves to implement the limit in an appropriate way.

(2) JPMorgan Aggressive Interpretations

JPMorgan and JPMorgan Chase Bank have both, over the years, employed aggressive interpretations and practices when complying with the regulatory size limits.²⁴³⁰ JPMorgan, which exercised a wide range of complementary activities involving physical commodities, was subject to the Federal Reserve’s 5% limit. JPMorgan Chase Bank, which conducted a large amount of physical commodities activities involving primarily physical metals like aluminum and copper, was subject to the OCC’s separate 5% limit. From 2005 to 2012, despite those purported size limits, JPMorgan accumulated massive physical commodity holdings far in excess of 5% of its Tier 1 capital.

JPMorgan and JPMorgan Chase Bank claimed to be in compliance with the Federal Reserve and OCC size limits, despite the actual size of their physical commodity holdings, by excluding and minimizing the value of various assets when calculating the market value of their respective holdings. Until 2012, both regulators had largely relied on JPMorgan and JPMorgan Chase Bank to track their own compliance and report any breaches of the regulatory limits. When the regulators learned of their aggressive interpretations and practices in connection with the limits, they disallowed some, while allowing others to continue.

²⁴²⁸ Id. Three months later, the OCC issued another Interpretive Letter allowing banks to treat copper as “bullion,” which effectively excluded copper from the 5% limit imposed by the OCC. See OCC Interpretive Letter No. 693 (11/14/1995), PSI-OCC-01-000135 - 141.

²⁴²⁹ OCC Interpretive Letter No. 684 (8/4/1995), PSI-OCC-01-000368 - 374. The OCC also prohibited the bank from being a “dealer or market-maker” in the physical commodity transactions; required the bank to “take delivery by accepting warehouse receipts or simultaneous ‘pass-through’ delivery to another party;” and precluded the bank from taking “a net position” in the commodities. Id.

²⁴³⁰ In this section, unless otherwise indicated, “JPMorgan” refers to the holding company, JPMorgan Chase & Co., while “JPMorgan Chase Bank” refers to its primary national bank subsidiary.

JPMorgan's compliance practices came into the spotlight in late December 2011, when JPMorgan Chase Bank engaged in a massive physical commodities transaction, involving \$1.6 billion in aluminum, and breached the OCC's limit. To bring the bank back into compliance with the OCC limit, the bank "sold" about \$1.1 billion in aluminum to a nonbank affiliate of the JPMorgan holding company, JPMorgan Ventures Energy Corporation (JPMVEC). JPMorgan informed the Federal Reserve that it had exceeded the 4% reporting threshold for physical commodities, but would not exceed the 5% limit. That transaction led to both Federal Reserve and OCC examiners asking questions about the compliance of both JPMorgan and JPMorgan Chase Bank with their respective size limits. The Federal Reserve examiners learned for the first time that the financial holding company had not been including the value of its bank's physical commodity assets when reporting the market value of its physical commodity holdings to the Federal Reserve. The OCC examiners learned that the bank had earlier exceeded the OCC limit without disclosing the breach to OCC examiners, and then remained in breach of the limit, ultimately for about a month.

The Federal Reserve and OCC examiners also learned that, when the physical commodity assets of the financial holding company and bank were combined, they far exceeded 5% of the financial holding company's Tier 1 capital, and had exceeded that level in every month of 2011. JPMorgan and JPMorgan Chase Bank nevertheless asserted they were in full compliance with both the Federal Reserve and OCC 5% limits, except for the one-month period, because they could use exclusions and other valuation techniques that brought down the value of their respective assets to below the regulatory limits. Despite concerns expressed by Federal Reserve and OCC examiners about JPMorgan's excluding its bank's assets when calculating the financial holding company's physical commodity holdings, the Federal Reserve legal department has so far declined to object to JPMorgan's approach.

(a) Making Commitments

In 2004 and 2005, JPMorgan and JPMorgan Chase Bank sought expanded authority to engage in physical commodity activities from their respective regulators. To obtain that authority, both made commitments to comply with the size limits designed to reduce the associated risks.

2004 JPMorgan Chase Bank Commitments to the OCC. In 2004, as its merger with Bank One was being finalized, JPMorgan Chase Bank sent a letter to the OCC essentially alerting it to the physical commodity activities then taking place within the bank, and seeking

confirmation that those activities were permissible. The JPMorgan Chase Bank letter stated:

“The purpose of this letter is to provide you with information regarding the Bank’s current commodity derivative activities and to request the Office of the Comptroller of the Currency’s (the ‘OCC’) concurrence with our view that entering into (1) cash-settled derivative transactions in natural gas, crude oil, power, coal, emissions and weather, (2) physically-settled transactions in the form of transitory title transfers in natural gas, crude oil, power, emissions and coal, including volumetric production payment transactions, and (3) physical commodity transactions in natural gas, crude oil, coal and emissions, all as described more fully below, is permissible for a national bank.”²⁴³¹

To persuade the OCC to support continuation of its physical commodity activities, in its letter JPMorgan Chase Bank made a number of commitments, including that: (1) all of its commodity related transactions would be to assist customers, and not for purposes of speculation; (2) it would establish comprehensive risk management practices and policies; and (3) when the bank took delivery of physical commodities, it would act as a financial intermediary and that “taking delivery of a physical commodity should be incidental to such financial intermediation.”²⁴³² JPMorgan told the Subcommittee that the bank never received a specific written response from the OCC, but its understanding was that the activities described in its letter were, in fact, permissible.²⁴³³

2005 JPMorgan Commitments to the Federal Reserve. Nine months after JPMorgan Chase Bank sent the letter to the OCC, its holding company, JPMorgan, sent one to the Federal Reserve applying for complementary authority to engage in physical commodity activities through the financial holding company.²⁴³⁴ The letter asked that JPMorgan be allowed to “expand its commodities derivatives activities to include physical transactions in the natural gas, crude oil and emissions allowance markets” through an affiliate, JPMorgan Ventures Energy Corporation (JPMVEC).²⁴³⁵ The letter indicated that JPMVEC’s “front office” employees would also be employees of JPMorgan Chase Bank, and the bank would also supply administrative and operational

²⁴³¹ 10/26/2004 letter from JPMorgan legal counsel to OCC, “Commodity Derivative Activities of JPMorgan Chase Bank,” OCC-PSI-00000266 - 298, at 266.

²⁴³² *Id.* at 267.

²⁴³³ Subcommittee briefings by JPMorgan (4/23/2014) and (10/10/2014). However, the OCC subsequently engaged the bank in extended discussions, some of which resulted in the OCC providing numerous Interpretive Letters to the bank during 2005 and 2006. Subcommittee briefing by OCC (11/14/2014).

²⁴³⁴ 7/21/2005 letter from JPMorgan legal counsel to Federal Reserve Bank of New York, “JPM Chase Application for Compl[e]mentary Authority,” PSI-FederalReserve-01-000004 - 000028.

²⁴³⁵ *Id.* at 007 (internal citations omitted).

support for JPMVEC.²⁴³⁶ JPMVEC would then execute commodity trades for both the bank and the holding company.

The letter requested complementary authority that would allow JPMorgan, through JPMVEC, to trade as a principal using commodity-related futures, swaps, options, forwards, and similar contracts.²⁴³⁷ The letter indicated that, if given the authority, in many cases, JPMorgan would either settle the contracts on a financial basis (without making or taking physical delivery of the commodities) or use paperwork to take legal title to the physical commodities and transfer that title “instantaneously” to a third party.²⁴³⁸ The letter also stated that, in other cases, JPMorgan would take legal title to physical commodities for “a relatively short period of time.”²⁴³⁹ In addition, the letter stated that JPMorgan “d[id] not expect to own, control or operate entities in the United States that are involved in the production, distribution, storage or processing of physical commodities for the purposes of engaging in those activities.”²⁴⁴⁰

JPMorgan’s 2005 letter to the Federal Reserve also made a number of specific commitments if it were granted expanded authority to conduct physical commodity activities. They included commitments that JPMorgan would:

- “limit the amount of physical commodities that it holds at any one time to 5% of its consolidated Tier 1 Capital,” a limit which, for reference purposes, it estimated was about \$3.5 billion on December 31, 2004, based on JPM Chase Tier 1 capital at that time of \$69.4 billion;²⁴⁴¹
- “assure proper risk management and controls over the [physical commodity activities]”;²⁴⁴²
- “make and take physical delivery of, or store, only commodities, such as natural gas, crude oil, and emissions

²⁴³⁶ Id. at 012.

²⁴³⁷ Id. at 009.

²⁴³⁸ Id.

²⁴³⁹ Id.

²⁴⁴⁰ Id. at 020. Five years later, as part of its RBS Sempra acquisition, JPMorgan acquired the Henry Bath warehouses, which were plainly engaged in the storage of physical commodities. While the Federal Reserve gave JPMorgan an initial grace period to operate the warehouse company, it did not provide complementary authority or agree that JPMorgan could use merchant banking authority to retain ownership of the company. In 2014, JPMorgan sold Henry Bath to a third party. For more information, see discussion of Henry Bath in Chapter 3, above.

²⁴⁴¹ Id. at 026. Tier 1 capital is generally comprised of “equity capital and published reserves from post-tax retained earnings” and is a “principal form of eligible capital to cover market risks.” 6/2006 “International Convergence of Capital Measurement and Capital Standards: A Revised Framework Comprehensive Version,” prepared by the Basel Committee on Banking Supervision, 1 - 333, at 14 and 16, <http://www.bis.org/publ/bcbs128.pdf>.

²⁴⁴² 7/21/2005 letter from JPMorgan legal counsel to Federal Reserve Bank of New York, “JPM Chase Application for Compl[e]mentary Authority,” at PSI-FederalReserve-01- 000004 - 028, at 026.

allowances, that have been approved by the CFTC for trading on U.S. futures exchanges”;²⁴⁴³

- “not acquire or operate facilities in the United States for the extraction, transportation, storage or distribution of commodities. ... [but if JPMorgan nevertheless ended up owning such a facility] JPMorgan will not hold any such interest as a means to engage in the underlying commercial activity”;²⁴⁴⁴
- “not process, refine, store or otherwise alter commodities in the United States”;²⁴⁴⁵
- “contract with a third party for any services that it needs in connection with the handling of any commodity”;²⁴⁴⁶ and
- “only use storage and transportation facilities owned and operated by third parties” and “enter into service agreements only with accredited, reputable independent third party facilities.”²⁴⁴⁷

JPMorgan was one of the first financial holding companies to apply for complementary authority to engage in physical commodity activities.²⁴⁴⁸ The Federal Reserve granted its request on November 18, 2005.²⁴⁴⁹ In the order granting the new authority, the Federal Reserve wrote that it was authorizing JPMorgan to engage in the new activities “on a limited basis.”²⁴⁵⁰ The order also stated:

“As a condition of this order, to limit the potential safety and soundness risks of Commodity Trading Activities, the market value of commodities held by JPM Chase as a result of Commodity Trading Activities must not exceed 5 percent of JPM Chase’s consolidated tier 1 capital. JPM Chase also must notify the Federal Reserve Bank of New York if the market value of

²⁴⁴³ Id.

²⁴⁴⁴ Id. at 027.

²⁴⁴⁵ Id. Four years later, in response to its request, JPMorgan obtained complementary authority to engage a third party to conduct those activities on its behalf. See 4/20/2009 letter from the Federal Reserve to JPMorgan, PSI-FRB-11-000001 - 002, at 001 [sealed exhibit] (allowing it to “engage a third party to alter or refine commodities after JPM takes delivery in connection with its Physical Commodity Trading”).

²⁴⁴⁶ 7/21/2005 letter from JPMorgan legal counsel to Federal Reserve Bank of New York, “JPM Chase Application for Compl[e]mentary Authority,” at PSI-FederalReserve-01-000004 - 028, at 027.

²⁴⁴⁷ Id.

²⁴⁴⁸ Only Citibank preceded it, receiving the first grant of complementary authority from the Federal Reserve in 2003. See 10/2/2003 Federal Reserve “Order Approving Notice to Engage in Activities Complementary to a Financial Activity,” in response to a request by Citigroup, Inc., 89 Fed. Res. Bull. 508 - 511 (12/2003), http://fraser.stlouisfed.org/docs/publications/FRB/2000s/frb_122003.pdf.

²⁴⁴⁹ See 2005 JPMorgan Complementary Order, 92 Fed. Res. Bull. C57 - C59.

²⁴⁵⁰ Id. at C57.

commodities held by JPM Chase as a result of its Commodity Trading Activities exceeds 4 percent of its tier 1 capital.²⁴⁵¹

The order was also “specifically conditioned on compliance with all the commitments” JPMorgan had made in its application.²⁴⁵²

(b) Expanding Its Physical Commodity Activities

As described earlier, JPMorgan used its new complementary authority to engage in a wide range of physical commodity activities. JPMorgan’s expansion into physical commodities was fueled, in part, by a handful of major acquisitions as well as an agreement with a major refinery. In 2008, through its Bear Stearns acquisition, JPMorgan gained rights to, or ownership interests in, 27 power plants and a host of energy-related assets, including pipeline and storage leases.²⁴⁵³ In 2009, through a UBS acquisition, JPMorgan obtained crude oil, natural gas, power, and agricultural assets in Canada.²⁴⁵⁴ In 2010, as part of a \$1.6 billion RBS Semptra acquisition, JPMorgan obtained global oil, natural gas, coal, and metal assets; European power and gas assets; and the Henry Bath network of warehouses.²⁴⁵⁵ In 2012, JPMorgan entered into a long-term agreement with a large oil refinery in Philadelphia, in which it agreed to supply crude oil and feedstocks to the refinery and purchase 100% of its refined oil products.²⁴⁵⁶

According to internal OCC and Federal Reserve analyses, in September 2012, JPMorgan’s physical commodity assets reached an all-time high.²⁴⁵⁷ JPMorgan’s own records show that, in 2012, its physical commodity inventories were substantial. By 2013, JPMorgan had begun to prepare quarterly charts for its regulators that tracked its physical commodity holdings and compared their market value to its Federal Reserve and OCC size limits. In September 2013, JPMorgan prepared a chart for its regulators that included information about its physical commodity holdings as of September 28, 2012, and compared those holdings to its Tier 1 capital as of that date, which was about \$148 billion.²⁴⁵⁸

The chart first provided data on the physical commodity holdings of JPMorgan, the financial holding company. It showed that, as of

²⁴⁵¹ Id. at C58.

²⁴⁵² Id. at C59.

²⁴⁵³ See discussion in the JPMorgan Overview, above, regarding the Bear Stearns acquisition.

²⁴⁵⁴ See discussion in the JPMorgan Overview, above, regarding the UBS acquisition.

²⁴⁵⁵ See discussion in the JPMorgan Overview, above, regarding the RBS Semptra acquisition.

²⁴⁵⁶ See discussion in the JPMorgan Overview, above, regarding Project Liberty.

²⁴⁵⁷ See email from OCC staff to FRBNY staff, “Meeting?,” OCC-PSI-0000077 - 079; 2012 Summary Report, at FRB-PSI-200477 - 510, at 506 [sealed exhibit].

²⁴⁵⁸ 9/26/2013 “Fed/OCC/FDIC Quarterly Meeting,” prepared by JPMorgan for a meeting with its regulators, FRB-PSI-301383 - 396, at 387. See also 2012 excel spread sheet, “Physical Inventory Limit Monitor-9.17.12_Final.xlsx,” prepared by the OCC, OCC-PSI-0000080 (stating that, in 2012, JPMorgan had Tier 1 capital of \$148 billion).

September 28, 2012, the market value of the “Physical Inventory” held by the financial holding company – referred to as “JPMVEC & Non Bank Subs” – was about \$6.6 billion, or about 4.5% of the financial holding company’s Tier 1 capital of \$148 billion.²⁴⁵⁹ That \$6.6 billion total excluded, however, several major categories of physical commodity holdings at the financial holding company, including all of the physical commodities held by its national bank, all of the financial holding company’s gold, silver, platinum, palladium, and copper assets, and all of the financial holding company’s physical commodities held through an exercise of its merchant banking authority.²⁴⁶⁰ The result was that the \$6.6 billion total reflected only a portion of the physical commodity assets actually held by the financial holding company.

The chart also provided data on the physical commodity holdings of JPMorgan Chase Bank. It showed that, on the same date, September 28, 2012, the market value of the “Base Metals” inventory held by JPMorgan Chase Bank was approximately \$8.1 billion.²⁴⁶¹ That total suggested that the bank held a larger inventory of physical commodities than the entire financial holding company. At the same time, that \$8.1 billion total also excluded certain categories of assets at the bank, including its gold, silver, platinum, palladium, and copper holdings. In response to a Subcommittee request, JPMorgan also provided separately, as of September 28, 2012, the total market value of the bank’s copper, platinum, and palladium inventories, which together totaled about \$2.7 billion.²⁴⁶²

When the financial holding company’s physical commodities inventory of \$6.6 billion is added to the bank’s metals inventory of approximately \$8.1 billion – still excluding gold, silver, and all merchant banking commodity assets – and the bank’s copper, platinum, and palladium inventories of \$2.7 billion are added in as well, the total market value of JPMorgan’s combined physical commodity inventories on September 28, 2012, was \$17.4 billion. That \$17.4 billion was about 11.75% of the financial holding company’s Tier 1 capital of \$148 billion, which meant that it was more than twice the size allowed by the Federal Reserve’s 5% limit, were it to apply.

The information provided by JPMorgan indicates that the size of its physical commodity holdings were actually far in excess of the 5%

²⁴⁵⁹ 9/26/2013 “Fed/OCC/FDIC Quarterly Meeting,” prepared by JPMorgan for a meeting with its regulators, FRB-PSI-301383 - 396, at 387; Subcommittee briefing by JPMorgan (10/10/2014).

²⁴⁶⁰ Subcommittee briefings by JPMorgan (4/23/2014) and (10/10/2014).

²⁴⁶¹ 9/26/2013 “Fed/OCC/FDIC Quarterly Meeting,” prepared by JPMorgan for a meeting with its regulators, FRB-PSI-301382 - 396, at 387.

²⁴⁶² See 10/21/2014 letter from JPMorgan legal counsel to Subcommittee, at attachment, JPM-COMM-PSI-000049 (indicating that, on September 28, 2012, JPMorgan Chase Bank held \$1.13 billion worth of physical copper, \$872 million worth of physical platinum, and \$656 million worth of physical palladium for a total market value of \$2.7 billion).

regulatory limits that were created to reduce the risks associated with those assets. JPMorgan told the Subcommittee, however, that it was in full compliance with all of its regulatory limits, because it was allowed to exclude whole categories of assets, including its bank's assets, under its interpretation of those limits.²⁴⁶³ The Federal Reserve told the Subcommittee that, after researching the issue, it had not yet objected to JPMorgan's interpretation of the Federal Reserve's 5% limit on complementary activities, because it was a possible interpretation that would, in fact, allow the financial holding company to exclude many of its physical commodity assets.²⁴⁶⁴ That JPMorgan could be found to be in compliance with a 5% limit at the same time the actual market value of its physical commodity assets totaled nearly 12% of its Tier 1 capital demonstrates how the Federal Reserve's regulatory limit, as currently enforced, has become riddled with exclusions and ineffective in capping the size of a financial holding company's physical commodity holdings.

(c) Stretching the Limits

For years, JPMorgan and JPMorgan Chase Bank have applied aggressive interpretations to stretch the size limits imposed by the Federal Reserve and OCC on the amount of physical commodities they are allowed to hold. To stay under the limits, they have routinely excluded assets and minimized the value of others. Some of these interpretations were known to the regulators; others were not. As a result of these efforts, JPMorgan often held physical commodities assets whose combined market value far exceeded 5% of its Tier 1 capital.

From 2005, when it received its first complementary order, until early 2012, Federal Reserve examiners appear to have been largely unaware of how JPMorgan was calculating its compliance with the Federal Reserve's 5% limit. It was not until 2012 that Federal Reserve Bank of New York (FRBNY) examiners learned that, for over six years, JPMorgan had been excluding all of the commodities held in JPMorgan Chase Bank when calculating the market value of its commodity holdings for purposes of the Federal Reserve's 5% limit.²⁴⁶⁵ JPMorgan had excluded its bank's holdings despite the financial holding company's having committed to "limit the amount of physical commodities that it holds at any one time to 5% of its consolidated Tier 1 Capital," with no express caveat for bank assets.²⁴⁶⁶ After learning of

²⁴⁶³ Subcommittee briefing by JPMorgan (10/10/2014).

²⁴⁶⁴ Subcommittee briefings by Federal Reserve (10/8/2014) and OCC (9/22/2014).

²⁴⁶⁵ Subcommittee briefings by the Federal Reserve (12/13/2013) and (10/8/2014).

²⁴⁶⁶ 7/21/2005 letter from JPMorgan legal counsel to Federal Reserve Bank of New York, "JPM Chase Application for Compl[e]mentary Authority," PSI-FederalReserve-01-000004 - 028, at 026. Again, the complementary order was "specifically conditioned on compliance with all the commitments made to the Board." 11/18/2005 "JPMorgan Chase & Co. New York, New York Order Approving Notice to Engage in Activities Complementary to a Financial Activity," Federal Reserve website, at 7, <http://www.federalreserve.gov/boarddocs/press/orders/2005/20051118/attachment.pdf>.

JPMorgan's exclusion, despite concerns expressed by its examiners, the Federal Reserve has yet to require JPMorgan to include its bank's assets when valuing the physical commodities held by the financial holding company.

Similarly, from 1995 until early 2012, the OCC appears to have been unaware of how JPMorgan Chase Bank calculated its compliance with the OCC's 5% limit. Beginning in 2012, as the OCC examined the bank's practices more closely, it issued a series of supervisory letters criticizing and disallowing some of those practices, as explained below. In response, JPMorgan Chase Bank agreed to change those practices and also recently sold much of the physical metals inventory that had been held in the bank's name. Today, JPMorgan asserts that both the bank and holding company continue to be in full compliance with the Federal Reserve and OCC size limits.

Excluding Bank Assets. Perhaps the most striking aspect of JPMorgan's approach to the size limits is its assertion that it can exclude all of its bank's extensive physical commodity holdings when reporting to the Federal Reserve on the total market value of the financial holding company's physical commodity assets. Since 2005, when it was first granted complementary authority by the Federal Reserve to conduct physical commodity activities, JPMorgan has been under an obligation to keep the market value of its physical commodity assets below 5% of its Tier 1 capital and to report to the Federal Reserve any instance in which those assets exceeded 4% of its Tier 1 capital. Normally, a financial holding company's assets include the assets of its bank subsidiaries, since they are typically the largest, and may be the only, subsidiaries of the holding company. Yet since 2005, JPMorgan has apparently never included the physical commodities held by JPMorgan Chase Bank when calculating the market value of the financial holding company's physical commodity assets for purposes of complying with the Federal Reserve's 5% limit.²⁴⁶⁷

The Federal Reserve told the Subcommittee that it first learned of JPMorgan's practice in early 2012.²⁴⁶⁸ Internal documents from the Federal Reserve, OCC, and JPMorgan chronicle what happened. The precipitating event came in January 2012, when JPMorgan reported to the Federal Reserve Bank of New York (FRBNY) that its physical commodity assets had recently exceeded 4% of its Tier 1 capital, the reporting threshold established in its 2005 complementary order.²⁴⁶⁹ According to the Federal Reserve and contemporaneous documents, when the FRBNY examiners asked JPMorgan what caused the increase

²⁴⁶⁷ Subcommittee briefing by Federal Reserve (10/8/2014).

²⁴⁶⁸ *Id.*

²⁴⁶⁹ 2/15/2012 email from FRBNY Staff to OCC staff, "JP Commodities," OCC-PSI-00000047 - 049.

in the market value of its physical commodity assets, JPMorgan indicated that, on or around December 21, 2011, JPMorgan Chase Bank purchased about \$1.9 billion of physical aluminum on behalf of a client.²⁴⁷⁰ JPMorgan told the Subcommittee that, as a result, the bank's total physical aluminum holdings on that date rose to \$6.5 billion.²⁴⁷¹ A few weeks later, on January 10, 2012, JPMorgan Chase Bank's aluminum inventory peaked at "3,501,365 metric tonnes," which JPMorgan estimated had "a total value of approximately \$7.48 billion."²⁴⁷²

Those enormous holdings put the bank over the OCC's size limit, so to get back under the limit, the bank decided to sell a large amount of the aluminum to JPMorgan Ventures Energy Corporation (JPMVEC), an affiliate of the financial holding company.²⁴⁷³ Emails between regulators indicate that, a month later, as of January 24, 2012, the bank's physical aluminum holdings had decreased in value to \$4.9 billion.²⁴⁷⁴ According to an internal Federal Reserve email at the time, JPMorgan told FRBNY examiners that nearly 80% of the aluminum at issue – purportedly worth \$3.8 billion – would continue to be held by JPMorgan Chase Bank, while about \$1.1 billion in aluminum would be sold to JPMVEC a subsidiary of the financial holding company, which meant JPMorgan would have to add it to the physical commodity assets subject to the Federal Reserve's 5% limit.²⁴⁷⁵ According to JPMorgan, the

²⁴⁷⁰ Subcommittee briefing by the Federal Reserve (12/13/2013); 2/15/2012 email from FRBNY Staff to OCC staff, "JP Commodities," OCC-PSI-00000047 - 049. JPMorgan legal counsel described the transaction to the Subcommittee as a swap in which JPMorgan "(1) delivered contracts for approximately 860,000 tons of aluminum to [its customer], (2) paid [the customer] a locational premium of ten million dollars, and (3) received from [the customer] warrants for approximately 860,000 tons of aluminum in Vlissingen." 10/30/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-17-000001 - 003, at 002. JPMorgan legal counsel also indicated that the correct total for the transaction was \$1.68 billion, rather than \$1.9 billion reported at the time; the discrepancy between the two numbers is not explained. 11/5/2014 email from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-22-000001 - 004, at 001.

²⁴⁷¹ 11/10/2014 email from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-23-000001 - 006, at 001.

²⁴⁷² Id. at 001. At 3.5 million metric tons, JPMorgan Chase Bank's aluminum holdings were so large that they exceeded more than half of the physical aluminum consumed in North America that year. See undated "Primary Aluminum Consumption, 2011-2013," European Aluminum Association website, <http://www.alueurope.eu/consumption-primary-aluminium-consumption-in-world-regions/> (indicating North American primary aluminum consumption in 2012 was 5.3 million metric tons).

²⁴⁷³ Subcommittee briefings by the Federal Reserve (12/13/2013) and JPMorgan (10/10/2014); 2/15/2012 email from FRBNY staff to OCC staff, "JP Commodities," OCC-PSI-00000047 - 049, at 049.

²⁴⁷⁴ 2/1/2012 email from FRBNY staff to Federal Reserve staff, "aluminum inventory balances at JPMC," FRB-PSI-200827 - 831, at 831. It is unclear how the value of the bank's aluminum holdings dropped from \$7.48 billion to \$4.9 billion, a difference of \$2.58 billion, over the course of that month.

²⁴⁷⁵ 2/1/2012 email from FRBNY staff to Federal Reserve staff, "aluminum inventory balances at JPMC," FRB-PSI-200827 - 831, at 831. JPMorgan legal counsel has indicated that the correct value of the aluminum sold to JPMVEC was \$921 million rather than \$1.1 billion, writing that, on January 19, 2012, JPMorgan Chase Bank sold, "in an arms-length, at-market transaction, 419,400 metric tonnes of aluminum to JPMVEC at \$2,196.75 per metric tonne, or approximately \$921 million." 11/5/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-

additional aluminum put the financial holding company's assets over the 4% reporting threshold, which was why JPMorgan had notified the Federal Reserve Bank of New York.²⁴⁷⁶

According to Federal Reserve emails, when JPMorgan informed its FRBNY examiners about the details of the aluminum trade, it marked the first time that the FRBNY examiners discovered that JPMorgan was not "reporting the full balance of its aluminum inventory for compliance with the 5% of Tier 1 capital rule, but rather only the portion that is held in non-bank affiliates."²⁴⁷⁷ Upon further inquiry, the FRBNY examiners learned that, during 2011, JPMorgan's physical commodities holdings, when the bank's assets were included (but excluding bullion), had ranged from \$8.9 billion to \$14.4 billion, and exceeded 5% of JPMorgan's Tier 1 capital in every month of the year.²⁴⁷⁸ The FRBNY examiners were told that, as of February 2012, JPMorgan's total physical inventory (excluding bullion) was "\$12.4 billion, which would exceed their 5% of Tier 1 capital limit (~\$7.5 bn) by about \$5 billion if the limit were applicable."²⁴⁷⁹

The discovery that JPMorgan was excluding its bank's holdings when calculating its compliance with the Federal Reserve's 5% limit raised concerns among the FRBNY examiners that JPMorgan was either bypassing the limit or the limit itself was ineffective in ensuring safety and soundness. As one FRBNY examiner wrote in an email: "It strikes me that the 5% Tier 1 capital limit should apply to all activity (whether its conducted in a bank or non-bank) given that the limit is relative to the consolidated organization's [T]ier 1 capital."²⁴⁸⁰

JPMorgan told the Subcommittee that it discussed the aluminum trade in a meeting with the OCC on January 17, 2012.²⁴⁸¹ It was two days later, on January 19, 2012, that JPMorgan Chase Bank actually sold the 419,400 metric tons of aluminum to JPMVEC.²⁴⁸² On February 15, 2012, the FRBNY examiners raised the matter with their OCC counterparts who were already aware of JPMorgan's large aluminum

19-000001 - 004, at 001 - 002. The discrepancy between the \$921 million reported to the Subcommittee in the November 2014 letter and the \$1.1 billion reported to the Federal Reserve in 2012, is not explained.

²⁴⁷⁶ Subcommittee briefing by JPMorgan (10/10/2014).

²⁴⁷⁷ Id. See also Subcommittee briefings by the Federal Reserve (12/13/2013) and (10/8/2014) (confirming Federal Reserve examiners first learned of the exclusion in 2012).

²⁴⁷⁸ 2/17/2012 email from FRBNY staff to Federal Reserve staff, "aluminum inventory balances at JPMC," FRB-PSI-200827 - 831, at 827.

²⁴⁷⁹ Id. It is unclear whether these figures included the entire amount of aluminum then held by the bank and its holding company.

²⁴⁸⁰ Id. at 829.

²⁴⁸¹ Subcommittee briefing by JPMorgan (10/10/2014).

²⁴⁸² 11/5/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-19-000001-004, at 001 - 002.

trade²⁴⁸³ and already analyzing how the new aluminum holdings in the bank affected the OCC's separate 5% limit.²⁴⁸⁴ The OCC limit focused, not on Tier 1 capital, but on the percentage of derivative trades that resulted in the physical delivery of commodities to the bank. The FRBNY examiners learned that the OCC examiners had determined that the aluminum trade had caused JPMorgan Chase Bank to breach the OCC's 5% limit by a large margin over the course of a month, from December 21, 2011 through January 20, 2012, the day on which the aluminum transfer by the bank to JPMVEC settled.²⁴⁸⁵

When asked about these developments, JPMorgan told the Subcommittee that it reduced its holdings as quickly as it could, came back under the OCC's limit within 30 days, and never breached the Federal Reserve's separate 5% limit at all.²⁴⁸⁶ JPMorgan explained to the Subcommittee that the bank's efforts to quickly reduce its aluminum holdings had been stymied, not only by the holidays, but also by a decline in the notional amount of outstanding derivatives held by the bank, which is the denominator for the OCC 5% calculation.²⁴⁸⁷ JPMorgan told the Subcommittee that it had hedged nearly all of its aluminum position by selling forward contracts, and thus had relatively small "net" aluminum positions that it could dispose of to reduce its overall holdings.²⁴⁸⁸

When asked about excluding the bank's assets when reporting the market value of the financial holding company's physical commodity assets to the Federal Reserve, JPMorgan explained that the Federal Reserve's 5% limit applied only to physical commodity holdings acquired as a result of complementary activities; that the bank did not and could not act under "complementary" authority since only financial holding companies could employ that authority; that the bank's activities took place under a separate grant of authority from the OCC to accept physical deliveries of commodities in a small percentage of derivatives trading transactions; and that the bank's physical commodity holdings

²⁴⁸³ Subcommittee briefing by the OCC (9/22/2014); 2/15/2012 email from FRBNY staff to OCC staff, "JP Commodities," OCC-PSI-00000047 - 049; 2/15/2012 email from FRBNY staff to Federal Reserve staff, "aluminum inventory balances at JPMC," FRB-PSI-200827 - 831, at 829.

²⁴⁸⁴ 2/15/2012 email from FRBNY staff to OCC staff, "JP Commodities," OCC-PSI-00000047 - 049, at 048.

²⁴⁸⁵ 8/1/2012 email from JPMorgan to OCC staff, "5% limit calculation method," OCC-PSI-00000324 (indicating the sustained breach of the OCC limit); 11/5/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-19-000001 - 004, at 002 (reflecting that the "transaction settled on January 20, 2012"). JPMorgan Chase Bank later attempted to change how it calculated compliance with the OCC limit, by using average holdings over a three or twelve month period, which would have minimized the impact of large trades like the aluminum trade in late 2011. That methodology was disallowed by the OCC. See discussion, below.

²⁴⁸⁶ Subcommittee briefing by JPMorgan (10/10/2014).

²⁴⁸⁷ 10/30/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-17-000001 - 003, at 002.

²⁴⁸⁸ 11/5/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-19-000001 - 004, at 002.

were, therefore, separate from and not subject to the Federal Reserve's 5% limit.²⁴⁸⁹

JPMorgan also expressed surprise that the Federal Reserve had been unaware of its ongoing exclusion of the bank assets.²⁴⁹⁰ A JPMorgan representative told the Subcommittee that, at some point in early 2010, she had a conversation with Federal Reserve personnel in Washington, D.C. that she thought indicated they "must have known there were metals in the bank."²⁴⁹¹ Federal Reserve representatives told the Subcommittee, however, that they were unaware of that earlier conversation, had been unaware of the financial holding company's practice, and it was clear that the examiners in New York first learned of the practice in connection with the aluminum transaction in 2012.²⁴⁹² The internal emails exchanged between the FRBNY and OCC examiners in early 2012 also indicate that JPMorgan's FRBNY examiners had been unaware of the exclusion prior to that time.

In early February 2012, the FRBNY examiners consulted with the Federal Reserve's legal department to determine whether JPMorgan was permitted to exclude its bank's physical commodity holdings when calculating the market value of its physical commodity assets for purposes of the 5% limit, on the theory that the bank's assets were held under "separate authority granted by the OCC ... rather than under FRB compl[e]mentary authority."²⁴⁹³ The Federal Reserve legal department concluded that JPMorgan's interpretation was a possible interpretation of the limit and that it would not object to that interpretation.²⁴⁹⁴ Despite that legal analysis, the FRBNY examination team remained "very concerned ... [with] not looking at the activity across the consolidated organization [because] [i]f we don't do that the limit strikes us as not very meaningful."²⁴⁹⁵

JPMorgan and the Federal Reserve told the Subcommittee that JPMorgan continues to exclude physical commodities held by JPMorgan Chase Bank when calculating the market value of the physical commodity assets held by the financial holding company.²⁴⁹⁶ The Federal Reserve acknowledged to the Subcommittee that it typically looks at a bank holding company holistically, and includes all bank assets when evaluating the holding company's assets. The Federal Reserve told the Subcommittee that it was unable to identify any other

²⁴⁸⁹ Subcommittee briefing by JPMorgan (10/10/2014).

²⁴⁹⁰ *Id.*

²⁴⁹¹ *Id.*

²⁴⁹² Subcommittee briefing by Federal Reserve (10/8/2014).

²⁴⁹³ 2/1/2012 email from FRBNY staff to Federal Reserve staff, "aluminum inventory balances at JPMC," FRB-PSI-200827 - 831, at 831.

²⁴⁹⁴ *Id.* at 828.

²⁴⁹⁵ *Id.*

²⁴⁹⁶ Subcommittee briefings by the Federal Reserve (10/8/2014) and JPMorgan (10/10/2014).

instance in which, when calculating the assets held by the financial holding company, it excluded the assets of a subsidiary bank.²⁴⁹⁷

Excluding Other Assets. Bank assets were not the only assets JPMorgan excluded when calculating the market value of the financial holding company's physical commodity assets for purposes of complying with the Federal Reserve's 5% limit.

A second exclusion was its copper holdings. As indicated in the prior section, JPMorgan is an active trader of copper and, from 2008 to 2012, maintained physical copper inventories whose value ranged from \$148 million to \$2.7 billion, with holdings frequently in excess of \$1 billion.²⁴⁹⁸ JPMorgan told the Subcommittee that it did not include any of its copper holdings when calculating compliance with the Federal Reserve's 5% limit.²⁴⁹⁹ JPMorgan explained to the Subcommittee that its physical copper was not only held by its bank, but it was also categorized as "bullion," and for both reasons could be excluded from its physical commodity holdings for purposes of complying with both the Federal Reserve and OCC limits.²⁵⁰⁰ As indicated earlier, the OCC has treated copper as bullion for years.²⁵⁰¹ The Federal Reserve told the Subcommittee that it explicitly authorizes banks to deal in bullion, including copper, and as a result, a financial holding company could hold copper under that separate authority rather than under its complementary authority, and so exclude its copper holdings when calculating compliance with the Federal Reserve's complementary 5% limit.²⁵⁰² While excluding copper is permissible according to regulators, excluding billion-dollar copper inventories from regulatory size limits, despite copper's trading status as a base metal, and the risk that even small price decreases could dramatically lower the value of large holdings, seems to have little economic rationale from a safety and soundness perspective.

Still another exclusion that JPMorgan employed for two years involved the power plants it obtained through its Bear Stearns acquisition in 2008. At that time, among other physical commodity

²⁴⁹⁷ Subcommittee briefing by the Federal Reserve (10/8/2014).

²⁴⁹⁸ See discussion above; attachment to 3/22/2013 letter from JPMorgan legal counsel to Subcommittee, JPM-COMM-PSI-000015 - 019, at 015; 9/26/2013 "Fed/OCC/FDIC Quarterly Meeting," prepared by JPMorgan, page entitled: "Key Risk Positions – as of June 28, 2013[:]" Key Risk Positions in Bank," at FRB-PSI-301382 - 396, at 388.

²⁴⁹⁹ Subcommittee briefing by JPMorgan (10/10/2014).

²⁵⁰⁰ Id.

²⁵⁰¹ See OCC Interpretive Letter No. 693 (11/14/1995), PSI-OCC-01-000135 - 141 (defining copper as bullion). See 12 C.F.R. §225.28(b)(8)(iii) (stating that a permissible nonbank activity includes: "Buying, selling and storing bars, rounds, bullion, and coins of gold, silver, platinum, palladium, copper, and any other metal approved by the Board, for the company's own account and the account of others, and providing incidental services such as arranging for storage, safe custody, assaying, and shipment.").

²⁵⁰² 10/29/2014 email from the Federal Reserve to Subcommittee, "Outstanding requests," PSI-FRB-16-000001 - 002.

assets, JPMorgan acquired tolling agreements and ownership interests in 27 power plants.²⁵⁰³ JPMorgan later put a market value on the tolling agreements with those and a few other power plants in the range of \$2 billion to \$2.3 billion.²⁵⁰⁴ In addition to the sheer size of those holdings, the normal practice at the time was for financial holding companies to include the market value of those types of power plant assets in their physical commodity holdings subject to the Federal Reserve's 5% limit. Despite those factors, JPMorgan excluded its power plant assets when calculating its compliance with the Federal Reserve's 5% limit for over two years.

Prior to the Bear Stearns acquisition in 2008, JPMorgan had never engaged in power plant activities or sought complementary authority to do so. As part of the Bear Stearns transaction, the Federal Reserve Bank of New York (FRBNY) gave JPMorgan a two-year grace period during which "any assets or activities acquired from Bear Stearns that JPMorgan is not currently permitted to own or engage in shall be treated as permissible assets or activities for a period of two years."²⁵⁰⁵ That grace period applied to the 27 power plants, as part of the Bear Stearns acquisition. JPMorgan took the position that, for the next two years, it held the power plants under the authority of the FRBNY two-year grace period, and not under its complementary authority, and so could exclude them when calculating the market value of its physical commodity holdings subject to the Federal Reserve's 5% limit.²⁵⁰⁶ JPMorgan took that position even though the FRBNY letter contained no language related to excluding the value of permissible assets from JPMorgan's physical commodity holdings.

JPMorgan held the Bear Stearns power plants from March 2008 to March 2010, without including their market value in its calculations of the total market value of its commodity holdings for purposes of the Federal Reserve's 5% limit. There is no indication that JPMorgan informed the Federal Reserve of its practice, or that the Federal Reserve inquired about the matter. On February 5, 2010, JPMorgan asked the Federal Reserve to extend the grace period for another year, and also explicitly requested permission to conduct its energy tolling and other

²⁵⁰³ See discussion above; undated 2014 JPMorgan chart, "Power Plants Owned or Controlled via Tolling Agreements, 2008 to present," prepared by JPMorgan for the Subcommittee, JPM-COMM-PSI-000022 - 025.

²⁵⁰⁴ See, e.g., 9/26/2013 "Fed/OCC/FDIC Quarterly Meeting," prepared by JPMorgan for a meeting with its regulators, FRB-PSI-301382 - 396, at 387.

²⁵⁰⁵ 3/16/2008 letter from FRBNY to JPMorgan, PSI-FRB-19-000001 - 003, at 002 [sealed exhibit].

²⁵⁰⁶ 10/21/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-15-000001 - 008, at 003.

power plant activities outside of the 5% limit.²⁵⁰⁷ The Federal Reserve extended the grace period for one more year, until March 2011.

On June 30, 2010, the Federal Reserve issued a complementary order authorizing JPMorgan to conduct its power plant activities as complementary activities.²⁵⁰⁸ At the same time, the Federal Reserve denied JPMorgan's request to exclude the value of its power plant assets when calculating compliance with the Federal Reserve's 5% limit, instead explicitly directing inclusion of the market value of its various power plant assets.²⁵⁰⁹ It was only after the new complementary order was issued that JPMorgan began to include the value of its power plant assets when calculating its compliance with the Federal Reserve's 5% limit.²⁵¹⁰ The end result was that, for more than two years after acquiring the 27 Bear Stearns power plant interests, from March 2008 to July 2010, JPMorgan excluded their \$2 billion value from its calculation of compliance with the Federal Reserve's 5% limit. Because the Federal Reserve never decided the issue, it is unclear whether JPMorgan's exclusion was permissible, and whether the same approach may be applied by JPMorgan or other financial holding companies when acquiring physical commodity assets that enjoy a two-year grace period before being required to conform with Federal Reserve requirements.

A third exclusion involved leases on oil and gas storage facilities. The FRBNY Commodities Team found that, while leases on power plants were included in the calculation of the market value of a financial holding company's physical commodity assets, some financial holding companies excluded "leases on infrastructure such as oil and gas storage facilities."²⁵¹¹ A different Federal Reserve examination document noted that JPMorgan was "leasing oil and natural gas storage" as well as "oil tankers and pipeline capacity."²⁵¹² JPMorgan told the Subcommittee that it normally excluded those types of infrastructure leases from its market value calculations for purposes of the 5% Federal Reserve limit.²⁵¹³ The Commodities Team stated in its 2012 Summary Report

²⁵⁰⁷ 2/5/2010 letter from JPMorgan legal counsel to the Federal Reserve, FRB-PSI-300286 - 290, at 286, 287 (stating: "[T]he Board has indicated that it has in the past subjected tolling activities of [financial holding companies] to the [5%] limit because tolling contracts expose the troller to the risk that the plant proves to be uneconomical to operate, which can occur when the cost of producing power is greater than the power's market price. However, given the competitive disadvantages that JPMC would suffer from having to manage its entire physical commodity and tolling activity under the [5%] limit, JPMC respect[fully] submits that the risks involved in tolling can be managed pursuant to robust risk management processes subject to regulatory examination.").

²⁵⁰⁸ 6/30/2010 letter from the Federal Reserve to JPMorgan, FRB-PSI-302571 - 580.

²⁵⁰⁹ Id. at 578 - 579.

²⁵¹⁰ Subcommittee briefings by JPMorgan (4/23/2014) and (10/10/2014).

²⁵¹¹ 2012 Summary Report, at FRB-PSI-200477 - 510, at 506 [sealed exhibit].

²⁵¹² Undated but likely in the second half of 2013 memorandum, "Commodities Focused Regulatory Work at JPM," prepared by Federal Reserve, FRB-PSI-300299 - 302, at 299 [sealed exhibit].

²⁵¹³ Subcommittee briefing by JPMorgan (4/23/2014).

that it was “investigating [the] interpretation of the rule.”²⁵¹⁴ The Federal Reserve told the Subcommittee that, currently, such leases are normally not included in the calculation of a financial holding company’s physical commodity assets for purposes of the 5% limit.²⁵¹⁵ The Federal Reserve also noted that its Advanced Notice of Proposed Rulemaking raised questions about whether such leasing arrangements should be approved as complementary activities at all and solicited public comment on how to reduce the safety and soundness risks they present.²⁵¹⁶

Reducing Asset Values. In addition to excluding assets, JPMorgan also used techniques to minimize the value of its assets when calculating the overall market value of its physical commodity holdings for purposes of complying with the Federal Reserve’s 5% limit. In particular, it used two techniques to try to reduce the market value of its power plant assets, once it was required to include them in its overall physical commodity holdings. After the Federal Reserve learned that JPMorgan was using those techniques on its power plant assets, it disallowed them.

The first involved a netting practice. When JPMorgan began including power plant tolling agreements in its Federal Reserve calculation for the first time in 2010, it initially calculated the values on a “net” basis, which reduced their market value.²⁵¹⁷ According to JPMorgan, once the Federal Reserve learned of this practice, the regulator disallowed it.²⁵¹⁸ On July 5, 2011, JPMorgan raised the issue again, formally asking the Federal Reserve for permission to “exclude from its calculation of the 5% Limit the value of its rights under Energy Tolling agreements to the extent that JPM Chase has effectively assigned its rights ... to an unaffiliated third party.”²⁵¹⁹ In other words, JPMorgan proposed that if it had a tolling agreement with a power plant, but then assigned or “re-tolled” that agreement to an independent third party, then JPMorgan could calculate the agreement’s market value according to the netted revenues it would receive from the re-tolled agreement.²⁵²⁰ JPMorgan noted that payments under a re-tolling agreement would “not necessarily offset dollar for dollar” the payments owed by JPMorgan under the original tolling agreement, and so

²⁵¹⁴ 2012 Summary Report, at FRB-PSI-200477 - 510, at 506 [sealed exhibit].

²⁵¹⁵ 11/17/2014 email from Federal Reserve to Subcommittee, PSI-FRB-21-000001 - 002, at 002.

²⁵¹⁶ *Id.* See also Federal Reserve advance notice of proposed rulemaking, “Complementary Activities, Merchant Banking Activities, and Other Activities of Financial Holding Companies related to Physical Commodities,” 79 Fed. Reg. 3329 (1/21/2014), <http://www.gpo.gov/fdsys/pkg/FR-2014-01-21/pdf/FR-2014-01-21.pdf>.

²⁵¹⁷ Subcommittee briefings by JPMorgan (4/23/2014) and (10/10/2014).

²⁵¹⁸ *Id.*

²⁵¹⁹ 7/5/2011 “Request to modify a commitment made by JPMorgan Chase & Co. in connection with its notice to, and approval by, the Federal Reserve to engage in energy tolling,” prepared by JPMorgan and submitted to the Federal Reserve, FRB-PSI-300258 - 263, at 260.

²⁵²⁰ *Id.*

proposed that it be allowed to net out the “present value of future committed receivables” from third parties against the payments owed by JPMorgan under the original tolling agreement.²⁵²¹ JPMorgan calculated that the netting technique would reduce the market value of its tolling agreements by about \$300 million, from \$2.3 billion to \$2.0 billion.²⁵²²

The Federal Reserve denied JPMorgan’s request to use netting when valuing its tolling agreements.²⁵²³ An internal Federal Reserve memorandum reviewing JPMorgan examination issues explained: “FRB [Federal Reserve Board] denied this request for several reasons, including that permitting netting would have allowed the firm to enter into unlimited tolling agreements, which would have been inconsistent with the spirit of the 5% limit on physical activity.”²⁵²⁴ In other words, the Federal Reserve viewed the 5% limit as a way of limiting the amount of physical commodity activities that a financial holding company may conduct, and so opposed a netting arrangement that, in effect, would have removed the limit with respect to tolling agreements.

A second technique JPMorgan used involved reducing the market value of the “capacity payments” paid in connection with its power plants. The Federal Reserve has defined a “capacity payment” as a “fixed periodic payment that compensates the power plant owner for its fixed costs.”²⁵²⁵ When it received complementary authority to enter into tolling agreements in June 2010, JPMorgan committed to including “the present value of all capacity payments to be made by it in connection with energy tolling agreements in calculating its compliance with” the 5% limit.²⁵²⁶ On July 5, 2011, JPMorgan asked to modify that commitment by excluding certain portions of the capacity payments, including “debt and equity payments associated with the power plant” and variable “operating” and “maintenance” expenses, so that a much smaller portion of the capacity payments – reflecting only “fixed costs” – would count towards the 5% limit.²⁵²⁷

An internal JPMorgan document indicates that JPMorgan actually made that change in its valuation methodology in November 2010,

²⁵²¹ Id. at 261.

²⁵²² Id.

²⁵²³ Undated but likely in the second half of 2013 memorandum, “Commodities Focused Regulatory Work at JPM,” prepared by Federal Reserve, FRB-PSI-300299 - 302, at 302 [sealed exhibit].

²⁵²⁴ Id.

²⁵²⁵ Undated but likely late 2010 or early 2011 JPMorgan memorandum, “CONFIDENTIAL - Methodology for Calculating Capacity Payments for Purposes of 5% Limit,” FRB-PSI-300345 - 347, at 345.

²⁵²⁶ Id. See also 6/30/2010 letter from the Federal Reserve to JPMorgan, FRB-PSI-302571 - 580, at 578.

²⁵²⁷ Undated but likely late 2010 or early 2011 JPMorgan memorandum, “CONFIDENTIAL - Methodology for Calculating Capacity Payments for Purposes of 5% Limit,” FRB-PSI-300345 - 347, at 345. See also 3/3/2011 Federal Reserve document, “Resolved Issues,” FRB-PSI-304601 - 604, at 604 (discussing “Tolling Calculation – Capacity Payment”) [sealed exhibit].

without getting prior approval from regulators.²⁵²⁸ According to projections by JPMorgan, the change potentially reduced the capacity payments that would count towards the cap from about \$2.1 billion to about \$560 million, a reduction of nearly 75%.²⁵²⁹ In 2011, the Federal Reserve rejected the change in methodology, reasoning that capacity payments include the “total fixed periodic payments as specified in a tolling contract,” not just the “fixed operating costs.”²⁵³⁰

The Federal Reserve’s rejection of JPMorgan’s two techniques to lower the reported market value of its power plant assets represent rare occasions in which the Federal Reserve did not go along with JPMorgan’s efforts to reduce the impact of the Federal Reserve’s 5% limit.

Stretching the OCC Limit. Since 1995, the OCC has expressly prohibited a national bank from accepting or delivering physical commodities in more than 5% of its derivative transactions. Yet, from 1995 until 2012, it appears as though JPMorgan Chase Bank was largely unaware of the OCC’s 5% limit, and may have even believed that it was 20%.²⁵³¹ JPMorgan Chase Bank also used aggressive interpretations and loopholes to reduce the impact of the OCC limit.

Among other measures, JPMorgan Chase Bank’s actions included calculating the value of its metals inventory: (1) on a physical volume basis, meaning tracking metric tons, instead of tracking the dollar value of those tons; (2) on an aggregated basis, meaning applying the limit to the overall amount of its metals holdings instead of applying the limit on a metal-by-metal basis;²⁵³² and (3) on a total notional amount basis, meaning measuring the amount of the bank’s derivatives holdings on a notional rather than net basis, which inflated the base against which the 5% limit was applied.²⁵³³ Taken together, these three interpretations

²⁵²⁸ Undated but likely late 2010 or early 2011 JPMorgan memorandum, “CONFIDENTIAL - Methodology for Calculating Capacity Payments for Purposes of 5% Limit,” FRB-PSI-300345 - 347, at 345. See also Subcommittee briefing by JPMorgan (4/23/2014).

²⁵²⁹ Undated but likely late 2010 or early 2011 JPMorgan memorandum, “CONFIDENTIAL - Methodology for Calculating Capacity Payments for Purposes of 5% Limit,” FRB-PSI-300345 - 347, at 347; Subcommittee briefing by JPMorgan (4/23/2014). See also 2012 Summary Report, at FRB-PSI-200477 - 510, at 505 [sealed exhibit].

²⁵³⁰ 3/3/2011 Federal Reserve document, “Resolved Issues,” FRB-PSI-304601 - 604, at 604 (discussing “Tolling Calculation – Capacity Payment”) [sealed exhibit]. See also 2012 Summary Report, at FRB-PSI-200477 - 510, at 505 [sealed exhibit].

²⁵³¹ See 1/25/2012 email from OCC staff to OCC staff, “Guidance on 5% rule,” OCC-PSI-00000343-345 (“The bank used to believe it was 20% and I asked them to show me where they got that interpretation.”).

²⁵³² See, e.g., 1/11/2012 email from Mark Lenczowski, JPMorgan, to OCC staff, “Consolidated OCC Summary 10 Jan 2012,” OCC-PSI-00000336; 1/25/2012 email from OCC staff to OCC staff, “Guidance on 5% rule,” OCC-PSI-00000343 - 345 (allowing aggregating) [sealed exhibit].

²⁵³³ See 10/21/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-15-000001 - 008, at 006.

rendered the OCC's 5% limit effectively meaningless as a risk management or prudential safeguard.²⁵³⁴

Additionally, JPMorgan Chase Bank attempted to replace the OCC's requirement to calculate the tonnage of physical assets held by the bank on a specific day, with using the average tonnage over a 12-month or 3-month rolling period, which would have allowed the bank to take delivery of more physical commodities overall.²⁵³⁵ In addition to those calculation strategies, JPMorgan Chase Bank also omitted data on the bank's holdings of "base metals, investor products, and agricultural and soft commodities" from a report to the OCC on its physical commodity assets;²⁵³⁶ and employed anticipatory and portfolio hedging tactics that stretched the permissible relationship between its physical commodity transactions and the derivative transactions they were supposedly hedging.²⁵³⁷ The OCC has objected to some of those tactics, but has not registered objections to others.

In December 2011, JPMorgan Chase Bank made a transfer of approximately \$1 billion in physical aluminum²⁵³⁸ to JPMVEC, which was outside the bank, but run by many of the same employees. This transaction moved physical metal to the financial holding company, but did not act as a derivative hedge for the bank. As a result, it triggered more intensive reviews of the bank's conduct by the OCC.

Over the next three years, the OCC cited a number of concerns with how JPMorgan was complying with the agency's 5% limit. In March 2012, the OCC sent a Supervisory Letter to JPMorgan Chase Bank identifying significant control weaknesses and regulatory non-compliance in how the bank was conducting its commodity activities,

²⁵³⁴ For example, a bank could still be in compliance with the OCC 5% limit if it held a long derivatives position for 1 million tons of aluminum that was offset by a short derivatives position for 999,999 tons of aluminum, but then had 99,000 physical tons of nickel, representing 5% of the total notional tonnage of derivatives. The net derivatives exposure in aluminum is just 1 ton, and yet it could be "hedged" with 99,000 tons of physical nickel. The OCC confirmed for the Subcommittee that this extreme example would be consistent with the 5% limit as currently applied. However, the OCC noted that the facts in this example may run afoul of other requirements set forth in the OCC's Interpretive Letters, such as the hedging requirement. Subcommittee briefing by the OCC (9/22/2014).

²⁵³⁵ See, e.g., 1/10/2012 email from Michael Kirk, OCC, to Fred Crumlish, OCC, "GCG Exam, Bank seeks guidance on 5% rule," OCC-PSI-00000342; 2/15/2012 email from Mark Lenczowski, JPMorgan, to Michael Kirk, OCC, "5% Limit Calculation," OCC-PSI-00000324; 10/4/2012 email from Michael Kirk, OCC, to Fred Crumlish, OCC, "Mark Lenczowski Call on 5% rule," OCC-PSI-00000346 (disallowing averaging) [sealed exhibit].

²⁵³⁶ See 6/27/2013 OCC Supervisory Letter JPM-2013-36, OCC-PSI-00000312 - 314 (citing 3/28/2012 OCC Supervisory Letter JPM-2012-13 (requiring corrected report) [sealed exhibit]).

²⁵³⁷ See 4/15/2014 OCC Supervisory Letter JPM-2014-23, OCC-PSI-00000315 - 320 [sealed exhibit].

²⁵³⁸ While contemporaneous documents reflected the transaction as valued at \$1.1 billion, JPMorgan legal counsel told the Subcommittee that the transaction was an "arms-length, at-market transaction" for "approximately \$921 million." 11/5/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-19-000001 - 004, at 002.

including with respect to its implementation of the 5% limit.²⁵³⁹ The OCC sent a followup Supervisory Letter in June 2013.²⁵⁴⁰ In April 2014, after concluding an extensive analysis of JPMorgan Chase Bank's activities, the OCC found that the bank was "making or taking physical delivery of metal in connection with spot and forward transactions in a manner that [was] beyond the scope of metals activities authorized in OCC interpretive letters."²⁵⁴¹ In other words, the bank was engaging in physical spot market transactions, forward contracts, and swaps that were not clearly customer-driven or linked to hedging transactions, as required by OCC rules.

In May 2014, JPMorgan Chase Bank informed the OCC that it would cease the impermissible activities by July 1, 2015, and thereafter conduct them "in a subsidiary or affiliate of the Bank for which such activities are permissible" under Section 716 of the Dodd-Frank Wall Street Reform and Consumer Protection Act.²⁵⁴² The bank further committed that, prior to July 1, 2015, it would keep its base metals "within the quantitative limits established by the OCC."²⁵⁴³ On June 27, 2014, the OCC essentially accepted JPMorgan Chase Bank's proposal, giving JPMorgan more time to reconfigure its currently impermissible derivative and physical commodity activities.²⁵⁴⁴

(3) Issues Raised by JPMorgan's Involvement with Size Limits

JPMorgan's actions raise a number of concerns about the effectiveness of the existing Federal Reserve and OCC limits to assess and limit the size of physical commodity activities at banks and their holding companies. Those size limits were developed to promote the safety and soundness of banks and their holding companies, and protect U.S. taxpayers from physical commodity activities posing outsized financial, operational, and catastrophic event risks. The facts show that JPMorgan was able to reduce the impact of both sets of limits by using aggressive interpretations that, in some cases, took years for regulators to uncover and, in other cases, identified loopholes that the regulators have so far failed to close. Key issues include the ongoing exclusion of key assets when applying the limits, valuation methodologies that

²⁵³⁹ See 3/28/2012 OCC Supervisory Letter JPM-2012-13, OCC-PSI-00000303 - 306 [sealed exhibit].

²⁵⁴⁰ See 6/27/2013 OCC Supervisory Letter JPM-2013-36, OCC-PSI-00000312 - 314 [sealed exhibit].

²⁵⁴¹ 4/15/2014 OCC Supervisory Letter JPM-2014-23, OCC-PSI-00000315 - 320, at 315 [sealed exhibit]. The OCC took exception, in particular, to JPMorgan Chase Bank's extensive activities in the spot markets for base metals.

²⁵⁴² 5/15/2014 letter from JPMorgan Chase Bank to OCC, "Supervisory Letter JPM-2014-23 (the 'Letter')," OCC-PSI-00000321 [sealed exhibit].

²⁵⁴³ *Id.* This pledge did not, however, include copper which remains exempt from the OCC's size limit.

²⁵⁴⁴ 6/27/2014 letter from OCC to JPMorgan Chase Bank, "Management Response to SL JPM-2014-23, MRA Follow-Up," OCC-PSI-00000323 [sealed exhibit].

minimize the value of some assets, the absence of comprehensive, standardized reports to track compliance with the limits, and a current lack of coordination that, together, allow financial holding companies to amass billions of dollars in physical commodity holdings far in excess of 5% of its Tier 1 capital.

(a) Excluding Bank Assets

The 2005 order granting JPMorgan's complementary authority was explicitly conditioned upon JPMorgan's commitment to "limit the amount of physical commodities that it holds at any one time to 5% of its consolidated Tier 1 Capital."²⁵⁴⁵ The order contains no caveat exempting JPMorgan's bank which, even in 2005, held billions of dollars in physical commodities. As far as the Subcommittee has been able to determine, JPMorgan is alone among financial holding companies in claiming that its obligation to limit the size of its physical commodity holdings excludes the physical commodities held by its bank. The Federal Reserve itself has been unable to identify for the Subcommittee any other instance in which it disregards a financial holding company's subsidiary bank when evaluating the size of the financial holding company's assets or when evaluating the financial holding company's compliance with a safety and soundness limitation on its holdings.

Disregarding the bank's physical commodity holdings is particularly inappropriate in the case of JPMorgan, since the same employees, working for JPMorgan Ventures Energy Corporation, execute physical commodity transactions on behalf of both the holding company and the bank.²⁵⁴⁶ That arrangement has meant, on a practical level, that the holding company and its bank have long conducted their physical commodity activities in an integrated fashion, sharing personnel, support functions, and infrastructure. JPMorgan disclosed that arrangement when it sought complementary authority in 2005; there was no indicating then, nor was the Federal Reserve aware for the next seven years, that JPMorgan planned to exclude its bank's holdings when reporting the market value of its physical commodity assets for purposes of complying with the 5% limit.

The Federal Reserve and OCC's own examiners have expressed concern that excluding the bank's assets has rendered the 5% limit ineffective. One Federal Reserve examiner wrote that the examination staff was "very concerned ... [with] not looking at the activity across the consolidated organization [because] [i]f we don't do that the limit strikes

²⁵⁴⁵ 7/21/2005, letter from JPMorgan counsel to the Federal Reserve Bank of New York, "JPM Chase Application for Compl[e]mentary Authority," PSI-FederalReserve-01-000004 - 028, at 026.

²⁵⁴⁶ Id. at 012.

us as not very meaningful.”²⁵⁴⁷ Another Federal Reserve examiner, in a communication with the OCC, noted the “mismatch” between allowing a financial holding company to use the Tier 1 capital amount for the entire “consolidated” group, but then exclude consideration of the substantial assets at the bank:

“The FRS [Federal Reserve System] limit maintains that the firm cannot hold a market value of physical commodities and certain assets (e.g. tolling agreements) exceeding 5% of the consolidated organization's Tier 1 capital; the firm supplies a file each month showing physical commodity balances in relation to Tier 1 capital. Our lawyers [at the Federal Reserve] have told us that this limit only applies to the subsidiaries and not the national bank, which is under separate authority granted by the OCC. This creates something of a mismatch between numerator and denominator in the FRS limit as the numerator is only for the subsidiaries while the denominator is the entire firm. We realized this was more of an issue than previously known when the firm moved approx[imately] \$1.8B[illion] of physical aluminum from the bank into the subsidiary (JPMVEC) for the stated reason of avoiding breaching the OCC limit of 5% of total transactions going to physical delivery, and thus saw that physical balances in the bank were more substantial than previously known. Thus, we thought it would be important to understand how you implement IL [Interpretive Letter] 684 and jointly explore how we can ensure commodities are limited to the levels intended.”²⁵⁴⁸

Emails from OCC examiners express similar concerns with excluding the bank's commodity holdings from the Federal Reserve's 5% limit.²⁵⁴⁹

The Federal Reserve's failure to object to JPMorgan's unusual interpretation of the 5% limit has allowed JPMorgan to exclude billions of dollars in physical commodities held at its bank when reporting the market value of its physical commodity assets to the Federal Reserve. The Federal Reserve's inaction may also act as an incentive for other financial holding companies to follow suit and locate physical commodities within their federally insured banks to avoid triggering the

²⁵⁴⁷ 2/15/2012 email from FRBNY staff to Federal Reserve staff, “aluminum inventory balances at JPMC,” FRB-PSI-200827 - 831, at 828. See also 10/25/2012 email from OCC staff to Federal Reserve Staff, “Regulatory limit framework around physical commodities,” FRB-PSI-624379 - 382, at 380 (“one partial solution to address fully consolidated concerns would be to have FRB clarify to include holdings on a consolidated basis.”).

²⁵⁴⁸ 5/30/2012 email from FRBNY staff to OCC staff, “JPMC Physical Commodities,” OCC-PSI-00000033 - 035, at 033.

²⁵⁴⁹ See, e.g., 2/15/2012 internal OCC email, “JP Commodities,” OCC-PSI-00000040 - 043.

Federal Reserve limit, a development that would create more, rather than less, risk for U.S. taxpayers.²⁵⁵⁰

Excluding billions of dollars in bank assets when calculating the physical commodity holdings of the bank's holding company is contrary to the Federal Reserve's normal practice and creates an unbridgeable gap between its 5% limit and the actual physical commodity assets held by financial holding companies. In 2012, JPMorgan had \$17.4 billion in physical assets representing nearly 12% of its Tier 1 capital, but was allowed to report to the Federal Reserve that it had only \$6.6 billion in physical assets representing 4.5% of its Tier 1 capital. The reported figures were about one-third of the actual physical assets (excluding gold, silver, and commodity-related merchant banking assets) held by the financial holding company. The Federal Reserve should not permit or support that type of pretense. Instead, the Federal Reserve should employ its normal practice of viewing a financial holding company's assets holistically, and apply its limit accordingly.

(b) Excluding and Undervaluing Other Assets

JPMorgan's practice of excluding other assets from its physical commodities reporting, including the 27 Bear Stearns power plants, and oil and gas leases, as well as its methodology changes to lower the reported value of its tolling agreements and capacity payments, is evidence of a relationship in which the financial holding company was continually trying to find loopholes to reduce the impact of the safety and soundness limit on size put in place by the Federal Reserve. Federal Reserve examiners recognized the problem in a memorandum providing an overall analysis of JPMorgan's physical commodity activities:

"Since 2006 the firm [JPMorgan] has significantly grown its physical activities, largely through acquisition, and joined the top tier (along with MS [Morgan Stanley] and GS [Goldman Sachs]) among banks in commodities. ... Amid this growth, JPM has pressed on the boundaries of permissible activities including integrating merchant banking investments into trading activities and pursuing activity that may appear 'commercial in nature,' as well as pushed regulatory limits and their interpretation. ...

In 2012 the SSO team [examination team for JPMorgan] identified a weakness in the FRS [Federal Reserve System] limit which caps commodity inventory and certain activities to 5% of the consolidated organization's Tier 1 capital. ... [T]he FRS limit was only partially effective in constraining the firm's commercial commodities activities. JPM's expansion in physical commodities

²⁵⁵⁰ It is possible that implementation of Section 716 of the Dodd-Frank Wall Street Reform and Consumer Protection Act would restrict the ability of a bank to take this course of action.

– both in the bank and nonbank – has brought the market value of its commercial commodity activity well above 5% of consolidated Tier 1 capital.”²⁵⁵¹

Despite this finding, the Federal Reserve appears to have taken no action to date to make its 5% limit more effective, such as by requiring the inclusion of bank assets, copper inventories, oil and gas leases, and assets acquired through acquisitions. The Federal Reserve’s possible rulemaking offers an opportunity to address those issues and strengthen its size limits.

OCC examiners experienced a similar set of tactics used by JPMorgan to avoid safety and soundness limitations, and issued three supervisory letters in three years to eliminate impermissible physical commodity transactions at JPMorgan’s federally-insured bank. Recently, JPMorgan has taken action to sell major components of its physical commodity activities, including much of the metals inventory held at its bank, which may reduce its overall physical commodity holdings and the risks those holdings represent.

(c) Operating Without Written Guidance or Standardized Periodic Reports

Although size limits are among their most powerful safety and soundness tools to reduce the risks associated with physical commodity activities, neither the Federal Reserve nor the OCC has issued formal written guidance on how their respective size limits are to be implemented. In the absence of written guidance, JPMorgan employed aggressive interpretations that attempted to maximize the amount of physical commodities it would be permitted to hold under both limits. While it has recently reduced its physical commodity holdings, the issues JPMorgan raised, including how to value certain assets, what assets can be excluded, and whether derivative holdings can be calculated on a notional rather than net basis, have not been publicly addressed or even disclosed. The lack of written guidance also invites financial institutions to develop their own implementation strategies that require time and resources from regulators to detect and analyze. Standardized rules in formal guidance would help clear up ambiguities in the regulatory limits and enable both financial institutions and regulators to implement the limits in a more efficient and effective manner.

A related problem has been the lack of standardized periodic reports tracking compliance with the regulatory size limits. For years, the Federal Reserve and OCC relied on information provided by

²⁵⁵¹ Undated but likely in the second half of 2013 memorandum, “Commodities Focused Regulatory Work at JPM,” prepared by Federal Reserve, FRB-PSI-300299 - 302, at 299, 301 [sealed exhibit].

JPMorgan on an ad hoc basis to enforce their respective regulatory limits. It was only after the 2011 aluminum trade raised questions about JPMorgan's actions that the Federal Reserve began receiving from JPMorgan periodic information in a standardized format regarding its compliance with the size limits.²⁵⁵² It was also at that point that the OCC learned JPMorgan Chase Bank had breached its 5% limit²⁵⁵³ – and that bank personnel had inaccurately thought the limit was 20%, not 5%.²⁵⁵⁴

The documents produced to the Subcommittee indicate that it was not until early 2013, that the Federal Reserve and OCC began receiving, on at least a quarterly basis, information in a standardized format related to both the holding company and bank's compliance with the Federal Reserve and OCC size limits.²⁵⁵⁵ That reporting aligns with a recommendation made by the FRBNY Commodities Team that the Federal Reserve should require "formal reporting of physical commodity exposures" including with respect to the "5% tier 1 capital limit."²⁵⁵⁶ The Federal Reserve and OCC should take the next step and make those reports public so that policymakers, analysts, and market participants can develop a better understanding of the physical commodities held by large banks and their holding companies.

(d) Rationalizing Patchwork Limits

A final issue involves the failure of the Federal Reserve to rationalize the existing patchwork of limits that now apply to financial holding companies engaged in physical commodity activities. As explained earlier, a financial holding company's physical commodity activities are currently subject to a limit of 5% of Tier 1 capital when conducted under its complementary authority; and a limit of 5% of its consolidated assets when conducted as a grandfathered activity. Physical commodities held by a financial holding company's bank are subject to a separate OCC 5% limit on physical delivery of commodities in connection with derivative transactions. Physical commodities acquired under the merchant banking authority have no size limit at all. Neither do activities involving copper, platinum, or palladium. Collectively, these limits create a complex Venn diagram with spotty

²⁵⁵² See 10/21/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-15-000001 - 008, at 002.

²⁵⁵³ See, e.g., 2/28/2013 email from Mark Lenczowski, JPMorgan, to Michael Kirk and others, OCC, "MRA Review," OCC-PSI-00000389 - 390; 1/20/2012 email from Blythe Masters, JPMorgan, to Michael Kirk, OCC, "Consolidated OCC Summary 19 Jan 2012," OCC-PSI-00000340 (apologizing for the OCC's learning about a limit breach "after the fact").

²⁵⁵⁴ 1/25/2012 email from OCC staff to OCC staff, "Guidance on 5% rule," OCC-PSI-00000343 - 345, at 343 [sealed exhibit].

²⁵⁵⁵ See, e.g., 2/12/2013 "Fed/OCC Quarterly Meeting," prepared by JPMorgan, FRB-PSI-301443 - 451, at 447.

²⁵⁵⁶ 2012 Summary Report, at FRB-PSI-200477 - 510, at 484 [sealed exhibit].

coverage and significant gaps. The complementary limit is also riddled with exclusions.

One Federal Reserve Bank of New York examiner took particular issue with the lack of coordination between the Federal Reserve and OCC 5% limits.

“In part because the two regulatory limits reference separate metrics (Tier 1 capital and percentage of physical delivery) and legal entities (the Bank and BHC subsidiaries), the resultant dual-limit framework is less effective and vulnerable to regulatory arbitrage. The Firm may increase physical commodity holdings in the booking entity where it perceives the most regulatory leeway and both regulators may be challenged to limit overall physical holdings to intended levels.”²⁵⁵⁷

The examiner further noted: “The current regulatory limit framework is thus siloed to some extent without an overall limit.”²⁵⁵⁸

Nothing in the law necessitates this lack of coordination and consistency across regulatory authorities. Nothing in the statutory text or legislative history of the Gramm-Leach-Bliley Act suggests that the Federal Reserve’s broad authority to protect the safety and soundness of financial institutions and the U.S. financial system was intended to be limited in any way, such as by precluding the establishment of an integrated, comprehensive, coherent limit on physical commodity activities.

To the contrary, Section 5(b) of the Bank Holding Company Act gives the Federal Reserve broad authority “to issue such regulations and orders ... as may be necessary to enable it to administer and carry out the purposes of this chapter and prevent evasions thereof.”²⁵⁵⁹ That broad grant of authority provides the legal foundation for the Federal Reserve to issue regulations or orders establishing limits on physical commodity activities authorized under the Bank Holding Company Act.²⁵⁶⁰

In fact, pursuant to its broad authority under the Bank Holding Company Act and its responsibility to ensure the safety and soundness of the U.S. banking system, the Federal Reserve has already imposed

²⁵⁵⁷ 10/25/2012 email from FRBNY staff to OCC staff and FRBNY staff, “Re: Regulatory limit framework around physical commodities,” FRB-PSI-400179 - 181, at 181 [sealed exhibit].

²⁵⁵⁸ *Id.*

²⁵⁵⁹ 12 U.S.C. §1844.

²⁵⁶⁰ As discussed in Chapter 3, above, it is the Bank Holding Company Act that authorizes financial holding companies to engage in physical commodity activities that are financial in nature or incidental thereto under Section 4(k)(1)(B); complementary to financial activities under Section 4(k)(1)(B); merchant banking investments under Section 4(k)(4)(H); or grandfathered under Section 4(o).

size limits on physical commodity activities undertaken with respect to both the merchant banking and complementary authorities. With respect to merchant banking, the Federal Reserve initially limited the size of those activities to no more than 30% of a financial holding company's consolidated Tier 1 capital.²⁵⁶¹ Later, the Federal Reserve repealed that limit after adopting rules imposing additional capital charges on those activities.²⁵⁶² The imposition and subsequent removal of the merchant banking limit was not provided for in the statute, but was instead grounded on the Federal Reserve's authority to administer the Bank Holding Company Act and safeguard the U.S. banking system. Similarly, the existing 5% limit imposed by the Federal Reserve on complementary physical commodity activities is not expressly required or authorized by the statute authorizing complementary activities. Rather, the statute is silent on the amount of activity allowable under the complementary authority,²⁵⁶³ and yet the Federal Reserve has imposed, not only a size limit, but also other conditions on each financial holding company given that authority to ensure complementary activities are carried out in a safe and sound manner.²⁵⁶⁴

Using its broad authority to administer the Bank Holding Company Act and ensure the safe and sound operation of financial holding companies, the Federal Reserve can remedy the current ineffective and incoherent set of size limits on physical commodity activities. One solution would be for the Federal Reserve to impose a single limit on all of the physical commodity activities conducted by a financial holding company and its affiliates – no matter how authorized – to no more than 5% of the financial holding company's consolidated Tier 1 capital. That approach would simplify, rationalize, and strengthen the most important safeguard ensuring that financial holding companies conduct physical commodity activities on a limited basis, in a safe and sound manner, with minimal risk that U.S. taxpayers would one day be called upon for another multi-billion-dollar bailout.

In addition, the Federal Reserve could provide better guidance on how to calculate the market value of physical commodities for purposes of complying with the size limit. In its 2012 Summary Report, the FRBNY Commodities Team stated that it was already “formulating specific guidance on the appropriate calculation methodology to be used by JPMC [JPMorgan] as well as peer firms.” Two years later, however,

²⁵⁶¹ See 12 C.F.R. §225.174 (restricting merchant banking investments to no more than 30% of the financial holding company's Tier 1 capital, or 20% of its Tier 1 capital after excluding private equity funds).

²⁵⁶² “Capital; Leverage and Risk-Based Capital Guidelines; Capital Adequacy, Guidelines; Capital Maintenance: Nonfinancial Equity Investments,” 67 Fed. Reg. 3784 (1/25/2002) (adopting a final rule that ended the size limit while imposing specific capital requirements for merchant banking investments).

²⁵⁶³ See 12 U.S.C. §1843(j).

²⁵⁶⁴ See e.g., 2005 JPMorgan Complementary Order, 92 Fed. Res. Bull. C57 - C59 (imposing numerous restrictions on the complementary powers authorized).

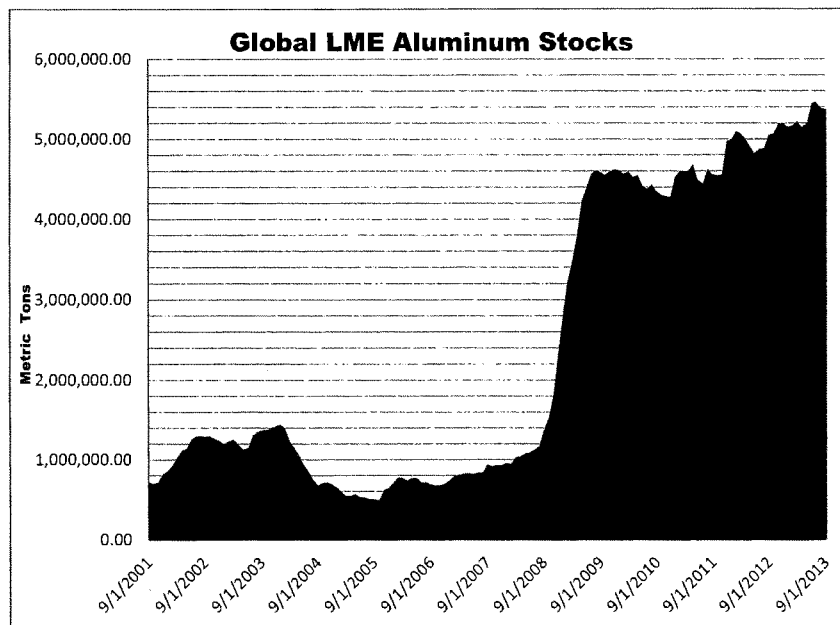
that guidance has yet to be circulated or made public. In addition, the various limits remain compartmentalized. The Federal Reserve's current rulemaking offers an opportunity to correct the many problems with the size limits on physical commodity activities.

(4) Analysis

The Federal Reserve and OCC have each imposed limits on the physical commodity activities that may be undertaken by a bank or financial holding company. Those size limits are intended to reduce risks that, in a worst case scenario, could lead to taxpayer bailouts. As currently configured and implemented, however, the limits do not impose a meaningful overall cap on the amount of physical commodity activities that may be conducted by a financial holding company and its federally insured bank. They are riddled with multi-billion-dollar exclusions and are compartmentalized in ways that reduce their effectiveness. The current problems are brought home by JPMorgan's ability to amass physical commodities valued at \$17.4 billion, representing nearly 12% of its Tier 1 capital, at the same time it was allowed by regulators to calculate that its holdings totaled just \$6.6 billion, representing 4.5% of its Tier 1 capital. The differences between those two sets of figures are startling, troubling, and need to be resolved.

On January 21, 2014, the Federal Reserve issued an Advance Notice of Proposed Rulemaking on financial holding company involvement with physical commodities.²⁵⁶⁵ That rulemaking effort addresses, in part, the question of differing authorities and limits, and offers a way to remedy the faults of the current system. The OCC should also revise its physical commodities limit to prevent it from being undermined or gamed. To promote the safety and soundness of the banks and their holding companies, and to prevent potential abuses, the current patchwork of limits on physical commodities activities using different measures should be reconciled across authorities and regulators.

²⁵⁶⁵ See Federal Reserve advance notice of proposed rulemaking, "Complementary Activities, Merchant Banking Activities, and Other Activities of Financial Holding Companies related to Physical Commodities," 79 Fed. Reg. 3329 (Jan. 21, 2014), <http://www.gpo.gov/fdsys/pkg/FR-2014-01-21/pdf/FR-2014-01-21.pdf>.



Source: Prepared by the Permanent Subcommittee on Investigations using information provided by Novelis. See undated "LME Stocks 2014-05-06," prepared by Novelis, PSI-Novelis-01-000001.

METRO FREIGHT INCENTIVES

Year	Total Annual Freight Allowance Paid by Metro	Annual Freight Allowance Paid by Metro to J. Aron*
2010	\$ 36,886,081.53	\$ 4,833,782.97
2011	\$ 78,705,509.76	\$ 42,837,549.73
2012	\$ 102,810,074.24	\$ 21,239,974.82
2013	\$ 128,841,024.47	\$ 19,115,351.31

* The spread that J. Aron earned on the trade constituted a very small portion — approximately 2% — of the actual freight allowance that J. Aron received from Metro.

PSI-GoldmanSachs-15-000006

GSPSICOMMODS00046232

Permanent Subcommittee on Investigations

EXHIBIT #1b

ALUMINUM TONNAGE SHIPPED (METRO WAREHOUSE (DETROIT) TO METRO WAREHOUSE (DETROIT))	
YEAR SHIPPED	TONNAGE SHIPPED (MT)
2010 (FROM FEBRUARY)	69,725
2011	100,000
2012	200,000
2013	219,025
2014 (THROUGH JANUARY)	38,975

Source: Letter from Goldman Sachs Counsel to the Permanent Subcommittee on Investigations, dated October 20, 2014, PSI-GoldmanSachs-20-000002.

Permanent Subcommittee on Investigations

EXHIBIT #1c

**Goldman Employees Who Served as Metro Board Members
2009 to 2014**

Goldman Employee	Goldman Department	From Date	To Date
Agran, Greg	Global Commodities	2/1/2010	12/1/2011
Attwood Scott, Victoria*	Securities Div Compliance	2/1/2010	11/16/2012
Bulk, Maxwell*	Global Deriv Ops Mgmt	2/1/2010	7/1/2014
Gabillon, Jacques	GCPI head	2/1/2010	CURRENT
Haynes, Oliver*	Securities Div Compliance	10/30/2012	4/1/2014
Holzer, Philip	EQ PIPG Sales	2/15/2010	3/1/2014
Murphy, Ken	Archon**	3/1/2010	5/1/2011
Mancini, Robert*	Assetco***	2/1/2010	12/1/2012
McDonogh, Dermot	Controllers' Admin	3/1/2010	CURRENT
Stewart, Richard	Media Relations	10/1/2012	CURRENT
Weiss, Michael	Securities Div Compliance	1/23/2013	CURRENT
West, Owen	Natural Gas Trading	11/28/2011	CURRENT

*Former Goldman employee

**Archon refers to Archon LP, which is the predecessor to Goldman Sachs Realty Management L.P.

***Assetco likely refers to GCPI, which stands for Global Commodities Principal Investments group.

Source: 8/15/2014 letter from Goldman Sachs legal counsel to the Permanent Subcommittee on Investigations, PSI-GoldmanSachs-17-000001-009, at Exhibit A, GSPSICOMMODS00046225. 11/11/2014 Briefing by Goldman legal counsel to the Permanent Subcommittee on Investigations (describing Archon and Assetco).

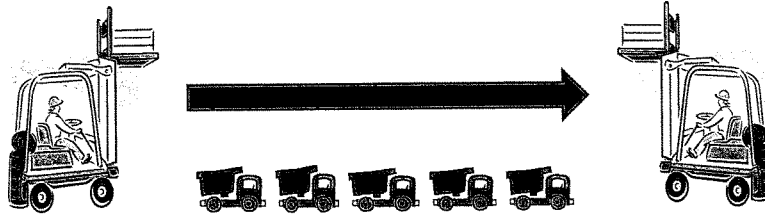
Permanent Subcommittee on Investigations

EXHIBIT #1d

ALUMINUM MERRY GO ROUND TRANSACTIONS

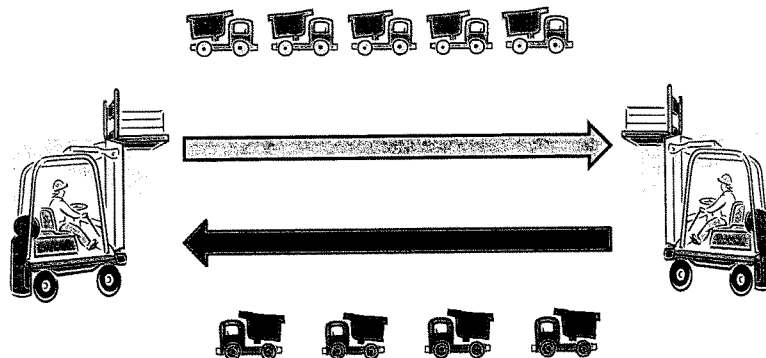
Metro Warehouse A

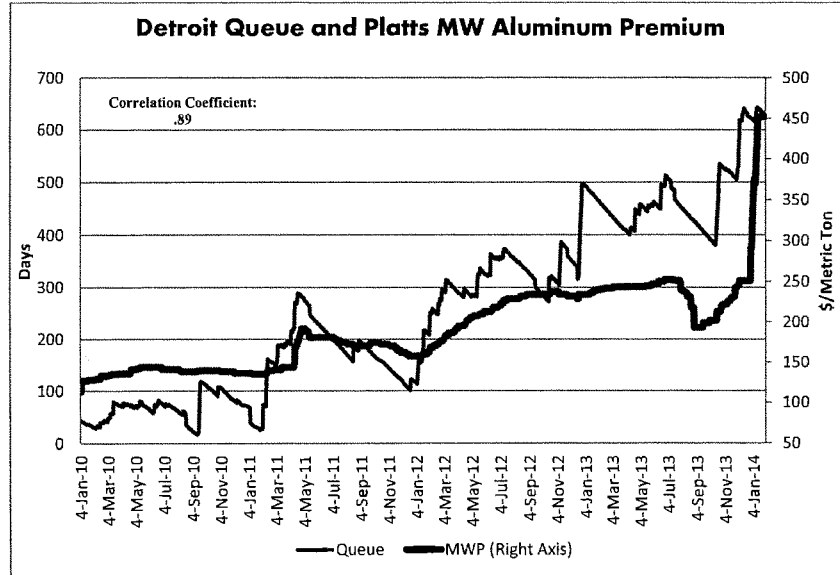
Metro Warehouse B



Metro Warehouse A

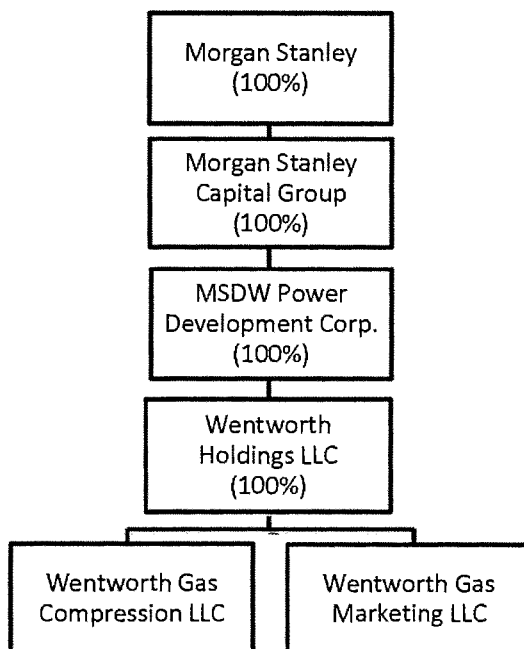
Metro Warehouse B





Source: Prepared by the Permanent Subcommittee on Investigations using information provided by Harbor Aluminum. See undated "HARBOR's estimated aluminum load-out waiting time in LME Detroit Warehouses vs HARBOR's MW Transactional Premium," prepared by Harbor Aluminum, PSI-HarborAluminum-03-000004.

Wentworth Ownership Structure



Source: 9/19/2014 letter from Morgan Stanley to Subcommittee, at PSI-MorganStanley-13-000004.

[illegible]

Note: Power plant equity interest may vary
 *Includes assets owned by Arroyo Energy affiliated entities;
 does not include gas transport or power transmission

*As of 03/31/2015

INTERNAL

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J.P. Morgan
FRB-PSI-623097

FOIA CONFIDENTIAL TREATMENT REQUESTED CONTAINS PRIVILEGED INFORMATION -
DO NOT RELEASE PURSUANT TO 5 U.S.C. § 552, 18 C.F.R. §§ 1b.9, 1b.20 AND 388.1112

From: Luis Davila <Luis.Davila@jpmorgan.com>
Sent: Friday, October 22, 2010 5:55 PM
To: John Rasmussen <John.Rasmussen@jpmorgan.com>; Ryan M Martin
<ryan.m.martin@jpmorgan.com>
Subject: Please sir! mor BCR!!!!



Luis Davila | Investment Bank T&O | Energy | ISO Associate | **J.P. Morgan**
700 Louisiana Street, Suite 1000, Houston, TX 77002 | T: 713 236 4169 | F: 713 236 5000
luis.davila@jpmorgan.com | jpmorgan.com

Permanent Subcommittee on Investigations

EXHIBIT #1i

JPM-069383

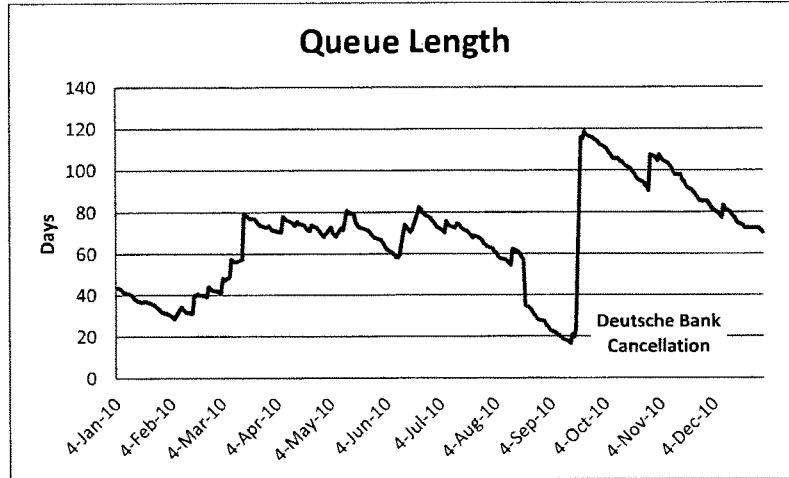
Excerpts from 2013 CNR Financial Statement

“CNR I started several legal actions for the unblocking of the mine, including protection petitions and police proceedings filed with the mayor of El Paso, as well as a request of administrative protection before the National Mining Agency ANM. Likewise, a large number of letters was sent to request the intervention of police and military authorities, the Governor of Cesar, the office of the Attorney General and the People’s Defender Office, as well as to the Mines and Interior Ministries, among others.”

Source: 2013 and 2012 CNR Financial Statements, at Note 1, GSPSICOMMODS00046366 - 397, at 374.

“The total blockade of the La Francia mine lasted for 244 days, until the 22nd of September of 2013, and it was lifted thanks to a private agreement in which CNR I paid a cash bonus of \$20,000 to each one of the persons that were still protesting. Once CNR I resumed the control of the mine, the activities to recover the productive areas were started, particularly the pumping of water from the pit.”

Source: 2013 and 2012 CNR Financial Statements, at Note 1, GSPSICOMMODS00046366 - 397, at 374. Goldman legal counsel subsequently told the Subcommittee that 120 protestors were paid \$10,000 each. 10/30/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-24-000001 - 003, at 001.



Source: Prepared by Permanent Subcommittee on Investigations using information provided by Harbor Aluminum and Deutsche Bank. See undated "HARBOR's estimated aluminum load-out waiting time in LME Detroit Warehouses vs HARBOR's MW Transactional Premium," prepared by Harbor Aluminum, PSI-HarborAluminum-03-000004; Subcommittee briefing by Deutsche Bank (8/22/2014).

EXCERPT

May 26, 2011
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Questions from the Federal Reserve on 4(o) Commodities Activities

1. Complete the chart below of the commodities activities of GS as of three different points in time (September 30, 1997; September 23, 2008; and today). (Requested by Federal Reserve Board legal staff on April 28, 1)

Column A	Column B	Column C
Commodities activities Goldman engaged in as of September 30, 1997 and continues to engage in.	Commodities activities Goldman engaged in at the time it became a bank holding company and continues to engage in.	Commodities activities Goldman began engaging in after becoming a bank holding company and continues to engage in.
<ul style="list-style-type: none"> Physically-settled trades in: <ul style="list-style-type: none"> natural gas crude oil condensate residual fuel oils heating oil gasoil naphtha jet fuel gasoline aluminum lead nickel zinc 	<p>In addition to those activities listed in Column A (other than copper, coffee, wheat, corn, soybeans, sugar, and rhodium),</p> <ul style="list-style-type: none"> Physically settled trades in: <ul style="list-style-type: none"> aluminum propane steel gas liquids (e.g., ethane, butane, LNG) coal 	<p>Physically-settled trades in:</p> <ul style="list-style-type: none"> palm oil rubber wheat molybdenum asphalt uranium (U38, UF6)

The information provided in Columns A and B includes activities and investments the Goldman Sachs Group, Inc. and of any company of which Goldman Sachs would be deemed to have "control" for purposes of the Bank Holding Company Act, as the Federal Reserve has interpreted that term, even if currently such activities are conducted or investments held under merchant banking authority. The information provided in Column C includes only those activities and investments which Goldman Sachs believes would be eligible to be held under Section 4(o) of the Bank Holding Company Act, even if such investments currently are structured to comply with the Federal Reserve's regulations on merchant banking investments. Information provided in response to question 2 addresses only those activities and investments in Column C.

FRB-PSI-200600

Permanent Subcommittee on Investigations

EXHIBIT #2

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Column A Commodities activities Goldman engaged in as of September 30, 1997 and continues to engage in.	Column B Commodities activities Goldman engaged in at the time it became a bank holding company and continues to engage in.	Column C Commodities activities Goldman began engaging in after becoming a bank holding company and continues to engage in.
<ul style="list-style-type: none"> Physically-settled trades in: <ul style="list-style-type: none"> rhodium power² cocoa coffee wheat³ corn³ soybeans³ sugar³ Transport and/or storage incidental to physically-settled trading 		
<ul style="list-style-type: none"> Owning and/or operating: <ul style="list-style-type: none"> oil refinery, including related pipeline and storage infrastructure oil and gas marketing and distribution upstream oil and gas fertilizer producer 	<ul style="list-style-type: none"> Owning and/or operating: <ul style="list-style-type: none"> power generation stations upstream oil and gas (including volumetric production payments) shipping vessels coal mining carbon aggregator bio-diesel refinery ethanol producer LNG facility developer 	<ul style="list-style-type: none"> Owning and/or operating: <ul style="list-style-type: none"> LME warehouse operator

² Power traded through joint venture with Constellation Energy.

³ Goldman Sachs was an active market maker in physically-settled wheat, corn, soybeans, and sugar through 1995.

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Column A <i>Commodities activities Goldman engaged in as of September 30, 1997 and continues to engage in.</i>	Column B <i>Commodities activities Goldman engaged in at the time it became a bank holding company and continues to engage in.</i>	Column C <i>Commodities activities Goldman began engaging in after becoming a bank holding company and continues to engage in.</i>
	<ul style="list-style-type: none"> • pipelines, storage and distribution of natural gas, crude oil, refined petroleum products, natural gas liquids, CO2 • refinery and fertilizer production • tantalum mining 	

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3. Questions concerning GS's activities related to power generation (asked by FRBNY legal staff on behalf of Board legal staff on April 29.)

[Board staff] are looking to understand (i) the extent to which Goldman Sachs, either directly or through a controlled subsidiary, was engaged in power generation as of September 30, 1997 and (ii) the extent to which Goldman Sachs was continuously engaged in such activity from such date until the date that Goldman became a bank holding company. To that end, we are interested in the following:

1. What activities were engaged in by the joint venture with Constellation Energy that you refer to on p. 3 of your June 4, 2010 letter? Did these activities include power generation? Was the joint venture a controlled subsidiary of Goldman Sachs?

In order to access the then recently deregulated power market with an appropriate level of industry expertise, Goldman Sachs, through its foreign subsidiaries, entered into two related agreements with Baltimore Gas and Electric (predecessor to Constellation Energy Inc.) ("Constellation") in order to create and govern the joint venture between Goldman Sachs and Constellation. These agreements, a Power Business Services Agreement and a Software License Agreement, were entered into in February 1997. Under these agreements, Goldman Sachs and Constellation committed to certain obligations in order to create an arrangement for trading of physically-settled power transactions. Transactions

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executed under the arrangement were booked at Constellation. Goldman Sachs committed to provide services and services relating to the establishment and conduct of the power business, including:

- developing risk management strategies and products to be marketed,
- marketing to customers risk management transactions,
- trading electric power and related commodities with customers,
- managing market, reputational, operational risks associated with trading, as well as related credit, payment/settlement, liquidity and legal risks.

In addition, Goldman Sachs committed to advise and assist in establishing and maintain the following support functions for the trading business:

- operations, responsible for handling processing of trades from entry through physical settlement,
- controllers function, responsible for maintaining books and records,
- credit function, responsible for assessing creditworthiness of counterparties and monitoring credit exposures,
- systems function, responsible for managing software, hardware and communications systems that process trades and provide risk management information,
- compliance function, responsible for establishing and enforcing policies and procedures relating to legal, regulatory and other requirements and internal rules
- legal function, responsible for monitoring legal and regulatory requirements and implementing documentation with counterparties.

Goldman Sachs deployed approximately 20 personnel across a range of functions to meet its commitments during the term of the arrangement. Goldman Sachs also provided a license of the software supporting its own internal trading system (SecDB) and requisite personnel to perform the related functions described above.

2. When did you exit the joint venture with Constellation Energy?

October 2001

3. Please provide a timeline of when you engaged in other power generation activity. For example, we understand that Goldman owned Orion Energy from 1998 to 2000, and purchased Cogentrix in 2003.

Goldman Sachs organized Orion Energy in March 1998. The company went public prior to being sold in February 2002. Goldman Sachs acquired the East Coast Power, which owned the Linden Cogeneration Facility in Linden, NJ, in March of 2003. Goldman Sachs acquired Cogentrix Energy Inc. in December 2003.

Goldman
Sachs

Federal Reserve Bank of New York Discovery Review:
Global Commodities – US Natural Gas & Power

March 2010

Permanent Subcommittee on Investigations

EXHIBIT #3

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EXCERPT

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Financial vs. Physical Trades FY 2009

Commodity Product	Financially Settling Volumes Traded FY 2009		Physically Delivered in 2009	% of Delivered 2009 vs Financially Settled FY 2009
	Buy	Sell		
Crude (bbls)	3,532,728,086	3,580,857,040	9,444,739	0.30%
Products & NGLs (bbls)	1,361,656,469	1,341,963,689	25,432,871	1.90%
Natural Gas (mmBtu)	24,520,728,023	25,429,761,833	119,623,049	0.50%
US Electricity (MWh)	361,116,653	362,104,286	88,435,260	24.00%
Coal (mt)	159,059,254	121,342,267	5,179,000	4.30%
Freight—Voyage Charter (mt)	26,136,615	17,642,372	2,729,764	15.50%
Freight—Timecharter (days)	19,295	15,135	5,460,000 MT	Approx 25%*

* Freight - Timecharter: Financially Settled volumes are a "Day" unit, the "MT" equivalent could be not calculated, therefore the % is an estimate

2

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Board of Directors



Global Commodities

Presentation to the Board of Directors of The Goldman Sachs Group, Inc.

October 28, 2011

Permanent Subcommittee on Investigations
EXHIBIT #4

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Board of Directors

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I. Executive Summary

II. Overview and Evolution of Commodities Business

- i. Business Evolution
- ii. Historical Performance
- iii. Competitive Landscape
- iv. Client Activity
- v. Physicals Activity
- vi. Headcount and Attrition
- vii. Business Expansion
- viii. Principal Investing

III. Regulatory Challenges

IV. Appendix



Board of Directors

Executive Summary

- The Global Commodities business ("GS Commodities"), originating from GS' purchase of J. Aron & Co. in 1981, is a strong, long standing GS franchise which is currently facing new internal and external challenges
 - Over the last 5 years, GS Commodities has generated more than \$10bn of pre-tax earnings, with an average margin of ~60%, and is present in 14 locations, serving over 1000 clients
 - Historically, GS Commodities has been able to maintain a dominant market share position with limited competition from financial institutions (largely MS) and has benefitted from being part of the broader GS franchise
 - In the last 2 years, margins and market share have declined dramatically as a result of increased competition from both financial and non financial institutions, as the two formerly distinct business models converge
 - This increased competition is negatively affecting our ability to retain people; GS Commodities attrition is at an all time high, and significantly higher than the rest of Securities businesses
 - Additionally, pending regulation (Volcker, BHC Section 4(o)) is shifting the competitive balance in favor of unregulated non-financial entities; these entities may also offer a more attractive compensation structure than GS (i.e. lower taxes, all cash, no deferral or vesting requirements)
 - We are focused on rebuilding our higher margin Physical business activities (Coal, Metals, Agriculture, etc.) in an effort to further diversify revenues, as our clients are demanding a more integrated service offering and as GS expands into Growth Markets
 - We expect the business environment to remain challenging over the next few years, with uncertainty regarding pending regulation having a negative impact on people retention and our business growth strategy

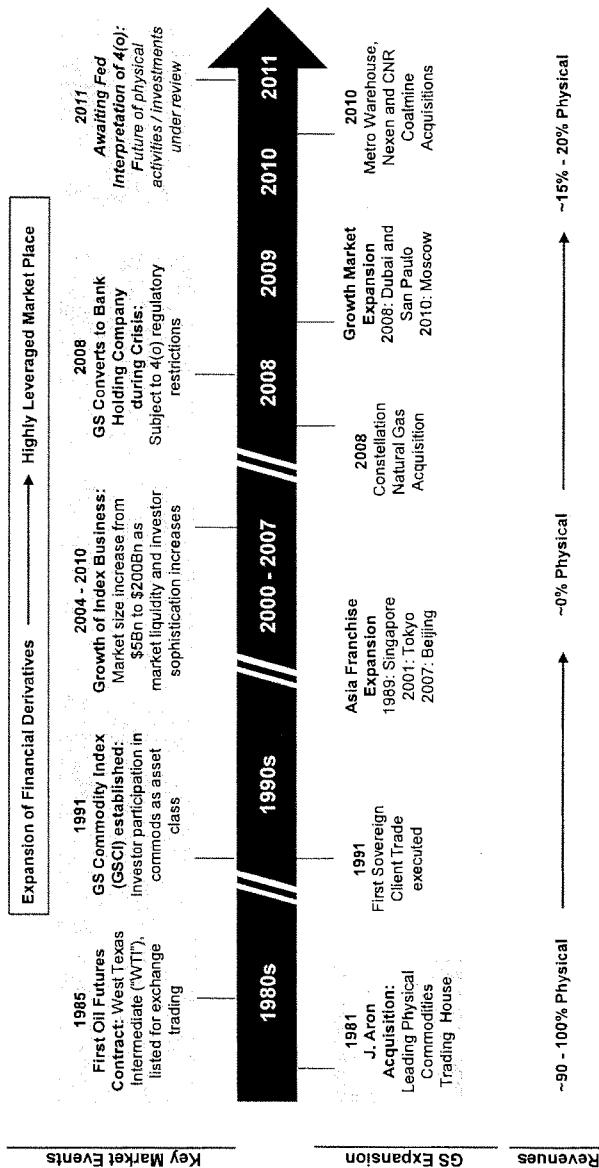


Board of Directors

Global Commodities

Evolution of the Business

Timeline of Key Events and GS Expansion



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FRB-PSI-700014



Board of Directors

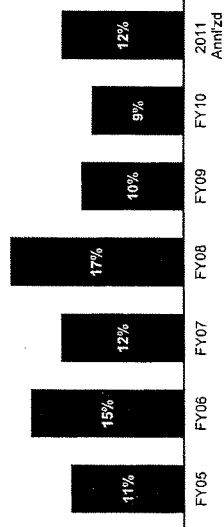
Global Commodities Historical Performance

Historical Revenues (ex-Gross ups) and Pre-Tax (\$mm)

Key Themes

- GS Commodities provides financial and physical risk management solutions to a wide range of global clients, including utilities, producers, industrial users, sovereigns, state owned entities, and financial institutions
- GS Commodities invests in commodity-related businesses to generate returns and to create synergies with the franchise
- Over the past 5 years, the business has launched initiatives to further diversify revenue mix, including expanding into new products e.g. Coal and Agriculture across Physical and Financial, Growth Markets and electronic market making
- In line with the broader Securities division, the challenging macro environment has impacted performance during 2011, with Commodities business heavily correlated to broader market events rather than fundamentals

GS Commodities Revenues as % of Securities Division



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Board of Directors

Global Commodities Competition

- GS Commodities competes against both highly regulated financial institutions and less regulated trading firms, as well as utilities, majors, hedge funds, and private equity firms
- Historically, GS Commodities has significantly outperformed its financial institution competitors. However, that outperformance has narrowed as competitors continue to invest in their businesses and acquire market share

Financial Institutions

- **Morgan Stanley**: historically closest competitor; expertise across all asset classes
- **JPMorgan**: aggressively growing business; became meaningful competitor as a result of Bear Stearns acquisition in 2008, and Sempra from RBS in 2010
- **Barclays**: top tier player since 2006; strong presence in financial business
- **Deutsche Bank**: mainly a financial player; leverages its European lending business

Non-Financial Institutions

- **Physical trading houses** (e.g. Glencore, Vitol, Mercuria): attempting to expand into financial business; actively poaching financial talent
- **Global energy producers** (e.g. BP): considers physical trading a core competency; growing financial capabilities
- **Utilities** (e.g. E.ON, RWE): expanding into client-facing activities, including financial activities
- **Private Equity** (e.g. First Reserve, TPG): exploring commodities trading as a way to extract additional value from natural resources investments

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Board of Directors

Global Commodities Physicals Activity

Historical Physical vs. Financial Commodities Revenues (ex-Gross ups) (\$mm): 1981 – 2011

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- Physical business now accounts for approximately 15-20% of total Franchise Revenues and is expected to increase
- Key product composition includes: Coal & Freight, Oil & Products, Natural Gas & Electricity, Base Metals, Emissions and Uranium
- Diversification into Physical business provides the following:
 - Higher margin business vs. derivatives
 - Credit mitigant for counterpart, where GS is unwilling to hold large derivative exposure
 - Access to new products, new clients and new regions – both developed and growth markets
 - Access to liquidity
- Examples of physical client activity:
 - We are contracted to supply jet fuel to **Delta Airlines** on a just-in-time basis, reducing the need for them to maintain a large inventory
 - We supply crude feedstock to and purchase refined products from **Independent Refiner Alon**, reducing the client's cost of capital and allowing for expansion capacity
 - We provide **Utility Drax**, with physical supply from our producers (Client: Murray / Asset: CNR)

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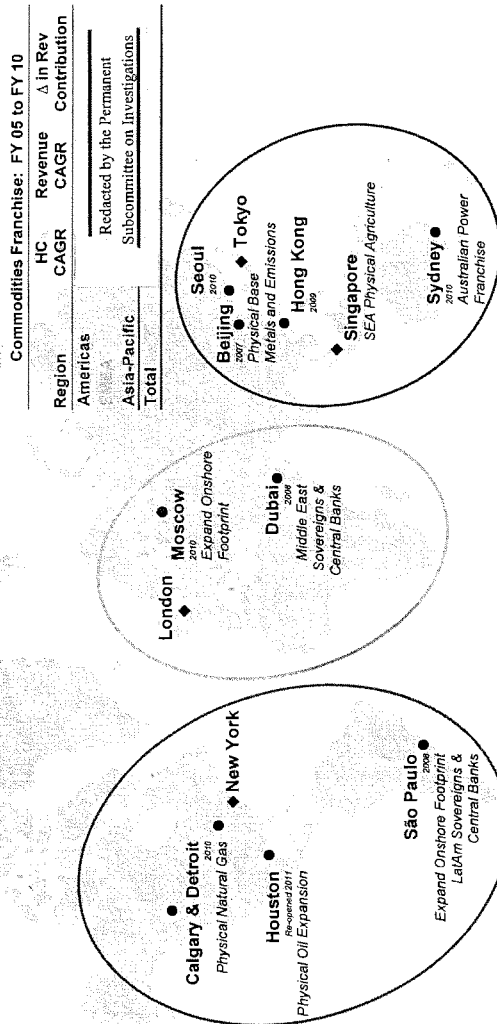


Board of Directors

Global Commodities Business Expansion

GS Commodities now has a physical presence in 14 locations: 5 in Growth Markets and 9 Developed Markets

- Global expansion has diversified revenue generation, with more than 50% of franchise revenues generated outside of Americas
- Invest in building Growth Market franchise:
 - Proportion of regular flow business has doubled since 2007, and now represents 40% of total activity as we become less reliant on historically large, one-off structured transactions
 - We expect a larger increase in Physical activity in Growth Markets relative to Developed Markets



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Board of Directors

Global Commodities

Principal Investing

- Capitalize on specialized market knowledge, providing substantial return on investment, while enhancing the overall commodities franchise
 - Subject to applicable regulation, investments are either integrated into the business, or
 - Acquired under "Merchant Banking" exemption, which limits integration and optimisation of assets
- Our diversified Investment Portfolio includes Mining & Metal, Power, Shipping and Oil & Gas companies, with current carry value across all assets estimated at ~\$1.8Bn
- Significant investments are as follows:
 - CNR (Colombian thermal coal mine): carry value \$254mm
 - Metro International (global LME warehouse operator): carry value \$519mm
 - Cogentrix Energy (wholly-owned subsidiary of GS focused on developing and operating power plants): carry value \$907mm
 - Nexen (North American natural gas marketing business): integrated into sales and trading activities
 - Constellation (US utility & trading business): acquired trading positions in gas, power, coal & freight in 2009
 - London Metals Exchange Position: carry value £5.9mm



Board of Directors

Global Commodities

Principal Investing

- Capitalize on specialized market knowledge, providing substantial return on investment, while enhancing the overall commodities franchise
 - Subject to applicable regulation, investments are either integrated into the business, or
 - Acquired under “Merchant Banking” exemption, which limits integration and optimisation of assets
- Our diversified Investment Portfolio includes Mining & Metal, Power, Shipping and Oil & Gas companies, with current carry value across all assets estimated at ~\$1.8Bn
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Board of Directors

Regulatory Challenges

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Board of Directors

Global Commodities Regulation Overview

Financial Institutions will be subject to increased regulatory restrictions vs. Non-Financial Institutions

Regulation	Description of Regulation	Potential GS Businesses Impacted
Bank Holding Company Act	Places restrictions on engaging in non-financial activities, which includes certain physical trading of commodities and investment in commodity assets	Uranium; Physical Business Expansion (e.g. Iron Ore)
Volcker Rule	Prohibits proprietary trading; exemptions for market-making and hedging	Business will review activities to ensure compliance
Margin/Clearing Requirements*	Increases costs of swaps	All non-physical activities
Position Limits*	Restricts position on specified futures and swaps	All non-physical activities

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* Applicable to both Financial and Non Financial Institutions

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Board of Directors

Appendix

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Global Commodities

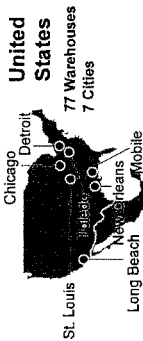
Review of Acquisitions: Metro

Metro Highlights

Business Diversification

- Global LME storage business, which has grown from 8 warehouses in 3 cities in 2001, to 155 warehouses in 22 cities
- Counter-cyclical business model
- Strong customer relationships in base metals sector

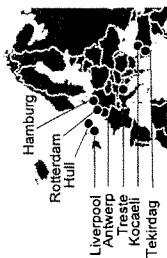
Warehouse Locations



Investment Performance

- Inventory levels continue to trend above/ in-line with acquisition forecast
- Annualized cash return >20% p.a.
- Capital expected to be returned within 3 years of acquisition

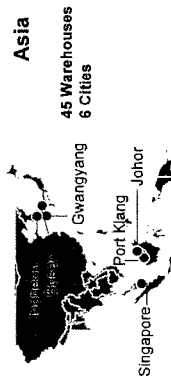
Europe



Challenges

- On-going media debate on aluminium stocks and outflow rates
- Regulatory changes to the current LME outbound regime

Asia



Global Commodities

Review of Acquisitions: Colombian Natural Resources

CNR Highlights

Business Diversification

- Asset Co acquired the Colombian coal mining assets of Coalcorp Mining on March 2010 for a total investment of \$203mm
- Assets included La Francia Coal Mine and an 8.43% ownership interest in the Fenoco railway (230km railway connecting the coal mining district to the Caribbean coast)
- Since acquisition, GS:
 1. Working on securing medium term port access
 2. Ramped up production / sales from 1 mt in 2009 to 2.5 mt in 2011E
 3. Installed J.Aron Coal Desk as marketing agent, increasing customer base from <5 in 2009 to >15 in 2011

La Francia Mine



Investment Performance

- Secured J.Aron's 4-yr coal offtake (MTM ~\$50 mm) at time of acquisition
- 2011 projected to be the most profitable year since the assets went into production (2005), with revenues forecasted to be >\$65mm



Challenges

- CNR continues to execute on long-term logistics strategy of constructing integrated mine-to-port rail network
- Looking to build out Colombia coal platform via bolt-on acquisitions of additional met and thermal coal mines as well as local infrastructure assets



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Global Commodities

Review of Acquisitions: Cogentrix Energy

Cogentrix

Conventional Thermal Assets

- In 2003 Asset Co acquired Cogentrix Energy; at its peak the GS power platform included 30 power plants, comprising 5,625 MW of generation
- Since acquisition, GS sold ~80% of the portfolio, realizing more than \$1.6 billion of gains, while keeping key components of the platform and personnel intact to take advantage of future acquisition and development opportunities
- Cogentrix remaining thermal asset footprint includes:
 1. Cedar Bay: 250 MW coal-fired cogeneration plant located in Florida
 2. Hopewell & Portsmouth: 50% interest in 240 MW of coal-fired cogeneration located in Virginia

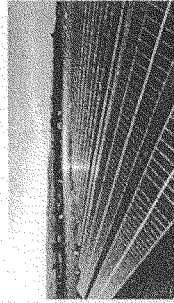
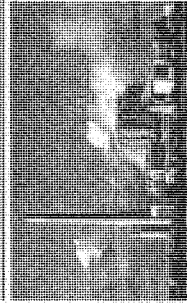
Renewable Assets

- Starting in 2008, Cogentrix diversified into renewable energy development:
- Eti Elektrik: Portfolio of 488 MW of licensed and in-development renewable power projects in Turkey, consisting of 8 hydroelectric generation facilities and 2 wind plants; sale process underway to sell first two projects upon completion, comprising 57 MW
 - Sun Ray: 43 MW thermal solar power plant located in California, contracted with Southern California Edison

Key Development Pipeline

- Quail Brush Project: 100 MW natural gas-fired peaking power facility contracted under long-term power sales agreement to San Diego Gas & Electric; online date in 2014
- Alamosa Solar Project: Finalizing construction of 30 MW concentrating photovoltaic solar power facility contracted under long-term power sales agreement to Public Service Company of Colorado

Power Assets



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Global Commodities

Threat from Non-Traditional Competitors

- Glencore competes with GS Commodities but has a broader business mix, including significant production, refining, storing and transport activities
 - May be model for evolution of commodities trading
- Glencore's IPO in June 2011 was the largest IPO on the premium listed segment of the London Stock Exchange
 - While shares are currently trading below IPO level, Glencore still trades at a meaningful P/B premium to GS
- GS Commodities would likely be valued as a trading portfolio (approximately 1x tangible book value) if monetized in its current state with relatively limited physical presence
- GS may command valuation multiples for GS Commodities similar to Glencore if the business was able to grow physical activities, unconstrained by regulation and integrated with the financial activities

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Key Business Lines

Business most similar to current GS Commodities:

- Sales and trading of physical commodities, commodity-linked derivatives and related financial instruments
- Source, store and transport physical commodities (note that GS does not have a meaningful physical commodities business)
- Provide financing to producers and consumers of commodities
- Produce, process and refine physical commodities
- Metals and minerals, energy products and agricultural products
- Minority and majority investments in a number of publicly listed commodity-focused companies
- Portfolio companies not integrated with remainder of Glencore businesses

Marketing Activities

Industrial Activities

Commodity Company Investments

Glencore's 2010 balance sheet figures represent, pro forma, balances as if the

FRB-PSI-700939

EXCERPT



July 25, 2012

Memorandum to:

Stacy Bash-Polley, Alan M. Cohen, E. Gerald Corrigan, Isabelle Ealet, J. Michael Evans, Richard J. Gnodde, David J. Greenwald, Robert J. Katz, Eric S. Lane, Gwen R. Libstag, John F.W. Rogers, David C. Ryan, Jeffrey W. Schroeder, Michael S. Sherwood, David M. Solomon, Esta E. Stecher, Gene T. Sykes, John S. Weinberg

From:

Chair: Gary D. Cohn

Subject:

Firmwide Client and Business Standards Committee Meeting
Wednesday, 9 a.m. – 10:30 a.m. (EST)

200 West / 41 / PC

Dom: 888-360-9718; Int'l: 212-902-1055; Confirmation: #8912805

New York: SBP, GDC, EGC, JME, RJK, ESL, GRL, JFWR, JWS, DM, GTSLondon: IE, DJGBy Phone: JSWNot Expected to Participate: AMC, RJG, DCR, MSS, JESAgenda:

Roundtable Discussion

Review of Commodities Business

Tab I

(I. Ealet, G. Corrigan, P. O'Hegarty, M. Shenhouda)

Information Items:

Client Metrics: Week Ending July 20, 2012

Tab II

1. Meeting Minutes of June 27, 2012

Tab III

2. Forward Calendar

Follow-up Items from Prior Firmwide CBSC Meetings

Tab IV

Permanent Subcommittee on Investigations

EXHIBIT #5

FRB-PSI-200984

Global Commodities: Competitive Landscape

GS Commodities compete against both highly regulated financial institutions and less regulated trading firms, as well as utilities, majors, hedge funds, and private equity firms

Increasing Threat: Financial Institutions

- Key Banks aggressively growing businesses:
 - JPMorgan
 - Deutsche Bank

Increasing Threat: Non-Financial Institutions

- Non Financial Institutions continue to expand financial capabilities and client-facing activities:
 - Physical trading houses (e.g. Trafigura, Vitol, Mercatoria, Freeport)
 - Global energy producers (e.g. BP)
 - Utilities (e.g. E.ON, RWE)
 - Private Equity (e.g. First Reserve, VGP)

Opportunity: Players Exiting Commodity Biz

- Closure of commodity businesses across European banks -> opportunity for Leading Banks to capitalise
 - Credit Agricole
 - BNP
 - Soc Gen
 - BBVA
 - Santander



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II. Risks Inherent to Commodities Business



Global Commodities: Risk Overview

Commodities business faces risks that differ to other areas of the Firm, due to:

- Expansive Corporate Client Franchise
 - >60% of Commodities Client Sales Credits vs. ~7% across the rest of Securities
- Physicals Franchise Business
 - ~20% of Franchise Activity in 2012
- Assets and Pending Regulatory Reform
 - Impact of 4(o) and Merchant Banking
- Attrition
 - ~14.5% Commodities Attrition YTD vs. 7.6% across Securities Division

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Physical Risks and Mitigants

Commodity Physical Business has been Structured to Minimize Reputational Risk

- Rigorous processes and due diligence process requirement (PCRQ)
- Develop and apply risk mitigation policies and procedures to limit potential exposures to Environmental Health and Safety (EHS)
 - Vendor Management: View (e.g. pipelines) – undergo thorough due diligence per firm policy
 - Vetting Policy's – vessels, tank and tank railcars are reviewed based on criteria established by Goldman Sachs that exceed industry standards
 - Insurance – the firm maintains comprehensive insurance (transportation and storage of physicals)
 - Legal / Structural Mitigants – contract activity in a manner that benefits from limitations on liability afforded by applicable law (OFAC)
 - Technology / Risk Management Infrastructure – support activity (PIP) – best in class systems

Issues to Consider

Key Mitigants

- Insurance: Broad liability insurance with significant limit covering storage and transport
- Procedures: ensure high operating standards of selected vendors including vessel vetting for shipping activities
- Portfolio Oversight: Board oversight of portfolio companies
- Event Responses: Practices that are designed to limit event impact without crossing the line of assuming an operating role; third party service providers are required to manage any event response
- Legal Doctrine / Corporate Structure: Liability for facilities attaches to the facility owner/operator rather than the commodity owner
- Safety Practices: Engagement of third-party firms to audit the controls and practices of vendors and investments
- Experienced Hires: Front the manager oversight and technical specialists to support business product.

Physicals: Examples of Business Selection

Case Selectivity with Respect to Physical Activities Conducted

■ Mitigate potential risk exposures. Examples include:

- Oil Spills: Waterborne transport of hydrocarbons on a limited basis that rarely includes the transport of "persistent oils" (e.g., crude oil)
- Bunker Fuel: Restrictions on the amount of fuel contained in bunkers - either 2,000 or 4,000 metric tons, depending on the size of the vessel chartered
- Piracy: Selective shipping routes to avoid high risk areas
- Truck & Rail: In process of developing Truck and Rail vetting policy above industry standards



Assets Overview and Control Policies

Merchant Banking vs. 4(o) Control Policies

- Assets acquired under Merchant Banking include CNR, Metro and Vale
- Under Merchant Banking Authority the firm is allowed to invest in non-financial portfolio companies
 - Firm personnel not permitted to engage in "routine management" absent extraordinary circumstances
- Merchant Banking authority not available for investments that are extension of firm's own activities

Assets Acquired under Merchant Banking

Control Policies:

- Policy Regarding "Merchant Banking" investments of GS Group, Inc. and its Subsidiaries
- Annual Training of GCPI personnel
- Email Surveillance
- Active involvement of Counsel
- Board Structure

Assets Acquired under 4(o)

- Portfolio companies owned under 4(o) include Cogentrix and Nucor - treated as part of firm's own activities

Control Policies:

- Subject to various firm policies, procedures and controls (varies according to specific asset)



Regulatory Reform: Challenges

Regulatory Reform Impact

- Interpretation of 4(o)
 - Increases risk that forward expansion into new and physical products will be delayed or limited – recent examples:
 - Cosan Sugar JV
 - Physical Iron Ore Expansion
- Position Limits
 - Potential impact to Investor Business
- Real Time Reporting
 - Potential Liquidity Impact

— = Redacted by the Permanent Subcommittee on Investigations

Physical Franchise: Overview of Current Activities

Activity	Franchise Overview	Significant Transactions
Oil & Products	<ul style="list-style-type: none"> Asset-specific franchise-related transactions Focus on refining in US and EMEA Started trading physical gas and distillates in NY Harbour 	<ul style="list-style-type: none"> Alon (US refinery) – supply/offtake agreement, [REDACTED] O.R.L. (Israeli refinery) – inventory financing, May '12, [REDACTED] Handa (Croatian state oil storage) – inventory financing, Apr '12, [REDACTED]
Metals	<ul style="list-style-type: none"> Producer-driven business in the Americas and EMEA supplying consumer demand in Asia Key part of global Metals franchise – complementing derivative and electronic platforms Focus on growing imports into China 	<ul style="list-style-type: none"> Assorted Korean industrials – aluminium supply, May '12, [REDACTED] Takauchi Press, Japan – 10yr aluminium supply, Oct '11, [REDACTED]
Coal & Freight	<ul style="list-style-type: none"> Producing assets in Colombia and offtake contracts in the US and Indonesia Consumer demand in EMEA and China Focus on expanding into new products – coking coal, coal tolls 	<ul style="list-style-type: none"> Murray Coal (US producer) – coal purchase, Jun '12, [REDACTED]
Natural Gas	<ul style="list-style-type: none"> Transport and storage opportunities across North America Aided by SocGen physical gas book buy 	<ul style="list-style-type: none"> Societe Generale – book buy, May '12, [REDACTED]

PCR Transaction Summary

Transaction Name	Action Description	Date Presented	New/ Legacy	Status
Project Ymirage	Ymirage supply agreement with investments in the UK	18-Jan-12	New	Approved with Conditions
Physical Uranium Transportation	Physical vessel transport of Uranium (U308)	31-May-12	New	Review In Progress
Associated Asphalt - SEACO	A small truck acquisition of asphalt emulsion business with two terminals located in South Carolina and Georgia	28-May-12	New	Approved with Conditions
Brazil	Orshore and offshore oil and gas development	24-May-12	Legacy	Reviewed with Conditions
Project Eaglewing	Shale Oil and Gas storage development and exploration	24-May-12	New	Approved with Conditions
Project California	Speedy review of the same deal as above - EHS items prior to the deal team signing	24-May-12	New	Approved with Conditions
Opal	Oil and Gas acquisition, development and production	17-May-12	Legacy	Reviewed with Conditions
China Risun	Coke and coking chemical production	02-May-12	Legacy	Reviewed with Conditions
Renew Wind Power	Wind Farm construction and operation	04-Apr-12	Legacy	Reviewed with Conditions
Project Oaktree	Structural Crude Supply Transaction	22-Mar-12	New	Approved with Conditions
Solar Amplifica	Equity and financing of residential solar installation through and involved lease and rebate credit facility	01-Mar-12	New	Approved with Conditions
Kennan Advantage Group - Grammer	Additional products being transported on the initial transportation network	01-Mar-12	New	Approved with Conditions
Ship Loan ASBG	Loan Acquisition with vessels as collateral	28-Feb-12	New	Posting ONLY - no approval required
Project California	Coal Mining in Columbia	01-Feb-12	New	Approved with Conditions
Yamamoto Katun	Japanese ship owning company	04-Mar-12	Legacy	Posting ONLY - no approval required
Samson Investment Company	Statoil Gas within a fund offering	15-Dec-11	New	Posting ONLY - no approval required
Physical Wheat	Physical Wheat trading	03-Dec-11	New	Posting ONLY - no approval required
Project Ahi	Electricity Distribution Network	01-Nov-11	New	Approved with Conditions
Associated Asphalt	Asphalt Storage terminals	18-Nov-11	New	Approved with Conditions

PCRC Transaction Summary (Cont'd)

Transaction Name	Activity Description	Date Presented	New/ Legacy	Status
Clean Coal Solutions - Amaran	Chemical Additive processing (Additional facilities)	03-Nov-11	New	Pending ONLY
Project Jairo	Open sea oil drilling and gas processing system	06-Oct-11	New	Approved with Conditions
EdgeMetric	Oil and gas exploration and shale gas	08-Sep-11	New	Approved with Conditions
Maxam	Explosive manufacturing for military	25-Aug-11	New	Approved with Conditions
Falveya	Oil and gas Exploration Development	18-Aug-11	Legacy	Reviewed with Conditions
Physical Engineering	Physical turnkey of vessels	11-Aug-11	New	Approved with Conditions
Vessel Vetting	Marine vetting Criteria for ocean vessel from	08-Jun-11	Legacy	Reviewed with Conditions
Kinder Morgan	Transportation of commodities	02-Jun-11	Legacy	Approved with Conditions
Clean Coal Solutions	Coal Chemical Additive processing	27-May-11	New	Approved with Conditions
Cobalt	Deep sea oil drilling	23-May-11	Legacy	Reviewed with Conditions
EF Energy	Oil and gas Exploration and Development and shale gas	23-May-11	Legacy	Reviewed with Conditions
Project Gascon (G3 Rate Gas)	Natural Gas Distribution Network	12-May-11	New	Approved with Conditions
CleanLight Power	Solar Panel power generation	28-Apr-11	New	Approved with Conditions
Kenan Advantage Group	Transportation of commodities (last mile from port to gas station)	21-Apr-11	Legacy	Reviewed with Conditions
MPC	Marine Transportation activities and new building	14-Apr-11	Legacy	Reviewed with Conditions
Asak Gasco	Power generation company	31-Mar-11	Legacy	Reviewed with Conditions
CNR	Coal Mining	10-Mar-11	Legacy	Reviewed
CCS Corporation	Oil field servicing company	03-Mar-11	Legacy	Reviewed with Conditions
Energy Future Holdings	Power generation company	03-Mar-11	Legacy	Reviewed with Conditions
Egnor	Oil field servicing company	18-Feb-11	Legacy	Reviewed with Conditions
Offshore Installation Group	Offshore installation and construction services company	17-Feb-11	New	Approved with Conditions
Physical Asphalt	Physical storage of asphalt	17-Feb-11	New	Approved with Conditions
Physical Iron Ore	Physical trading of iron ore	14-Jan-11	New	Approved
Comanera	Deep sea oil drilling	07-Jan-10	Legacy	Reviewed with Conditions
CE Petroleum	Oil exploration company focused petroleum exploration in Eastern Germany	07-Dec-10	Legacy	Approved with Conditions
Endesa	Natural Gas Distribution and Transmission Network in Spain	20-Nov-10	Legacy	Approved with Conditions
Laysana Petroleum	Oil and natural gas company primarily focused on mature, shallow oil field development in Texas and Louisiana	18-Sep-10	New	Approved with Conditions

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JULY 9, 2013

Introduction

Goldman Sachs engages in two principal types of commodity-related activity: acting as a market maker and making investments in companies that are engaged in commodity-related activities. Each of these activities has a different profile. Goldman Sachs acts as a market maker through its Global Commodities Business Unit (Global Commodities). It invests in companies engaged in commodities-related activities through the Global Commodities Principal Investment (GCPI) group within Global Commodities and through certain other groups in the firm.

General Approach:

The guiding principle in how we approach these activities is to ask not simply whether we have the appropriate resources to conduct the activity (e.g. the know-how, infrastructure, operational and risk management capabilities) but also whether the activity promotes the interests of our clients and falls within the parameters of risk that are appropriate for our firm. Our conclusion with respect to these questions depends on our ability to manage such risks at the level of the business unit that would conduct the activity and oversee the management of these risks through the various committees described herein. Applying this principle results in our being selective with regard to the activities in which we choose to engage.

Commodity Markets:

Goldman Sachs, through various subsidiaries, has been an active market maker in commodities and commodity derivatives since 1981. In connection with these market-making activities, we are involved in making and taking delivery of commodities and, for a certain portion of our business, in arranging for the storage and transport of certain physical commodities. These activities are described more fully in Annex A. Our physical trading and related capabilities enable us to provide risk management solutions to our clients that complement the various financial services we perform for them and to hedge risks otherwise associated with our financial activities. Our client base includes a wide range of producers, consumers, investors and governmental entities.

Our marketing-making activities in physical commodities involve the following products:

- Power
- Natural Gas
- Oil & oil products
- Liquefied natural gas (LNG)
- Natural gas liquids (e.g., ethane, butane and propane)

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EXHIBIT #6

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- Coal
- Freight
- Base metals
- Uranium
- Agricultural products – (e.g., palm oil, rubber and wheat)
- Emissions, carbon and renewable credits

Physical activities have grown and continue to grow as part of the overall risk of our business but remain a limited part of our market-making activities. We view our business holistically and from a market risk perspective do not distinguish between financially- and physically-settled transactions insofar as the market exposure for physical and financial market risk is relatively the same.

While market exposures between financially and physically-settled transactions are similar, physical activities involve operational risks (such as environmental risks) that do not exist in the context of financially-settled transactions. These risks are primarily associated with the potential for damage to occur in connection with the actual physical transportation and storage of commodities. The possibility of environmental risk arising from the settlement of transactions by accepting and transferring title on a transitory basis (which is the manner in which the majority of our physical activities are settled) is virtually non-existent.

With respect to the transport and storage of commodities, liability for damages is generally the responsibility of the legal entity that owns or operates the facilities involved in the particular incident rather than the owner of the commodity. Nevertheless, we take various steps as detailed herein to mitigate potential risk exposures. First, we are selective in choosing the business that we do. For example, Goldman Sachs arranges waterborne transport of hydrocarbons on a limited basis that rarely includes the transport of “persistent oils” (e.g., crude oil). Second, and perhaps more importantly, we apply criteria approved by PCRC, defined below) to ensure that the vessels and facilities that are utilized to transport commodities and the operators of such vessels and facilities meet high performance standards.

To the extent we arrange for storage or transport of a commodity, we apply multiple controls. Before engaging in a new physical commodity activity (or an activity in which we have not engaged over an extended period of time), the proponents of engaging in the activity present their proposal and associated risk considerations to the firm’s Physical Commodity Review Committee (PCRC). PCRC is tasked with maintaining a consistent approach to evaluating risks associated with the firm’s commodities activities. In addition to review by PCRC, new activities are required to be reviewed by the applicable Regional New Activity Committee (RNAC) and/or the Firmwide New Activity

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Committee (FNAC). These committees conduct a detailed review and ensure the activity can be managed satisfactorily and are accountable for ensuring that business standards and practices (including those relating to reputational risk management and client service) are properly observed. Further, we vet vendors that provide commodity-related services.

Goldman Sachs manages the risks associated with our physical commodities businesses with the same rigor that we apply to the management of our derivatives businesses. We analyze each aspect of risk associated with any product in which we trade. For example, when we trade currencies we consider the risk that a central bank would impose restrictions on convertibility. Similarly, when we trade natural gas, we consider the risk that the pipeline may be subject to a force majeure that would interfere with our ability to transport gas to buyers.

Commodity-Related Investments:

Goldman Sachs, through various subsidiaries, invests in companies that are engaged in commodity-related activities. For example, we own Cinos, which owns and operates an open-pit coal mine in Colombia.

As an investor in such companies, Goldman Sachs adheres to two guiding principles. First, we review the qualifications of the management of operating companies to confirm their competence to manage risks associated with the business. As an investor, we do not assume direct responsibility for operational or risk management. Second, we provide appropriate oversight through our involvement on the boards of directors of the portfolio companies and as an investor to ensure that the companies adhere to best practices with respect to environmental, health and safety (EHS) and reputational risk.

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2. Is there capital held against environmental/catastrophic risk in particular?

Operational risk capital, which is calculated using the Advanced Measurement Approach, is currently held for seven risk categories: legal and regulatory, execution and processing, internal fraud, external fraud, business disruption and system failure, employment practices and workplace safety, and damage to physical assets (DPA). While there is no explicit scenario for environmental/catastrophic damage for any business line or corporate area, exposure related to participation in commodity markets primarily resides in the damage to physical assets risk category in Global Commodities.

Global Commodities' operational risk loss during storage and transportation of its physical commodity assets is limited to the value of those assets as catastrophic/environmental risk resides with the facility operators. Estimates derived through scenario analysis are driven by the single largest value of energy assets in storage or transportation in the period. Basel-compliant insurance has been applied to capital in

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this risk category. As of 1Q 2013, Global Commodities operational risk capital for damage to physical assets risk was \$3mm. Without the insurance application, this figure would have been \$73mm, which reflects the highest dollar value of inventory at a single location, re-priced to the peak of the 1-year forward curve. Please refer to Appendix B for more detailed information.

Goldman Sachs holds operational risk capital for the Damage to Physical Assets risk for its corporate assets such as its headquarters in downtown New York City. Basel-compliant insurance has been applied to capital in this risk category. As of 1Q 2013, capital calculated for corporate asset damage related to uncontrollable events (e.g. terrorism, natural disasters, etc.) was \$232mm. The capital calculated for corporate asset damage related to internal incidents (e.g. burst water pipes, fires caused by electronic malfunctions, etc.) was \$21mm.

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3. How do you determine the appropriate level of insurance? How do discrete pieces of the insurance program come together both internally with regard to the business as well as the diversification benefits?

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In late 2011, the Insurance group identified an opportunity to implement an additional layer of insurance protection for the firm. The group partnered with an industry leading broker and a syndicate of commercial insurers to develop an insurance program that provides GS Group and its subsidiaries/affiliates with contingent, third-party environmental/pollution liability coverage for risks that could emanate from either our physical trading activities or our investing activities. This program is particularly meaningful as it broadly covers environmental risk across all GS businesses.

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Across all insurance programs there are industry standard exclusions or limitations to coverage for risks like nuclear, biological or chemical/radioactivity loss, fines and penalties, inherent vice, loss of market, Japan earthquake and terrorism/war.

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5. Describe any other methods or strategies used to hedge or mitigate the catastrophic/environmental risks of commodity activities.

Our first method and strategy to mitigate catastrophic/environmental risks is to be selective with regard to the types of activities that we choose to conduct.

Second, we apply risk mitigation policies and procedures to limit potential exposures to environmental risk.

Third, we take care to conduct activities in a manner that benefits from limitations on liability afforded by applicable law.

Finally, we conduct thorough review of the activity and the infrastructure we have to support such activity:

- Business Selection Process.
- Committee review as applicable
 - Physical Commodity Review Committee (PCRC)
 - Regional New Activity Committee (RNAC)
 - Firmwide New Activity Committee (FNAC)
 - Suitability Committee
 - Acquisition Review Committee (ARC)
 - Principal Investment Committee (PIC)
- Develop and apply risk mitigation policies and procedures to limit potential exposures to EHS risks, e.g.:
 - Vendor Management Review – all vendors (e.g. pipelines) undergo a thorough due diligence per firm policy
 - Vessel Vetting Review – vessels are reviewed based on criteria established by Goldman Sachs
 - Insurance – the firm maintains comprehensive insurance, covering transportation and storage of physical commodities
 - Legal / Structural Mitigants – conduct activities in a manner that benefits from limitations on liability afforded by applicable law
 - Technology / Risk Management Infrastructure – technology infrastructure to support activity (e.g. PIP)

Ensuring we have the relevant technical capabilities & skills in our people

For example, in our coal and freight business, subsidiaries of Goldman Sachs charter vessels that transport dry freight commodities (e.g., coal, iron ore). Global Commodities does not own vessels in connection with market making activities but rather charters them for a particular voyage or under a time charter of a specified duration. Goldman

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Sachs has established criteria (approved by PCRC) against which vessels are measured, which include:

- Lloyds 100A1 classification or equivalent (where the classification society is a member of the International Association of Classification Societies) and rating of not less than 3* by RightShip Pty Ltd.
- Maximum age of 20 years
- Coverage by a member of International Group of Protection and Indemnity Associations

In addition, we maintain an incident response program to promote efficient communication in the event that an incident occurs involving a cargo belonging to the firm.

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6. How do you measure and assess the catastrophic/environmental risk associated with physical commodity assets, including private investment vehicles, leasing structures, and any other arrangements?

For those activities where there is a possibility of environmental and catastrophic risks, we evaluate them in a disciplined manner. Prior to engaging such activities, the firm conducts a due diligence review of relevant risks and assesses the resources necessary to support the management of such risks. Those considerations include, among other things, inherent financial and physical risks, EHS risks, statutory liability, regulatory requirements, reputational implications, legal liabilities, transaction structure, operational risk management processes, systems and controls. We then assess these risks and validate internal processes in relation to 1) our ability to mitigate the risk, 2) the size of the transaction, 3) the transaction's potential return and 4) the relevant technical capabilities in our people. In addition, and where appropriate, we reserve capital against the risk and, or seek indemnities from such risk.

The firm employs in house expertise such as the Corporate Environmental Management team and external resources such as outside counsel or consultants to assist in identifying and reviewing relevant risks. After this initial review, the firm determines whether the risks associated with the activity may be mitigated appropriately.

In addition, when the firm is considering making an investment in a company that is engaged in activities that involve EHS risks, we will evaluate such risks when the investment is of a size that is meaningful in the context of such company. For investments that the firm makes in such companies, we in our capacity as investor promote observation of industry best practices by the companies in relation to EHS matters, including:

- Development, review, and regular maintenance of formal EHS policies, procedures and training
- Management focus and attention on EHS risk mitigation
 - Ensuring senior management responsibility for EHS oversight
 - Maintaining appropriate board oversight of EHS management
 - Where appropriate, ensuring that EHS reporting is incorporated in management reports (weekly, monthly, or quarterly) and evidencing EHS performance & metrics.
- Appropriate levels of insurance
- Performance of regular EHS audits (at least annually) by reputable and independent EHS consultants

In making these investments, the firm will take various measures to promote EHS risk management, the specifics of which will be context-dependent but in general would

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include insurance, contractual representations, warranties and related indemnity protections, transaction structure, legal structure protections, and policies and procedures. Due diligence conclusions and transactional mitigants are reviewed by various governance committees. These committees are discussed further in our responses to questions #8 and #9.

The investments that are within our portfolio are subject to the EHS policies and procedures which include ongoing monitoring and evaluation of catastrophic/environmental risk. In addition, and as required by FASB (SFAS 43), and our relevant portfolio companies access and update the Asset Retirement Obligations (ARO liability) of our physical commodity assets.

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7. How do you evaluate the adequacy of mitigants to control losses associated with industrial activities (i.e. ownership of mining/storage facilities, freight transportation, and storage facilities) including catastrophic/environmental risk?

When evaluating the adequacy of the mitigants put in place to control losses, Goldman Sachs takes the approach described in our response to Question 6. Each business unit has processes in place to monitor activities and investments that it conducts, including related catastrophic/environmental risk. For example, the investing businesses review the performance of their investments quarterly (if not more frequently). Where appropriate, this review includes an assessment of potential catastrophic/environmental risk. For physically traded commodities, the Logistics group within the firm's operations division is responsible for oversight of physical assets in storage or transport, including monitoring the value of held physical inventory against insurance levels.

Additionally, the firm regularly monitors developments in the industry generally and revises its approach to evaluation and management of these risks in light of these. For example, the BP Gulf Spill prompted the firm to establish PCRC.

As PCRC has matured its impact has increased. In particular, we note that as businesses gained experience with PCRC their approach to EHS mitigants became more structured and consistent. Now, businesses routinely utilize PCRC best practices and recommendations from previous assessments to their diligence analysis of potential new opportunities, which enhances the efficiency of due diligence and the ability of business leaders to make informed investment decisions in light of EHS considerations. PCRC tracks industry best practices with a view toward enhancing its standards.

Broadly speaking, the adequacy of EHS mitigants is reviewed in line with industry best practices (ISO certifications, API standards, etc.), regional and national regulatory standards, organizational risk, legal precedent, and the application of insurance. Certain groups, such as PCRC, perform periodic reviews of existing activities and investments.

In addition, Internal Audit (IA) regularly reviews the firm's activities and investments. Each business actively engages with IA to determine audit plans & to perform thorough evaluations.

Included in this submission is Corporate Environmental Management's Environmental Policies and Procedures document (Appendix E) that is applied to all activities or investments for which they are called upon to review. This allows them to provide a consistent standard in their reviews.

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8. How do you formally dimension and manage the reputational risks associated with the industrial activities that the firm does and or will engage in?

Since 2011 the firm has adjusted its procedures to ensure that all firmwide committees explicitly consider reputational risk as part of their assessment criteria. Additionally, the core function of the Environmental Markets Group (EMG) is to evaluate reputational risk associated with industrial activities and related environmental issues. The mandates and processes of this group and the committees that are most commonly engaged in assessing commodity related activity are described in more detail below.

Prior to committing to business on behalf of the firm, all advisory, financial and principal investing teams conduct an environmental, social and governance (ESG) review for all opportunities in the normal course of their due diligence. EMG, which sits within the Executive Office and reports into the Office of the Chairman, and the firm's Business Intelligence Group assist deal teams in evaluating transactions that have potential ESG sensitivities. Findings are passed on to key committees for review and input. If a transaction has significant ESG sensitivity and associated reputational risk, it is escalated for discussion and decision with key business leaders, appropriate committees, and the Chairman's Office. Where feasible, EMG will work with teams to identify ways to engage with the client to help mitigate the risk and have a positive outcome through its engagement. Where this is not feasible and involves potentially significant environmental damage, social issues, unacceptable risks or directly conflicts with the firm's Business Selection and Risk Management guidelines in the Environmental Policy Framework (EPF) (Appendix F), the firm will forgo the engagement.

In addition to this firmwide review process, EMG equips teams in sensitive sectors with due diligence guidelines and training to evaluate new business opportunities effectively. This includes background on current ESG issues and sensitivities in the sector and a framework of questions to discuss with a company. The existing guidelines are periodically updated and new guidelines are developed, as appropriate, to reflect evolving ESG issues. EMG's due diligence guidelines span 8 industry sectors and within some of these sectors we have sub-sector guidelines:

- Biofuels
- Chemicals
- Forestry
- Metals and mining

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- Oil and gas¹
- Power generation²
- Transportation
- Water

As examples, included in this submission (Appendix G and Appendix H) are the due diligence guidelines for Metals and Mining (updated in 2012) and subsector guidelines for Unconventional Oil & Gas and Hydraulic Fracturing (newly developed in 2013).

The Firmwide New Activity Committee (FNAC) reviews proposals with a focus on answering the critical question of “should we” engage in a proposed new activity/product (considering reputational, client, suitability and other concerns). The Regional New Products Committees (sub-committees of the FNAC, with separate committees located in the Americas, Europe and Asia), discuss the “should we” question, and on the detailed “can we” review (i.e., can the business be supported and controlled), recognizing that divisional and regional business leadership must analyze both questions prior to sponsoring a matter. New business opportunities in the physical commodities sector are reviewed by the relevant Regional New Product Committee, and, depending on the significance of the proposal, may also be reviewed by the FNAC. These committees discuss reputational risk the firm may face if the firm conducts the proposed activity. The business unit submitting a new product proposal is responsible for highlighting key reputational concerns to the committees, as well as the mitigants the firm has put in place to control and prevent, to the extent possible, reputational and other risks. The committees evaluate these risks and mitigants and will reject opportunities, or require changes to the business model, if the committees feel the risks are too great.

In addition to the above referenced committees, the Firmwide Acquisition Review Committee (FARC) reviews all proposed legal entity acquisitions that will be (or potentially could be) consolidated into The Goldman Sachs Group Inc's consolidated balance sheet, including via a consolidated subsidiary. Furthermore, each division has its own investment review committee (Principal Investment Committee for Securities Division and Investment Committee for the Merchant Banking Division).

As mentioned in the previous question's response, PCRC reviews all physical commodity-related activities that fall within that committee's mandate. PCRC considers reputational risk as part of its assessment of each activity. PCRC is a sub-committee of

¹Subsector guidelines include: Unconventional Oil & Gas and Hydraulic Fracturing; and Oil Sands.

²Subsector guidelines include: Coal; Gas; Hydroelectric; and Nuclear Power Generation.

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FNAC and reports its findings to FNAC (as part of the FNAC review process, FNAC members ensure that PCRC has reviewed and signed-off on an activity before commencing their review).

Additionally there are internal screening processes and committees within the business units which serve as an initial gating function and address many of the same issues prior to the firmwide review. Those committees review financial and reputational risks that could result from environmental or catastrophic events. Prior to submitting to these committees, transaction teams are required to conduct thorough due diligence including on EHS matters. As such, each transaction goes through several screens. Included in this submission (Appendix I) are examples of PCRC committee memos that highlight the analysis of EHS and reputational risks and the mitigants in place to reduce these issues.

9. How and when is catastrophic/environmental risk presented to senior management and the Board of Directors? Describe any committees which review such risks and provide meeting minutes, presentations, or other documentation in which these risks were discussed.

New business opportunities, including physical commodity trading and investing in companies that engage in physical commodity-related activities, are discussed with Senior Management in prior to the various Divisional and Firmwide Committee review processes. Through this escalation and evaluation process, depending on the potential environmental and catastrophic risks on the opportunity, a transaction may be structured in such a way that mitigates these risks. Ultimately, if Senior Management or the applicable Committee do not believe that these risks are sufficiently mitigated, the transaction will not be approved.

As described in the previous questions, various firmwide committees consider risks associated with engaging in commodities related activity. However, PCRC is a cross-divisional firmwide governance committee responsible for maintaining a consistent approach to evaluating risks associated with the firm's activities in physical commodities that may have an impact on the environment, human health and safety. The Committee was authorized by the Firmwide New Products Committee (currently reporting to the Firmwide New Activity Committee) and established in September 2010. Members of PCRC have been selected from different areas across the firm with diverse background and expertise that is suited to review EHS risks. The PCRC membership includes individuals from the following areas of the firm: Operations, Legal, Compliance, Operational Risk Management and Analysis, Finance (includes Insurance), Securities Division, Merchant Banking, Investment Management Division, Corporate

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Environmental Management and the Executive Office. Included in this submission (Appendix J) is a copy of the Physical Commodity Review Committee Charter.

Businesses presenting before the Committee are required to complete applicable templates and provide supporting documentation which specifically address EHS risks. Following review of the activity, the Committee provides recommendations to assist business units in avoiding, minimizing or mitigating EHS risks. In this capacity, the Committee also determines whether the firm has sufficiently addressed and mitigated such risks by approving, approving with conditions and/or constraints, or rejecting certain activities. The Committee reviews developments in law and industry practice that may have a bearing upon the efficacy or reliability of the firm's approach to these issues. In addition, the Committee periodically reviews existing businesses and investments regarding their approach to applicable EHS standards.

PCRC reports on its activities to the Firmwide New Activity Committee (FNAC) on a quarterly basis. There is a formal presentation to FNAC on an annual basis (Appendix K). In addition, the Chair of PCRC has presented to the board's Audit and Risk Committees. Updates regarding the activities of the Committee are presented to the Board as called for. The next update is planned to take place prior to the end of 2013.

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10. Provide fair value adjustment balances for past 12 months for all physical commodity exposures as well as a description of the methodology used to determine the size of the adjustment.

Attached to this submission are the Global Valuation Adjustment Summary and the Global Valuation Adjustment Policy (Appendix L and Appendix M) for the Commodities business unit. Please note these valuation adjustments are derived from risk per product category, and are not segregated into physical commodities risk vs. derivatives toward settling risk.

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Annex A: Description of Physical Activities Associated with Market-Making

Below is a more detailed description of the physical activities by product type. For each of the commodities described below, the majority of transactions are settled the basis that title is received and then transferred on a transitory basis.

- **Power** – Goldman Sachs purchases and sells power, which is settled by way of scheduling through central transmission organizations or utilities. In certain instances, Goldman Sachs arranges for transmission through transmission organizations or utilities in order to meet obligations under purchase and sale agreements. Goldman Sachs is registered as a “purchase and selling entity” under the North American Electric Reliability Corporation, which has been certified by the Federal Energy Regulatory Commission to establish and enforce reliability standards. Goldman Sachs has entered into certain trading agreements pursuant to which it procures fuel feedstock for a power generating plant, provides direction to the plant owner/operator with respect to the dispatch of the plant and purchases/sells the output from the plant.
- **Natural Gas** – Goldman Sachs purchases and sells natural gas, which is settled at central delivery points or at specific locations depending on the requirements of the relevant client or counterparty. Goldman Sachs also contracts with third parties to transport and/or store natural gas.
- **Oil and refined products** – Goldman Sachs purchase and sells crude oil and various refined products (e.g., gasoil, heating oil, gasoline). Goldman Sachs also contracts with third parties to transport and/or store crude oil and refined products. Goldman Sachs has entered into certain arrangements under which it provides crude oil or refined products to refineries or consumers (e.g., airlines) to meet requirements.
- **Coal** – Goldman Sachs purchases and sells coal which is settled at central delivery points or at specific locations depending on the requirements of the relevant client or counterparty. Goldman Sachs also contracts with third parties to transport and/or store coal.
- **Freight** – Goldman Sachs charters vessels in (under time or voyage charters) and then charters vessels out to counterparties under time or voyage charter basis.
- **Metals** – Goldman Sachs purchases and sells various industrial metals (e.g., aluminum, zinc, nickel), including transporting and storing such metals. The

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business principally consists of metals of a grade that meets the specification requirements of the London Metals Exchange (LME). When such metals are stored in LME registered warehouses the title to such material is evidenced by warrants issued by such warehouses.

- Uranium – Through its Nufcor subsidiary, Goldman Sachs purchases and sells U3O8 (“yellowcake”) and UF6. Settlement of such transactions is generally effected through depositories operated by third parties whereby the purchaser/seller does not take actual possession of the material, similar to the manner in which “unallocated” gold transactions are settled.
- Agricultural products - Goldman Sachs purchases and sells palm oil, rubber and wheat, generally on a back to back basis where risk and title of the commodity pass through us in a chain.
- Carbon/Emissions - Goldman Sachs participates (purchases and sells) in both compliance and voluntary emissions markets in the U.S. and Europe acting as both principal and intermediary. The firm maintains and transfers physical emissions inventory across several registries. We do not consider these to constitute “physical” commodity transactions.
- Renewable Energy Certificates (RECs) – Goldman Sachs participates in REC markets to meet Renewable Portfolio Standards (RPS) state level requirements which impact our physical US Power portfolio. The firm purchases and sells RECs through the over the counter market as well as hold inventory and schedule these products via online exchanges. We do not consider these to constitute “physical” commodity transactions.
- Liquefied natural gas (LNG) - Goldman Sachs purchases and sells LNG on a back to back basis where risk and title of the commodity pass through us in a chain. Goldman Sachs also arranges for transport and storage of LNG by waterborne vessels as conditions warrant.
- Natural gas liquids (e.g., ethane, butane and propane) - Goldman Sachs purchases and sells physical NGLs. Goldman Sachs may also arrange for transport and storage of NGLs.

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Annex B: List of Exhibits Provided

Question	Exhibit	Document Name
Question 1	Appendix A	Regulatory Capital Requirements Detailed Methodology (Capital Attribution and Assessment)
Question 2	Appendix B	Operational Risk Capital for Damage to Physical Assets
Question 4	Appendix C	Commodities Business Insurance Summary (Landside, Waterborne, Pollution, Cargo and Israel/Palestine Violence Programs)
	Appendix D	J Aron - Physical Trading Insurance Program
Question 7	Appendix E	GS Environmental Policies and Procedures
Question 8	Appendix F	GS Environmental Policy Framework
	Appendix G	Metals and Mining ESG Guidelines
	Appendix H	Unconventional Oil & Gas and Hydraulic Fracturing ESG Guidelines
	Appendix I	1 Original PCRC Template
		2 Follow Up Presentation
		3 Additional ERM Risk Assessment Template
		4 Follow Up PCRC Minutes Jan2012
		5 Follow Up PCRC Minutes Aug2012
		6 Follow Up PCRC Minutes May2013
Question 9	Appendix J	Physical Commodity Review Committee Charter
	Appendix K	PCRC Presentation to the Firmwide New Activity Committee
Question 10	Appendix L	Global Valuation Adjustment Summary
	Appendix M	Global Commodity Valuation Adjustment Policy



Global Commodities & Global Special Situations Group

Presentation to the Board of Directors of The Goldman Sachs Group, Inc.

September 2013

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EXHIBIT #7

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Global Commodities Competition

GS competes against regulated Financial Institutions, as well as less regulated Energy Companies & Independent Traders

2012 Revenues: Competitive Landscape¹ Financial Institution Wallet Size Has Declined¹

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Segment	2012 - 2013 Momentum	Leading Players	Approx. Sector Revenues ¹ (\$bn)			
			2009	2010	2011	2012
Financial Institutions		GS, MS, JPM, DB, BarCap, Citi, BAML				
Energy Companies ²	→	BP, Shell, Total, Statoil, Gazprom, RWE, E.ON, EDF, ENI				
Independent Traders	↑	Glencore, Noble, Mercuria, Vitol, Trafigura, Louis Dreyfus				
Total Industry			55-58	33-36	38-41	37-40

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¹ Source: Oliver Wyman. Financial Institution revenues include Franchise revenues.
² Trading businesses of oil and gas majors, power/gas producer-traders.

Global Commodities Regulatory Environment

Review of Bank Holding Company (BHC) activities due in September 2013; this may prompt the Fed to issue an interpretation of 4(o) exemption

Franchise Activities			Principal Investments	
4(o) Exemption	Complementary Authority (4(i))	Merchant Banking Exemption (MBE)		
<ul style="list-style-type: none"> Provides a grandfather for GS / MS to engage in commodities activities in light of their having been engaged in commodities activities in 1997 Assets must be < 5% of total assets Treatment is self-effecting; does not require Fed action Permits GS / MS physical franchise activity 	<ul style="list-style-type: none"> Authority under which banks (e.g. JPM) are able to conduct physical business which is viewed as complementary to their financial business Assets held must be < 5% of Tier 1 capital 	<ul style="list-style-type: none"> Authority to acquire assets / equity in non-financial entities Must be "bona fide" merchant banking and not strategic Prohibited from engaging in "routine management" Asset must be divested within 10 years Metro and CNR owned under MBE¹ 		
			4(o) Exemption	Complementary Authority
<ul style="list-style-type: none"> X Not permitted ? Uncertain ✓ Permitted 			Less-Regulated Trading Company	
New Financial Trading	✓	✓	✓	✓
New Physical Trading	?	✓	✓	✓
Routine Management of Principal Investments	?	X	✓	✓

1. GS has preserved the ability to assert 4(o).

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Global Commodities Client Franchise

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Much of the activity that is considered 'physical' does not involve a commodity being moved

- ➊ **Back-to-Back Intermediation** – GS intermediates a buyer and a seller, instantaneously transferring title to the commodity without moving or storing it!
- ➋ **Storage / Book Transfer** – Ownership passes from seller to buyer, in storage without the commodity being moved
- ➌ **Transport** – The commodity is moved physically from seller to buyer (e.g.: By barge, pipeline, ship or truck)

Sample Breakdown of Activities (As % of Settled / Moved Volume)

For June 2013	Physically Settled Volume	Physical as a % of Total Settled Volume	Back-to-Back Intermediation	Storage / Book Transfer	Transport	Balance Sheet ² (\$mm)	
						Third Party	GS
Crude Oil & Oil Products	15mm bbls	1%					
Natural Gas	235mm cu ft	8%					
Power	20mm MWh	24%					
Coal & Freight	4mm mt	5%					
Emissions	2mm mt	8%					
Uranium ³	2mm lbs	100%					
Base Metals	0.5mm mt	4%					

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Global Commodities

Physical Franchise Activity Review Process (Conducted Under 4(o))

In our Commodities Franchise, primary liability rests with the owner / operator of storage or transportation facilities; GS Commodities Franchise does not operate any storage or transportation facilities

- 1 In-house Expertise
 - Discussion regarding whether GS has relevant in-house expertise
- 2 Vendor Diligence
 - Business Intelligence Group ("BIG") & GS Logistics team in Commodities Operations conduct diligence and vendor suitability checks on all providers, such as pipeline operators, in line with the firm's wider Vendor Management Policy
- 3 Establish Transport & Storage Policy
 - Instituted best-in-class shipping, rail and pipeline transportation policies, enforced by GS Logistics team, include Critical Event Management Policy
 - Periodic review and enhancement of policies based on industry related "events" e.g.: Quebec rail
- 4 Physical Commodity Review Committee
 - Approval of entry into new physical trading business by Physical Commodities Review Committee ("PCRC")
 - PCRC reviews logistical, regulatory, compliance, environmental and reputational risks and draws its membership from across the firm
- 5 Broader GS Committee Approvals
 - Approval of Regional New Activities Committee ("RNAC")
 - Approval of risk limits by Divisional Risk Committee ("DRC")
 - Approval to sell product to client by either Structured Products Committee ("SPC") or Structured Investor Product Committee ("SIPC")
 - Approval of all investments to be integrated into GS financials directly or as Consolidated Investment Entities ("CIEs") by Acquisition and Disposition Review Committee ("ADRC")
- 6 Insurance
 - Maintenance and review of extensive insurance policies by GS corporate insurance team
 - Review of external insurance policies held by vendors
- 7 On-going Review
 - Periodic review of trading activities by PCRC, e.g.: Nulcor and Nexen, Client & Business Standards Committee ("CBSC"), and SecDiv Executive Committee
 - Regular reconciliation / price verification of all inventory positions held globally
 - Engagement of Internal Audit and third parties to audit storage, transportation and delivery practices
 - Vendor management review of service providers including health & safety, environmental and OFAC

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Global Commodities Principal Investments

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Global Commodities Principal Investments Overview of Positions Held Under Merchant Banking Exemption

Introduction

- Global Commodities Principal Investing ("GCP") evaluates investment opportunities in commodity-related businesses
- It seeks attractive risk-adjusted returns across the capital structure. Most activities are focused on private companies / assets which are then held under the Merchant Banking Exemption

Current Portfolio¹

Investment	Description	Ownership (%)	Acquisition Date	Max Exit Date	Acquisition Price (\$mm)	Current Book Value (\$mm)	LTD Revenues (\$mm)	Status
Metro	LME warehouse operator	100	2010	2010	451	386	429	Under review
CNR	Colombian coal assets	100	2010	2020	569	593	222 ²	Under review

Significant Recent Divestitures

Investment	Description	Acquisition Date	Exit Date	Acquisition Price (\$mm)	LTD Revenues (\$mm)
Cogentrix	US power assets	2003	2012	457	1,747 ³
Eti Elektrik	Turkish hydropower assets	2008	2013		
LME	London-based metals exchange	2009 - 2011	2012	7	194
Syntech	Australian coal mine	2007	2011		

In addition to the Physical Franchise controls on pg. B-9, we apply the following additional controls to our Principal Investments:

- Principal Investment Committee** ■ Approval of all investments above \$75mm by Principal Investments Committee ("PIC")
- Establish Information Barriers** ■ Physical segregation of information between GCP investments (e.g.: Metro) and franchise trading desks to prevent flow of MNPI, where appropriate

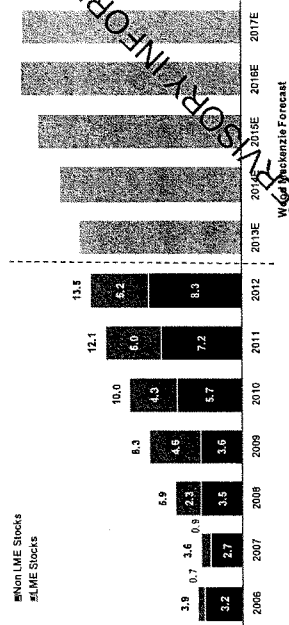
¹ Financial data as of August 2013.
² Includes coal and FX hedge gains of \$246mm.
³ Excludes Lender, sold in 2006, with LTD gains of \$61mm.



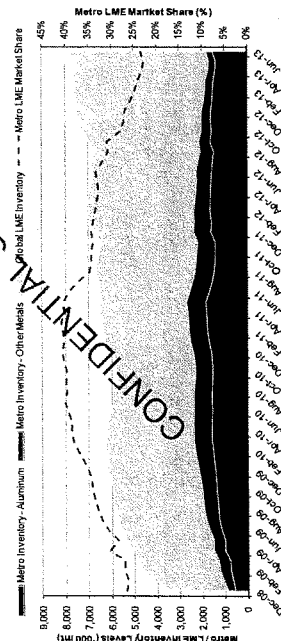
Global Commodities Principal Investments

Principal Investment: Metro (Cont'd.)

Global & LME Aluminum Inventories



Evolution of Metro Inventories



Sources: Wood Mackenzie Aluminum Long Term Outlook Q2 2013, LME Data as of Jul-2013, Metro Inventories

Market & Recent Events

- Global Aluminum Inventories Have Been Rising Since Financial Crisis**
- In the wake of the global economic crisis, aluminum demand dropped precipitously between 2008 and 2009
 - Since that time, the global aluminum market has been "oversupplied"
 - As a result, global as well as LME aluminum inventories have increased significantly
- Recent Criticism of LME Warehousing System and Outbound Queues**
- LME warehouses operate under a framework of rules including a minimum outbound delivery rate
 - Long waiting times at certain LME locations to take metal out because of this rule have led to criticism of the LME warehousing system in general, and of Metro operations in particular
- GS Has Responded To The Criticism On Several Levels**
- Contacted commercial end user clients to offer to swap aluminum in the queue for spot aluminum
 - Contacted commercial end users most vocal in their criticism of LME warehouses to ensure that we understand their concerns (e.g.: MillerCoors, Coca-Cola)
 - CNBC interview and public support for recent LME proposal to reduce queues as well as consumer priority system

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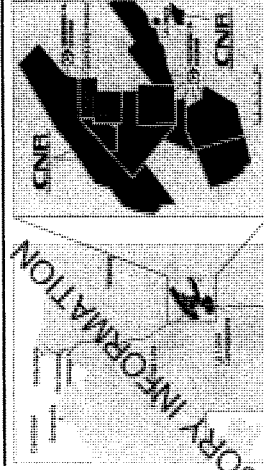
Global Commodities Principal Investments

Principal Investment: CNR

Asset Summary

- Colombian Natural Resources ("CNR"), a 100% owned subsidiary of Goldman Sachs, was established in January 2010 to acquire the Colombian coal assets of Coalcorp Mining Inc.
- In June 2012, CNR added to its portfolio by acquiring Vale Coal Colombia from Vale S.A.
- The combined portfolio includes
 - Coal assets: 4 coal concessions with total reserves of ~160 million tonnes ("Mt")
 - Operational assets include the La Francia and El Hatillo mines, with current total capacity of 6 Mt per annum ("Mtpa")
 - Rail assets: 17% ownership in the Fenoco rail line guaranteeing capacity of 7 Mtpa
 - Port assets: 100% ownership of the Puerto Cordoba Port, with current capacity of 7.5 Mtpa
- CNR has significant expansion plans including
 - Expand production from 6 Mtpa to 10-12 Mtpa
 - Expand current mining operations from 2 to 5 open pit operations over the next 4 years
- Certain operational issues have arisen

Location of CNR Assets



Global Commodities Principal Investments

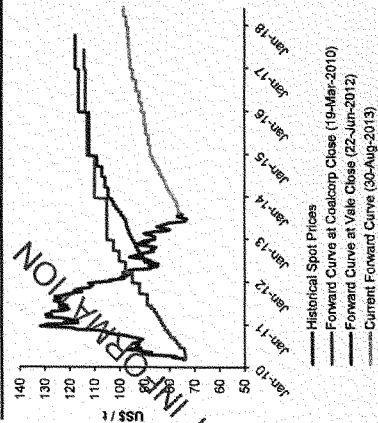
Principal Investment: CNR (Cont'd.)

Investment Performance

- Coal prices have declined from \$113 / Mt to \$90 / Mt since the acquisition of Coalcorp, although MTM gains on a short coal hedge has produced accounting gains
- Economics to date:
 - Invested Cash: \$569mm
 - Book Carrying Value: \$593mm
 - Total LTD GCPI P&L: \$222mm
 - Pre-Carry LTD P&L: \$2mm
 - Carry Charge P&L: \$(26)mm
 - Hedge P&L: \$246mm

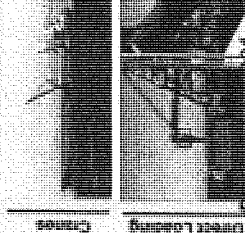
- An additional \$5-7 / Mt price fall across the curve may trigger a permanent impairment of ~\$200+mm, as CNR is not held at fair value
- This may be partly offset by MTM gains on hedges (if maintained)
- Gains in coal prices would result in hedge losses (but would not result in a mark up of the coal mine asset value)

Historical Coal Pricing



Port Project

- Currently, CNR barges coal out to sea in order for it to be loaded onto vessels via floating cranes
- New regulations require ships to convert to direct loading by January 2014
- CNR projects cost to be ~\$220mm and is evaluating alternatives



1. Calendar 2014 prices.
Notes: Financial data as of August 2013

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Global Special Situations Group

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Global Special Situations Group Overview

Introduction

- The Global Special Situations Group ("GSSG") primarily specializes in lending to and investing in middle market companies on a risk-adjusted return basis. Equity investments are held under the merchant banking exemption
- All investments in GSSG are subject to GSSG Investment Committee; the controls applied to our commodities investments within GSSG are the same as those previously discussed
- GSSG has 19 investments in commodities assets totaling a current book value of \$683mm, a \$13bn total portfolio

GSSG Portfolio¹

Investment	Description	% Ownership	Acquisition	Acquisition Price (\$mm)	Current Book Value (\$mm)	LTD Revenues (\$mm)
Agriculture						
Shuanghui	Pork processing company	5%	2006			
Alternative Energy						
US Geothermal	Geothermal energy provider	100%	2006			
Three Winds Power	50/50 JV with Shell; 153MW portfolio	50%	2004			
SunRun	Residential rooftop PV solar systems	N/A	2013			
Condon Wind Power	JV with Seawest; 50MW wind farm	50%	2003			
SunE Solar Fund	Commercial rooftop solar / photovoltaic power	99%	2005			
Clean Light	3MW solar PV plant in Mt. Lebanon	100%	2011			
Exploration & Production						
Fairway II	Oil & gas exploration and drilling	98%	2010			
Fairway I	Oil & gas exploration and drilling	94%	2006			
Opal	Oil & gas exploration and drilling	86%	2007			
Brasol	Brazilian oil & gas exploration	23%	2005			
Sea Rover	Deepwater oil & gas surveys	38%	2009			
Bali Oil & Gas	Deepwater oil & gas surveys	39%	2009			
Power						
GSRC Minnesota	Leases refined coal facilities	N/A	2013			
GSRC Siskiyew	Leases refined coal facilities	N/A	2013			
GS RC Investments	Leases refined coal facilities	N/A	2010			
GSRC Corbreen	Leases refined coal facilities	N/A	2010			



Global Special Situations Group Overview Cont'd

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GSSG Portfolio Cont'd

Investment	Description	% Ownership	Acquisition	Acquisition Price (\$mm)	Current Book Value (\$mm)	LTD Revenues (\$mm)
Transportation & Storage						
US Development III	Crude transloading	20%	2013			
Yamalo-Khatun	Holding vessels for lease. Own one ship	60%	2009			
Total						

1. Equity investments where (a) the firm's investment is 20% or more of the company, or (b) have a cost basis or current carrying value of at least \$200mm in entities the primary business of which is that of a producer or processor of, or participant in, the oil and gas business (including storage and transportation) for, or provider of logistical services to, the oil and gas business, or physical commodities.

Further Details on Select Investments

- **Fairway II**
 - Upstream oil and gas acquisition, development and production company
 - Focused on un-developed or under-developed acreage positions and properties across Texas and Oklahoma
 - Converts under-developed acreage from land value to proved reserve value through successful drilling
- **Opal**
 - Upstream oil and gas acquisition, development and production company
 - Focused on un-developed or under-developed acreage positions and properties across Texas, Oklahoma and New Mexico; Similar business model to Fairway II
- **US Geothermal**
 - Project level equity investment between GS and US Geothermal, Inc.
 - The Raft River geothermal project is a 10-13MW geothermal power plant located in Idaho
 - The project is a renewable geothermal technology project that generates zero emissions
- **US Development ("USD")**
 - Logistics provider engaged in the design, finance, construction and operation of crude-by-rail and biofuel transloading
 - GSSG originally invested in USD in Feb 2007, purchasing [REDACTED] of preferred equity, which represented 50% ownership. In 2010, its three primary assets were sold to Kinder Morgan. The LTD P&L for USD I was [REDACTED]
 - In 2010, GSSG reinvested [REDACTED] to support USD's crude-by-rail strategy ("USD II"), which represented 32.5% ownership. USD II's crude-by-rail assets were sold in 2012 to Plains All American. The LTD P&L for USD II was [REDACTED]
 - During 2013 GSSG reinvested [REDACTED] ("USD III") in a crude-by-rail transloading strategy in Canada. GSSG's ownership following this transaction is 20%.

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FRB-PSI-200094

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Appendix

CONFIDENTIAL SUPERVISORY INFORMATION



Appendix

Recent Incidents & GS Response

Incident	Firms Involved	GS Response
FERC Fines	Barclays & JP Morgan	<ul style="list-style-type: none">■ Commodities anti-manipulation policy reviewed and revised in November 2012■ New physical natural gas surveillance program. Program is designed to detect cases where the firm represents a significant portion of daily volume and report to trading supervisors■ New physical power surveillance program with same purpose as natural gas program

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B-20

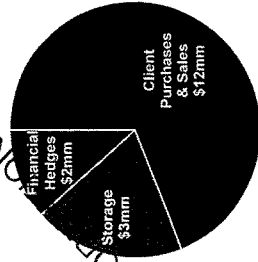
Appendix Business Under Review: Uranium

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Overview

- Our Uranium franchise has only transacted in low-enriched Uranium¹ to date at variety of secure storage locations globally
- It provides clients with hedges through physical purchases and sales
- All receipts / deliveries are made on a book-transfer basis
- It operates predominantly as Nufcor International Ltd., which was purchased by GS in Q2 2009
- Through this we acquired \$50m of physical low-enriched Uranium, rising to \$263m at Y/E 2012
- The purchase was approved by the UK's FSA and operated under the 4(o) exemption in the US

Total Uranium 2012 Revenues: \$17m



Secure Storage Locations In Which GS Holds Inventory²

Name	Location	Owner
ConverDyn	US	Honeywell
Caneco Corporation	Canada	Public
Comunex	France	Areva
Eurodif	France	Areva
Ureco Ltd	UK	UK & Dutch govt

Top Client Inventory Holdings: 2009Q3 - 2012Q1

Client	Location	Type	Balance (kg)
Client A	US	Low Enriched Uranium	1000
Client B	Canada	Low Enriched Uranium	500
Client C	France	Low Enriched Uranium	200
Client D	UK	Low Enriched Uranium	100

¹ Specifically, GS trades UO₂, also known as "yellowcake," a mixture of uranium oxides. ² As of March 31, 2013.

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Appendix

Physical Franchise Case Study

Crude Oil Supply / Oil Product Offtake Arrangement

- Client is headquartered in Dallas, Texas and engages in refining and marketing petroleum products primarily in the south-western and south central regions of the United States
- Their refineries produce clean-burning gasoline, ultra-low-sulfur diesel, jet fuel, specialty chemicals and advanced-performance asphalt products
- In February 2012, GS structured a crude oil supply and refined product offtake arrangement with them for their California refineries; this was the third such transaction GS had structured for the Client

Challenge

- Client required financial support to make crude oil purchases
- Client had ~\$100mm tied up in existing crude oil and refined product inventories; a significant amount of cash for a smaller domestic refinery
- Traditional commercial banks remain risk averse, generally advancing only 70-80% of the value of petroleum inventories

GS Solution

- GS purchased the refinery's inventory at market prices
- GS intermediated the majority of Client's crude purchases (up to 50,000 barrels / day)
- GS purchased the majority of Client's refined products at a prevailing market price as they are produced

End Result & Value-Add

- The transaction reduced working capital requirements associated with crude purchases and inventory
- The CA for the Client was lower than the cost of financing these working capital requirements with a traditional asset-backed loan and equity
- The arrangement was volume-denominated, providing the Client with a stable mechanism for sourcing crude and managing liquidity regardless of prevailing market prices

In aggregate, the 3 transactions free up \$450mm of working capital for the Client, representing ~20% of their total assets

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INTERNAL FR

June 30, 2014

RSSDID: 2380443

FR Y-12
OMB Number 7100-0000
Approval expires December 31, 2015
Page 1 of 4

Board of Governors of the Federal Reserve System



Consolidated Holding Company Report of Equity Investments in Nonfinancial Companies—FR Y-12

Report at the close of business as of the last calendar day of the reporting period.

This report is required by law: Section 5(c) of the Bank Holding Company Act (12 U.S.C. § 1844(c)) and Section 10 of the Home Owners Loan Act (12 U.S.C. § 1467a(b)).

The *Consolidated Holding Company Report of Equity Investments in Nonfinancial Companies* is to be prepared in accordance with

the instructions provided by the Federal Reserve System. The Federal Reserve may not conduct or sponsor and an organization (or a person) is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

NOTE: The *Consolidated Holding Company Report of Equity Investments in Nonfinancial Companies* must be signed and attested by an Executive Officer of the reporting holding company.

Date of Report: June 30, 2014
Month / Day / Year (BHEI 9999)

I, the undersigned Executive Officer of the named holding company, attest that the *Consolidated Holding Company Report of Equity Investments in Nonfinancial Companies* for this report date has been prepared in conformance with the instructions issued by the Federal Reserve System and is true and correct to the best of my knowledge and belief.

Sarah E. Smith

Printed Name of Executive Officer at Holding Company (BHEI C490)

Principal Accounting Officer

Title of Executive Officer of Holding Company (BHEI C491)

Signature of Executive Officer of Holding Company

08/13/14

Date of Signature (MM/DD/YYYY) (BHEI J186)

GOLDMAN SACHS GROUP THE

Legal Name of Holding Company (TEXT 9010)

200 WEST STREET

(Mailing Address of Holding Company) Street / P.O. Box (TEXT 9110)

NEW YORK

City (TEXT 9130)

NY

State (TEXT 9200)

10282

Zip Code (TEXT 9220)

Person to whom questions about this report should be directed:

Name / Title (TEXT 8901)

Area Code / Phone Number (TEXT 8902)

Area Code / FAX Number (TEXT 9115)

E-mail Address (TEXT 4086)

For Federal Reserve Bank Use Only

RSSD ID

C.I.

S.F.

Public reporting burden for this information collection is estimated to average 18.5 hours per response, including time to gather and maintain data in the required form and to review instructions and complete the information collection. Comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing the burden, may be sent to Secretary, Board of Governors of the Federal Reserve System, 2000 L Street, NW, and to the Office of Management and Budget, Paperwork Reduction Project (7100-0300), Washington, DC 20503.

Permanent Subcommittee on Investigations

EXHIBIT #8

FRB-PSI-800013

03/2013
PSI-FRB-12-000016

INTERNAL FR GOLDMAN SACHS GROUP THE Legal Name of Holding Company June 30, 2014 As-of Date	June 30, 2014 RSSDID: 2380443	For Federal Reserve Bank Use Only RSSDID _____ C.I. _____	FR Y-12 Page 2 of 4
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Schedule A: Type of Investments

(If no activity or if the following section does not apply, please enter zero "0".)

	(Column A) Acquisition Cost			(Column B) Net Unrealized Holding Gains Not Recognized as Income			(Column C) Carrying Value			(Column D) Publicly Quoted Value		
	BHEI	Bl	Mil	BHEI	Bl	Mil	BHEI	Bl	Mil	BHEI	Bl	Mil
Dollar Amounts in Millions												
1. Direct investments in public entities	C088		795	C089		0	C090		795	C091		849
2. Direct investments in nonpublic entities	C093	6	283	C094		0	C095	6	286			
3. All indirect investments	C097	7	984	C098		0	C099	7	983			
4. Total portfolio (sum of items 1, 2, and 3)	C101	15	062	C102		0	C103	15	066			

Memoranda

	Number of Companies				
	BHEI	1-10	11-25	26-100	100+
1. Total portfolio	C100			100	

	(Column A) Acquisition Cost			(Column B) Net Unrealized Holding Gains Not Recognized as Income			(Column C) Carrying Value		
	BHEI	Bl	Mil	BHEI	Bl	Mil	BHEI	Bl	Mil
Dollar Amounts in Millions									
2. Investments held under Merchant Banking (GLBA) authority	C104	14	668	C105		0	C106	14	677

	Income Amount		
	BHEI	Bl	Mil
Dollar Amounts in Millions			
3. Pre-tax impact on net income from items 1, 2, and 3 above	B498	1	751

	Off-Balance-Sheet Amount		
	BHEI	Bl	Mil
Dollar Amounts in Millions			
4. Investments managed for others	C716	292	355

	Income Amount		
	BHEI	Bl	Mil
Dollar Amounts in Millions			
5. Pre-tax impact of management fee income (from item M4 above)	J443	1	140

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 FRB-PSI-800014 09/2013
 PSI-FRB-12-000017

INTERNAL FR	June 30, 2014	RSSDID: 2380443
GOLDMAN SACHS GROUP THE		PR Y-12
Legal Name of Holding Company		Page 3 of 4
June 30, 2014		
As-of Date		

Schedule B: Type of Security

	(Column A) Acquisition Cost			(Column B) Carrying Value		
	BHEI	Bl	Mil	BHEI	Bl	Mil
Dollar Amounts in Millions						
1. Common stock	C107	3	623	C108	3	611
2. Convertible debt and convertible preferred stock	C109		852	C110		889
3. Other equity instruments	C111	10	587	C112	10	566
4. Total portfolio (sum of items 1, 2, and 3)	C113	15	062	C114	15	066

	Off-Balance-Sheet Amount		
	BHEI	Bl	Mil
Dollar Amounts in Millions			
1. Unused equity commitments	C115	2	577

	Warrants	
	0=No	BHEI
2. Does the holding company hold any warrants or similar instruments received in connection with equity investment activity? (Enter "1" for yes; enter "0" for no.)	1=Yes	C717 1

Schedule C: Type of Entity within the Banking Organization

	(Column A) Acquisition Cost			(Column B) Net Unrealized Holding Gains Not Recognized as Income			(Column C) Carrying Value		
	BHEI	Bl	Mil	BHEI	Bl	Mil	BHEI	Bl	Mil
Dollar Amounts in Millions									
1. Depository institutions:									
a. SBICs	C117		0	C718		0	C118		0
b. Edge and agreement corporations	C121		0	C719		0	C122		0
c. All other	C126		0	C720		0	C127		0
2. Parent holding and other nonbank subsidiaries:									
a. SBICs	C136		0	C721		0	C137		0
b. Edge and agreement corporations	C722		0	C723		0	C724		0
c. Broker/Dealers	C131		717	C725		0	C132		717
d. Private equity subsidiaries	C726		692	C727		0	C728		692
e. All other	C146	13	653	C729		0	C146	13	657
3. Total portfolio (sum of Items 1.a through 2.e)	C150	15	062	C730		0	C151	15	066
Memoranda									
1. Domestic investments									
2. Foreign investments	C157	7	356	C750		0	C158	7	360

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FRB-PSI-800015 03/2013
PSI-FRB-12-000018

INTERNAL FR

GOLDMAN SACHS GROUP THE

Legal Name of Holding Company

June 30, 2014

As of Date

June 30, 2014

RSDD: 2380443

FR Y-12

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Schedule D: Nonfinancial Investment Transactions During Reporting Period

Type of Transaction	Direct Public Investments						Direct Nonpublic Investments						Indirect (Fund) Investments					
	(Column A) Acquisition Cost		(Column B) Carrying Value				(Column C) Acquisition Cost		(Column D) Carrying Value				(Column E) Acquisition Cost		(Column F) Carrying Value			
	BHEI	BI	MI	BHEI	BI	MI	BHEI	BI	MI	BHEI	BI	MI	BHEI	BI	MI	BHEI	BI	MI
Dollar Amounts in Millions																		
Type of Transaction																		
1. Purchases	C731		0	C732		0	J434		544	J435		544	C733		343	C734		343
2. Less: return of capital	C735		13	C736		13	J436		256	J437		256	C737		1	C738		1
3. Net valuation changes				C739		69				J438		453				C740		515
4. Other	C741		0	C742		0	J439		-85	J440		-85	C743		-44	C744		-44
5. Total transactions (sum of items 1 through 4)	C745		-13	C746		55	J441		223	J442		676	C747		-895	C748		-370



NEW PRODUCT MEMORANDUM

To: Federation New Products Committee - Europe
Cc:

From: Magid Shenouda
Jonathan Fish
James Powell

Date: December 2008

Business
Sponsors: Isabelle Ealet

Subject: Uranium Trading

Executive Summary

The purpose of this memo is to seek approval from the Federation New Products Committee on the expansion of our Commodities Trading function to begin trading physical and financial Uranium products and processing rights.

More specifically, J. Aron & Company ("JANY") is to commence marketing and trading activities in physical Uranium through certain stages of the nuclear fuel cycle, and the associated activities of conversion and enrichment.

The intention is that this business will be initiated through the purchase and continuing operation of Nufcor International Limited, "Nufcor", an existing uranium products and processes trading house as part of the Stonehenge transaction. However, in the event that the Stonehenge transaction can not be concluded, we would develop a new uranium trading business within the existing European Gas and Power trading franchise.

In addition to this FNPC discussion, the proposed Nufcor transaction will go to the Acquisition Review Committee and the overall Stonehenge transaction will be discussed at [Divisional Risk].

Trading, operations and books and records will be controlled out of the London office.

Physical trading of uranium occurs by way of book-transfers of the products at various processing and storage facilities, and at no-stage does JANY intend to physically transport or handle any uranium product. Further approvals will be sought for any expansion of activities into physical handling or transportation of uranium products.

For the purposes of this memo, we have focused on the businesses conducted by Nufcor as this is where the initial activity is focused.

JANY Business Opportunity

Acquisition of Nufcor International Limited

The business opportunity is to acquire and operate an existing uranium trading business, Nufcor International Limited, which is a recognized name in the uranium industry, and has been operating in this field for over 40yrs.

The uranium fuel cycle consists of a number of uranium "products" each characterised by different purity and enrichment levels connected by a number of discreet processes to convert and enrich from mined uranium ore to enriched uranium, usable within fuel rods at nuclear reactors.

Permanent Subcommittee on Investigations

EXHIBIT #9

FRB-PSI-400039

Nufcor periodically takes positions, on a book entry basis in the products uranium oxide (U3O8), uranium hexafluoride (UF6), and enriched uranium product (EUP).

Nufcor also takes positions in the rights to convert U3O8 to UF6 (Conversion Services Certificates) and the right to enrich UF6 (Separative Work Units or SWUs).

Nufcor's business model consists of 4 distinct activities:

- 1) Arbitrage across elements and processes in the uranium fuel cycle including time-spreads and inventory carry trades to capture contango differentials
- 2) Speculation on individual elements and processes in the fuel cycle
 - a. Currently hold in inventory 1.15mio lbs of U3O8
 - b. Currently hold in inventory 0.2mio kgU of UF6
 - c. Currently hold in inventory 0.77mio kgU conversion service credits, which have been 'loaned' out to Honeywell for return in 2009, generating 'interest' income.
- 3) Fulfilment of Agency Agreements with two mining companies for the marketing and sale of U3O8
 - a. Uranium One annual retainer plus commission on sales, 12mo termination
 - b. Anglo Gold Ashanti annual retainer plus commission on sales, 12mo termination from June 2013
- 4) Provision of Advisory and Custodian services to Nufcor Capital Ltd, an AIM listed closed-ended investment fund that buys and holds UF6 & U3O8.
- 5) Nufcor currently hold 3.3mio common shares (8%) in Nufcor Capital Ltd plus deep out of the money warrants for a further 2.475mio shares.

The headcount associated directly with Nufcor's business is currently 6 London-based employees. We anticipate this would fall to 2-3 employees as part of the acquisition process.

Existing Trading Relationships:

Nufcor's current positions can be characterized as a portfolio of inventory holdings hedged with forward supply agreements and financial products.

It holds U3O8 conversion positions in North America and Europe, and has existing relationships with all Enrichment facilities except Rosatom (Russia).

Traded Volumes:

In 2008, Nufcor physically traded 3.6 m lbs of U3O8, and 0.46m KgU of UF6

In 2008, Nufcor traded 1.3 million lbs of U3O8e financially, using Exchange based products and bilateral swap agreements

In 2007, Nufcor traded 0.5m SWUs and 0.76 million Conversion Services credits

Portfolio Valuation

To value Nufcor's positions, we have derived a U3O8 forward curve from the NYMEX U3O8 futures contract. We have priced a conversion services forward curve flat with Ux Consulting Spot Conversion Services price indicator. We derive the UF6 forward curve from the U3O8 and the conversion services forward curves. We have conservatively valued the agency services business activities by crediting only the sales commissions currently due and payable. We have valued the advisory and custodian services business activities assuming the funds under management remain constant for 3 years.

The portfolio valuation as of 24 October was:

Uranium Inventory	\$90mm
Uranium Forwards	\$(55)mm
Uranium Agency & Advisory	\$8mm
Nufcor Uranium Ltd (8%)	\$4mm
Total	\$47mm

Note that uranium inventory of Nufcor Uranium Ltd is currently valued at in excess of \$180m, whereas the equity valuation is circa \$75m, presenting a significant additional value opportunity.

Expected Start Date

Nufcor is a going concern, and will continue trading activity. Complete integration within the existing commodities infrastructure is expected to take 3months

Commercial Risks

The primary business risks associated with the trading physical and financial uranium products, that are faced by Nufcor as well as market activity generally include:

- **Physical Market liquidity**

Nufcor occasionally holds positions in 5 different elements of the uranium production cycle. Approximately 100 companies participate in buying/selling/trading some or all of these elements. Competitive tenders and bilaterally negotiated contracts are the common forms of transacting in these uranium products. We assume that churn is low, and that transactions generally are the result of periodic sales/procurement-driven strategies rather than frequent physical portfolio optimisation. Other than annual data, to date, we have not accessed data pertaining directly to market liquidity.

- **Financial Market Liquidity**

The NYMEX U3O8 futures contract, launched in May 2007, trades thinly and relatively near-dated. Daily volume traded is usually <7,500 lb, and is frequently 0 lb (NUFCOR's open interest is 139k lb). Current open interest is 661k lbs until March 2010 (representing <1% of physical U3O8 consumption over this time period). NUFCOR accounts for 20% of this open interest.

- **Lack of Spot Market**

"Spot" physical transactions in uranium products are considered those transactions for physical delivery within 12 months from transaction date. There is no spot market or spot price marker for transactions with just near-dated delivery and settlement

- **Market Reference Pricing**

There is currently no exchange-traded commodity market for physical uranium products. Weekly "spot" (see below) price indicators published by two consulting firms are accepted by the uranium industry as acceptable reference prices for floating price contracts. These weekly price markers are based on market sentiment and qualifying bids rather than on transactions completed. We have not tested the rigor/robustness of these price markers. One of them serves as the underlying settlement price for the NYMEX uranium futures contract

- **Information Asymmetry.**

The uranium product industry is characterised by traditional, long-term physical participants trading with each other. There is the potential that new entrant intermediaries will operate at a material and sustained information disadvantage to the established physical players in these products.

- **Health, Safety and Environmental Risk and Safety Record:**

Uranium processing and storage (in all forms) is heavily regulated, and conducted on a book transfer basis. That is, there are regulated storage, conversion and enrichment facilities responsible for all physical transfers and handling of the uranium products. Therefore JANY would hold legal title to the uranium products but not at any stage of its trading or marketing activities, physically hold uranium products. There is no expectation that JANY would engage in any direct physical movement of these products

Federation Considerations

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- **Insurance.** We are currently investigating the extent to which liability concerns around nuclear incidents which are not afforded the financial protections of local nuclear liability laws can be addressed through privately provided nuclear liability insurance. It is not compulsory for facilities that process and store uranium concentrates and UF6 to maintain nuclear liability insurance.

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- **Compliance Issues:** (Yael Levy, Seung Earm, Rod Stern)

Policies & Procedures and Training

All uranium business will operate under existing internal policies and procedures and no changes to current policies and procedures are anticipated. To the extent that we acquire Nufcor personnel, they will be subject to the Firmwide Compliance Policies and Procedures and receive annual compliance trainings.

Account Opening

All new counterparties and customers will be subject to the firm's standard Account Opening Process, including Anti-money Laundering, Classification, Capacity and Authority checks. We anticipate most counterparties to be Market Professionals and will undergo suitability review for any structured or strategic transactions with any non-market professional client.

Should the bid for Nufcor be successful, there will potentially be additional due diligence needs to be carried out by Client Due Diligence and BIG in relation to unknown counterparties.

It is expected that the majority of clients will either have existing relationships with GSI or will be listed on exchange or government owned where account opening requirements are less onerous

Regulatory and Reputational Risks

As mentioned in the Legal section, given that JANY will only hold legal title to the uranium and will not own the facility or be in physical possession or delivery of the uranium, licensing is not expected to be problematic under the relevant local laws. In addition, given that JANY will not be the facility owners, JANY will not be subject to the government regulations applicable to production of uranium.

From an FSA registrations perspective, there are no additional registration requirements for individuals or the firm. In addition, there are no additional telephone taping or training requirements.

From a Regulatory Reporting standpoint, we are currently not aware of any reporting obligations but further due diligence will be conducted with external counsel to ensure reporting requirements are fulfilled. For example, some jurisdictions may require reporting on the basis of legal title if the inventory exceeds a certain amount.

Re acquisition of Nufcor as a separate legal entity, the Compliance section in the Acquisition Review Committee memo will discuss regulatory issues as far as the entity structure is concerned.

■ Credit Issues: (Pawel Adrjan, Sana Habib, Sara Farooqi)

Credit views the uranium industry as characterized by high barriers to entry, long lead times to bring production onstream, substantial geographic and producer concentration, and tight regulation of conversion, enrichment, and transportation processes. This results in a counterparty universe that is typically comprised of large multinational corporations or government-related entities, i.e. relatively strong credits. All uranium trade requests and new counterparties will be subject to the standard Credit review and approval guidelines.

Nufcor's uranium forward portfolio has a net short position (currently out of the money), so the portfolio will begin to generate mark to market exposure if uranium prices decline to the range of mid \$20s/lb.

We have identified the following three areas of uranium trading that will involve GS taking credit risk, with specific follow up items noted in each case:

1- Forward and 'loan' positions

GS will take counterparty credit risk via forward trading of uranium products. Additionally, Nufcor's existing portfolio contains a 'loan' of conversion service credits to Honeywell that generates credit exposure.

Credit has conducted a high level overview of Nufcor's existing counterparties. Subject to more detailed analysis, which will follow in the next stage of the due diligence process, we have not identified any significant concerns relating to the credit quality of those counterparties compared to the size of the positions.

Credit concerns/follow-ups related to uranium trading are:

- Tenor: Uranium trades can be long-dated (i.e. >3 years)
- Settlement risk: Settlement is non-standard and lengthy with most counterparties, i.e. payment up to 30 days after delivery, although it varies in each contract
- Documentation: Trade documentation is not standardized and transactions are not captured by ISDA or other standard commodities master agreements. While some of Nufcor's contracts have credit

terms relating to rating downgrades and other termination events, other forms of credit support such as collateral do not appear to be a market standard. It is not clear whether uranium trades would benefit from legal netting

- Exposure modeling: Credit will need to be comfortable with trade capturing, accurate mark to market and potential exposure calculations. We will need to ensure good data quality, allowing for accurate stress testing and monitoring of exposures against credit limits

We will manage the tenor, settlement, and documentation risks by setting limits based on the credit quality of the counterparties, following the standard credit risk management process.

2- Inventory

Nufcor holds uranium inventory on an unallocated/ non-segregated basis with a number of storage facilities, generating credit risk to those entities.

We have obtained details on the actual location and value of Nufcor's current inventory:

U308	LBS	Mkt \$/lb	Value
Cameco	154,931	54	8,366,274
Comurhex	119,451	54	6,450,354
Converdyn	348,851	54	18,837,954

UF6	KGU	\$ / kgU	Value
Eurodif	153,448	150	23,017,200
USEC	49,662	150	7,449,300

Preliminary analysis of the counterparties to Nufcor's storage contracts has identified some credit concerns.

For USEC, Credit is concerned given the weak credit profile (public rating of B-/B3). Going forward, we would not want to add to this exposure, and we would work with business to manage this position.

For Cameco, Comurhex and Converdyn, Credit is comfortable based on the ownership or standalone profiles of these names.

3- Agency contracts

Credit risk in uranium marketing and agency agreements is limited to the commission fees owed to Nufcor by two uranium producers. Nufcor does not take any principal risk via these contracts, and they can be terminated with 12 months' notice.

With regards to the custodian and advisory services provided to Nufcor Capital Ltd., credit risk is also limited to the fee receivables. We do not currently anticipate any OTC trading with the fund.

■ **Controller issues:** (Ellis Kitchener, Mark Davis)

Product Controllers

After the integration of the business into our existing operational infrastructure, controllers envisage that we will be able to adequately subsume the volumes of Nufcor's business within our existing control infrastructure. In the interim we will agree a temporary control procedures with operations to mitigate risks to the firms pnl and completeness of our books and records.

The purchase of the Nufcor entity crystalizes the requirement for the completion of full financial and accounting due diligence. The transaction would also require sign off from NPC and Acquisition review committee (ARC).

In terms of mark-to-market (MTM) and P&L recognition, our understanding is that trading in the Uranium market is limited and is likely to remain so in the future. If it is determined that the spot market is not active, then we cannot conclude that the forward positions are derivatives and as such would not be MTM.

The physical inventory will need to be marked at FV, to be determined by the desk, product control and accounting policy. The lack of a liquid spot trading market would mean that the determination of FV would be skewed to trading activity, rather than published prices.

The disconnect between FV of physical inventory and the lack of MTM on the forward positions may result in P&L volatility for the Uranium portfolio.

Regulatory Reporting

GSI should not be used to house any new commodity risk. If GSI is used to intermediate trades between a 3rd party and JANY, the appropriate counterparty charges will be taken systematically.

■ **Technology Issues & Operational Issues:** (Chris Teverson, Ali Peera)

Nufcor's existing involvement in the uranium market is managed without direct physical ownership of the uranium products. The process is managed on an 'Unallocated' process where participants own the rights to certain products but that these are not directly physically assigned. In effect there is no physical delivery or logistics activities; with all transfers between mines, conversion and enrichment facilities effected through book entry. There is no expectation that we would engage in any direct physical movement of these products.

Trade Capture

The Nufcor entity is to be maintained and will be created in the existing JANY systems. All trades will ultimately be booked using the existing JANY infrastructure against this entity.

Incorporation of Nufcor in the JANY systems may take a while to implement and there may be a limited period where the risk is booked in SecDB but the operational processes are managed using a spreadsheet. The low trading volumes in Nufcor should enable operational risks to be managed prior to completing the transition.

Apart from managing the underlying uranium products (U3O8, UF₆ currently) we will require objects to be able to book and track Conversion Credits and SWU (Separative Work Units) to convert UF₆ to Enriched Uranium Products – although there is currently none of the latter product being transferred.

It is likely that the Elec Energy object will be utilized for booking the U3O8 and UF₆ products and the Conversion Credits will be booked as Certificates. It is planned that these objects will enable the uranium products to eventually be managed through the existing Energy Scheduling System.

Logistics and Inventory Management

We have extensive experience of managing a wide range of physical commodity products both on an allocated and unallocated basis. It should be fairly straight forward to accurately represent the physical positions in our systems. We have experience of managing physical unallocated products for metals and coal (Bear Tolling Deal). We also have experience of managing products with varying levels of quality e.g. physical coal cargoes which has differing levels of % sulphur and differing energy values. We also manage deliveries for products where delivery timings are prone to changes particularly in the LNG, coal and oil business.

Confirmations and Settlement

Some work would be required to set up new product lines and ensure trades flow to downstream operations systems. We would look to incorporate these products into the strategic OMNI-COS workflow for OTC products and to GMI for Listed Derivatives.

■ Strats (Ossie Manners)

To be incorporated, a new legal entity will need to be set up within upstream and downstream systems to house all Nufcor trades. We will roll out CMLs for each product and delivery location to accurately reflect the location of inventory and future trades.

The share holding of Nufcor Uranium, and the associated warrants will be introduced through existing equity instruments.

For the Advisory & Agency agreements, we need to introduce them as future payment streams. This is similar to the mechanisms used in selling GSCI to S&P, so we anticipate that we can introduce this in a similar fashion.

We have existing instruments in and outside of SecDB through which we are comfortable to book and risk manage and delivery flexibility and storage costs. New instruments need to be incorporated to model the conversion service loan repayments, but this should not be problematic.

■ Tax Department issues (Neil Reeve)

We understand the Uranium trading activities will be undertaken by, and booked in, Nufcor. The unique tax implications of the activities will be assessed as part of the proposed general corporate Tax Due Diligence to be undertaken (by Deloitte) in connection with the larger Stonehenge transaction. While we understand that Nufcor will never be engaged in the physical delivering, withdrawing or carriage of uranium product, we will nevertheless seek reassurance from the due diligence provider that no unusual reporting requirements or income, sales, VAT, environmental or other taxes are imposed on the business by any of the jurisdictions in which Nufcor operates. We anticipate that if the Due Diligence uncovers any tax concerns with the activities this would be discussed in detail with the desk.

In relation to the holding of Nufcor in the GS Group, this has not been finalised and will only be considered further when the Stonehenge transaction structure is known. If Nufcor is held beneath the UK deferral group, we will have to consider the tax implications of backing out any off-market contracts to JANY to the extent this will be necessary.

■ MRMA (Swati Jain)

MRMA has confirmed with the gas & power trading desk and strategists that MRMA's standard requirements will be met. MRMA standard requirements can be found at:
http://www.ny.ficc.gs.com/ssps/ProdSource/FAQ_Question?faq=FAQE+are+the+requirementsB7Z++0

MRMA should be able to view the risk on the positions in SecDB by running Slate report on the archives hence should be notified once the booking is done.

Also, from the discussions with controllers, we understand the positions will not be Marked to market and hence will sit out of VaR.

On this basis MRMA are comfortable to proceed with implementing the uranium business.

■ Business Intelligence Group (Helen Symonds)

Given the nature of the sector, all uranium counterparties will be subject to review by BIG prior to onboarding.

In the context of the Stonehenge transaction, BIG is close to completing its review of the counterparties currently utilised by Nufcor. Those counterparties are all highly regulated and are operating out of lower risk jurisdictions (US, Canada, Europe) - to date, we have not identified any material issue that would prevent the firm from transacting with any of the counterparties.

ANNEX 1

WHAT IS URANIUM?

In its pure form, uranium, U, is a silvery white metal of very high density. It has the highest atomic mass of any naturally occurring element, found in rocks and ores which make up approximately 3% of the earth's crust.

The three naturally occurring isotopes of Uranium are uranium-238, uranium-235, and a very small amount of uranium-234. The percentage occurrence (by weight) and radioactivity properties of the naturally occurring isotopes of Uranium are approximately follows:

Isotope	Percent of Total Uranium in Crustal Rock		Alpha energies, MeV (abundance)	Half-life (years)
	by weight	by radioactivity		
^{234}U	0.0055	48.9	4.776 (72.5%) 4.723 (27.5%)	2.45×10^5
^{235}U	0.720	2.2	4.597 (5%) 4.395 (55%) 4.370 (6%) 4.364 (11%) 4.216 (5.7%) Others (17.3%)	7.04×10^8
^{238}U	99.2745	48.9	4.196 (77%) 4.147 (23%)	4.46×10^9

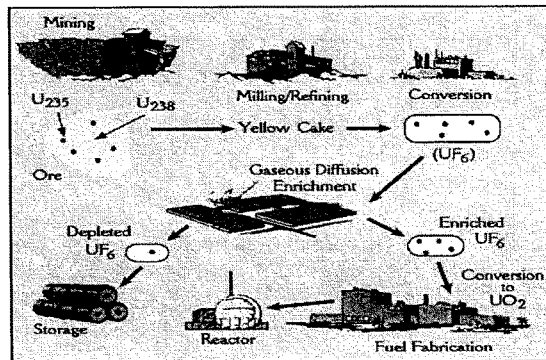
Source: Lide 1994

The sole commercial usage for uranium is for power generation and as can be seen, Uranium is a radioactive substance. As mined from the ground it is not usable as nuclear fuel, primarily because the ratio of U-235 needs to be increased from 0.7% to 2%-4%.

To achieve this, the uranium ore is first refined and processed to generate triuranium octaoxide (U_3O_8) or "Yellowcake", which essentially is an inert, stable, insoluble oxide which can be safely handled.

From this point, it is "Converted" into UF_6 , usually in gaseous form, at one of 4 conversion facilities globally. UF_6 then has to undergo the Enrichment process to increase the percentage level of U-235, to the level required for nuclear power generation. Once Enriched, UF_6 is then solidified and processed into UO_2 , from which nuclear fuel rods are manufactured. This entire process is known as the Uranium Fuel processing cycle:

The Uranium Fuel Processing Cycle



RADIOACTIVITY

It is paramount to note that in all the processes from its natural form to enriched UF₆, Uranium is not a harmfully radioactive substance.

This is because Uranium decays slowly by emitting an alpha particle. The half-life of uranium-238 is about 4.47 billion years and that of uranium-235 is 704 million years – because of this, natural uranium, although it is radioactive, has a very low specific activity (i.e., the amount of radioactivity per gram) and thus, being a heavy metal, is considerably more hazardous from the standpoint of chemical toxicity.

In fact, for natural uranium the chemical toxicity is the overriding consideration and is approximately the same as the chemical toxicity of lead. Please note that we actively trade lead, and as such consider uranium to be a similar product.

About twenty million packages of all sizes containing radioactive materials are routinely transported worldwide annually on public roads, railways and ships. These use robust and secure containers. At sea, they are generally carried in purpose-built ships.

U3O₈ is transported from the mines to conversion plants in 200-litre drums packed into normal shipping containers. No radiation protection is required beyond having the steel drums clean and within the steel container.

From the conversion plant, the uranium is in the form of uranium hexafluoride, which again is barely radioactive but has significant chemical toxicity. Consequently it is transported in special containers, which also function for storage.

Although Nufcor would never transact in fabricated fuel rods, or nuclear waste, it's interesting to note that since 1971 there have been more than 20 000 shipments of used fuel and high-level wastes (over 80 000 tonnes) over many million kilometres. There has never been any accident in which a container with highly radioactive material has been breached, or has leaked ¹

¹ Primary source for section: International Atomic Energy Agency

ANNEX 2: URANIUM MARKET OVERVIEW**PRODUCTION**1) Mining & Milling:

The majority of the mined uranium ore deposits are found in Australia (22%), Canada (21%) and Kazakhstan (16%).

Raw uranium is extracted through either, i) open pit mining, ii) underground mining or iii) In situ recovery.

Once recovered, the uranium ore is milled, purified and processed to produce a concentrate powder, known as "Yellow Cake" or U₃O₈, and then transported for the refining process.

2) Refining & Conversion

During this process, U₃O₈ is purified into UO₃ and then, depending on its ultimate usage (type of nuclear reactor its intended for), it is converted into either UO₂ or UF₆.

U₃O₈ is principally stored at these refining and conversion locations, whereas processed UF₆ is transported and stored at the enrichments facilities

The Nufcor business proposal involves transactions and inventories in U₃O₈ on a book-entry basis once it has been accepted into the conversion facilities

The business also includes trading of conversion credits, which entitle the holder to exchange volumes of U₃O₈ for UF₆, and of the UF₆ held at the enrichment facilities, but without the need for the holder to arrange for transportation or physically handle the uranium

3) Enrichment

Normal nuclear power reactors need to utilize fuel with a 3%-5% U-235 concentration level, whereas its approx 0.7% in natural deposits (Natural UF₆ is 99.3% U-238). To achieve the necessary enrichment, lighter U-235 atoms have to be separated from heavier U-238 atoms to enable an increase in the U-235 concentration. This is either done through gaseous diffusion or centrifuge methods

These processes are sold through Separative Work Units (SWUs), where 1 SWU is the unit that expresses the energy needed to separate U-235 and U-238.

The precise enrichment process depends on the amount of uranium feed (UF₆) at the beginning of the process; the amount of SWU used; and the concentration of the U-235 atoms left over (tails assay) at the end of the process.

There is an inherent optimization and arbitrage exercise for nuclear operators and traders – through comparing the value of the enriched uranium (in part through the ultimate generated power price) to the cost of the UF₆ fuel, and the price of the SWUs needed to perform the enrichment.

The Nufcor business proposal also involves trading of enriched uranium products (EUPs) and also SWUs to be able to optimize existing inventory positions and arbitrage future pricing opportunities, although Nufcor does not currently hold positions in these products

4) Fuel Manufacture

Once uranium is enriched, it can then be manufactured into fuel rods that can ultimately be used in nuclear reactors.

[The proposal does not envisage trading fuel rod manufacturing services, and at no stage would it be responsible for physically handling enriched uranium or fuel rods, as it is at this stage that the U-235 concentration levels are potentially harmful]

URANIUM UTILIZATION

There are 440 nuclear power reactors operating in 31 countries, with 96 new reactors under construction or planned for completion within the next 10 years – these form the sole commercial demand for processed uranium.

World annual uranium consumption 178m lbs U₃O₈e

Primary Production: 109m lbs U₃O₈e

Secondary Sources: 69m lbs U₃O₈e

Nuclear Utilities purchase the uranium at all 4 stages of production outlined above, and then if necessary, contract for the processing necessary to convert the material into usable fuel. Due to the ultimate usage, the market is heavily concentrated, with no more than 100 entities involved in different parts of the traded markets.

62% of the uranium demand is supplied from the "primary market" of extraction and production process. The remainder is from Secondary supplies – from existing inventories, reprocessed used reactor fuel and decommissioning of nuclear armaments. In recent years, highly enriched uranium, derived from dismantling of Russian nuclear weapons has become the major secondary source (equivalent to a large mine), but supplies from this source are contracted only until 2013, and other sources will be depleted over the forthcoming years.

URANIUM MARKETS

Traditionally, uranium is contracted under bilaterally negotiated transactions, although Exchange based products, including the Nymex Uranium futures contract for U₃O₈ have been increasing in stature over the last couple of years.

The bilateral agreements are heavily negotiated, long term structured trades (up to 10yr), based on a fixed price with escalation through inflation or economic performance (GDP) indices.

In 2007, about 250 million pounds of U₃O₈ were contracted in the long term market

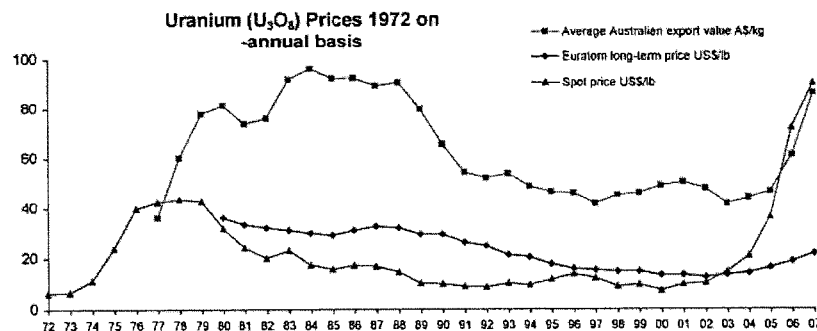
A smaller "spot" market exists, with delivery within 1yr of contracting. Spot transactions are typically priced referencing to the value quoted by one of 3 market information sources (Ux, TradeTech & Nukem).

In 2007 around 20m pounds of U₃O₈ was contracted here.

U₃O₈ has standardized pricing, irrespective of the holding location

UF₆ is purchased priced either as a North American product, or a European product, depending on the delivery location, and Conversion Credits have the same geographical specification¹

MARKET DYNAMICS



Note that the Euratom long-term price is the average price of uranium delivered into the EU that year under long term contracts. It is not the price at which long-term contracts are being written in that year.

¹ Sources for Section: Cameco, International Atomic Energy Agency, World Nuclear Association

PHYSICAL COMMODITY REVIEW COMMITTEE: MEETING MINUTES**Meeting Date:** May 17, 2013**Meeting Type:** Ad Hoc**Location:****Time:** 8:15amEST – 9:15amEST

Dial in 212-902-4292 passcode 419310

NY: 200W/12th Floor/ Room 104/ LDN: PBC/008/200 DAL
6031CD/004/1453**Attendance:** See Annex A**Quorum Requirement Met:** Yes**Meeting Chairperson(s):** Denise Wyllie**Secretary:** Jenny Chin/Jeff Fernandez1) **Administrative Matters:** Magid Shenouda was recused.2) **Transaction Review:** The London Commodities presented to the committee the book title purchases and sales of enriched uranium (UF6) that will be stored at Global Nuclear Fuel's (GNF-A) fabrication facility in North Carolina, U.S.3) **Background and Key Discussion:**

The commodities business is looking to expand its uranium trading portfolio to include UF6 with enrichment levels up to 5% (the civil nuclear threshold according to the U.S. Nuclear Regulatory Commission). Proposed transaction involves both purchases and sales of enriched UF6 where title transferred on a book transfer basis (where GS will never take actual possession) at the GNF-A facility. All uranium storage accounts are held in the name of Nufcor International Limited, a GS subsidiary.

Topics addressed/discussed included the following:

- Deal team went through the transaction structure with respect purchase of UF6 from AFR/USEC in 2013 stored at GNF-A facility to sale of UF6 to Exelon in 2018.
 - Title transfer between buyer and seller is via book transfer process on instruction from the seller to the facility within the time parameters set out by the facility.
 - GS will not be a transporter of the enriched UF6 and GS will not be the operator of the storage facility.
 - The hazards relating to stored enriched UF6: 1) chemical exposure to fluorine and metal fluoride, and 2) criticality exposure – auto reaction of stored canister with water and pressure.
 - While GNF-A has property (1st party) and liability (3rd party) insurance, it cannot be relied upon due to potential dilution and specific coverage exclusion in a catastrophic nuclear event.
 - GNF-A's EHS organizational structure/governance, management, policies and procedures.
 - UF6 stored at GNF-A facility is fungible and comingled. The canisters stored will not have specific title identification.
- 4) **Reputational Risks:** Potential reputational risk to GS as title owner of the UF6. Deal team to provide better understanding of public disclosure of title ownership. GNF-A confirmed that they are not required to disclose ownership of the material stored at their facility.
- 5) **Outcome/Follow up:** The meeting outcome is **Reviewed with Conditions**. Deal team is to provide information regarding the following.

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Permanent Subcommittee on Investigations

EXHIBIT #10

FRB-PSI-400053

EHS

- Any EHS metrics that have deal with the general operation of the GNF storage facility (not only relating to nuclear/NRC incidents)
 - Deal team advised that GNF-A is willing to provide further details on HSE and other internal policies to GS after signing of the contract and confidentiality agreement.

Reputational:

- What, if any, public disclosures is GNF / USEC required to provide to the government or any other agency about the business and title holders with whom it transacts
 - GNF-A confirmed that they are not required to disclose ownership of the UF6 stored at their facility.

These conditions were satisfied by deal time and the deal has subsequently been approved on May 17, 2013.

- 6) **Reports/Updates:** The PCRC Template and supporting documents were presented and circulated prior to the meeting.
- 7) **Other Business and Material:** None
- 8) **Prior Meeting Minutes Approval:** None

Annex A: Attendance

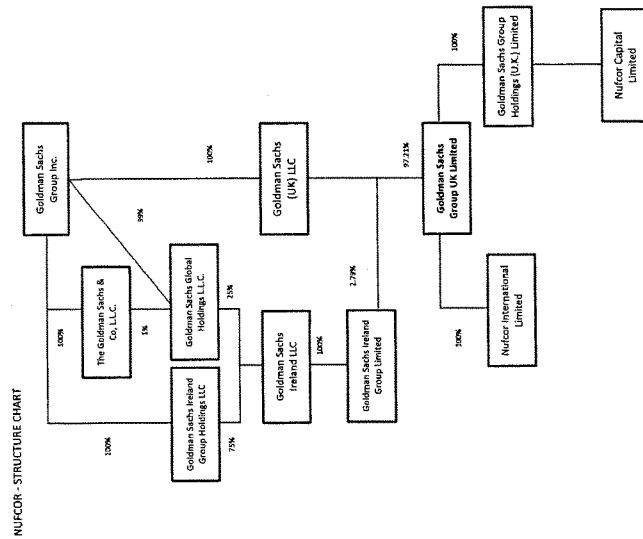
<i>Chairperson(s), Members, Counsel and Secretary</i>	<i>Present</i>	<i>Absent</i>
Chairperson: Denise Wyllie	Yes	
COO: Max Bulk		Yes
Member: Greg Agran		Yes
Member: Alistair Cross	Yes	
Member: Mark D'Arcy	Yes	
Member: Gary Hayes	Yes	
Member: David Herrmann	Yes	
Member: Scott Lebovitz	Yes	
Member: Sabrina Liak	N/A	
Member: Milt Millman		Yes
Member: Kyung-Ah Park	Yes	
Member: Magid Shenouda	Yes	
Member: Joel Sulkes	Yes	
Member and Counsel: Steve Bunkin	Yes	
Secretary: Jenny Chin	Yes	
Secretary: Jeff Fernandez	Yes	
Observer: Robert Dannenberg		Yes
Observer: Raymond Clifford	Yes	

Other Attendees

None

Presenter(s)

Jonathan Gaylard
Jonathan Fish
James Marchese
David Gallagher
Michelle Zammit
Jolie Norris



Permanent Subcommittee on Investigations
EXHIBIT #11

GSFSPICOMMODS00046240

CONFIDENTIAL



Abbe David Lowell
direct tel (202) 974-5605
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October 2, 2014

By E-mail

Ms. Elise J. Bean
Permanent Subcommittee on Investigations
Homeland Security & Governmental Affairs Committee
United States Senate
199 Russell Senate Office Building
1st & Constitution, N.E.
Washington, D.C. 20510

Re: Follow-Up Requests

Dear Ms. Bean:

I write on behalf of The Goldman Sachs Group, Inc. ("Goldman Sachs" or the "Firm") in connection with the efforts of the Permanent Subcommittee on Investigations (the "Subcommittee") to better understand the nature and scope of activities of U.S. banks in physical commodities.¹ Goldman Sachs responds to certain requests attached to your email dated September 9, 2014, which we reproduce below for your convenience. We are continuing to work diligently on the remaining requests and will supplement this submission with additional responses as soon as possible.

¹ The Goldman Sachs Group, Inc. is the Firm's publicly-held parent company. Information relevant to the Subcommittee's requests involves the activities of affiliates controlled by the Firm operating both inside and outside the United States.

Permanent Subcommittee on Investigations
EXHIBIT #12

PSI-GoldmanSachs-21-000001

New York | Washington, DC | Los Angeles |

Warsaw | Istanbul | Dubai | Beijing



Ms. Elise Bean

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October 2, 2014

Request No. 2: The one-page Metro Management Brief for June 2011 [GSPSICOMMODS00009668] refers to: "Extraordinary income from counterparties sharing physical premium with Metro after delivering metal previously under financing deals into the physical market."

- a. Please describe the agreement or agreements reached between Metro and one or more counterparties to share physical premium, including by providing the date of each such agreement, the name and location of each counterparty that entered into such an agreement, and the total amount of income earned by Metro. If the agreement was reduced to writing, please provide a copy of the agreement.
- b. Please describe any other agreement or arrangement since Goldman acquired Metro in which Metro earned a portion of the physical premium for metal delivered to the market. Please include the date of the agreement or other arrangement, the party with whom the agreement or arrangement was reached, and the amount of income earned by Metro.

The reference of "extraordinary income from counterparties sharing physical premium with Metro after delivering metal previously under financing deals into the physical market" is an imprecise way of describing amounts received by Metro in certain situations in which a customer removes metal from Metro's warehouse or retrieves metal prior to the expiration of an agreed term/elects not to roll a lease when otherwise expected to do so. The payment of such amounts is a means of compensating Metro for, among other things, rent discounts Metro provided based on the understanding that the customer would hold metal for a period that is longer than the period for which the customer ultimately held the metal in Metro's warehouses. The term used in the Management Report characterizes these amounts as "extraordinary" insofar as the revenue is not regularly recurring, but rather arises only in the particular circumstances as described above. Enclosed as Exhibit A (bearing production number GSPSICOMMODS00046531) is a chart prepared by Metro in response to Request No. 2 summarizing these arrangements for aluminum held under warrants issued by Metro during the period of Goldman Sachs' ownership of Metro.

Redacted By
Permanent Subcommittee on Investigations



Ms. Elise Bean

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October 2, 2014

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Permanent Subcommittee on Investigations

Request No. 7: Please provide a list of the power plants, by name and location, with which:

- a. Nufcor had uranium supply contracts at the time of its purchase in 2009; and**
- b. Nufcor had uranium supply contracts as of June 30, 2014.**

Enclosed as Exhibit B (bearing production numbers GSPSICOMMODS00046532-33) is a chart prepared by Goldman Sachs in response to Request No. 7, listing the utility companies with which Nufcor had uranium supply contracts at the time of the Nufcor acquisition and as of June 30, 2014.



Ms. Elise Bean

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October 2, 2014

Redacted By
Permanent Subcommittee on Investigations

Request No. 9: Please confirm that no Goldman entity had a tolling agreement with any of the power plants that had supply contracts with Nufcor.

Goldman Sachs has not entered into tolling agreements with utilities that were party to supply contracts with Nufcor.

Request No. 10: Please confirm that, from 2009 to the present, Nufcor has stored U308 uranium products at a Comeko facility in Ontario, Canada, Comurhex facility in France, and Converdyn facility in Illinois; and UF6 uranium products at a Eurodif facility in France, Urenco facility in Germany/UK/Netherlands, and Louisiana Energy Services facility in New Mexico, and at no other locations. If this information is incorrect, please correct it to identify all of the facilities at which Goldman stored either U308 or UF6 uranium products since 2009.

We confirm that since the time of the Nufcor Acquisition to the present, the only facilities at which Nufcor International has maintained inventories of U308 or UF6 are those facilities identified above in this Request, other than that Nufcor International has maintained inventory balances of UF6 at the USEC facility in Paducah, Kentucky but has maintained no inventory at this facility since December 2012.

Request No. 11: Please confirm that Nufcor traded 20,000 pounds of U308 in 2009, but that its trading has steadily declined since and that its 2014 trading is estimated to be 4,000 pounds of U308.

The volumes traded (*i.e.*, purchased and sold) within the specified periods are set forth below:

- Between June 30, 2009 and December 31, 2009, Nufcor traded 650,000 lbs of U308.
- In 2010, Nufcor traded 4.7m lbs of U308.
- In 2011, Nufcor traded 8.2m lbs of U308.
- In 2012, Nufcor traded 13.7m lbs of U308.
- In 2013, Nufcor traded 12.8m lbs of U308.
- In the first half of 2014, Nufcor traded 1.9m lbs of U308.



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October 2, 2014

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Permanent Subcommittee on Investigations

Request No. 21: Please provide a brief description of the July 2009 acquisition from Constellation Energy of financial instruments to buy or sell coal or to supply or transport coal, including a description of the number and nature of the instruments, the approximate volumes of coal involved, and the number of power plants with coal supply agreements or arrangements.

In March 2009, Goldman Sachs acquired portfolios of coal and freight contracts and related financial instruments from Constellation Energy. The contracts were between Constellation Energy and various counterparties. Counterparty consent was required in order to novate the contracts from Constellation Energy to Goldman Sachs. In order to transfer risks/rewards associated with such contracts at a single moment in time, Goldman Sachs and Constellation Energy effectuated the acquisition in steps. First, Goldman Sachs and Constellation Energy entered into an agreement governing the acquisition of contracts. This acquisition was completed on a closing date on which many of the contracts were novated by Constellation Energy to Goldman Sachs. On this closing date, Goldman Sachs and Constellation entered a series of transactions with one another in which Goldman Sachs assumed the position of Constellation Energy, and Constellation Energy assumed the position of its contractual counterparty in relation to those contracts that were not novated on the closing date (the "Mirror

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Transaction"). As additional consents from counterparties were obtained, the underlying contracts with counterparties were then novated by Constellation Energy to Goldman Sachs. At the same time, the portion(s) of the Mirror Transaction that corresponded to such underlying counterparty contract(s) were unwound. To the extent counterparty consents for particular contracts were not obtained, the corresponding portion of the Mirror Transaction remained in place.

Details of the transactions associated with the Constellation Energy transactions are set forth in Exhibit D (bearing production number GPSICOMMODS00046535), which Goldman Sachs prepared in response to this Request.

Request No. 22: Please describe Constellation's coal supply agreements with Coalcorp's subsidiary in Colombia, including whether there was a 2006 long-term supply contract and whether, as described in a 2010 Coalcorp Shareholder Notice, there was a Feb. 2010 contract to supply 2.4 million metric tons of coal at a fixed price from the La Francia mine.

Constellation Energy entered into a coal purchase and sale agreement with Compania Carbones del Cesar (a subsidiary of Coalcorp Mining Inc. ("Coalcorp")) in June of 2007 (the "Coalcorp Agreement"). Under the Coalcorp Agreement, Coalcorp committed to deliver 150,000 metric tonnes of coal each quarter from January 1, 2009 to December 31, 2012 (totaling 2.4 million tonnes, the "Firm Tonnage"), and provided an option for Constellation Energy to acquire an additional 150,000 metric tonnes/quarter from January 1, 2013 to December 31, 2013 (the "Optional Tonnage" which, together with the Firm Tonnage, totaled 3 million metric tonnes). Constellation Energy committed to pay a fixed price for each delivered tonne of coal. The Coalcorp Agreement was one of the contracts included in the 2009 acquisition transaction that Goldman Sachs entered into with Constellation Energy. As such, a portion of the Mirror Transaction related to the Coalcorp Agreement. As noted on page 41 of the Coalcorp Mining Inc. Notice of Special Meeting of Shareholders to be Held on February 11, 2010 and Management Information Circular, the Coalcorp Agreement was novated by Constellation Energy to Goldman Sachs (specifically, J. Aron) on the date on which Goldman Sachs entered into the agreements to acquire the La Francia assets, described further in our response to Request No. 24. At the time that this novation was completed, the portion of the Mirror Transaction that corresponded to the Coalcorp Agreement was unwound between Constellation Energy and Goldman Sachs.

Request No. 23: Please describe any Constellation Energy coal supply contracts with CNR, including the date of the supply contracts, the volumes of coal involved, and the duration of the supply agreements or arrangements.

We refer you to our response to Request No. 22.



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Request No. 24: Please provide a brief description of Goldman's purchase of the La Francia mine, greenfield, railroad shares, and related assets in 2010, and confirm the purchase price of about \$200 million.

On January 6, 2010, GS Power Holdings LLC ("GS Power") entered into an agreement with Coalcorp and Compania Carbones del Cesar ("CDC," a wholly owned subsidiary of Coalcorp), providing for the sale by CDC of the La Francia I mining concessions and related infrastructure and other assets (including approximately 8% of the shares of Ferrocarriles de Norte de Colombia S.A., aka, FENOCO) for cash consideration of \$100 million and the assumption of certain liabilities, including CDC's coal sale agreement with Constellation Energy (which was, as described in the response to Request No. 21, subject to the Mirror Transaction).

In addition, on the same date, Coalcorp and another one of its wholly owned subsidiaries, Pianta Ltd., entered into a share purchase agreement providing for the purchase by GS Power of the shares of Adromi Capital Corporation, which owned the concession for the La Francia II mine, for cash consideration of \$51 million. These transactions closed on March 19, 2010.

Request No. 26: Please provide a brief description of Goldman's purchase of the Hatillo mine, greenfield, railroad shares, and related assets in 2012, and provide the overall purchase price.

On May 25, 2012, a newly created subsidiary of GS Power called Colombia Purchase Co. SAS, entered into a share purchase agreement with Vale S.A., Vale International Holdings GMBH and Vale International SA to acquire the shares of Vale Colombia Holding Ltd. (which owned the concession to the El Hatillo mine), Sociedad Portuaria Rio Cordoba S.A. (which owned the Rio Cordoba port), and approximately 8% of the shares of FENOCO in exchange for cash consideration of approximately \$400 million, subject to certain adjustments. The transaction closed on June 22, 2012.

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Permanent Subcommittee on Investigations

Request No. 32: Please provide a copy (translated into English) of the ANI or other Colombian government order, decision, or regulation requiring direct loading of coal onto ships by 1/1/2014, together with any extensions. Please describe any actions taken by CNR



Ms. Elise Bean

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October 2, 2014

or Goldman in response, including any plans developed or actions taken to upgrade its port facilities at Rio Cordoba port.

Enclosed as Exhibit E are English translations of the following documents: Decree 3083 of 2007, Decree 4286 of 2009, Decree 700 of 2010, and Art. 113 of law 1450 of 2011 (bearing production numbers GSPSICOMMODS00046536-42). CNR evaluated the prospect of upgrading the Rio Cordoba port facilities to make them compliant with the direct-loading regulations but determined that it was not economically feasible to pursue such an initiative.

Request No. 39: Please confirm that J. Aron bought about 20% of the CNR coal each year from 2011 to 2013, and marketed the other 80% of the coal. Please provide the approximate volume of coal J. Aron bought from CNR each year, and the approximate volume sold to unrelated parties each year.

Over the period from 2011 to 2013, J. Aron purchased approximately 20% of CNR's production under the Coalcorp Agreement that was novated to it by Constellation Energy. For each year, set forth below is the approximate volume of coal that J. Aron bought from CNR and approximate volume that CNR sold to unrelated parties.

- 2011: J. Aron (710kt), Other (1,638kt)
- 2012: J. Aron (776kt), Other (3,498kt)
- 2013: J. Aron (324kt), Other (3,356kt)

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Permanent Subcommittee on Investigations



Ms. Elise Bean

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October 2, 2014

Request No. 45: Please provide a description of any due diligence procedures used by any Goldman entity to ensure the safe transportation of coal via shipping vessels from Colombia. Please provide a copy of any CNR or Goldman report of a shipping incident or accident involving at least \$100,000 in damages or at least 1,000 metric tons of coal.

With respect to vessels chartered to transport coal for its intermediation business, Goldman Sachs conducts the diligence set forth in the firm's vessel vetting procedures, a copy of which is attached as Exhibit F (bearing production numbers GSPSICOMMODS00046543-56). With respect to CNR, please find attached as Exhibit G (bearing production numbers GSPSICOMMODS00046557-629) a copy of the regulations for the Rio Cordoba port which, among other things, specify the types of vessels that are permitted to load coal at the Rio Cordoba port. As otherwise noted, because the substantial majority of sales of coal made by CNR are done on a free on board basis, CNR is rarely if ever involved in chartering vessels. Neither Goldman nor CNR has experienced any shipping incident or accident of the type referenced.

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Ms. Elise Bean

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October 2, 2014

Sincerely,

A handwritten signature in black ink, appearing to read "Abbe David Lowell". The signature is fluid and cursive, with the first name "Abbe" being more prominent and the last name "Lowell" written in a more compact, cursive style.

Abbe David Lowell

Enclosures

cc: Mr. Joseph Bryan
Tyler Gellasch, Esq.
Steven R. Peikin, Esq.

Counterparty	Nucor Uranium Utility Supply Contracts at the time of the Nucor Acquisition (June 30, 2009)					Outstanding Volume (at June 30, 2009)
	Transaction Type (Buy / Sell)	Product (U308 / UFG)	Delivery Term		Delivery Frequency	Total Contract Volume
Redacted by the Permanent Subcommittee on Investigations	Sale	U308	Start Date	End Date	Quarterly	1,000,000
	Sale	U308	1-Jan-09	31-Dec-11	Up to 3 deliveries per year	600,000

Counterparty	Nucor Uranium Utility Supply Contracts as at June 30, 2014										Outstanding Volume (at June 30, 2014)
	Transaction Type (Buy / Sell)	Product (U308 / UFG)	Delivery Term		Delivery Term		Delivery Term		Delivery Term		Total Contract Volume
Redacted By Permanent Subcommittee on Investigations	Sale	U308	Start Date	End Date	Start Date	End Date	Start Date	End Date	Start Date	End Date	1,075,000
	Sale	U308	1-Jan-12	31-Dec-14	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	370,000
	Sale	U308	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	1,125,000
	Sale	U308	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	50,000
	Sale	U308	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	75,000
	Sale	U308	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	50,000
	Sale	U308	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	65,000
	Sale	U308	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	110,000
	Sale	U308	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	50,000
	Sale	U308	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	50,000
	Sale	U308	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	100,000
	Sale	U308	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	100,000
	Sale	U308	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	50,000
	Sale	U308	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	100,000
	Sale	U308	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	100,000
	Sale	U308	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	1-Jan-15	31-Dec-18	100,000

PSI-GoldmanSachs-21-000014

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Confidential

GSPSICOMMODS00046532

CONFIDENTIAL

PSJ Submission: Goldman Sachs - 103.314
Exhibit B

Nucor Uranium Utility Supply Contracts as of June 30, 2014							
Counterparty	Transaction Type (Buy / Sell)	Product (UB08 / UF6)	Delivery Term		Delivery Frequency	Total Contract Volume	Outstanding Volume (at June 30, 2014)
			Start Date	End Date			
	Sale	UB08	1-Sep-15	1-Sep-15	Single	200,000	200,000
	Sale	UB08	2-May-16	2-May-16	Single	100,000	100,000
	Sale	UF6	1-Dec-14	1-Dec-14	Single	11,000	11,000
	Sale	UB08	1-Mar-16	1-Mar-16	Single	100,000	100,000
	Sale	UB08	1-Jun-16	1-Jun-16	Single	71,604	71,604
	Sale	UB08	1-Jun-16	1-Jun-16	Single	100,000	100,000
	Sale	Conversion	1-Jan-14	31-Dec-17	Annual in 2014, 2016 and 2017	142,000	142,000
	Sale	UB08	2-Sep-14	2-Sep-14	Single	100,000	100,000
	Sale	UB08	2-Sep-14	2-Sep-14	Single	100,000	100,000
	Sale	UB08	1-Jun-16	1-Jun-16	Single	100,000	100,000
	Sale	UF6	15-Dec-14	15-Dec-14	Single	74,000	74,000
	Sale	UB08	1-Jun-16	1-Jun-16	Single	90,530	90,530
	Sale	UB08	3-Jan-17	3-Jan-17	Single	200,000	200,000
	Sale	UB08	1-Jun-16	1-Jun-16	Single	50,000	50,000
	Sale	Conversion	1-Jan-14	31-Dec-17	annual	148,000	148,000
	Sale	UB08	6-Apr-15	6-Apr-15	Single	100,000	100,000
	Sale	UB08	1-Apr-16	1-Apr-16	Single	200,000	200,000
	Sale	UB08	1-Jun-16	1-Jun-16	Single	100,000	100,000
	Sale	UF6	1-Mar-13	30-Sep-15	Semi-annual	360,000	180,000
	Sale	UF6	1-Jul-12	1-Jul-14	Annual	378,000	58,000

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Permanent Subcommittee on Investigations

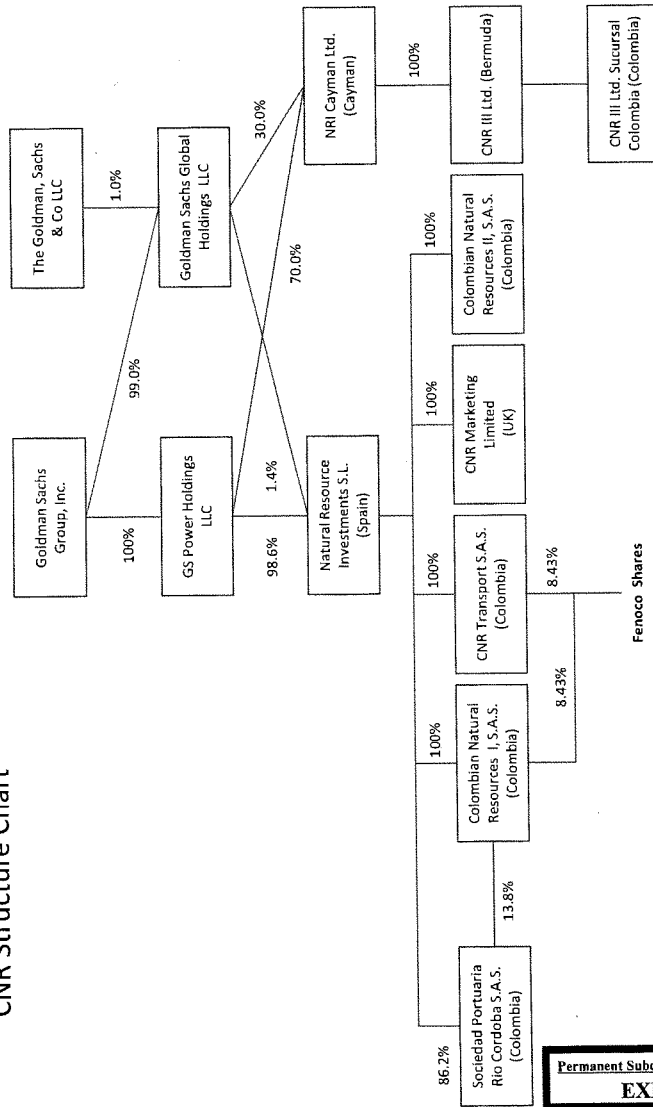
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GSPSICOMMODS00046533

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CNR Structure Chart



Permanent Subcommittee on Investigations
EXHIBIT #13

GSPSICOMMODS00046318

EXCERPT

These materials are important and require your immediate attention. They require shareholders of Coalcorp Mining Inc. to make important decisions. If you are in doubt as to how to make such decisions, please contact your financial, legal or other professional advisors. If you have any questions or require further information regarding the voting of your shares, please contact Laurel Hill Advisory Group toll free at: 1-800-503-9439.



COALCORP MINING INC.

**NOTICE OF SPECIAL MEETING OF SHAREHOLDERS
TO BE HELD ON FEBRUARY 11, 2010
AND
MANAGEMENT INFORMATION CIRCULAR**

RECOMMENDATION TO SHAREHOLDERS

The Board of Directors of Coalcorp Mining Inc. Unanimously Recommends that Shareholders VOTE FOR the Proposed Transaction Resolution as Described in the Accompanying Management Information Circular

January 19, 2010

Permanent Subcommittee on Investigations

EXHIBIT #14

PSI-CI-01-000001



January 19, 2010

Dear Shareholder,

You are cordially invited to attend a special meeting of shareholders of Coalcorp Mining Inc. ("Coalcorp" or the "Corporation"), which will be held at St. Andrew's Club & Conference Centre, 150 King Street West, 27th Floor, Toronto, Ontario at 10:00 a.m. (Toronto Time) on February 11, 2010 (the "Special Meeting") to consider and vote upon the Proposed Transaction (as defined herein).

On January 7, 2010, Coalcorp announced that it and certain of its wholly owned subsidiaries had entered into agreements with a wholly owned subsidiary of Goldman Sachs Group, Inc. (through one or more of its affiliates, "Goldman Sachs") providing for the sale by those subsidiaries of their mining and related infrastructure assets to Goldman Sachs, for total cash consideration of USD\$151 million, subject to certain closing adjustments (the "Purchase Price") and the assumption of certain liabilities, for a total transaction value in excess of USD\$201 million. The transaction includes:

- (a) an asset purchase agreement dated as of January 6, 2010 among the Corporation, its subsidiary, Compañía Carbones del Cesar ("CDC") and GS Power Holdings LLC (the "Purchaser"), a subsidiary of Goldman Sachs, providing for the sale by CDC to the Purchaser of the La Francia I mining concessions and related infrastructure assets (the "CDC Assets") for cash consideration of USD\$100 million and the assumption of certain liabilities of Coalcorp, including but not limited to the liabilities under the Coal Sale Contract (as defined herein) with a mark-to-market value of approximately USD\$50 million based on prevailing coal prices, and
- (b) a share purchase agreement among the Corporation, its subsidiary, Pianta Ltd. ("Pianta") and the Purchaser providing for the sale by Pianta to the Purchaser of all of the issued and outstanding shares (the "Adromi Shares") of Adromi Capital Corp. ("Adromi"), which entity holds the Corporation's interests in the La Francia II mining concession, for cash consideration of USD\$51 million.

The disposition of the CDC Assets by CDC and the Adromi Shares by Pianta is collectively referred to herein, as the "Proposed Transaction". The Proposed Transaction is subject to certain closing conditions, including the approval of Coalcorp's shareholders at the Special Meeting, and is expected to be completed shortly following the Special Meeting.

The attached management information circular (the "Circular") sets forth among other things, information about: (i) the Special Meeting, (ii) the unanimous recommendation by the Special Committee in favour of the Proposed Transaction and the unanimous approval by the Board of Directors of the Corporation, (iii) the background to the Proposed Transaction and the strategic alternatives review process that led to the Proposed Transaction, (iv) summaries of the purchase agreements entered into in connection with the Proposed Transaction, and (v) the special resolution in respect of the Proposed Transaction to be voted upon at the Special Meeting. In addition, the Fairness Opinion (as defined herein) is included as an appendix to the Circular.

On the unanimous recommendation of the Special Committee, and upon consideration of the Fairness Opinion, the Board of Directors of Coalcorp has unanimously determined that the Proposed Transaction is in the best interests of Coalcorp and its shareholders and other stakeholders. Accordingly, the Board of Directors unanimously recommends that you VOTE FOR the special resolution approving the Proposed Transaction.

The Proposed Transaction is the result of the strategic alternatives review process as previously announced by Coalcorp, which was a comprehensive and thorough strategic review which included, (i) careful consideration of a number of strategic alternatives, including continuing as a stand-alone business, seeking potential equity/debt financing, pursuing a restructuring and/or capitalization, and other various commercial arrangements, (ii) engaging in formal discussions with a number of interested parties and the conducting of a formal strategic auction process, (iii) full and careful consideration of the submitted offers and proposals from the auction process, and (iv) the receipt of the Fairness Opinion. In the event the Proposed Transaction is not completed, and in light of its current financial condition, it is likely that the Corporation will have to seek creditor protection or commence insolvency proceedings.

The Corporation's largest shareholder, Pala Investments Holdings Limited, which holds approximately 44% of Coalcorp's outstanding shares and approximately 13.05% of the aggregate principal amount of Coalcorp's outstanding Senior Notes (as defined herein) has entered into a support agreement with the Purchaser to vote its shares for the Proposed Transaction at the Special Meeting.

We encourage you to read the materials in the Circular carefully. Your vote is important. Whether or not you attend the Special Meeting to vote on the Proposed Transaction, please take the time to vote your shares in accordance with the instructions contained in the Circular. If you have any questions or require further information regarding the voting of your shares, please contact Laurel Hill Advisory Group toll free via telephone at: 1-800-503-9439 or by email at: assistance@laurelhillag.com.

Sincerely,

(Signed) "*Juan Carlos Gomez*"

Juan Carlos Gomez
Interim Chief Executive Officer

- (a) not sell, transfer or otherwise dispose of its shares or enter into any agreement or arrangement in connection therewith or grant any proxies or powers of attorney or enter into any agreement or arrangement with respect to the voting of such shares;
- (b) not directly or indirectly, (i) solicit, initiate, encourage or seek directly or indirectly, any inquiries relating to the making or implementation of any Acquisition Proposal, (ii) engage in any negotiations, provide any information or have any substantive discussions with any person relating to an Acquisition Proposal, (iii) or cooperate with or facilitate any effort that constitutes or may reasonably be expected to lead to an Acquisition Proposal, and (iv) enter into any contract with any person relating to an Acquisition Proposal;
- (c) deliver a duly completed form of proxy appointing the Purchaser or such person designated by the Purchaser to attend at a special meeting to approve the Proposed Transaction;
- (d) (i) vote all of its shares at any meeting of the shareholders to approve the Proposed Transaction and against any action that is intended or would reasonably be expected to impede or interfere with the Proposed Transaction, (ii) not to, without the consent of the Purchaser, revoke any proxies delivered under the Support Agreement, provided that such proxies will be revocable in the event of termination of the Support Agreement in accordance with its terms, (iii) not to, without the consent of the Purchaser, requisition any meeting of shareholders with respect to voting for or against the Proposed Transaction, and (iv) not to do anything to frustrate or hinder the consummation of the Proposed Transaction.

The Support Agreement and Pala's obligations thereunder shall automatically terminate upon the earliest of: (i) the closing of the Proposed Transaction, (ii) March 31, 2010, (iii) the termination of any of the Purchase Agreements for any reason, and (iv) the date that Pala ceases to exercise control and direction of the shares as a result of a transfer of its shares in accordance with the terms of the Support Agreement. Either party to the Support Agreement will be permitted in its sole discretion to terminate the Support Agreement if any of the Purchase Agreements is amended where such amendment (i) reduces the Asset Purchase Price or Share Purchase Price, or (ii) results in a materially negative consequence to either Pala or Coalcorp. The foregoing is a summary of certain terms of the Support Agreement, a copy of which has been filed on SEDAR at www.sedar.com.

INFORMATION REGARDING THE PROPOSED TRANSACTION

The Proposed Transaction

Coalcorp and certain of its wholly owned subsidiaries have entered into agreements with GS Power Holdings LLC (the "**Purchaser**"), a wholly owned subsidiary of Goldman Sachs Group, Inc. (through one or more affiliates, "**Goldman Sachs**") providing for the sale by those subsidiaries of their mining and related infrastructure assets to the Purchaser, for total cash consideration of USD\$151 million, subject to certain closing adjustments (the "**Purchase Price**") and the assumption of certain liabilities, for a total transaction value in excess of approximately USD\$201 million.

The purchase agreements entered into include:

- (a) an asset purchase agreement dated as of January 6, 2010 (the "**Asset Purchase Agreement**") among Coalcorp, its indirect wholly owned Colombian subsidiary, Compañía Carbones del Cesar ("**CDC**") and the Purchaser, providing for the sale by CDC to the Purchaser of the La Francia mine and associated infrastructure assets (the "**CDC Assets**") for cash consideration of USD\$100 million (the "**Asset Purchase Price**") and the assumption of certain liabilities of Coalcorp, including but not limited to the liabilities under the Coal Sale Contract (as defined herein) with a mark-to-market value of approximately USD\$50 million based on prevailing coal prices;
- (b) a share purchase agreement dated as of January 6, 2010 (the "**Share Purchase Agreement**") among Coalcorp, its indirect wholly owned British Virgin Islands subsidiary, Pianta Ltd. ("**Pianta**") providing for the sale by Pianta to the Purchaser of all of the issued and outstanding shares of Adromi Capital Corp. (the "**Adromi Shares**"), which entity holds Coalcorp's interests in

the La Francia II mine, for cash consideration of USD\$51 million (the "Share Purchase Price"); and

- (c) a supplemental terms and conditions agreement dated as of January 6, 2010 (the "**Supplemental Agreement**") among the Corporation, CDC, Pianta, the Corporation's British Virgin Island subsidiary, Andean Coal Corporation ("Andean"), and the Purchaser setting out certain additional supplementary terms and conditions.

The Asset Purchase Agreement, Share Purchase Agreement and Supplemental Agreement are collectively referred to herein, as the "**Purchase Agreements**". The sale by CDC and Pianta to the Purchaser of the CDC Assets for the Asset Purchase Price and the Adromi Shares for the Share Purchase Price, respectively, pursuant to the terms and conditions of the Purchase Agreements, is collectively referred to herein, as the "**Proposed Transaction**".

The Proposed Transaction is Not a "Related Party Transaction"

Coalcorp is of the view that the Proposed Transaction is not a "related party transaction" within the meaning of Multilateral Instrument 61-101 - *Protection of Minority Security Holders in Special Transactions* ("**MI 61-101**"). Further, Coalcorp is of the view that there are no other "connected transactions" that would make the Proposed Transaction or any of the transactions contemplated thereby a "related party transaction" within the meaning of MI 61-101.

Coalcorp has been advised by Goldman Sachs of the following:

- The Purchaser is 100% owned by Goldman Sachs. Accordingly, other than any holdings of public securities of Goldman Sachs (the parent company to the Purchaser) that such parties may hold, no other party has any direct or indirect interest in, or other involvement with, the Purchaser (or will have any such interest in any affiliate of the Purchaser if the Purchase Agreements are assigned to such affiliate in accordance with the terms of such Purchase Agreement).
- There is no agreement or any agreement contemplated to be entered into by the Purchaser (or any affiliate of the Purchaser if the Purchase Agreements are assigned to such affiliate in accordance with the terms of such Purchase Agreement) with any "related party" of Coalcorp.

Coalcorp has been advised by Pala of the following:

- The only agreement that Pala has entered into with Goldman Sachs is the Support Agreement and there are no other potential agreements contemplated at this time.
- Pala does not have any direct or indirect interest in the Purchaser (or any affiliate of the Purchaser if the Purchase Agreements are assigned to such affiliate in accordance with the terms of such Purchase Agreement).

Certain members of the former management of Coalcorp, who are also shareholders of the Corporation, have filed an application on January 19, 2010 with the Ontario Securities Commission ("**OSC**") alleging the Proposed Transaction involve "related party transactions". Coalcorp does not agree with the allegations or analysis set out in this application to the OSC. See below "Threatened Proceedings in respect of the Proposed Transaction - Application to the OSC by certain former management of Coalcorp".

Threatened Proceedings in respect of the Proposed Transaction

On January 15, 2010, Coalcorp received correspondence from the law firm Groia & Company representing Blue Pacific Assets Corp (a corporation that has been disclosed to be controlled by members of former management) threatening injunctive relief in respect of the completion of the Proposed Transaction. Additionally, on January 19, 2010, Coalcorp received correspondence from Groia & Company representing certain members of former management of Coalcorp, who are also shareholders of the Corporation, initiating an application with the Ontario Securities Commission on the basis that the Proposed Transaction involves certain "related party transactions" under Ontario securities laws. Each of these parties represented by Groia & Company are named as defendants in the

Initiatives to Acquire Port Access and Stand-Alone Strategy

At its meeting on September 5, 2009, the Board and management carefully considered and evaluated a stand-alone strategy under which the Corporation would retain its mining assets and remain independent, continuing to operate its mining business and seek to raise additional capital while executing its Operational Restructuring Plan. The Board conducted an assessment of the Corporation's near and long term prospects on a stand-alone basis. The Board determined that the key to remaining independent and continuing to operate, was to secure port access and utilize its existing railroad infrastructure. Without securing port access for delivery of the Corporation's coal, the Corporation could not continue operation.

Throughout the auction process, Coalcorp continued to pursue its efforts to secure port access in Colombia. Coalcorp's lack of access to port capacity prevented it from being able to ship its coal offshore and access off-shore markets. Therefore, it was essential that Coalcorp gain port access to have a viable and sustainable coal mining operation in Colombia. In connection with these efforts, at the end of August 2009, Coalcorp submitted a non-binding offer to Carbozon Ltda. ("Carbozon") for the acquisition of port capacity at Carbozon's discharging port in Santa Marta, Colombia. Availability of the offer by Carbozon would have provided Coalcorp access to an annual port capacity of approximately 1.5 million tonnes a year and a minimum of 1.5 million tonnes from 2010 to 2012. Coalcorp continued to negotiate its offer for a definitive agreement with Carbozon to secure port access from late August to November. One of Coalcorp's key prerequisites to entering into a definitive agreement was being permitted a short period of time to secure the necessary financing to make certain initial investment payments to Carbozon for port access as well as funding of required capital expenditures for capacity expansion. At the beginning of November, 2009 Coalcorp signed a port discharge services agreement with Vale. This agreement, together with the potential Carbozon port access agreement, were part of Coalcorp's strategy to develop a fully integrated coal mining and transportation chain and continue as a stand-alone company. Coalcorp's plan was to utilize its rail infrastructure to rail coal to Vale's Rio Cordoba port, discharge the coal at Rio Cordoba and transport the remaining coal approximately 30km to the Carbozon port by truck.

On November 19, 2009, Carbozon informed Coalcorp that it was not willing to accept the financing conditions that the Corporation required and that it was instead pursuing a transaction to provide Carbozon's available port capacity to another mining company with operations in the vicinity that had offered to commit to make initial investment payments without any financing conditions. The substance of the Corporation's proposed agreement frustrated the Corporation's business plan, including its access to port capacity, its near term ability to pay its cost of off-shore market.

Financing Alternatives

Management had determined that to effectively execute on a stand-alone strategy it would need to raise a minimum of \$50 million in order to fund its operating and capital commitments to the end of 2010. By September, the Corporation had considered and already held discussions regarding potential equity or debt financing through a possible public offering or private placement from various sources including two of its largest shareholders as well as two Canadian investment dealers. However, given the Corporation's lack of port capacity, its continuing operating losses and the existence of various ongoing legal claims, actions and other contingent liabilities and the restrictive change of control provisions in the Note Indenture, the Corporation had been advised that any such financing was not available to the Corporation at that time. The Corporation also considered a potential rights offering, but without a party to back stop the rights offering, management determined that it was not a credible option to raise the capital needed to operate the business on a stand-alone basis.

Financial Position and the Unpaid December Interest Payment

As described in the Corporation's filed annual financial statements and related management discussion and analysis for the year financial ended June 30, 2009 (the "2009 Annual Financials"), the Corporation's cash position at November 30, 2009 was USD\$1.8 million. The 2009 Annual Financials stated that given Coalcorp's interest payments due on its Senior Notes, its capital expenditures and commitments for calendar years 2009 and 2010 and its negative operating cash flow, the Corporation would deplete its cash position by the end of December, 2009, and if a sale of its mining assets or an alternative transaction or a refinancing of the Corporation's balance sheet did not occur, the Corporation would face a going concern risk by the end of December, 2009. As described in the Annual Financials, the Corporation does not have the working capital required to operate beyond December 31, 2009.

The 2009 Annual Financials reported that the Corporation wrote down the carrying value of its La Francia I and La Francia II mining assets to their estimated fair value of \$151.0 million, resulting in an impairment charge of \$233.3 million. This write down of the carrying value of assets was done in accordance with Canadian generally accepted auditing standards and was required by the Corporation's auditor, Deloitte & Touche LLP in connection with its audit of the Corporation's financial statements for the year ended June 30, 2009.

On December 31, 2009, the Corporation announced that it had not paid its USD\$6.9 million of interest that was due on that date on its Senior Notes. Without additional financing, the Corporation would not be able to continue its operations and would have to consider potential insolvency proceedings.

Discussions with Goldman Sachs

Beginning in September, the Corporation began discussions with Goldman Sachs and other parties relating to a possible refinancing and/or restructuring of the Corporation involving either equity or debt financing, or other alternative transactions.

The Corporation approached Goldman Sachs as a potential source of financing and as the counterparty for coal sales given the existing commercial relationship. In June 2007, CDC had with a Goldman Sachs affiliate, J.P. Morgan Chase & Co. ("J.P. Morgan"), entered into an agreement with Constellation Energy Commodities Group Inc. ("Constellation") providing for the sale by CDC of 2.4 million metric tonnes of coal to Constellation (the "Coal Sale Contract") at an established fixed price. In March of 2009, Constellation sold the business unit that had entered into the Coal Sale Contract to J. Aron & Company ("J. Aron"), the commodity trading unit of Goldman Sachs. As part of this transaction, J. Aron acquired an indirect interest in the Coal Sale Contract and had assumed the risks of CDC's performance under the Coal Sale Contract. The fixed price in the Coal Sale Contract is significantly lower than prevailing prices of coal in the current market, making the Coal Sale Contract a substantial liability to the Corporation if the Corporation had to settle the contract on a mark-to-market basis. For the period commencing from April 1, 2009 and ending December 31, 2009, the Corporation cash settled the coal deliveries under the Coal Sale Contract as it did not possess access to port capacity for delivery of coal under this agreement. Given the potential counterparty exposure of CDC under the Coal Sale Contract, Goldman Sachs commenced discussions with the Corporation near the end of March, 2009 regarding a possible restructuring of the contract to address the coal commitments and deliveries thereunder and mitigation of potential exposures related thereto.

On September 17, 2009, the Corporation entered into a letter agreement with Goldman Sachs and J.P. Morgan to discuss the restructuring of the Coal Sale Contract. During the period commencing from that date through to November, 2009 the Corporation and Goldman Sachs discussed various alternative options relating to a possible refinancing and/or recapitalization of the Corporation. A number of alternative financing structures were considered by Goldman Sachs and the Corporation but the existence of various existing legal claims, actions and other contingent liabilities involving the Corporation, including the ongoing Glencore Arbitrations, made a refinancing and/or recapitalization, on terms acceptable to Coalcorp and Goldman Sachs, not viable. As a result of those discussions and factors, both parties began to consider and discuss the possible acquisition by Goldman Sachs of the La Francia I mine and associated assets and the La Francia II mining concession. Goldman Sachs advised the Corporation that it would consider an acquisition transaction if the Corporation agreed to provide reimbursement for certain expenses incurred in evaluating such a transaction up to a cap. On November 12, 2009, Goldman Sachs and Coalcorp entered into a letter agreement in respect of the reimbursement of such expenses.

The Proposed Transaction with Goldman Sachs

On November 12, 2009 Goldman Sachs and its internal and outside legal counsel commenced their due diligence review of the Corporation. Goldman Sachs provided the Corporation with a non-binding offer letter providing for the purchase by Goldman Sachs of substantially all of the mining and infrastructure assets of the Corporation for the amount of \$150 million and the assumption of certain liabilities, including those liabilities under the Coal Sale Contract. At the end of November, the parties commenced formal negotiations relating to the potential structure of the Proposed Transaction and the terms and conditions of the Purchase Agreements.

During the time that discussions were on going with Goldman Sachs, Coalcorp continued to pursue discussions with other interested parties and consider alternative transactions. On November 25, 2009, Coalcorp received a letter

from a Canadian investment dealer acting on behalf of an unidentified group, stating that such group had expressed an interest in making an offer to buy all of the issued and outstanding shares of Coalcorp at a proposed price of \$0.50 per share. The Board sought to continue discussions with the unidentified group and requested confirmation from their representative that a transaction could be completed within a certain time frame and that purchasers had funds to complete the transaction at that price. Coalcorp's counsel was advised by the investment dealer that the unidentified group could not arrange to undertake a transaction in the time frame proposed by management. The Corporation has received no further communications related to that proposal.

On November 26, 2009 and November 30, 2009, the Special Committee held meetings to be updated on among other things, the status of the Proposed Transaction and the progress of the negotiations with Goldman Sachs and the other matters related thereto.

In December, management engaged in intensive negotiations with Goldman Sachs.

On December 16, 2009 and December 21, 2009, the Board held meetings to discuss among other things, the status of the Proposed Transaction and the progress of the negotiations with Goldman Sachs.

On December 30, 2009, drafts of the Purchase Agreements were circulated to the Board for its review and consideration. On December 30 and 31, 2009, meetings of the Special Committee and the Board were held to discuss the key terms of the Proposed Transaction.

Between December 31, 2009 and January 3, 2010, management continued negotiations with Goldman Sachs.

On January 3, 2009, the Special Committee met again to consider the Proposed Transaction and, based upon their own investigations (including their consideration of the form of the Fairness Opinion) and the results of managements negotiations, determined to recommend the Proposed Transaction to the Board.

On that date, the Board met to consider the Proposed Transaction and, based upon their own investigations (including their consideration of the form of the Fairness Opinion) and based upon receipt of the recommendation of the Special Committee, unanimously determined that the Proposed Transaction was in the best interest of the Corporation and its shareholders and other stakeholders and determined to recommend that shareholders vote in favour of the Proposed Transaction. In making its determination and recommendation, the Board relied upon legal, tax and other advice and information received during the course of its deliberations.

On January 6, 2010 the Corporation, CDC and the Purchaser entered into the Purchase Agreements and the Corporation publicly announced the Proposed Transaction prior to the opening of markets on January 7, 2010.

Special Committee Recommendation

The Special Committee carefully reviewed and considered the terms of the Proposed Transaction and, based upon their own investigations (including their consideration of the Fairness Opinion), unanimously determined that the Proposed Transaction was in the best interest of the Corporation and its shareholders and other stakeholders and determined to recommend that the Board approve the Proposed Transaction and that the Board recommend that shareholders vote in favour of the Proposed Transaction. In making its determination and recommendation, the Special Committee relied upon legal, tax and other advice and information received during the course of its deliberations.

Recommendation of the Board

The Board carefully reviewed and considered the terms of the Proposed Transaction and, based upon their own investigations (including their consideration of the Fairness Opinion) and based upon receipt of the unanimous recommendation of the Special Committee, unanimously determined that the Proposed Transaction was in the best interest of the Corporation and its shareholders and other stakeholders and determined to recommend that shareholders vote in favour of the Proposed Transaction. In making its determination and recommendation, the Board relied upon legal, tax and other advice and information received during the course of its deliberations.

Fairness Opinion

Paradigm was retained by Coalcorp to assess the Proposed Transaction and to provide financial advice to the Special Committee in connection with the Proposed Transaction. Paradigm has delivered the written Fairness Opinion addressed to the Special Committee concluding that, on the basis of the assumptions, limitations and other considerations set forth in the Fairness Opinion, as of January 5, 2010, the consideration to be received by CDC for the CDC Assets and the consideration to be received by Pianta for the Adromi Shares, are fair, from a financial point of view. **The full text of the Fairness Opinion is attached as Appendix "B" to this Circular. The Board encourages shareholders to read the Fairness Opinion carefully and in its entirety for a description of the assumptions made, matters considered, qualifications and limitations on the review undertaken.** The Fairness Opinion addresses only the fairness of the consideration to be received by CDC and the consideration to be received by Pianta, from a financial point of view. The Fairness Opinion does not constitute a recommendation to shareholders as to whether they should vote in favour of the Proposed Transaction. As described above, the Fairness Opinion was one of many factors taken into consideration by the Board in determining to unanimously approve the Proposed Transaction.

Pursuant to the terms of its engagement letter with Coalcorp, Paradigm is to be paid a fee for its services, including in relation to the Fairness Opinion and expenses incurred in relation thereto. Coalcorp also has agreed to indemnify Paradigm against certain liabilities.

Reasons for the Board Recommendation

In making its recommendation to the shareholders of the Corporation, the Board carefully reviewed and considered the terms of the Proposed Transaction. The following are some of the principal reasons for the Board's recommendation to shareholders to vote for the Proposed Transaction:

- The Corporation's current financial and liquidity position and status of its operations, including lack of vital port access in Colombia, lack of working capital, estimated projected coal sales and revenues, and ongoing operating and overhead costs and capital expenditure requirements, together, do not allow the Corporation to continue with its current operations.
- The Corporation exhausted all opportunities to solve its logistical and port access problems and pursue a stand-alone strategy.
- As a result of the Corporation's lack of port capacity, its continuing operating losses and the existence of various ongoing legal claims, actions and other contingent liabilities, no credible opportunity existed to raise the \$50 million which the Corporation believes to be the minimum amount necessary to fund the Corporation's operations for 2010.
- If the Proposed Transaction is not consummated, the Corporation will likely seek creditor protection or commence insolvency proceedings, which would likely result in a fire-sale of the Corporation's assets at a significantly lower value than the minimum USD\$201 million total transaction value of the Proposed Transaction.
- The Proposed Transaction will provide the Corporation with additional working capital to pursue its legal claims against the former management group which, in addition to the funds to be received in connection with the sale of the Caypa Mine, could result in additional value for the Corporation's shareholders.

Reasons to Vote For the Proposed Transaction

The Board believes that the Proposed Transaction represents the best available transaction for the Corporation at this time to maximize the value of the Corporation's assets. The following are the principle reasons why shareholders should vote for the Proposed Transaction:

- The Proposed Transaction is the result of the Strategic Alternatives Review, which was a comprehensive and thorough strategic review conducted by the Special Committee, which strategic review included, (i) careful consideration of a number of strategic alternatives, including continuing as a stand-alone business,



The Report Confirmation Number is 77749.

Submission Date 04/16/2010
(MM/DD/YYYY)

GOLDMAN SACHS GROUP, INC., THE
Legal Name
200 West Street
Street Address
NEW YORK, NEW YORK
City and County
NY, UNITED STATES
State/Province, Country
10282
Zip/Postal Code

Reporter's Mailing Address (if different from street address)

Mailing City

Mailing State/Province Country Zip/Postal Code

Ronald Christopher, Vice President
Name and Title
212-855-0587
Phone Number (Include area code and if applicable, the extension)
646-769-7563
Fax Number (Include area code)
ronald.christopher@gs.com
E-mail Address

30 Hudson Street, 39th Floor
Contact's Mailing Address (if different from reporter's)
Jersey City
Mailing City
NJ, UNITED STATES
Mailing State/Province/Country
07362
Zip/Postal Code

I, _____
Printed Name & Title

am an authorized official of this company named above, and hereby declare that
this report is true and complete to the best of my knowledge and belief.

Filed Electronically _____
Signature of Authorized Official _____ Date of Signature _____

Does the reporter request confidential treatment for any portion of this submission?

☐ Yes

Please identify the report schedule(s) and item(s) to which this request applies:

☐ In accordance with the instructions on page GEN-2, a letter justifying the request is being provided.

☐ The information for which confidential treatment is sought is being submitted separately and labeled "Confidential."

☒ No

Public reporting burden for the information collection is estimated to average 1.25 hour per response, including time to gather and maintain the data and complete the information collection. The Federal Reserve may not conduct or sponsor, and a person is not required to respond to, any information collection unless it displays a currently valid OMB control number.

This report is required by law. Sections 4(k) and 5(c)(1)(A) of the Bank Holding Company Act (12 U.S.C. §§ 1843(k), 1844(c)(1)(A)); Section 8(a) of the International Banking Act (12 U.S.C. § 3106(a)); Sections 11(a)(1), 25(7) and 25A of the Federal Reserve Act (12 U.S.C. §§ 248(a)(1), 321, 601, 611a and 615); Section 211.13(c) of Regulation K (12 CFR 211.13(c)); and Sections 225.5(b) and 225.87 of Regulation Y (12 CFR 225.5(b) and 225.87).

Permanent Subcommittee on Investigations

EXHIBIT #15

2380443

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GSPSICOMMODS00046301

FRB Use Only	
ID_RSSD_TOP (top tier BHC)	2380443
ID_RSSD_E1 (direct holder)	
ID_RSSD_E2 (reportable company)	

4(k) Schedule

Use this schedule to provide required post-transaction notice for activities, formations and acquisitions of companies, and large merchant banking and insurance company investments authorized under Section 4(k) of the Bank Holding Company Act.

Check box if correction: ☐**Post-Transaction Notice Section**

1.a. Event Type (check one only):

1.b. Date of Event: _____ (MMDDYYYY)

☐ New Activity Commenced Directly by an FHC or Through an Existing Subsidiary

☐ New Activity Commenced Through Acquisition of a Going Concern

☐ New Activity Commenced Through a De Novo Formation

2. New Activities Commenced

For the event type checked in item 1.a, report the FRS Legal Authority code and the five or six-digit NAICS activity code for each new activity. Provide a text description of the activity if unable to identify a five or six-digit NAICS activity corresponding to the activity.

FRS Legal Authority Code (check one)	NAICS Activity Code	Description of Activity
2.a. <input type="checkbox"/> 311 / <input type="checkbox"/> 312		
2.b. <input type="checkbox"/> 311 / <input type="checkbox"/> 312		
2.c. <input type="checkbox"/> 311 / <input type="checkbox"/> 312		

Large Merchant Banking or Insurance Company Investments Section

Use this section to report certain merchant banking or insurance company investments when the FHC directly or indirectly acquires more than 5 percent of a Nonbanking Company's voting shares or total equity or assets and the cost of the investment exceeds 1) \$200 million; or 2) 5 percent of tier 1 capital, whichever is less.

1. Date of Event: 03/13/2010 (MMDDYYYY)

2. Direct Holder's Name and Location: GS POWER HOLDINGS LLC
 City and County: Wilmington, NEW CASTLE DE State/Province: UNITED STATES Country: UNITED STATES

3. Nonbanking Company's Name and Location: COLOMBIAN NATURAL RESOURCES I, S.A.S.
 City and County: Bogota State/Province: COLOMBIA Country: COLOMBIA

4. Direct Holder's Investment in Nonbanking Company Report the percentage amount in a, b, or c, as applicable.

a. 100 % Voting Securities

b. % Total Equity

c. % Assets

5. Initial Aggregate Cost of Investment to the FHC: \$ 204 (in millions of U.S. dollars)

Report Confirmation Number 77749:
Submitted on 04/14/2010 (6:42 PM EDT)

CONFIDENTIAL

FR Y-10
Page 2 of 3

GSPSICOMMODS00046302

FR Y-10 Online
Supplemental Information

This page contains information designed to identify or describe the transaction(s) within the report.

Reporter Name and Address

GOLDMAN SACHS GROUP, INC., THE

200 West Street

NEW YORK, NY 10282

UNITED STATES

Contact Information

Ronald Christopher

212-855-0587

Report Description/Comments

COLOMBIAN NATURAL RESOURCES I, S.A.S. - 4(k) Schedule, event date 3/19/2010

Permissible under BHCA 4(c), but investment complies with the Merchant Banking regulations.

Report Confirmation Number 77749:
Submitted on 04/14/2010 (6:42 PM EDT)

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FR Y-10
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GSPSICOMMODS00046303

EXCERPT

C.I. Colombian Natural Resources I SAS

and

J. Aron & Company

MARKETING AGREEMENT

Permanent Subcommittee on Investigations
EXHIBIT #16

CONFIDENTIAL

GSPSICOMMODS00046496

THIS MARKETING AGREEMENT (hereinafter referred to as the "Agreement") is made this 26th day of September, 2011

BETWEEN:

- (1) C.L. Colombian Natural Resources I S.A.S a *sociedad por acciones simplificada* organized and existing under the laws of Colombia, whose registered place of business is Calle 113 #7-80 Piso 12, Bogotá D.C., Colombia ("CNRI" or the "Principal"); and
- (2) J. Aron & Company, a general partnership organised under the laws of New York, whose principal place of business is 200 West Street, New York, New York 10282-2198, USA (hereinafter referred to as "Aron", and each of the Principal and Aron are individually referred to as a "Party" and together as the "Parties").

WHEREAS:

- (A) The Principal has the right to export and sell Coal; and
- (B) The Principal wishes to appoint Aron to perform the Services, and Aron wishes to accept such appointment, on the terms and conditions set out in this Agreement.

IT IS HEREBY AGREED as follows:

1. DEFINITIONS

- 1.1 In this Agreement, the following initially capitalized terms shall have the following meaning:

"Approved Enquiry" has the meaning set forth in clause 3.5.

"Aron Coal" means coal which Aron (acting as principal) has purchased or, as of the relevant time, contracted to purchase from the Principal.

"Business Day" means a day (other than Saturday and Sunday) on which the clearing banks in London and commercial banks in New York, New York and Bogotá D.C. are open for business. A Business Day shall be deemed to end at 5:00 pm Eastern Standard Time.

"Blending Coal" means coal from a source other than the Mine which is used by the Principal for the purpose of blending with coal from the Mine to enhance the quality of Coal sold by the Principal.

"Characteristics" has the meaning set forth in clause 4.4.

"Coal" means all the coal, other than Previously Contracted Coal, produced by and from the Mine and includes Blending Coal acquired by Principal.

"Colombia Delivery" means a delivery of Coal (a) within Colombia, (b) to a

customer incorporated, registered, organised or domiciled in Colombia or (c) which is not intended for export from Colombia. For the avoidance of doubt, Colombia Delivery does not include any delivery of Coal that is intended for export from Colombia.

"Commencement Date" means January 1, 2011.

"Customer" has the meaning set forth in clause 3.5.

"Enquiry" has the meaning set forth in clause 3.3.

"Mine" means the La Francia 1 mine located in the province of Cesar, Colombia and which is the subject matter of mining concessions 5160 and GAK-152.

"Previously Contracted Coal" means coal which the Principal has as of the Commencement Date agreed in a binding and unconditional contract to sell to Vitrol S.A. (or an entity affiliated with Vitrol S.A.) or to Aron.

"Price Level" means the market price for Coal.

"Principal Termination Amount" has the meaning set forth in Annex B.

"Sale Contract" has the meaning set forth in clause 3.5.

"Services" means the services identified in Annex A.

"Specified Transaction" means any transaction between the Principal and Aron that is a spot, forward, option or swap transaction in or with respect to one or more currencies, commodities, securities, rates, index or other measure of financial or economic risk or any other similar transaction (or any combination thereof).

"Successor Entity" means, with respect to a Party, a partnership, corporation, trust or other organization in whatever form that succeeds (whether by merger, reorganization, or otherwise) to all or substantially all of that Party's assets and business and that assumes such obligations by contract, operation of law or otherwise.

2. APPOINTMENT OF ARON AS AGENT

- 2.1 The Principal hereby appoints Aron as its exclusive agent for the performance of the Services, and Aron hereby agrees to act as the Principal's exclusive agent in connection with the Services, in accordance with the terms of this Agreement.
- 2.2 The relationship of the Principal and Aron created under this Agreement is that of principal and agent, and the scope of the authority of Aron is exclusively set out in this Agreement. The Principal and Aron acknowledge and agree that:
 - (i) it is not their intention to create between them the relationship of partners and nothing in this Agreement will be construed as constituting such a relationship between them; and

- (ii) it is not their intention to create a relationship of employer and employee and nothing in this Agreement will be construed as creating such a relationship.

3. INFORMATION; MARKETING AND SALE OF COAL; OTHER SERVICES

- 3.1 Any of the information listed below (collectively, the "Marketing Information") in the possession of one Party shall be communicated to and shared with the other Party with such frequency as the Parties shall determine from time to time.

- (i) Price Levels;
- (ii) the Principal's current and forward production schedules, identifying the quantity and quality (both at production and at the time of loading into trucks and vessels) of Coal being produced and reasonably expected to be produced by the Mine for marketing by Aron on the terms and conditions set out in this Agreement;
- (iii) the quality of Blending Coal available in the market;
- (iv) the tonnage of Blending Coal expected to be required by Principal;
- (v) the Principal's trucking and rail schedules, capacities and terms, in respect of trucking and rail delivery both to port and to domestic customers;
- (vi) the Principal's stockpile quantities and capacities at the Mine and at any loadports used by the Principal;
- (vii) the Principal's contractually confirmed vessel loading slots at loading ports, and opportunities to acquire additional slots; and
- (viii) the Principal's credit requirements for potential purchasers of Coal.

- 3.2 Subject to the restrictions contained in this clause 3.2 and clause 5.2, Aron shall market for the sale by the Principal to prospective customers all Coal, taking into account any relevant Marketing Information. Subject to the restrictions contained in clause 5.2, such prospective customers may be in any location whatsoever (and the Principal may identify and propose locations to Aron), and the sale and delivery may be in any location whatsoever, providing that Aron shall not (a) market or provide any other Services in relation to Previously Contracted Coal or (b) (i) send the Principal any Enquiry concerning, (ii) market Coal for, or (iii) pursue (as agent, on behalf of the Principal, pursuant to this Agreement) any agreement in respect of, the sale of Coal by the Principal for Colombia Delivery. For the avoidance of doubt, Aron shall not be entitled to any Commission in respect of any sales of Coal prohibited by this clause 3.2.

- 3.3 Aron shall promptly notify the Principal in writing of any opportunity to sell Coal to a prospective customer which (a) complies with clauses 3.2 and 5.2, (b) is materially consistent with the Marketing Information, and (c) entails delivery of Coal to the Customer on (i) FOB or CIF terms or (ii) any other terms agreed between the Parties (provided that the Commission payable in relation to any such prospective sale must,

if not specified in clause 6.1, be agreed before the relevant Enquiry can become Approved Enquiry). Such notice (an "Enquiry") shall include information relevant to the opportunity, including, but not limited to, the identity of the prospective customer and the prospective quantity, quality, price and delivery terms for the Coal to be sold.

- 3.4 The Principal shall exercise commercially reasonable endeavours to notify Aron within three (3) days of receipt of an Enquiry from Aron if it wishes Aron to pursue a sale of Coal based on an Enquiry. Decisions whether to pursue a sale of Coal based on an Enquiry shall be made by the Principal in its sole and absolute discretion. If the Principal determines not to approve an Enquiry, Aron shall not seek to negotiate a contract for the sale of Coal to the relevant prospective customer. The Principal shall have no liability to Aron for or in connection with any Enquiry which is not approved.
- 3.5 If the Principal wishes that Aron pursue a sale based on an Enquiry, either solely on the terms of the Enquiry itself, or subject to conditions, the Principal shall notify Aron accordingly (an "Approved Enquiry"), and Aron shall use its reasonable endeavours to negotiate, as agent only for and on behalf of the Principal, a contract for the sale of Coal to the relevant prospective customer (taking into account any conditions imposed by the Principal or other agreement between the Parties). Aron shall have no liability to the Principal for or in connection with any Approved Enquiry in respect of which for any reason whatsoever a binding sale contract is not executed. Any final and binding contract with a customer shall (and as between Aron and the Principal may only) be executed by the Principal. The Principal shall execute any and all documents and perform any and all acts reasonably required by Aron to evidence or give effect to the foregoing. A contract for the sale of Coal executed by both the Principal and the counterparty thereto (a "Customer") is referred to herein as a "Sale Contract."
- 3.6 Pursuant to clause 3.3, a Sale Contract may entail delivery of Coal to the Customer on (a) FOB or CIF terms or (b) any other terms agreed between the Parties (providing that the Commission payable in relation to such deliveries is, if not specified in clause 6.1, agreed no later than the time an Enquiry becomes an Approved Enquiry). For Sale Contracts on CIF terms, Aron shall, on behalf of the Principal and taking account of any conditions imposed by the Principal or other agreements between the Parties, procure necessary freight services for no additional compensation to Aron other than the Freight Commission specified in Clause 6.1, and the Principal shall execute and perform all agreements and perform all acts and pay all the costs and expenses incurred or associated with such freight services. Sale Contracts shall include provisions stating that vessel and cargo nominations shall be given by the Customer to Aron and Aron shall forward all such nominations to the Principal. In addition, the Principal shall keep Aron informed of all other material communications between Principal and Customer.
- 3.7 At the request of Principal, Aron shall exercise reasonable endeavours to locate on the Principal's behalf as the Principal's agent: (a) Blending Coal supplies from third parties to facilitate blending of the Coal to meet specific quality requirements of prospective customers, Customers, and markets; and (b) port services to facilitate delivery of Coal to Customers. Contracts concerning Blending Coal and/or port services shall be entered into and executed and performed by Principal.

4. EXCLUSIVITY

- 4.1 Subject to clauses 4.2 and 7.2, during the Term of this Agreement the Principal shall not (a) instruct or otherwise allow any person or entity other than Aron to perform the Services and/or act as agent for the marketing or sale of Coal, (b) enter any agreement with any third party for the sale of Coal other than pursuant to a Sale Contract or (c) take any action which compromises or could reasonably be expected to compromise its ability to perform its obligations under this Agreement. Any failure to comply with the foregoing shall constitute a material breach by Principal under this Agreement for purposes of clause 8.1(b).
- 4.2 Nothing in this Agreement shall restrict the Principal from marketing and selling Coal for Colombia Delivery.
- 4.3 Subject to clause 4.4 only, nothing in this Agreement shall restrict Aron from entering into (as principal or as agent) any agreements (including, without limitation, any agreement for the sale or purchase of coal or any other commodity) and/or engaging in any activities (including, without limitation, any marketing, promotional, transactional, or other commercial activities) with any current or prospective customer, client, person or other entity. In addition, nothing in this Agreement shall restrict Aron from purchasing Coal from the Principal on its own behalf, on terms to be agreed, provided, however, that with respect to such purchase Aron shall not be entitled to payment of Commission.
- 4.4 If Aron (as a principal and not as agent for Principal) offers to sell to any prospective customer Aron Coal, and the quality, quantity and delivery (timing and location) terms (collectively, the "Characteristics") for such Aron Coal are the same as the Characteristics for Coal that Aron (as agent hereunder) could offer for sale to such prospective customer, then Aron shall use all reasonable endeavours to procure that any coal sold to such customer comprises Coal and Aron Coal in equal quantities and at the same price. In the event of any breach of this clause 4.4 by Aron, Principal shall calculate any damages suffered by it resulting from such breach and submit a damages claim in writing to Aron, together with a certification as to the method by which the amount of such claim was calculated. Any such claim shall be limited as set out in clause 9. Aron shall be liable for and pay to Principal the amount of such claim within 30 days of receipt. Any disputes arising from any such claims shall be submitted to arbitration as set out in clause 11.2. Without limiting any other rights provided in this Agreement, the parties shall continue to perform hereunder during the pendency of any such dispute.

5. REPRESENTATIONS AND WARRANTIES

- 5.1 Subject to clause 5.2 below, the Principal represents and warrants that it has obtained and will obtain and keep valid and in force throughout the Term any and all production and export licenses and/or government and other approvals and permits which it is required to obtain and keep valid in order to perform its obligations under this Agreement (including without limitation to sell and export all the Coal at all times to any Customer and destination worldwide).

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement on the day and year first written above.

C.I. COLOMBIAN NATURAL RESOURCES I SAS

Signed by: *[Signature]*

Name: Juan Cerbo Gomez

Title: General Manager

J. ARON & COMPANY

Signed by: *[Signature]*

Name: Donna Mansfield

Title: Attorney in Fact

EXCERPT

C.I. Colombian Natural Resources I S. A. S.

*Financial Statements for the years ended on
the 31st of December of 2013 and 2012 and
Statutory Auditor's Report*

Permanent Subcommittee on Investigations

EXHIBIT #17

CONFIDENTIAL

GSPSICOMMODS00046366

**CERTIFICATE OF THE LEGAL REPRESENTATIVE AND OF THE
ACCOUNTANT OF THE COMPANY**

To the shareholders of
C.I. Colombian Natural Resources I S. A. S.

The 12th of March of 2014

The undersigned Legal Representative and accountant of C.I. Colombian Natural Resources I S. A. S. hereby certify that the financial statements of the company as of December 31, 2013 and 2012 have been faithfully taken from the books and that before making them available to you and to third parties we have verified the following affirmations contained in them:

- a. All the assets and liabilities included in the financial statements of the Company as of December 31, 2013 and 2012 exist and all the transactions included in said statements have been made during the period ended in those dates.
- b. All the economic facts of the company during the years ended on December 31, 2013 and 2012 have been acknowledged in the financial statements.
- c. The assets represent probable future economic benefits (rights) and the liabilities represent probable future economic sacrifices (obligations), obtained or in the charge of the Company as of the 31st of December of 2013 and 2012.
- d. All the elements have been acknowledged at their appropriate values pursuant to the accounting principles generally accepted in Colombia.
- e. All the economic facts that affect the company have been correctly classified, described and disclosed in the financial statements.

Juan Carlos Gómez Fernández
Legal Representative

Néstor Moreno Acosta
C. P. A.
Professional Card No. 47396 – T

CONFIDENTIAL

GSPSICOMMODS00046367

C.I. COLOMBIAN NATURAL RESOURCES I S. A. S.**INCOME STATEMENT**
(Thousands of Colombian Pesos)

		Year ended on 31 st of December of	
	<u>Notes</u>	<u>2013</u>	<u>2012</u>
Operational income	17	384,826,168	485,877,549
Cost of sales			
Gross Earnings			
Operational Expenses	18		
Management			
Sales			
Total Operational Expenses			
Operational Loss			
Non operational income (expenses), net	19		
Loss before income tax			
Income tax	13		
Net loss			
Net Loss per share, in Colombian pesos			

Redacted by the Permanent Subcommittee on Investigations

The attached notes are integral part of the financial statements.

Juan Carlos Gómez Fernández
Legal Representative
(See certificate attached)

Néstor Moreno Acosta
C. P. A.
Professional Card No. 47396-T
(See certificate attached)

Viviana Carreño Duran
Statutory Auditor
Professional Card No. 174906-T
Member of PricewaterhouseCoopers Ltda.
(See report attached)

CONFIDENTIAL

GSPSICOMMODS00046369

C.I. COLOMBIAN NATURAL RESOURCES I S. A. S.

NOTES TO THE FINANCIAL STATEMENTS

31st of December of 2013 and 2012
(in thousands of Colombian pesos)

NOTE 1 – REPORTING ENTITY AND OPERATIONS

Reporting Entity

The Company was incorporated in the 13th of January of 2010, by private instrument of the sole shareholder, registered on the 14th of January of 2010 under number No. 01354258 of Book IX; its legal term is indefinite.

Its corporate purpose is the marketing and sale of Colombian products abroad, acquired in the national market or made by national producers; the exploration, exploitation, transportation and marketing of coal. The mining activities take place in the municipality of El Paso, Department of.

Financial Condition

As it can be seen in the financial statements, the Company presents cumulative losses as of the 31st of December of 2013 of \$ [REDACTED] which have reduced in a substantial manner the net equity to a level below the subscribed capital, evidencing a balance of a contrary nature. Currently, the management and the Board of Directors continue with their endeavors to recover the normal operation of the Company and to improve the cash flow, according to the plans set forth below:

- a) Reduction of the subscribed capital: The General Shareholders' Meeting held on the 11th of February of 2014, approved the reduction of [REDACTED] shares of subscribed capital without effective reimbursement of contributions, with the facility to absorb, in a partial manner, the cumulative losses of the Company.
- b) Capitalization by the Shareholders: The meeting of the Board of Directors held on the 12th of February of e 2014, authorized and issued [REDACTED] shares in favor of the sole shareholder of the Company, subject to the right of first refusal of a par value of \$ 1 and with a placement premium (additional capital) of \$ 36.74, for a total capitalization of [REDACTED] which was paid on the 13th of February of 2014.
- c) The Company envisions to make additional capitalizations according to the cash flow requirements or to the economic condition of the organization.

Operations

- a) On the 27th of December of 1991 the Ministry of Mines and Energy and the company called Siminera S. A. entered into Concession Contract Number 5160, for the exploration and exploitation of coal by Siminera S. A., in the municipality of El Paso, Department del Cesar, for a

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period of 30 years. On the 25th of August of 1997, Siminera S. A. assigned to Compañía Carbones del Cesar Ltda. (currently Compañía Carbones del Cesar S. A.) its rights on this contract, which was approved by the Ministry of Mines and Energy in Resolution 701594 of the 23rd of October of 1997. Compañía Carbones del Cesar S. A., assigned to Colombian Natural Resources I S. A. S. (currently C.I. Colombian Natural Resources I S. A. S.) its rights on this contract, which was approved by the Ministry of Mines and Energy in Resolution SFOM 026 of the 22nd of February of 2010.

- b) On the 22nd of February of year 2006 Colombian Mining and Geology Institute - Ingeominas and Compañía Carbones del Cesar S. A. (currently Compañía Carbones del Cesar S. A.) entered into Concession Contract Number GAK - 152 for the exploration and exploitation of a coal deposit, located in jurisdiction of the municipality of El Paso, Department del Cesar, for a period of 30 years. Compañía Carbones del Cesar S. A., assigned to Colombian Natural Resources I S. A. S. (currently C.I. Colombian Natural Resources I S. A. S.) its rights on this contract, which was approved by the Ministry of Mines and Energy by Resolution SFOM 027 of the 22nd of February of 2010.
- c) The concession contracts state that the Company must comply with the "Works and Investment Program" presented to the Ministry of Mines and Energy and that it must pay to the relevant entities the royalties, as per the provisions of Law 756 of 2002. During 2013 royalties for \$ [REDACTED] were acknowledged, that corresponded to Concession No. 5160 and [REDACTED] of Concession No. GAK-152.
- d) The company changed its corporate name to C. I. Colombian Natural Resources I S. A. S., by private document registered on the 3rd of December of 2010 under number No. 01433472 of Book IX.
- e) On the 21st of January of 2013, in a sudden manner, Consorcio Minero del Cesar S. A. S sent a letter announcing the unilateral termination of the La Francia Mine's operation Contract, based on the alleged breach of the Company. In parallel, the mine's activities were suspended on the same day and all the machinery of the consortium and of its members was abandoned on the field. During the next two weeks, the inventory of coal on the yards was shipped to the port, and from then onwards the mine's activity was completely halted. On the 15th of April a group of women and children who said to be relatives of the CMC'S employees blocked the access to the camp of the El Hatillo mine. In this way, the conflict at the La Francia mine irradiated also to that mine, owned by CNR III Ltd. Colombia Branch. CNR I started several legal actions for the unblocking of the mine, including protection petitions and police proceedings filed with the mayor of El Paso, as well as a request of administrative protection before the National Mining Agency ANM. Likewise, a large number of letters was sent to request the intervention of police and military authorities, the Governor of Cesar, the office of the Attorney General and the People's Defender Office, as well as to the Mines and Interior Ministries, among other.

The total blockade of the La Francia mine lasted for 244 days, until the 22nd of September of 2013, and it was lifted thanks to a private agreement in which CNR I paid a cash bonus of \$ 20,000 to each one of the persons that were still protesting. Once CNR I resumed the control of the mine, the activities to recover the productive areas were started, particularly the pumping of water from the pit.

The suspension of activities also led to the suspension of the activities of the mine's contractors. For that reason, CNR I invoked force majeure with the contractors called M&M Servicios de la Loma Ltda. and RB Multiservicios La Loma. Once the operations were restored, we received out-of-court claims from RB Multiservicios La Loma, with whom an amicable settlement was made and a compensation amount of \$ 42,332 was paid, and from Luis Bernardo Piedrahita and Jima Servicios Ltda., arguing breach of contract on the part of CNR I, which have not led to court claims to date.

Regarding the Company's commercial commitments, at the start of the mine's blockade, CNR I sent to its clients letters invoking a force majeure event. Nevertheless, up to August most of the coal shipments were performed using coal from our affiliate company CNR III Ltd. Colombia Branch. Other commitments were postponed or cancelled through direct agreements with the buyers. In the second half of the year, some commitments could not be honored because there was no further availability of coal from CNR III, and therefore in August the company, once again, invoked force majeure before the following clients: AES Gener S. A., ECL S. A. and GDF Suez Energy Management Trading. With the first two clients it was possible to reach agreements to postpone the shipments. GDF rejected the existence of a force majeure event, so a settlement agreement was entered into on the 19th of February of 2014 in which CNR I agreed to pay USD \$ 237,000.

On the 17th of October of 2013 CNR I entered into a new agreement for the operation of the La Francia mine with the Spanish – based company Excavaciones y Proyectos de Colombia S. A. S - EPSA. The agreement contemplates the production of [REDACTED] tons of coal per year and the exploitation of the mine's resources until the exhaustion thereof or until year 2018, whichever is first. It also contemplates a 'preliminary period' during which there is a reduced production of approximately one third. Since the date of execution and as of the date of this report, the contract is being performed in such preliminary mode.

f) Direct Loading:

Law 1450 of 2011 ordered that, as from the 1st of January of 2014, the maritime ports that handle coal must do so using a direct – loading system. Bearing in mind that in all probability the Río Córdoba port, through which CNR I exports its coal, would not have the direct loading system ready for that date, During year 2013 CNR I analyzed other options, in particular the possibility to load its coal at Puerto Nuevo which, being a public port, had to offer access to third parties.

In this sense, on the 28th of June of 2013, the company lodged with Puerto Nuevo a request for port services for the export of 3 million tons of coal per year during years 2014 and 2015. On the 19th of July, Puerto Nuevo answered the request and announced that it was completing all pertinent proceedings with the National Government. On the 18th of November of 2013, the company insisted to Puerto Nuevo to obtain the access to the port terminal; on the 5th of December of 2013, Puerto Nuevo answered that it had established an access policy and invited the Company to lodge a request according to the procedures therein established. Once CNR reviewed this access policy, the Company could establish that it is not in agreement with Resolution 2734 of 2013 of the Transport Ministry or with Law 1 of 1991 and all other regulations applicable, and besides in practice it made impossible the access of CNR or of any other that the companies affiliated with Puerto Nuevo. In consequence, the Compañía has filed with different entities of the National Government an analysis of the legality of PNSA'S access policy, for these to review such policy and to adapt it so it complies with the guidelines set forth for the public – access ports. To date, the access policy initially established is in force and Puerto Nuevo argues that it does not have available capacity to be offered to third parties.

g) Utilization of the Río Córdoba Port

As from the 1st of January of 2014 the Río Córdoba Port, utilized by CNR I for the export of coal, stopped all of its operations by virtue of article 113 of Law 1450 of 2011, which states that as from that date all loading had to be made using ships' direct loading systems. Therefore, CNR I stopped all coal railway transportation and export activities. Currently, the Company is studying other options that allow the sale of coal, which include (i) the access to Puerto Nuevo's public port; (ii) the access to Drummond's port; (iii) the domestic sale of coal.

h) Continuity of the Business.

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Currently, the company is exploring options for the international marketing of its coal; meanwhile, it is carrying out all arrangements necessary to complete all other mining projects within the current conditions.

It has been projected that the La Francia continues operating during year 2014 under the 'preliminary period' scheme, with an operation reduced to approximately one third of the production agreed with EPSA. The estimated production for the year is of [REDACTED] tons of coal, which will be stored in the mine's yards. On the 3rd of March of 2014 la Compañía filed with the National Mining Agency the request to have a reduced operation, with the argument that CNR I does not have an export port; to date the National Mining Agency – ANM has not given its answer.

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NOTE 6 - DEBTORS

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Affiliate companies

A detail of the balances of the receivable and payable accounts with affiliate companies, as of the 31st of December, is presented below:

	<u>2013</u>	<u>2012</u>
Accounts Receivable		
Colombian Natural Resources II S. A. S.	8,936,699	4,357,721
NR! Cayman Ltd.	1,119,240	872,193
CNR Marketing Limited	1,314,791	1,243,919
Sociedad Portuaria Rio Córdoba S. A.	8,428,210	-
J. Aron & Company	8,756,558	-
CNR Transport S. A. S.	1,401,205	-
CNR III Ltd. Colombia Branch	-	54,551,799
	<u>29,956,703</u>	<u>61,025,632</u>
Accounts Payable		
Short Term		
Sociedad Portuaria Rio Córdoba S. A.	-	(6,064,372)

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J. Aron & Company		(1,744,447)	(1,375,216)
CNR Transport S. A. S.		-	(108,388)
CNR III Ltd. Colombia Branch		(27,666,647)	-
NRI Cayman Ltd.		(21,619)	-
		<u>29,432,713</u>	<u>7,547,976</u>
Long Term			
GSPC Latin America LLC (Note 12)		<u>(305,199,216)</u>	<u>(215,016,768)</u>

The accounts payable between related parties have no term or interest agreed, with the exception of the financial liability with GSPC Latin America LLC which, for year 2012 has been reclassified from financial liabilities to accounts payable with related parties.

Below is the detail of the main transactions with affiliate companies:

Company	Loans made (received)	Sale of Coal	Purchase of Coal	Swap & other
<u>2013</u>				
Colombian Natural Resources II S. A. S.	8,936,699	-	-	-
J. Aron & Company	8,756,558	30,594,938	-	5,127,025
Sociedad Portuaria Río Córdoba S. A.	8,428,210	-	-	-
CNR Transport S. A. S.	1,401,205	-	-	-
CNR Marketing Limited	1,314,791	-	-	-
NRI Cayman Ltd.	1,119,240	-	-	-
CNR III Ltd. Colombia Branch	-	-	272,441,161	-
<u>2012</u>				
Colombian Natural Resources II S. A. S.	2,052,421	-	-	-
CNR III Ltd. Colombia Branch	54,551,799	-	53,083,961	-
NRI Cayman Ltd.	872,193	-	-	-
J. Aron & Company	-	99,658,765	-	14,317,179
CNR Marketing Limited	1,433,167	18,924,837	46,496,558	-

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NOTE 16 - MEMORANDA ACCOUNTS

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Commitments

The following is a summary of the main commitments in force as of the 31st of December:

(i) Coal Sale Agreements

The company enters into sale and purchase agreements for the supply of coal. The main obligations derived from said contracts are:

- To supply coal as sale for domestic sale as well as for export.
- To comply with the schedule of deliveries in time and quality to the satisfaction of the buyer.
- To deliver the quantity of pithead coal, (onto truck or loaded on the railway line (railcars)) or at port, according to the negotiation.

As of the 31st of December of 2013, there were commitments for the sale of coal to be dispatched as from 2012, according to the following detail:

Third Party	Quantity (tons)	Average price per ton (USD \$)
J Aron & Company	276.510	20.62
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As of the 31st of December of 2013, there were situations that affected the compliance with the coal sale agreements. (See Note 1e)).

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(iii) Consortio Minero del Cesar

In the transaction of the 19th of March of 2010, the Company acquired the rights and obligations on the commercial offer entered into by Compañía Carbones del Cesar S. A. on the 31st of August of 2005 with the Consortio Minero del Cesar - CMC, made up by the companies called Construcciones El Cóndor S. A., S. P. Explanaciones S. A. and Tunelesa S. A., according to a document called Consortium Agreement.

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The purpose of the offer is the hiring of the Consortium to carry out all activities necessary for the extraction of a quantity equivalent to the total of the coal reserves mineable from the La Francia mine, for a term of no less than six years. The remuneration of the Consortium is established by rates determined according to the type of activities performed.

In 2008 Masering S. A., came to take part in the development of the offer with a majority share of 51% of the Consortium.

On the 16th of April of 2008, a Memorandum of Understanding (MOU), was signed with the purpose of:

- Reviewing the issues of the legally binding offer dated on August 31, 2005, which includes, among other things, the application of the purpose, with the incorporation of the mining exploitation of Pit B' Concession Contract GAK 152.
- Faced with the need to acquire equipment for the operation of the mine and in order to share the risk of the advanced acquisition of equipment, the company financed the 16% corresponding to the down payment of the equipment for USD \$ 7,735,589, which shall be deducted from the amount payable to the CMC, with a grace term of 12 months, with no interest.

On May of 2009 Compañía Carbones del Cesar S. A. (CDC) declared the force majeure and ordered the operator of the La Francia I Mine (Consorcio Minero del Cesar – CMC) to suspend operations; therefore, there was no production of coal during the period between June 5, 2009 and August 12 2009.

On that date (12 August 2009) an Operations' Resumption Agreement was signed, which brings together all the aspects and obligations included in the Memorandum of Understanding, rendering it ineffective, and establishing, among other, the following items:

- Agreement on the manner in which CMC had to restart the activities
- To make commitments regarding the current annual, quarterly and monthly mining plan, as well as some minimum guarantees of production of sterile and coal by CDC and in favor of CMC
- Notification of CDC to CMC of the possibility of the sale of all or substantially all of its assets, including the assignment of mining title No. 5160 that operates the CMC.
- The payment by CDC to CMC of some items such as conciliation bonuses to some of the workers of the CMC,
- Regulation and payments, in the event of an early termination of the offer as a result of CDC'S decision, of the installments of some leasing contracts on equipment that the CMC has to carry out its mining activity with CDC and standby costs, among other.
- To amortize as of April 1, 2010, the sum of USD \$ 7.735.589 received as advanced payment for the acquisition of equipment for the operation of the La Francia Min. The amortization was done in 3 years, and to date the amount yet to be amortized is the sum of USD \$ 1,460,925.

On January 6, 2010 CDC signs with CMC Addendum No. 2 to the Resumption Minutes, which regulates, upon request of CDC, the reduction of the volumes of production of waste and of extraction of coal as of November of 2009 and until December 31, 2010, and consequently agrees, among other things, on the following relevant items:

- As a consequence of the reduction of the production mentioned above, the CMC had to leave in stand by some equipment acquired under leasing, so CDC committed to pay the CMC the sums corresponding to a percentage of the leasing installments, interest as well as the insurance of the equipment left in stand by, as a proportion of the effective standby of such equipment. As a result of this Commitment, the company paid to CMC in 2010 USD \$ 5,747,237, which shall be amortized as from April 1, 2011 in quarterly installments. The amortization was done in 3 years, and to date the amount yet to be amortized is the sum of USD \$ 2,873,619.
- As a result of the reduction of the minimum monthly production and the consequent stand by of the mine's equipment and personnel, CMC had to implement a voluntary retirement plan for 120 workers, for which CDC would contribute with the sum of \$ 2,099,231.
- CMC had to refund to CDC the amounts of money that were not effectively used within the aforementioned retirement plan.

On March 18, 2010, CDC, CMR and the Company entered into an Agreement for the Assignment and Assumption of Obligations, whereby CDC transferred to the Company each and all of the rights and obligations set forth in the commercial offer dated on August 31, 2005, the resumption minutes of August 12, 2009 and the addendums to the resumption minutes dated on October 20, 2009 and January 6, 2010, which was incorporated to the Assignment Agreement of March 18, 2010 whereby CDC transfers all of its rights and obligations with CMC to the Company.

On November of 2012, the Consorcio Minero del Cesar (CMC) informed CNR of an alleged assigned of the La Francia Mine operation contract to a company called Consorcio Minero del Cesar SAS. CNR does not recognize the legality of that assignment and continues assuming that CMC is its legitimate counterparty in that contract. The invoices for the operation of the mine started being presented on behalf of the Consorcio Minero del Cesar SAS, and hence all the invoices were rejected by CNR in due time.

On the 21st of January of 2013, and in a sudden manner, the Consorcio Minero del Cesar SAS sent a letter announcing the unilateral termination of the La Francia Mine operation contract, based on the alleged breach of CNR. On the same day, the activities in the mine were suspended and all the machinery of the consortium was abandoned in the field. During the next two weeks the coal inventories that were on the yards were loaded onto the trains. As from that moment and on the date in which this report is written, the operation of the mine is completely halted.

Notwithstanding the foregoing, as of the date of this report, the company has been fulfilling its coal sale commitments by selling its existing coal inventories and by purchasing coal from third parties.

CNR and the Consorcio Minero del Cesar (CMC) will bring the differences regarding the operation contract, including the termination and its consequences, to an arbitration tribunal before the Chamber of Commerce of Bogotá. To date, the joint selection of the arbitrators by the parties is pending.

On top of this, several legal actions have being brought because of the termination of the La Francia Mine operation contract, including a request for police protection lodged by CMC because of the alleged interruption by C.I. Colombian Natural Resources I S. A. S of the possession of different assets in the mine.

The Company as made contacts with companies that could potentially assume the operation of the La Francia mine.

NOTE 17 - OPERATIONAL REVENUES

Below is the detail of the operational revenues during year ended on the 31st of December:

	2013	2012
Coal	Redacted By The Permanent Subcommittee on Investigations	
J. Aron & Company	30,594,938	99,658,765

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<u>384,826,168</u>	<u>485,877,549</u>
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The company sold 3,201,455,24 tons of coal during 2013 (2012 – 3,722,662 tons).

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Abbe David Lowell
direct tel (202) 974-5605
adlowell@chadbourne.com

October 8, 2014

By E-mail

Ms. Elise J. Bean
Permanent Subcommittee on Investigations
Homeland Security & Governmental Affairs Committee
United States Senate
199 Russell Senate Office Building
1st & Constitution, N.E.
Washington, D.C. 20510

Re: Follow-Up Requests

Dear Ms. Bean:

I write on behalf of The Goldman Sachs Group, Inc. ("Goldman Sachs" or the "Firm") in connection with the efforts of the Permanent Subcommittee on Investigations (the "Subcommittee") to better understand the nature and scope of activities of U.S. banks in physical commodities.¹ Goldman Sachs responds to the last remaining requests attached to your email dated September 9, 2014 as well as the supplemental questions set forth in Tyler Gellasch's email dated October 3, 2014, which we reproduce below for your convenience.

¹ The Goldman Sachs Group, Inc. is the Firm's publicly-held parent company. Information relevant to the Subcommittee's requests involves the activities of affiliates controlled by the Firm operating both inside and outside the United States.

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EXHIBIT #18

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Request No. 16: Please confirm whether any Goldman or Nufcor entity conducted due diligence with respect to the safety and security of the facilities where Nufcor's uranium was stored, and if so, provide copies of the due diligence procedures used and any written reviews or analysis since 6/30/2009. Please provide a copy of any Goldman or Nufcor report of any incident or accident at any such storage facility since 6/30/2009.

Goldman Sachs performs due diligence on each of the vendors or counterparties with which it enters into a business relationship. In relation to the owners and operators of facilities that store or transport commodities, Goldman Sachs conducts specific diligence in relation to qualifications of the owner/operator that is based on the nature of the interaction with the owner/operator. With respect to the operators of uranium conversion and enrichment facilities that hold inventory of U308 and UF6 in which we maintain a non-possessory beneficial interest, we diligenced various matters, including the ownership and regulatory structure for each of the operators. In this regard, we note that each such entity is subject to comprehensive oversight by appropriate regulators. These include the Nuclear Regulatory Commission of the United States (the "NRC"), the Nuclear Safety Commission of Canada, the Office for Nuclear Regulation in the United Kingdom, the Department of Nuclear Safety of the Netherlands, the Federal Office for Radiation Protection in Germany, and the Authority for Nuclear Safety in France. Moreover, we note the following with respect to the ownership of these entities:

- (i) Urenco is owned by the governments of the United Kingdom and the Netherlands and two large German utilities;
- (ii) Louisiana Energy Services is a subsidiary of Urenco;
- (iii) Comurhex and Eurodif are subsidiaries of Areva, in which the government of France is a majority shareholder;



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- (iv) Cameco was formed by the federal government of Canada and the government of the province of Saskatchewan, was privatized in 2002, and is currently listed on the NYSE; and
- (v) Converdyn is a 50%-50% partnership between Honeywell and General Atomics.

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Request No. 31: Please provide a copy (translated into English) of the Feb. 2013 ANLA order, decision, or regulation barring further coal expansion in the Cesar region of Colombia pending remediation of environmental issues related to coal. Please provide the ANLA order, decision, or regulation related to the Colombian government's initiative to relocate certain families affected by coal-related environmental problems in the Cesar region. Please describe any actions taken by CNR or Goldman in response, even though CNR has not sought to expand its coal operations since 2013.

Enclosed as Exhibit C (bearing production numbers GSPSICOMMODS00047310-41) are relevant excerpts, translated into English, from the relevant resolutions passed by ANLA in 2010 and 2011. We are not aware of any February 2013 ANLA order or decision responsive to this Request.

CNR has taken various steps to reduce dust emissions, including increasing the size of its fleet or water spraying trucks, undertaking additional road maintenance, and rehabilitating sites for the storage of overburden generated through the mining process. With regard to resettlement, CNR has worked with other mining companies in the region to advance the goals of the government to effectuate the initiative in conformity with applicable World Bank standards. The group hired rePlan, a leading consultant of internationally recognized standing, to develop a resettlement management plan.

Request No. 33: Please describe the labor disputes that affected the La Francia and Hatillo mines and the Fenoco railway in 2013, how and when those disputes were resolved, and the current status of any labor disputes affecting the mines or railroad.

El Hatillo: Since 2012, CNR has been in ongoing discussions and negotiations to reach a collective bargaining agreement with the Sintramienergetica, the union that represents 30 of a total of 74 employees. Ultimately, the parties were unable to reach an agreement by March 2014. In accordance with applicable procedures, CNR has requested the Ministry of Labor of Colombia to convene an arbitration panel to decide the dispute.

Fenoco: Members of the Sintraime union initiated a strike against Fenoco in July 2012. This strike was resolved in August 2012. In September 2013, Fenoco and the union reached a collective labor agreement that is currently in place.



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La Francia: CNR has experienced no significant labor disputes with its employees at the La Francia mine in 2013.

Request No. 34: Please confirm that, from 2011-2013, CNR exported coal from Colombia via ship and that it shipped the coal on an approximately quarterly basis.

During the period from 2011 to 2013, CNR typically delivered coal each month to one or more purchasers.

Request No. 35: Please identify the approximate percentage of CNR coal that was shipped to the United States each year and the percentage shipped to non-U.S. locations from 2011 to 2013.

The overwhelming majority of coal sales made by CNR were done on an FOB Colombia basis. As such, CNR fulfilled its obligation upon delivering the coal to the purchaser's vessel and did not know the destination of the coal.

Request No. 38: Please list all Goldman contracts to supply or transport coal from 2011 to 2013, by describing the number and nature of the contracts; the coal recipients (providing their name, type of business, and location); the approximate volumes of coal involved; the approximate frequency of deliveries; and the extent to which the coal was provided from the CNR mines in Colombia.

Enclosed as Exhibit D (bearing production numbers GSPSICOMMODS00047342-43) is a chart Goldman Sachs prepared in response to Request No. 38 containing the requested information.

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Request No. 49: Please describe the process used to value CNR, its physical coal inventory, and its related financial instruments.

CNR management marks the value of physical coal inventory at the lower of cost and market per US GAAP guidelines. Each month CNR management estimates the netback price of its coal inventory based on published API2 and C7 freight indices and assumed average quality, logistics costs, port costs, and market discounts (*i.e.* the spread between physical and financial transactions).

In light of its 100% ownership, Goldman Sachs consolidates CNR on its financial statements in accordance with applicable accounting principles. As such:

- Accounts receivable are recorded at amortized cost plus accrued interest (as applicable), less an allowance for doubtful accounts.
- Physical coal inventory is recorded at the lower of cost or market, consistent with the “GS Accounting Policy: Commodities – Physical Inventory Recognition and Valuation Policy” for physical inventory held by a CIE.
- PP&E and Intangibles are recorded at cost, less accumulated depreciation/amortization.
- Liabilities are accrued as incurred and are recorded at cost plus accrued interest (as applicable).

Supplemental Question No. 1: Please provide the amount in dollars and kgU of UF6 traded each year by Nufcor from June 30, 2009 through June 30, 2014.

In response to this Request, Goldman Sachs prepared the charts below providing the requested information.

	UF6 Purchase Volume	\$ Notional of Purchases	UF6 Sales Volume	Estimated \$ Notional of Sales
2009	20,000	2,500,000	60,000	7,380,000
2010	182,000	28,090,000	165,000	19,906,250
2011	500,000	79,447,000	675,000	96,150,250
2012	750,000	100,462,500	925,522	137,311,143
2013	450,000	56,387,500	200,000	22,887,500



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	Conversion Purchase Volume	\$ Notional of Conversion Purchases	Conversion Sales Volume	Estimated \$ Notional of Conversion Sales
2011	0	0	220,000	2,400,000
2012	469,638	4,196,742	319,154	2,193,750
2013	500,000	4,625,000	964,000	11,621,000

Supplemental Question No. 2: Please confirm that all of the physical uranium, futures, forwards, swap and options positions are fair valued on a mark to market basis pursuant to Goldman's valuation policy.

As noted in our response to Question No. 15, all physical uranium futures, forwards, swaps and options are fair valued on a mark to market basis pursuant to Goldman Sachs's valuation policy, other than three UF6 forward contracts which are treated as executory contracts and the transactions in conversion credits, which are considered intangibles under US GAAP that are held at the lower of net realizable value and cost.

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Sincerely,

Abbe Lowell / *sq*
Abbe David Lowell

Enclosures

cc: Mr. Joseph Bryan
Tyler Gellasch, Esq.
Steven R. Peikin, Esq.

PSI-GoldmanSachs-19-000009



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November 4, 2014

By E-mail

Tyler Gellach, Esq.
Permanent Subcommittee on Investigations
Homeland Security & Governmental Affairs Committee
United States Senate
199 Russell Senate Office Building
1st & Constitution, N.E.
Washington, D.C. 20510

Re: Follow-Up Requests

Dear Mr. Gellach:

I write on behalf of The Goldman Sachs Group, Inc. ("Goldman Sachs" or the "Firm") in connection with the efforts of the Permanent Subcommittee on Investigations (the "Subcommittee") to better understand the nature and scope of activities of U.S. banks in physical commodities.¹ Goldman Sachs responds to certain requests you have made by email and telephonically, which we reproduce below for your convenience. We are continuing to work diligently on your remaining requests and will supplement this submission with additional responses as soon as possible.

Coal Request No. 1: Please confirm that J. Aron acted as the exclusive marketing and sales agent for CNR after the acquisition of each of the Colombian mines but prior to the entry of the formal 2011 marketing agreement.

We confirm that J. Aron acted as the exclusive marketing and sales agent for CNR after the acquisition of the Colombian mines owned by CNR and that a formal written marketing agreement was subsequently signed following the completion of the acquisition. We note that this practice is not unusual insofar as J. Aron also acts as marketing and sales agent for unaffiliated mines on what we believe to be an exclusive basis without formal written marketing agreements in place.

¹ The Goldman Sachs Group, Inc. is the Firm's publicly-held parent company. Information relevant to the Subcommittee's requests involves the activities of affiliates controlled by the Firm operating both inside and outside the United States.

Permanent Subcommittee on Investigations

EXHIBIT #19

New York Washington, DC Los Angeles

PSI-GoldmanSachs-25-000001

Warsaw Istanbul Dubai Beijing



Tyler Gellasch, Esq.

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November 4, 2014

Coal Request No. 2: Please confirm that J. Aron acted as the exclusive marketing and sales agent for the El Hatillo mine after its acquisition.

We confirm that J. Aron acted as the exclusive marketing and sales agent for the El Hatillo mine after its acquisition.

Coal Request No. 3: Please confirm that the "individuals" who received settlement payments from CNR in July of 2013 were all current or former "employees," as opposed to anyone who was protesting.

We confirm that the individuals who received settlement payments were former employees of CMC, the company that acted as operator for CNR's La Francia mine. The identity of the individuals as CMC employees was verified by CNR, which maintained a list of such individuals for security purposes, and by the union of which the individuals were members. A list of these individuals was provided to the Colombian Ministry of Labor.

Coal Request No. 4: Explain why an October 2012 document generated by the Federal Reserve states that "GS avoids the appearance of over control of its coal mine business by not hedging its underlying coal exposure to maintain legal protection," whereas a September 2013 document generated by Goldman Sachs indicates that Goldman Sachs hedged its investment in CNR.

You have asked us to reconcile a statement to the effect that "GS avoids the appearance of over control of its coal mine business by not hedging its underlying coal exposure to maintain legal protection" with information contained in a September 2013 presentation to the Board of Directors of Goldman Sachs describing hedges relating to the firm's exposure to CNR. You have not provided and we do not have a copy of the document that contains the statement, but we understand it was prepared by a regulator and assume that the regulator was the Federal Reserve Bank of New York.

Obviously, we did not make the quoted statement and are therefore not in a position to reach any definitive conclusions as to its meaning. That said, the statement appears to distinguish between two different types of hedge positions. On the one hand, the management of a portfolio company may implement hedges to protect the cash flows of the company against fluctuations or declines resulting from changes in the prices of commodities produced by the portfolio company, such as coal prices for a coal mining company. On the other hand, the shareholder of a portfolio company may implement hedges to protect it against the possibility that the value of its investment may decline as a result of changes in the prices of commodities produced by the portfolio company. As we discussed in our September 5, 2014 meeting, Goldman Sachs in its capacity as a shareholder entered into the second type of transaction. As we indicated at that meeting, the purpose of entering into such hedges was to protect Goldman Sachs against the risk that the value of the CNR investment would decline as a result of a fall in coal prices. As we told you at our September 5th meeting, the statement from the document



Tyler Gellasch, Esq.

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November 4, 2014

prepared by the regulator does not in our view accurately describe the reasons why we implemented the hedging program in the manner we did.

* * *

We wish to stress that certain information included in this submission in response to the requests by the Subcommittee did not previously exist in this form. Goldman Sachs used various technology and manual resources to generate this information. While Goldman Sachs believes that the information contained in this letter is reasonably accurate, Goldman Sachs cannot make an absolute representation that it is complete or that there were not some inadvertent errors in their preparation. We will provide further updates or corrections if we determine that corrections are warranted.

* * *

Redacted By
Permanent Subcommittee on Investigations

Sincerely,

A handwritten signature in black ink, appearing to read "Abbe David Lowell". The signature is written in a cursive, flowing style.
Abbe David Lowell

Enclosures

cc: Elise J. Bean, Esq.
Mr. Joseph Bryan
Steven R. Peikin, Esq.

Metals & Mining

Background to Environmental and Social Due Diligence

As a part of Goldman Sachs' Environmental Policy Framework, the firm has developed guidance for due diligence processes involving transactions in environmentally sensitive sectors. The following pages provide the transaction team with background on the potential environmental and social impacts of the sector and guidance for conducting thorough due diligence with the company.

Please contact the **ESG Transaction Review Team** with any questions.

I. Environmental and Social Impacts of Metals and Mining Operations

Mining attracts considerable scrutiny from civil society and the general public due to the scale of environmental and social impacts, and in some geographies, revenue management and governance concerns. Additionally, due diligence on mining transactions may be challenging as impacts may extend well beyond the site's geographic boundaries and operational timeframe – for example, associated facilities (haul roads, rail links, port facilities, accommodation areas, captive power plants etc.) whose existence is solely or largely dependent on the mine may impinge on the environment and local communities as much as the mine site itself.

The major phases in mine development are (a) exploration; (b) mine development; (c) extraction (underground and open pit); (d) ore beneficiation; (e) storage and transport; and (f) closure and reclamation. The scope of this due diligence checklist focuses on development, extraction and closure (where key E&S concerns are frequently evident), but impacts from ore beneficiation and storage and transport should also be considered during evaluation. Key concerns for the sector include:

Ecological and Social Sensitivities: Some projects are inherently higher-risk because they are located in areas of ecological or social sensitivity, such as the rainforest or areas with populations of indigenous peoples. Project development may result in the physical and/or economic displacement of people (including relocation and loss of assets such as land, crops, water, houses), and increased access by third parties to previously remote areas may create additional environmental impacts. Special attention should be paid to mines in the following situations:

- Within, adjacent to, or near a declared area of ecological sensitivity (world heritage sites, national parks, preserves, etc).
- Mine development will require displacement of individuals or communities.
- Mine development will require development of roads into previously undeveloped areas.
- "Mountaintop removal" mining.
- Mines adjacent to sensitive ecological receptors such as rivers, oceans, water supply lakes, etc.
- Mine development will require deforestation

Operational Sensitivities: Some projects also have risk associated with the planned or current types of operations on site. Additional risks may be posed by projects which:

- Adopt direct riverine or submarine tailings disposal, or where there is risk of acid mine drainage;
- Use large volumes of water for beneficiation which could reduce the availability and/or quality of water for downstream users and fisheries;
- Reduce the water table and cause shallow water wells and groundwater resources to be impacted;

- Generate fugitive dust emissions causing health impacts to nearby communities; or which
- Have inadequate financial provisions for mine rehabilitation after closure.

Legacy Poor Performance: Where there is a history of pollution or social conflicts surrounding mining projects in a given region (including locations where there has been damage to or closure of operations and/or NGO campaigns), underlying tensions and concerns about the sector can persist and create a higher hurdle for more recent entrants, regardless of a company's own performance history. On the other hand, sometimes companies have to overcome their own blemished track record in seeking access to new resources (e.g. in Papua New Guinea – BHP Billiton's OK Tedi mine, the Philippines – Lafayette's Rapu Rapu tailings accident, and Peru – Newmont's Yanacocha mercury spill).

Preclusions: Members of the International Council on Mining and Metals have committed to designate "no-go" areas barring mining in areas that are legally protected for nature conservation. Some disposal methods (e.g. riverine or submarine tailings disposal) are effectively illegal in developed countries, though still used in developing countries (e.g. Indonesia, the Philippines, Papua New Guinea), which can lead to accusations of double standards for multinational companies.

Political Instability, Poor Governance and Transparency: Exploration and development is increasingly focusing on emerging markets where governance and enforcement capacity may be weak. In recent years, there has been increased interest in the way in which governments utilize mining revenues, coupled with increasing demands that these revenues be used to develop the regions where the reserves are explored. In some areas, corrupt officials divert a significant percentage of mining revenues to personal gains resulting in high levels of civic unrest as local communities do not benefit from the mining revenues and royalties.

Climate Change: New (or expanded) coal mining proposals are creating increased scrutiny because of climate change concerns (methane emissions from deep mines, and the burning of coal to generate power). There is significant sensitivity to this issue for mines that supply coal to power generators in the U.S., China and India.

Safety: High accident rates in some geographies (e.g. China, Russia and India), coupled with a number of high profile mining incidents in others (e.g. U.S., Australia) have drawn significant attention to mining companies' safety records and high-risk extraction methods such as retreat mining. The safety records of mines in developing or emerging markets may be unacceptable when compared to standards adopted in areas like the U.S., Australia and Western Europe that may have more rigorous regulatory oversight. Underground mining operations may have a greater sensitivity due to the tendency for fatalities to occur as cluster events.

Key Environmental Issues for Specific Metals

Mining, as broadly defined, includes both the extraction and milling processes. Methods used for different metals present specific environmental challenges.

Metal	Extraction Methods	Milling Processes
Non-Ferrous:	■ Open pit	■ Crushing and grinding
Base Metals (e.g. copper, nickel, tin)	■ Underground	■ Flotation
	■ Heap or in-situ leaching	■ Leaching
Non-Ferrous:	■ Open pit	■ Crushing and grinding
Precious Metals (e.g. gold, silver)	■ Underground	■ Flotation
	■ Heap Leaching	■ Cyanide leaching
Uranium	■ Open pit	■ Crushing and grinding
	■ Underground	■ Flotation
	■ In situ leaching	■ Leaching

Developed in conjunction with Sustainable Finance, Ltd., 2007, last updated in 2012

Metal	Extraction Methods	Milling Processes
Coal	<ul style="list-style-type: none"> Strip mining Open pit Underground Mountain top removal 	<ul style="list-style-type: none"> Flotation Coal washing
Iron Ore	<ul style="list-style-type: none"> Open pit Underground 	<ul style="list-style-type: none"> Flotation Leaching

Guidance on the specific environmental and social risks that may be associated with each mining method is provided below.

Extraction Method	Key Issues / Guidance
Open pit	<ul style="list-style-type: none"> Potential significant loss of natural habitat and biodiversity. Significant earth disturbance, although topsoil and overburden usually kept for site rehabilitation Potential resettlement (especially outside of Organization for Economic Development (OECD) countries-some other way to generalize?) Rehabilitation planning, financing and management critical Tailings management (and associated water quality issues, including acid mine drainage) may be an issue Heap Leaching <ul style="list-style-type: none"> Typically used with lower grade ores Crushed ore is heaped in large piles or as fill in lined valleys Cyanide is typically sprayed over the piles for gold leaching and hydrochloric or sulfuric acid is used for non-ferrous metal extraction. The leached solution is then recovered and processed. Can result in contamination of surface and groundwater resources.
In situ leaching	<ul style="list-style-type: none"> Little surface disturbance and no tailings or waste rock generated May require explosive or hydraulic fracturing Typically involves injection of acids and other contaminants into the fractured rock formation Potentially mobilizes heavy metals and radioactive heavy metals Potential contamination of groundwater (requires regular monitoring during and after mining operations) limits locations at which this method can be safely utilized
Mountain top removal	<ul style="list-style-type: none"> Controversial and much-opposed practice often involving significant natural habitat destruction, large-scale use of explosives, and damage to adjacent valleys and water courses Social and community impacts may be significant Use of this practice largely restricted to eastern US
Strip mining	<ul style="list-style-type: none"> Natural habitat loss and earth disturbance, although topsoil and overburden usually kept for site rehabilitation
Underground – continuous mining	<ul style="list-style-type: none"> Potential collapse of mines poses safety risks to miners May result in subsidence (property damages and changes in hydrology) Coal mine methane can be encountered and is highly combustible, creating hazard to mine stability and miners' safety (major cause of mortalities in China, India, US) Other dangerous atmospheres such as carbon monoxide and sulphur dioxide may exist, creating a hazard to miner's safety.
Underground – longwall mining	<ul style="list-style-type: none"> Better safety record than continuous mining due to fewer workers underground May cause subsidence (property damages and changes in hydrology) Coal mine methane can be encountered and is highly combustible, creating hazard to mine stability and miners' safety (major cause of mortalities in China, India, US) Other dangerous atmospheres such as carbon monoxide and sulphur dioxide may exist, creating a hazard to miner's safety.

Extraction Method	Key Issues / Guidance
Underground – uranium mining	<ul style="list-style-type: none"> Uranium ore emits radon gas, a cancer-causing radioactive gas – mines require adequate ventilation and monitoring Other dangerous atmospheres such as carbon monoxide and sulphur dioxide may exist, creating a hazard to miner's safety. Concerns about security and weapons proliferation downstream in the supply chain
Milling Process	Key Issues / Guidance
Coal washing	<ul style="list-style-type: none"> Waste water is generally a slurry held in lagoons – highly polluting and containing toxic metals and compounds indigenous to the ore body Potential degradation of water resources either by drawdown of groundwater levels, diversion or damming of surface waterways, or contamination of waters by accidental site discharges
Cyanide leaching	<ul style="list-style-type: none"> Use (and transport) of cyanide poses risks to workers and communities Discharge of effluents containing heavy metals may contaminate water resources Tailings dams and long-term management may be an issue – tailings laden with cyanide add complexities to storage and disposal International Cyanide Management Code certification and chemical destruction of the cyanide is considered best practice
Flotation	<ul style="list-style-type: none"> Tailings storage and disposal management Discharge of effluents containing heavy metals may contaminate water resources
Crushing and grinding	<ul style="list-style-type: none"> Significant releases of dust containing metals, including mercury, may result from drying the ore concentrate
Leaching	<ul style="list-style-type: none"> Discharge of effluents containing heavy metals may contaminate water resources

III. Sensitive Countries for Metals & Mining Transactions

A combination of weak governance, legacy poor performance in the sector, and environmental and social sensitivities associated with exploration and production techniques can combine to create particular reputational and investment risks in the metals and mining sector in some countries and regions. If a client has projects in development in any of these countries, please consult the [ESG Transaction Review Team](#) for additional guidance.

Bangladesh	Dem. Rep. of Congo	Indonesia	Nigeria	Turkmenistan
Bolivia	Ecuador	Kazakhstan	Pakistan	United States
Brazil	Equatorial Guinea	Laos	Papua New Guinea	Uzbekistan
Cameroun	Ethiopia	Liberia	Peru	Zambia
Chad	Guinea	Mauritania	Philippines	Zimbabwe
China	India	Niger	Sudan	

Environmental & Social Due Diligence

Metals & Mining – Explanation of Best Practices and Guidance to Assess Client Performance

Environmental and Social Management

All projects should include an Environmental Impact Assessment (EIA). Ensure that there has been full and effective consultation and that the EIA has been submitted to and approved by relevant authorities.

Most companies will have an environmental and social policy; however, there is wide variation in the credibility, impact and depth of management plans, so appropriate diligence needs to be done to determine the strength of the program. Common elements of a strong Environmental and Social Management System (ESMS) include:

- *clear technical standards and criteria*, including a thorough description of resources and extraction technologies and the rationale for using these technologies;
- *clear environmental standards*, based on a baseline environmental assessment and an assessment of potential social and environmental impacts of operations, with time-bound and quantitative commitments on targets and deliverables;
- *clear social requirements*, based on the needs and rights of local people (particularly indigenous peoples), provision of a safe and healthy working environment and the long term contribution to local and national economies; and
- *clear monitoring, process and transparency requirements*, based on consistent benchmarking against objective and measurable performance standards, a commitment to obey the law, development through consultation with relevant stakeholders, and fair, transparent, independent decision-making procedures which avoid conflicts of interest. Documentation of audits and training programs are crucial to monitoring and transparency.

Companies should also be able to demonstrate a clear chain of command in terms of environmental and social responsibility at operational levels, and ultimate accountability for performance should be vested with senior management. Strong ESMS plans will require managers and other staff (including contractors) to receive training in ESMS and will include appropriate incentives to insure compliance. Certification under ISO 14001 for environmental management is considered a best practice. As a major area of risk relates to the activities of third party goods and services suppliers, evidence that companies recognize and are trying to manage these risks is an important indicator of both commitment and capacity. Joint ventures with local companies are a common mechanism for multinational mining companies to access resources in emerging markets.

New assets may be located in areas of high biodiversity. Check if the company has commitments to avoid operations in environmentally sensitive areas such as World Heritage Sites or high conservation value forests. International Council on Mining & Metals (ICMM) commitments regarding operating in ecologically sensitive areas, plus heightened attention from NGOs make assets in ecologically important areas increasingly difficult to develop.

Legal claims against the company might include fines, penalties, prison sentences for staff (arising from pollution, compensation from communities that have lost land or assets), significant delays in construction/development of projects/infrastructure, impaired ability to access new assets based on previous performance.

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Evidence of active participation in a recognized industry forum with clear standards (e.g. International Council on Mining and Metals) can also be a leading indicator of commitment to environmental and social performance (though free riders are not unknown). Evidence of active engagement and benchmarking against peers in such forum is usually indicative of stronger and more significant commitment.

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Environmental & Social Due Diligence

Metals & Mining – Explanation of Best Practices and Guidance to Assess Client Performance

Health and Safety

The occupational health & safety (OHS) record of a company is a leading indicator of wider environmental and social commitments. Trends need to be interpreted carefully, but declining incidence and favorable comparison of incidents against industry peers are leading indicators of overall performance. For underground coal mines, high fatality rates and cluster events have drawn national criticism in a number of countries (including USA, Russia, India and China). Certification under OHSAS 18001 for Health and Safety is considered a best practice.

Stakeholder Engagement

Community liaison provides a mechanism through which the company can consult with local stakeholders and also a way in which these stakeholders can voice concerns and grievances. Companies that do not have a community liaison (or similar) mechanism in place will be less likely to understand or respond to local concerns, which are often the flash point of tensions between communities and companies over poor practices. Indicators that there is effective consultation at the operational level include evidence of regular meetings with stakeholders, the presence of a grievance mechanism and partnerships with civil society organizations and/or local communities to address environmental and social issues.

If operations occur in areas where there are indigenous peoples, clients should be able to demonstrate with a high degree of comfort that indigenous peoples have been involved in free prior informed consultation in relation to mining activities.

If the company has been subject to protests, it is important to understand the nature and scope of opposition. Determine whether the views of critics are credible (or will be perceived as such by the client), the degree to which activists have access to the media, and whether they represent local or international perspectives. Some NGOs or activists may pose greater reputational risk to the firm than that of other activists. Note as well whether campaigns have documented specific grievances towards the company and its specific operations versus more generalized grievances towards the sector in general. Incidents of violence, protest by local communities, international media attention, kidnapping, and occupation or damage to plants and equipment are clear indicators of problems. A particular area of concern may also relate to the use of security forces (government or private) and whether firearms have been discharged in relation to company operations or security of assets. The company should demonstrate how it has addressed any issues.

Transparency

Best practice includes both the public disclosure of an annual report describing environmental and social performance (ideally verified by third parties) and (ii) evidence of effective consultation with communities adjacent to assets (including the presence of a grievance mechanism for those communities). It is also important to note whether companies disclose the results of environmental and social performance assessments to local peoples and employees as this is indicative of overall commitments to transparency and stakeholder engagement.

It is important that companies disclose the payments made to host governments as the principal concerns are that revenues may be misused by government, there may not be an equitable distribution of tax revenues/benefits with affected communities, and companies may not be paying a fair rate for the resources they are exploiting. To counter these concerns there is a growing voice for disclosure of information (see the Extractive Industries Transparency Initiative) from both companies and governments to demonstrate the scale and use of revenues.

Environmental & Social Due Diligence Metals & Mining – Explanation of Best Practices and Guidance to Assess Client Performance

Climate Change

There is increasing pressure on all companies across industries to acknowledge and take steps to address climate change and the impact of their operations on the problem. This concern is especially prevalent in the coal industry, where concern to date has focused on coal-fired generation. However, increasingly activists are looking further upstream in the value chain.

The energy sources and total energy consumption should be part of the evaluation of the mining asset. Efforts should be made to optimize equipment utilized onsite to reduce energy consumption. When power is generated onsite, carbon emissions should be considered in the design of the power units to the extent practicable. Assets should seek to reduce carbon footprints where possible through alterations in operational practices such as use of rail in lieu of trucking, local sources of run of river hydro for power and other opportunities that may be present locally. Some projects may generate tradable carbon credits and additional economic value for the asset.

Companies which acknowledge the risks posed by climate change and which are taking steps to address it (participation in industry forums or coalitions, working on clean coal / carbon capture & storage research, etc.) are less likely to be targeted

Environmental & Social Due Diligence Guidance Metals & Mining

Environmental and Social Management

1. Where are the company's operations located, and what extraction and milling techniques are being utilized?
2. If the transaction relates to a specific project, has the company undertaken an environmental impact assessment (EIA) and has it been approved by relevant authorities? Will any rivers or other water resource be redirected or relocated? Has there forest compensation plans in-place?
3. Are there any operations currently located or planned near protected areas? If so, please describe approval process for development and mitigants for potential impacts.
4. Does the company have an environmental and social management system (ESMS) in place (e.g. ISO 14001)? If so, please describe key features, including but not limited to a) scope, b) environmental and social impact assessment, c) monitoring plan, d) third-party verification procedures, e) standards/targets and ongoing performance evaluation criteria.
5. Do the company's environmental policy and management require the protection of biodiversity or commit to the adherence of industry best practices (e.g. Energy and Biodiversity Initiative)? Please describe any monitoring and management systems.
6. How is the ESMS implemented? Please describe employee and contractor, if applicable) training procedures and responsibility for performance at both the operational and management levels.
7. Is there a mine closure plan? Has it been approved by relevant authorities? Are funds being reserved to adequately fund closure?
8. Do contracts with third parties require contractors to adhere to the company's environmental, social and safety standards?
9. Are there outstanding legal claims or actions relating specifically to the company's environmental and social performance? If so, please describe.
10. Is the company an active member of the International Council on Mining and Metals (ICMM) or another forum / coalition that seeks to address environmental and social issues?
11. Has the company formally recognized climate change as an environmental concern? Does the company measure its greenhouse gas emissions and report on these, and are there any efforts underway to reduce emissions from the company's operations? Does the company report on energy usage?

Health and Safety

12. Were any employees or contractors killed or seriously injured in accidents in the course of their work this past year or in previous years? If so, please describe the nature of the accidents. What is the annual incident rate for non-fatal days lost for the last few years?
13. Is there a formal Health and Safety plan in place? Is the operation OHSAS 18001 certified what documentation is available regarding audits of the health and safety plan as well as the training program associated with the plant?
14. Are any losses used in the operations? What are the safety and security measures surrounding these operations?

Stakeholder Engagement

15. Does the company consult regularly with local stakeholders and communities about its operations? Please describe the frequency of engagement and any specific community liaison / grievance mechanisms that are in place.
16. Do any of the company's operations occur in areas where there are indigenous peoples? If so, have they been consulted in relation to the company's operations? Will any communities be displaced or require relocation by the operation?
17. Has the company ever been subject to complaints, campaigns, negative media reports or protests from NGOs, activists or local communities over environmental and/or social issues? If so, please describe.
18. Has it been necessary to shut down operations at company assets due to legal enforcement or local stakeholder grievances? If so, describe.

Transparency

19. Does the company report publicly against its ESMS targets and objectives? If so, how regularly and in what form?
20. Does the company disclose payments it makes to host governments? Is there transparency in how governments distribute revenue or royalty payments?

Additional Questions for Coal Mining Companies

21. If the company does any deep mining, what is the company doing to address the risks associated with methane leakage (capture, storage, etc)?
22. What are the company's largest customers? Does the company sell a significant amount of coal to any power companies – if so, which ones?



Abbe David Lowell
direct tel (202) 974-5605
adlowell@chadbourne.com

October 20, 2014

By E-mail

Tyler Gellasch, Esq.
Permanent Subcommittee on Investigations
Homeland Security & Governmental Affairs Committee
United States Senate
199 Russell Senate Office Building
1st & Constitution, N.E.
Washington, D.C. 20510

Re: Follow-Up Requests

Dear Mr. Gellasch:

I write on behalf of The Goldman Sachs Group, Inc. (“Goldman Sachs” or the “Firm”) in connection with the efforts of the Permanent Subcommittee on Investigations (the “Subcommittee”) to better understand the nature and scope of activities of U.S. banks in physical commodities.¹ Goldman Sachs responds to certain requests you have made by email on October 8, 2014 (the “October 8 Email”) as further refined through our telephone conversations—as well as additional telephonic requests that you have made—which we reproduce below for your convenience. We are continuing to work diligently on your remaining requests and will supplement this submission with additional responses as soon as possible.

¹ The Goldman Sachs Group, Inc. is the Firm’s publicly-held parent company. Information relevant to the Subcommittee’s requests involves the activities of affiliates controlled by the Firm operating both inside and outside the United States.



Tyler Gellasch, Esq.

-2-

October 20, 2014

October 8 Email Request No. 2: Provide information regarding the tonnage of aluminum that was loaded out of one Metro International Trade Services LLC ("Metro") warehouse in Detroit and back into a second Metro warehouse in Detroit.

In response to this Request, Metro has prepared the table below showing the tonnage of aluminum that was loaded out each year during the period from February 2010 to January 2014 from one Metro-operated shed in the Detroit warehouse location and directed to be shipped to another Metro-operated shed in the Detroit warehouse location. Such aluminum was directed to be shipped to such location pursuant to the metal owner's instructions. After metal is loaded out, the owner has various options, including selling the aluminum to a consumer of physical aluminum, storing the aluminum off-warrant or re-warranting the metal in an LME warehouse. To the extent that the metal owner decides to re-warrant the aluminum in a Metro-operated shed and then cancels the warrant, such aluminum would be placed in the queue pursuant to the LME rules and loaded out accordingly.

ALUMINUM TONNAGE SHIPPED (METRO WAREHOUSE (DETROIT) TO METRO WAREHOUSE (DETROIT))	
YEAR SHIPPED	TONNAGE SHIPPED (MT)
2010 (FROM FEBRUARY)	69,725
2011	100,000
2012	200,000
2013	219,025
2014 (THROUGH JANUARY)	38,975

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Permanent Subcommittee on Investigations

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Permanent Subcommittee on Investigations
EXHIBIT #22a

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5	Amount related to specific deals			
6	Deal #	mt	FA/mt	Total
7				
8	DET-1524	50,046,872	\$ 198.00	\$ 9,909,280.66
9	DET-1524S	19,949,939	\$ 20.16	\$ 402,190.77
10	DET-1524S	21,407,022	\$ 15.00	\$ 321,105.33
11				
12				
13	DET-1500	159,323,000	\$ 36.00	\$ 5,735,208.00
14	DET-1500	37,600,000	\$ 35.95	\$ 1,352,720.00
15	DET-1500	8,075,000	\$ 35.95	\$ 288,396.25
16	DET-1500(N)	84,207,028	\$ 160.00	\$ 13,473,124.48
17				
18				
19				
20	DET-1500(N)	17,458,813	\$ 160.00	\$ 2,793,410.08
21				
22				
23				
24	DET-1500	1,001,835	\$ 30.00	\$ 30,054.78
25	DET-1500	1,000,000	\$ 35.95	\$ 35,950.00
26	DET-1500	503,248	\$ 30.00	\$ 15,097.44
27		500,000	\$ 35.95	\$ 17,975.00
28	DET-1500	749,284	\$ 30.00	\$ 22,478.52
29		750,000	\$ 35.95	\$ 26,962.50
30	DET-1500	5,003,174	\$ 30.00	\$ 150,095.22
31		5,025,000	\$ 35.95	\$ 180,648.75
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GLENCORE Ltd.

METRO INTERNATIONAL TRADE
20495 Pennsylvania Avenue
48180 Brownstown MI

INVOICE NO: 690113-2 AMENDED
COPY

TERMS: Payment to be remitted via
Telegraphic Transfer before
{Payment Term Needed}

ATTN: ACCOUNTS PAYABLE

REFERENCE:

DATE: 21-June-13

CONTRACT: 162-13-54802-001-S

P.O.: 198 prom for det-1524

	Regular Invoice	US DOLLARS
Charges:	50,046.872 mt X 198 dollars/mt=	9,909,280.66
	Total Due Glencore Ltd.	25-June-13 9,909,280.66
Payment:	Payment via Telegraphic Transfer to: Citibank NA New York ABA 021 000 089 Account Name Glencore Ltd. Account# 3042-5974	

APPROVED
Freight Allowance
Gabriella Vognini
Location Detroit
Date 6 Dec 2013
DEAL # DET-1524
Metal Type Aluminum
FA \$ 198/mt
Total MT 50,046.872
Batch #
Wire Date JUNE 27, 2013
See attached for details
Needs 2nd & 3rd Approval

APPROVED
LEO S PRICHARD SSP
Location Detroit
Date 26 JUN 2013
Desc FREIGHT ALLOWANCE

Three Stamford Plaza - 301 Treasurer Boulevard - Stamford CT 06901-3244 - U.S.A.
Telephone (203) 328-4900 - Telefax (203) 978-2610

Permanent Subcommittee on Investigations

EXHIBIT #22b

Confidential

GSPSICOMMODS00046873

1005

GLENCORE Ltd.

METRO INTERNATIONAL TRADE
20495 Pennsylvania Avenue
48180 Brownstown MI

INVOICE NO: 690117-2 AMENDED
COPY

TERMS: Payment to be remitted via
Telegraphic Transfer before
(Payment Term Needed)

ATTN: ACCOUNTS PAYABLE

REFERENCE:

DATE: 21-June-13

CONTRACT: 162-13-54799-002-P

P.O.: 20 dollars for det1524s

	Regular Invoice	US DOLLARS
Charges:	19,949,999 x 20.16 ⁸⁸ 20,103,874 int X 28 dollars/mt = 402,061.42	402,061.42
	Total Due Glencore Ltd.	25-June-13 402,061.42
Payment:	Payment via Telegraphic Transfer to: Citibank NA New York ABA 021 000 089 Account Name Glencore Ltd. Account# 3042-5974	402,190.77 ⁸⁸

APPROVED
Freight Allowance,
Cable Allowance,
Location: Detroit
Date: 6/26/2013

DEAL # DET-1524S
Metal Type: Aluminum
FA \$ 20.16/mt
Total MT 19,949,999
Batch # 001216
Wire Date June 20, 2013
See attached for details
*Needs 2nd & 3rd Approval

APPROVED
LED S. RICHARD ⁸⁸
Location: Detroit
Date: 26 JUN 2013
Desc: PREPACT ALUMINUM

Three Stamford Plaza - 301 Tresser Boulevard - Stamford CT 06901-3244 - U.S.A.
Telephone (203) 328-4900 - Telefax (203) 978-2610

Permanent Subcommittee on Investigations

EXHIBIT #22c

Confidential

GSPSICOMMODS00046874

1006

GLENCORE Ltd.

METRO INTERNATIONAL TRADE
6850 Middlebelt Road
48174 Romulus MI

INVOICE NO: 706265

1290 MCO
2455 DT

TERMS: Payment to be remitted via
Telegraphic Transfer before
(Payment Term Needed)

ATTN: ACCOUNTS PAYABLE

REFERENCE:

DATE: 24-September-13

CONTRACT: 162-13-54798-001-S

P.O.: 15/mt swap ball

	Regular Invoice	US DOLLARS
Charges:	DET-15245 21,407.022mt at \$15/mt Premium	321,105.33
Payment:	Total Due Glencore Ltd. Payment via Telegraphic Transfer to: Citibank NA New York ABA 021 000 089 Account Name Glencore Ltd. Account# 3042-5974	321,105.33
	26-September-13 APPROVED Leo Prichard Location DETROIT Date 25 SEP 2013 Desc PREPAID ALUMINUM	



APPROVED
Freight Allowance
Katie Kuhlman
Location DETROIT
Date 9/25/13

DEAL # DET-15245 ✓
Metal Type ALUMINUM ✓
FA \$ 15/mt ✓
Total MT 21,407.022 ✓
Batch # 001249
Wire Date 26-SEP-2013
See attached for details
*Needs 2nd & 3rd Approval

Three Stamford Plaza - 301 Tresser Boulevard - Stamford CT 06901-3244 - U.S.A.
Telephone (203) 328-4900 - Telefax (203) 978-2610

Permanent Subcommittee on Investigations

EXHIBIT #22d

Confidential

GSPSICOMMODS00046875

1007

Red Kite Master Fund Limited

Metro International Trade Services
6850 Middlebelt Road
Romulus,
Michigan 48174
USA

Your ref: DET 1500

Our ref:

Date: 13 November 2012

DEBIT NOTE					
Aluminium T-Bar/Ingots/Sows					
LME Brands					
Origin Canada / USA					
To Agreed Initial Rebate on 6,373 lots Aluminium					
Cancelled in November 2012 in LME Warehouse Metro Detroit					
Ref	date	no of lots	Round weight /mt	rebate /mt	
RDET000709	07-Nov-12	1,000	25,000		
RDET000710	08-Nov-12	754	18,850		
RDET000711	08-Nov-12	2,725	68,125		
RDET000712	09-Nov-12	1,062	26,550		
RDET000713	09-Nov-12	832	20,800		
		6,373	159,325	@ USD 36.00 PMT	
ACTUAL LOT 158,471.854					
Payment by SWIFT/DIRECT AUTHENTICATED TELEX to:					
Standard Chartered Bank London					
Swift Code: SCBLGB2L					
For Account: Red Kite Master Fund Limited					
Account Number 01 01 2550725 50					
IBAN: GB14SCBL60910412550725					
Cover with Standard Chartered Bank New York					
Swift Code: SCBLUS33					
For and on behalf of					
Red Kite Master Fund Limited					
					Total Payable
					USD 5,735,700.00
					APPROVED
					FOT PMT
					Gabriella Vignati
					Location DETROIT
					Date 11/13/2012
					DEAL # DET-1500
					Material Type ALUMINIUM
					Unit # 500 mt
					Total MT 159,325
					Wire Date 13 NOV 2012
					See attached for details
					APPROVED
					Leo Prichard
					Location DETROIT
					Date 13 Nov 12
					Desc. PREPAID FREIGHT
					ALLOWANCE

RED KITE MASTER FUND LIMITED
P.O. Box HM 1540, Hamilton HM FX, Bermuda
Email: info@redkite.hm

Permanent Subcommittee on Investigations

EXHIBIT #22e

Confidential

GSPSICOMMODS00046876

1008

Red Kite Master Fund Limited

Metro International Trade Services
6850 Middlebelt Road
Romulus,
Michigan 48174
USA

Your ref: RDET00719
Our ref:
Date: 20 December 2012

DEBIT NOTE	
<p>Aluminium T-Bars / Sows LME Brands Origin Canada / USA</p>	
<p>To Agreed Initial Rebate on 704 lots Aluminium in LME Warehouse Metro Detroit</p>	
<p>Cancellation date 19 Dec 2012 17,600.000 mt nett USD 35.95 PMT</p>	
<p>APPROVED Leo Prichard <i>SS?</i> Location <u>DETROIT</u> Date <u>3 Jan 13</u> Desc <u>FOT REFUND</u></p>	
<p>Payment by SWIFT/DIRECT AUTHENTICATED TELEX to: Standard Chartered Bank London Swift Code: SCBLGB2L For Account: Red Kite Master Fund Limited Account Number 01 01 2550725 50 IBAN: GB14SCBL60910412550725 Cover with Standard Chartered Bank New York Swift Code: SCBLUS33</p>	
<p>For and on behalf of Red Kite Master Fund Limited</p>	
<p><i>Pay</i> <u>USD 682,720.00</u></p>	
<p>APPROVED FOT PMT Gabriella Vignola Location <u>DETROIT</u> Date <u>Jan 3, 2013</u> DEAL # <u>DET-1500</u> Metal Type <u>Aluminum</u> For S <u>35.95 mt</u> Total MT <u>17,600mt</u> Batch # <u>-</u> Wire Date <u>ASAP</u> See attached for details</p>	
<p><i>*Note FOT is Always calculated at rounded MT.</i></p>	

*Request
Actual P
Rate P
Original
Michael
Approve*

RED KITE MASTER FUND LIMITED
PO, Box HM 1540, Hamilton HM PX, Bermuda
E-mail: info@redkitefund.com

Permanent Subcommittee on Investigations

EXHIBIT #22f

Confidential

GSPSICOMMODS00046877

Metro International Trade Services
6850 Middlebelt Road
Romulus,
Michigan 48174
USA

Your ref: RDE007759
Our ref:
Date: 28 January 2014

Int# DET1500002

DEBIT NOTE

Aluminium T-Bars
LME Registered Brands

To Agreed Warranting Rebate on 704 lots Aluminium
in LME Warehouse Metro Detroit

Reference	Issue date	Warrants	MT
RDE1000719	22-Dec-13	704	17,458.816

Total 704 17,458.816

Incentive 17,458.816 mt nett @ USD 160.00 PMT
Adjustment 17,458.816 mt nett @ USD 7.98 PMT
Nett Payable

Payment by SWIFT/DIRECT AUTHENTICATED TELEX to:
Standard Chartered Bank London
Swift Code: SCBLGB2L
For Account: Red Kite Master Fund Limited
Account Number 01 01 2550725 50
IBAN: GB14SCBL60910412550725
Cover with Standard Chartered Bank New York
Swift Code: SCBLUS33

For and on behalf of
Red Kite Master Fund Limited

APPROVED
Leo Prichard 887
Location DETROIT
Date 31 JAN 14
Desc ~~REBATE ALLOWANCE~~
Total Payable

2793,410.68
USD 2,793,410.56
USD 139,321.35
USD 2,932,731.91
USD 2,932,731.43

APPROVED
Freight Allowance
Gabelekin Vaynskiy
Location DETROIT
Date 24 JAN 2014
DEAL # DET1500002
Metal Type ALUMINIUM
FA \$ 160.00
Total MT 17,458.813
Batch # 007513
Wire Date Des Account
S/C 1500002

Red Kite Master Fund Limited

Metro International Trade Services 6850 Middlebelt Road Romulus, Michigan 48174 USA		Your ref: RDET000709, RDET000710, RDET000712, RDET000713 Our ref: Date: 28 January 2014 <i>INVT</i> DETISCO01	
DEBIT NOTE			
Aluminium T-Bars LME Registered Brands		APPROVED Leo Prichard <i>882</i> Location <u>DETROIT</u> Date <u>31 JAN 14</u> Desc <u>PREPAID ALUMINUM</u> Total Payable	
To Agreed Warranting Rebate on 3,373 lots Aluminium in LME Warehouse Metro Detroit			
Reference	Issue Date	Warrants	MT
RDET000709	28-Nov-13	1,000	25,091.981
RDET000710	28-Nov-13	479	12,016.974
RDET000712	28-Nov-13	1,062	26,493.732
RDET000713	28-Nov-13	832	20,603.945
Total		3,373	84,206.632
Incentive		84,206.632 mt	nett @ USD 160.00 PMT
Adjustment		84,206.632 mt	nett @ USD 7.26 PMT
Nett Payable			
Payment by SWIFT/DIRECT AUTHENTICATED TELEX to: Standard Chartered Bank London Swift Code: SCBLGB2L For Account: Red Kite Master Fund Limited Account Number 01 01 2550725 50 IBAN: GB14SCBL60910412550725 Cover with Standard Chartered Bank New York Swift Code: SCBLUS33		APPROVED Freight Allowance Gabriella Vignola Location <u>DETROIT</u> Date <u>31 JAN 2014</u> DEAL # <u>DETISCO01</u> Metals Type <u>ALUMINUM</u> FA \$ <u>160.00</u> Total MT <u>84,206.632</u> Batch # <u>000111</u> Who Date <u>Leo Prichard 31/1/14</u> See attached for details	
For and on behalf of Red Kite Master Fund Limited		<i>USD 13,473,124.48</i> <i>USD 13,473,124.48</i> <i>USD 511,340.15</i> <i>USD 14,084,464.63</i> <i>OT</i> <i>TOTAL</i>	

01.31.14
WASH/AR

Permanent Subcommittee on Investigations
EXHIBIT #22h

Confidential

GSPSICOMMODS00046879

1011

WARRANT FINANCE AGREEMENT

DATED 15 SEPTEMBER 2010

DB ENERGY TRADING LLC

AND

METRO INTERNATIONAL TRADE SERVICES LLC

1

Permanent Subcommittee on Investigations
EXHIBIT #23

CONFIDENTIAL

GSPSICOMMODS00047434

THIS AGREEMENT is made on 15 September 2010

BETWEEN:

- (1) **DB ENERGY TRADING LLC** a company incorporated in the State of Delaware with company registration number 38-3712197 and having its registered address at 1301 Fannin, Suite 2300, Houston TX 77002 U.S.A. (DBET); and
- (2) **METRO INTERNATIONAL TRADE SERVICES LLC** a company organized in the State of Delaware with company registration number 3544210 and having its registered address at 6850 Middlebelt Road, Romulus, MI 48174 U.S.A. (Counterparty).

Collectively, the Parties (and Party shall be construed accordingly).

WHEREAS:

- (A) The Parties intend to enter into a transaction in respect of Aluminium meeting LME delivery requirements (the Transaction).
- (B) The Parties wish to enter into the Transaction for the Finance Period at discounted warehouse rental rates in the manner set out in and subject to the provisions of this Agreement.

IT IS HEREBY AGREED as follows:

1. INTERPRETATION

In this Agreement:

- 1.1 The following terms and expressions shall bear the meanings given to them hereunder, unless otherwise defined in this Agreement or the context requires otherwise:

Agreement, or This Agreement, means the present contract with the exclusion of any other document.

Aluminium means primary aluminium with impurities no greater than in the registered designation P1620A in the North American and International Registration Record entitled *International Designations and Chemical Composition Limits for Unalloyed Aluminium* (revised March 2007).

Business Day means a day (other than a Saturday or Sunday) on which commercial banks are open for general business in London and Detroit, and for the purposes of settlement only, New York.

Effective Date means the date on which this Agreement becomes legally binding upon the Parties, such date to be the date on which both parties have duly executed this Agreement.

Event of Default means any event or circumstance specified in Clause 11.

Final Warehouse means a warehouse in a FTZ, Detroit U.S.A owned by the Counterparty.

Finance Period means from 15Sep10 to 16Feb11 (the Finance Period End Date).

FOT Charge means "free-on-truck", and as of the date of this Agreement is USD32.95 per ton of Aluminium.

Goods means the Notional Amount of Aluminium on the Effective Date in any of the relevant Shapes, represented (i) initially by Warrants in the SWORD account of Deutsche Bank AG, London Branch and held on behalf of DBET and (ii) alternatively during the term of this Agreement, as a Warehouse Receipt.

Initial Warehouse means LME listed warehouse, Detroit U.S.A. owned by the Counterparty.

LME means the London Metal Exchange operated by the London Metal Exchange Ltd. or any successor thereto.

Logistics Charge means a charge for logistics in respect of moving any Aluminium between the Initial Warehouse and the Final Warehouse, and as of the date of this Agreement is USD10 per ton of Aluminium.

Notional Amount means 4000 lots of Aluminium (with a weight tolerance of +/- 2 per cent).

Party means a party to this Agreement.

Queue means the time period from (and including) the date when the holder of Aluminium instructs the Warehouse Company to take the Aluminium out of a Warehouse to (and including) the date when the Aluminium actually leaves a Warehouse.

Reduced Rent means the rent rate agreed by the Parties for the Finance Period

Relevant Warehouse means (i) any warehouse for the storage of Aluminium which as of any relevant time is listed as an approved warehouse on the LME website (www.lme.com) and (ii) where such Aluminium may be held in the form of Warrants by a relevant holder.

Rent Limit means USD28.35 per ton of Aluminium for the time period in the queue prior to the Aluminium leaving the Initial Warehouse.

Shape means ingots, t-bars or sows.

Slots means trucking slots that a holder of metal may request from the Warehouse Company at a Warehouse for the purpose of taking the relevant metal out of the Warehouse.

Transaction Document means this Agreement and/or any other document designated as such by the Parties.

Transport Cost means the sum of the FOT Charge and the Logistics Charge.

USD or U.S. Dollars means the lawful currency of the United States of America.

Warehouse means both the Initial Warehouse and Final Warehouse.

Warehouse Company means Counterparty.

Warehouse Receipt means a transferable and numbered receipt issued by the Warehouse Company, on which it is certified that the holder is entitled to receive a specific quantity of goods of a specific kind and quality, and which shall be construed to be a document of legal title, with the details of the Goods placed on warrant under Clause 3.3 including, where applicable, the relevant numbering of the Goods.

Warehouse Services mean the services to be provided, under this Agreement and for the Finance Period, by the Warehouse Company and in accordance with the standard terms and conditions of the Warehouse Company.

Warrant means a transferable and numbered receipt, settled through SWORD, on which it is certified that the holder is entitled to receive a specific quantity of goods of a specific kind and quality, and which shall be construed to be a document of legal title, with the details specified in Annex 1.

1.2 In this Agreement:

- (a) words denoting persons include bodies corporate and unincorporated associations of persons;
- (b) references to a party to this Agreement include the successors or assigns (immediate or otherwise) of that party;
- (c) the words including and include shall mean including without limitation and include without limitation, respectively;
- (d) any reference importing a gender includes the other genders;
- (e) any reference to a time of day is to Detroit, U.S.A. time;
- (f) any reference to US\$ or US Dollars is to United States dollars;
- (g) any reference to a period shall, where the last day of that period is a day that is not a Business Day, terminate on the next Business Day;
- (h) any reference to writing includes typing, printing, lithography, photography and facsimile but excludes any other form of electronic communication;
- (i) any reference to a document is to that document as amended, varied or novated from time to time otherwise than in breach of this Agreement or that document;
- (j) an Event of Default being outstanding means that it has not been waived;
- (k) any reference to a company includes any company, corporation or other body corporate wherever incorporated; and
- (l) any reference to a company or firm includes any company or firm in succession to all, or substantially all, of the business of that company or firm.

2. REPRESENTATIONS AND WARRANTIES

2.1 DBET represents and warrants to the Counterparty as follows:

- (i) It is duly incorporated under the laws of Delaware as a limited liability corporation.
- (ii) DBET has all necessary corporate authority, for DBET to sign and deliver, and perform the transactions contemplated in this Agreement and this Agreement constitutes valid and binding obligations of DBET.
- (iii) Its performance of its obligations under this Agreement is lawful under the

laws of its incorporation.

2.2 Counterparty represents and warrants to the Counterparty as follows:

- (i) It is duly incorporated under the laws of the State of Michigan, domiciled in Michigan, registered in Michigan under Company No. 3544210.
- (ii) The Articles of Association of Counterparty include provisions which give power, and all necessary corporate authority has been obtained and action taken, for Counterparty to sign and deliver, and perform the transactions contemplated in this Agreement and this Agreement constitutes valid and binding obligations of Counterparty.
- (iii) Its performance of its obligations under this Agreement are lawful in the United States of America and the State of Michigan.

3. WARRANT FINANCE TRANSACTION AND RENT

- 3.1 Following the Effective Date and in respect of the Finance Period, the Parties agree that DBET will request the maximum number of Slots and place the Goods or part of the Goods off-warrant as soon as possible thereafter but dependent on existing demand for slots.
- 3.2 Counterparty will immediately issue to DBET a Warehouse Receipt for the Goods placed off-warrant.
- 3.3 The Parties agree that although Slots will be requested as of the Effective Date, the Goods will be in the Queue to exit the Initial Warehouse and no firm time for such exit can be given as of the date of this Agreement. DBET undertakes on a commercially reasonable basis to inform the Counterparty on a weekly basis any updates as to timing for this exit of the Goods.
- 3.4 Whilst the Goods are in the Queue, DBET shall pay warehouse rent at the full rate. However, if the rent paid by DBET exceeds the Rent Limit, then Counterparty agrees to pay any excess amount to DBET's nominated account.
- 3.5 DBET shall pay a Transport Cost to Counterparty as for the movement of the Goods from the Initial Warehouse to the Final Warehouse. In respect of the Goods, no further Transport Costs shall be payable by DBET to the Counterparty once this amount has been paid.
- 3.6 For the Finance Period, Counterparty agrees to hold in custody the Goods at either Warehouse.
- 3.7 In respect of the Finance Period, Counterparty will perform the warehousing services in accordance with the present Agreement and/or as may be agreed in writing from time to time by the Parties in the relevant confirmation.
- 3.8 If during the Finance Period, DBET decides to sell the Goods to a third party then DBET shall pay a loading charge to Counterparty to its nominated account an amount in USD equal to USD 65 per ton of Aluminium.

4. **WAREHOUSING SERVICES**

4.i In respect of this Agreement and in accordance with the Warehouse Company's standard terms and conditions applicable to the relevant Warehouse:

- (a) The Warehouse Company shall make arrangements (i) for the goods to be safely stored in each Warehouse pursuant to the terms set out in this Agreement, so that the Goods shall be labelled or numbered in such a way that the labels or numbers are clearly visible and can be identified in the records of DBET and (ii) shall supervise, manage and monitor the Goods in accordance with this Agreement and DBET's instructions and will hold the Goods in each Warehouse at all times for the whole Finance Period.
- (b) It is agreed and intended that the Warehouse Company will hold possession of the Goods in each Warehouse on account of DBET and will hold no title whatsoever.
- (c) The Warehouse Company shall issue, in respect of the Goods represented by a Warehouse Receipt, monthly commodity reports to DBET as customary for the relevant Warehouse and provide such other reports and information (including any warehouse charges outstanding) reasonably requested by DBET from time to time.
- (d) The Warehouse Company undertakes that, subject to the confidential obligations under applicable laws and regulations, any representative(s) of or person(s) nominated by DBET shall have access during all normal hours of business (subject to one (1) Business Day prior written notice) to any books, records, information or other data or system held by the Warehouse Company relating to the goods.
- (e) For the avoidance of doubt, any costs, fees or charge associated with Clause 4.2 and 4.3 above are included in the Reduced Rent.
- (f) Insurance
- (g) The Warehouse Company shall maintain at all times appropriate and sufficient levels of fire insurance with reputable insurers.
- (h) The Warehouse Company will provide DBET, on request and no later than 24 hours from DBET's request in writing, with evidence of the current insurance policies in place.

5. INDEMNITY

- 5.1 The Warehouse Company shall indemnify DBET against any liabilities, losses or damages whatsoever, including but not limited to the Goods, caused by any breach of its obligations, whether contractual or not, under this Agreement.

6. RELEASE OF GOODS

- 6.1 Thirty (30) calendar days prior to the end of the Finance Period, the Parties shall in good faith negotiate as to which actions in clause 7.2 below shall apply.
- 6.2 At the end of the Finance Period and notwithstanding the location of the Goods, the Parties may either (i) agree to enter and negotiate the terms of a new transaction or (ii) DBET may request the Counterparty to re-warrant the Goods so that they are represented by Warrants in a Warehouse.
- 6.3 Where DBET request the Goods to be re-warranted in accordance with clause 7.2 above, then Counterparty shall pay USD42.95 per ton to DBET using the account in its Standard Settlement Instructions (SSI).
- 6.4 Where DBET request the Goods to be re-warranted in accordance with clause 7.2 above, the Warehouse Company acknowledges and agrees that all the relevant expenses and fees charged and/or which may be incurred in relation to the movement of the Goods from either Warehouse to any Relevant Warehouse, shall be fully paid by the Warehouse Company with no responsibility for DBET.
- 6.5 Where DBET request the Goods to be re-warranted in accordance with clause 7.2 above and Counterparty has failed to re-warrant the Goods by the Finance Period End Date, Counterparty agrees to pay all expenses incurred in a commercially reasonable manner caused by any delay to DBET using the account in its SSI.
- 6.6 Unless otherwise provided in this Agreement, the Warehouse Company shall at all times be required to act in accordance with any and all instructions issued by DBET and shall disregard any instructions as may be received from any other third party, and shall immediately inform DBET in writing of such instructions.

7. RECORDS AND REPORTING REQUIREMENTS

The Warehouse Company shall maintain such books and records for three years after all the Goods have been Released, and shall produce, at DBET's request in writing, such statements as necessary to properly account for all the Goods so released.

8. GOVERNING LAW AND JURISDICTION

- 8.1 This Agreement and any non contractual obligations arising out of or in connection with it shall be governed by and construed in accordance with New York law.
- 8.2 Both Parties submit to the non-exclusive jurisdiction of the courts of the State of New York and Texas for any action suit, claim or proceeding arising under or relating to this Agreement, and expressly waives any objection it may have to such jurisdiction or the convenience of such forum. Each party waives, to the fullest extent permitted by applicable law, any right it may have to a trial by jury in respect of any suit, action or proceeding relating to this Agreement.

8.3 Nothing in this Agreement, whether express or implied, is intended to or shall be construed so as to confer upon or give to any person, other than the parties hereto and their respective permitted successors and assigns, any rights or remedies under or by reason of this Agreement

9. NOTICES

9.1 The contact details of each Party for all communication in connection with this Agreement are as set out below:

(a) for Party A:

Address: 1301 Fannin, Suite 2300, Houston TX 77002 U.S.A.
 Fax Number: 713-653-5180
 Email: commodities.contracts@db.com
 Attention: Commodities Contracts

With a copy to:

Address: Deutsche Bank AG, London Branch
 Winchester House
 1 Great Winchester Street
 London EC2N 2DB
 Fax number: +44 (0) 207 545 4970
 Email: evan.richards@db.com/physicalsettlement@list.db.com
 Attention: Evan Richards/Physical Settlement

(b) for Party B:

Address: 6850 Middlebelt Road, Romulus, MI 48174 U.S.A.
 Fax number: 0017347213963
 Email: cwibbelman@metroftz.com
 Attention: Christopher Wibbelman

9.2 Any Party may change its contact details by giving five (5) Business Days' notice to the other Party.

9.3 Any notice or other communication shall be deemed to have been given:

- (a) if delivered by hand on the date of delivery; or
- (b) if sent by post, on the second Business Day after it was put into the post;
- (c) if sent by fax, on the date of transmission, if transmitted before 7.00 p.m. (local time at the country of destination) on any Business Day, and in any other case on the Business Day following the date of transmission; or
- (d) if sent by email or any other electronic communication, when received in legible form.

9.4 A communication given under paragraph 10.3 above but received on a day that is not a Business Day or after hours on a Business Day in the place of receipt will only be deemed to be given on the next Business Day in that place.

10. EVENTS OF DEFAULT

Each of the events or circumstances set out in this Clause 10 is an Event of Default. For purposes of this Clause 10, a reference to this Agreement shall include a reference to every Confirmation issued under this Agreement.

10.1 Breach of obligations

Counterparty does not comply with any term of this Agreement, unless the non-compliance:

- (a) is capable of remedy; and
- (b) is remedied within three (3) Business Days of DBET giving notice of the breach to Counterparty.

10.2 Misrepresentation

A representation or warranty made by Counterparty in this Agreement is incorrect or misleading in any material respect when made, unless the circumstances giving rise to the misrepresentation or breach of warranty:

- (a) are capable of remedy; and
- (b) is remedied within three (3) Business Days of DBET giving notice of the breach to Counterparty.

10.3 LME Approval

The Warehouse Company ceases to be an LME approved warehouse company and/or ceases to be listed on the LME's website as one of the approved companies.

10.4 Insolvency

Any of the following occurs in respect of Counterparty:

- (a) it is, or is deemed for the purposes of any applicable law to be, unable to pay its debts as they fall due or insolvent;
- (b) it admits its inability to pay its debts as they fall due;
- (c) it suspends making payments on any of its debts or announces an intention to do so;
- (d) by reason of actual or anticipated financial difficulties, it begins negotiations with any creditor for the rescheduling or restructuring of any of its indebtedness;
- (e) the value of its assets is less than its liabilities (taking into account contingent and prospective liabilities); or
- (f) a moratorium is declared in respect of any of its indebtedness.

If a moratorium occurs in respect of Counterparty, the ending of the moratorium will not remedy any Event of Default caused by the moratorium.

10.5 Insolvency proceedings

- (a) Except as provided below, any of the following occurs in respect of Counterparty:
- (i) Any step is taken with a view to a moratorium or a composition, assignment or similar arrangement with any of its creditors;
 - (ii) a meeting of its shareholders, directors or other officers is convened for the purpose of considering any resolution for, to petition for or to file documents with a court or any registrar for, its winding-up, administration or dissolution or any such resolution is passed;
 - (iii) any person presents a petition, or files documents with a court or any registrar, for its winding-up, administration, dissolution or reorganisation (by way of voluntary arrangement, scheme of arrangement or otherwise);
 - (iv) an order for its winding-up, administration or dissolution is made;
 - (v) any liquidator, trustee in bankruptcy, judicial custodian, compulsory manager, receiver, administrative receiver, administrator or similar officer is appointed in respect of it or any of its assets;
 - (vi) its shareholders, directors or other officers request the appointment of, or give notice of their intention to appoint, a liquidator, trustee in bankruptcy, judicial custodian, compulsory manager, receiver, administrative receiver, administrator or similar officer; or
 - (vii) any other analogous step or procedure is taken in any jurisdiction.
- (b) Paragraph (a) does not apply to a petition for winding-up presented by a creditor which is being contested in good faith and with due diligence and is discharged or struck out within 30 calendar days.

10.6 Change of Control

- (a) Counterparty's Holding Company as at the date of this Agreement ceases to hold, directly or indirectly, at least the majority of the total share capital and/or the majority of the voting rights attributable to the share capital of Counterparty, unless DBET waives its rights under Clause 11.6 in writing pursuant to sub-section (b) below
- (b) Should a Change of Control happen, or should a Change of Control be in the process of happening, Counterparty will immediately inform DBET in writing. DBET will, within five (5) Business Days from such a request, inform Counterparty whether or not it waives its rights under Clause 11.6. DBET will not unreasonably deny the waiver, always provided that the Change of Control does not affect the rating and/or the financial stand and/or the credit worthiness of Counterparty.

10.7 Effectiveness of Transaction Documents

- (a) It is or becomes unlawful for any party to perform any of its obligations under the Transaction Documents.
- (b) Any Transaction Document is not effective in accordance with its terms or is alleged by any party to it to be ineffective in accordance with its terms for any reason.

- (c) Counterparty repudiates a Transaction Document or evidences an intention to repudiate a Transaction document.

11. TERMINATION PURSUANT TO AN EVENT OF DEFAULT

- (a) Without prejudice to any other remedy that a Party may have under this Agreement, at law, or otherwise, upon the occurrence of an Event of Default, DHET shall be immediately entitled to designate a date in writing for the early termination of any or all of the Transactions, being a date no sooner than the date of the notice (such date an Early Termination Date).
- (b) On the Early Termination Date, each Transaction in respect of which the Early Termination Date was designated together with each Party's rights and obligations thereunder will be automatically terminated, except that:
 - (i) Clauses 1, 2, 4, 5, 6, 7.2 to 7.4, 8, 9, 10, 12, 13, 14, 15 and 17 shall survive the termination and remain to be in full effect and force after the Early Termination Date; and
 - (ii) any termination shall not release a Party from any liability which as of the Early Termination Date has already accrued to the other Party or which thereafter may accrue in respect of any act or omission prior to such termination.

12. WAIVER OF IMMUNITY

To the extent that Counterparty may in any jurisdiction claim for itself or its assets immunity from suit, execution, attachment (whether in aid of execution, before judgment or otherwise) or other legal process and to the extent that in any such jurisdiction there may be attributed to itself or its assets such immunity (whether or not claimed), it hereby irrevocably agrees not to claim and hereby irrevocably waives such immunity to the full extent permitted by the laws of such jurisdiction.

13. LANGUAGE

The language of this Agreement and the transactions envisaged by it is English and all notices to be given in connection with this Agreement must be in English. All demands, requests, statements, certificates or other documents or communications to be provided in connection with this Agreement and the transactions envisaged by it must be in English or accompanied by a certified English translation; in this case the English translation prevails unless the document or communication is a statutory or other official document or communication.

14. SEVERABILITY

If a term of this Agreement is or becomes illegal, invalid or unenforceable in any respect under any jurisdiction, that will not affect:

- (a) the legality, validity or enforceability in that jurisdiction of any other term of this Agreement; or
- (b) the legality, validity or enforceability in other jurisdictions of that or any other term of this Agreement.

15. TERMINATION

- 15.1 Subject to Clause 12, and without prejudice to Clause 16.2, DBET may terminate this Agreement by giving advance written notice of at least 90 calendar days to Counterparty.
- 15.2 Without prejudice to any other rights or remedies that DBET may have under this Agreement, at law or otherwise, DBET shall be entitled to terminate this Agreement with immediate effect, upon written notice, in case of breach by Counterparty of any of its obligations under this Agreement.
- 15.3 Following a termination notice under this Clause each Warrant Finance Transaction, together with each Party's rights and obligations thereunder will be automatically terminated, except that:
- (a) Clauses 1, 2, 4, 5, 6, 7.2 to 7.4, 8, 9, 10, 12, 13, 14, 15 and 17 shall survive the termination and remain to be in full effect and force after the termination date to the extent that it is necessary to close out any existing Warrant Finance Transaction; and
 - (b) any termination shall not release Counterparty from any liability which as of the termination date has already accrued to DBET or which thereafter may accrue in respect of any act or omission prior to such termination.

16. WHOLE AGREEMENT

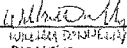

This Agreement and the Warrant Finance Confirmations contain the whole agreement between the Parties. Except as required by statute, no terms shall be implied or incorporated (whether by custom, usage or otherwise) into this Agreement.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

AS WITNESS this Agreement has been signed by the Parties (or their duly authorised representatives) on the date stated at the beginning of this Agreement.

Signatories

Signed by
DB ENERGY TRADING LLC

By: 
Its: 

By:
Its: Brandon Diket
Vice President

Signed by
METRO INTERNATIONAL
TRADE SERVICES LLC

By:
Its:

1024

Annex I

DETAILS OF WARRANTS OWNED BY DBET AS OF THE EFFECTIVE DATE

[to be inserted]

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Overview Off-warrant Deals

Metro has been approached again by a client planning to cancel metal for the purpose of off-warrant financing deals. Similar to previous deals Metro has decided to offer off-warrant storage space to the client in order to keep the business in-house.

	Jan 2012 Deal	Feb/Mar 2012 Deal	Sept 2012 Deal
Tonnage (kt)	■ 100 kt	■ 100 kt ■ 50 kt	■ 160 kt
Rent & FOT	■ FOT and full rent in queue		■ FOT and full rent in queue
Rate	■ 8 cents/y/d for off-warrant storage after initial 90 days of free rent		■ Full LME rent for off-warrant material until Dec 2013
Structure	■ After 12 months from shipment date metal reverts back to full rent		
Day-One Incentive	■ Metro pays \$33/t	■ Metro pays \$58/t	■ Metro pays \$58/t ■ Metro pays \$36/t
Client	■ Cancel deal and sell metal/remove from Metro off-warrant storage or re-warrant with Metro		
Optionalty			
Cancellation	■ Client pays \$60/t	■ Client pays \$85/t	■ Client pays \$85/t
Re-warranting	■ Metro pays \$69/t, if re-warranted within 6 months from cancellation date (sliding scale down thereafter)	■ Metro pays \$44/t, if re-warranted within 9 months from cancellation date (sliding scale down thereafter)	■ Metro pays \$160/t, if re-warranted by Dec 2013
Terms			■ Metro reimburses the difference between current published rent and 2013/2014 published rent, if material is re-warranted
Status	■ Re-warranted		■ Metal has not shipped out yet
	■ Of the three deals 100kt were re-negotiated to \$95/t and 100kt to \$130/t at re-warranting		

Business Review 15

EXCERPT

FW: Detroit Ali - off warrant storage deal *NEW DEAL # DET-1500.**From:**

Gabriella Vagnini <gvagnini@metroftz.com>

To:

"Barry Feldman (bfeldman@redkitegmt.com)" <bfeldman@redkitegmt.com>

Cc:

Michael Whelan <mwhelan@metroftz.com>

Date:

Mon, 05 Nov 2012 20:16:44 +0000

Dear Barry,

I hope this email finds you well.

Please note, Metro's issued deal number (for the agreement indicated below) is- DET-1500. Apply this number to all documents pertaining to this confirmation.

Thank you for your continued support.

Deal #- DET-1500**Customer-** Red Kite**Location-** DETROIT**Metal Type-** Aluminum**Brand-** n/a**Quantity*-** 150,000mt**Warranting Date(s):**

1. Metal is to be placed on warrant December 18, 2013 prompt date.
 - a. Early warranting date needs to be requested to Metro and agreed upon in writing.
 - b. Metal warranted after Dec'13 prompt date is based on queue availability (indicated by Metro's Operation team).
 - c. Cost for placing on warrant is for Metro's account.

Rent, Off-Warrant Rent & FOT indications:**

1. Red Kite Pays LME rent & FOT upon cancellation.
2. Red Kite pays full published LME rent from cancellation date, while in the queue and off warrant once the material ships out through December 2013.
 - a. Note LME rent rates change April 1st yearly. The monthly billing will adjust to reflect accordingly.
 - b. Note that shipping should not extend through the December 2013 month end date, unless indicated by Metro when shipping instructions are set in place.
3. If the material is not placed onto warrant by the DEC 2013 prompt date, full LME rent and FOT would apply while the material remains off warrant.

Freight Allowance Amount:

1. \$36/mt paid within 2 weeks of cancellation date.
2. \$160/mt paid to Red Kite after metal is placed on warrant Dec 18, 2013.
 - a. Also paying to Red Kite (after warranting on the Dec prompt date) is the difference in the rent rate cost from April 1st, 2013 through December 18, 2013.
 - i. The difference would be from the current published LME of \$0.45/mt and the new LME rent rate as of April 1, 2013.

Shipping Terms:

1. Metro will truck the material to an off warrant Metro storage facility in Detroit.

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EXHIBIT #25

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2. Metro to incur shipping costs.

Additional Terms That Apply:

1. Red Kite cancels 150,000mt of aluminum in Detroit immediately.
2. Red Kite fulfills the requirements to get into the queue with shipping instructions for maximum appointments asap.
3. If RK ships the material out of Metro's warehouse, or sells in warehouse without the material being warrant by DEC 2013, full LME FOT plus an additional \$30 would be payable to Metro.

Shipping & Receiving contact- Tanya Rich trich@metroftz.com (734) 721-3334 Ext.236

All invoicing email only to- Gabriella Vagnini (group email) acctg@metroftz.com (734) 721-3334 Ext. 233

All invoicing address to (but not mail)**:**

Metro International Trade Services, LLC

6850 Middlebelt Rd.

Romulus, MI 48174

(*LME warrantable metal)

(*If there are no terms indicated for dates not specified above, then that current date of that months published LME rate is to apply.)

(***Off-Warrant rates commence from date metal received in warehouse and expires once placed on warrant.)

(***In order for Metro to process payment request from Red Kite, the above address is required on the invoice, as well as the deal number and the warrants billing against (if applicable).

On 11/4/12 7:09 AM, "Barry Feldman" <bfeldman@redkiterngmt.com> wrote:

>Michael,

>

>Sorry for delay in sending this, finally got our electric back

>yesterday afternoon. Yippie!

>

>We are in agreement with this. I think our ultimate goal was 200,000

>mt, which you suggested. RK will endeavor to reach 150 to 200k,

>however, this will be done in smaller tranches as the spreads and

>market allow. Steve Upot is working on this and we will keep you informed of our progress.

>

>Regards,

>

>Barry

>

>-----Original Message-----

>From: Michael Whelan (<mailto:mwhelan@metroftz.com>)

>Sent: Thursday, November 01, 2012 3:42 PM

>To: Barry Feldman; Steve Upot

>Subject: Detroit Ali - off warrant storage deal

>

>Barry/Steve -

>

>It was nice to chat with you both this morning. Thanks for approaching

>me with an opportunity to store approximately 150,000 mt of aluminum

>which you are holding LME warrants for currently.

>

>As discussed, here is what Metro could provide:

>

>

> * RK cancels 150,000 mt of aluminum in Detroit immediately;

> * RK pays LME rent and FOT upon cancelation and fulfills the
 > requirement to get into the queue with shipping instructions for
 > maximum appointments;
 > * RK pays full LME rent from cancelation date, while in the queue,
 > and off warrant once the material ships out, through DEC 2013;
 > * Metro would pay RK an initial freight allowance of \$36 (LME FOT)
 > within 2 weeks of cancelation;
 > * Metro would truck the material to an off warrant storage facility
 > in Detroit, costs for Metro's account;
 > * Metro would provide RK with \$160 per mt (plus whatever the
 > difference is in additional LME rent from April 1 2013 if there is a
 > rent increase from \$.45) if there is a mutual agreement to place the
 > material onto warrant by the DEC 2013 prompt date, costs for placing
 > onto warrant for Metro's account;
 > * If the material is not placed onto warrant by the DEC 2013 prompt
 > date, full LME rent and FOT would apply while the material remains off
 > warrant;
 > * If RK ships the material out, or sells in warehouse without the
 > material being warrant by DEC 2013, full LME FOT plus an additional \$30
 > would be payable to Metro;
 >
 > Please let me know if you have any additional questions or concerns.
 > Once you respond with your agreement to the terms, I will have a Metro
 > deal number issued and sent to you for reference for this deal moving
 > forward.
 >
 > Thanks and regards,
 >
 > Michael

Re: New Deal - Glencore Detroit

From:
Michael Whelan <mwhelan@metroftz.com>
To:
matthew.lucke@glencore.com, Gabriella Vagnini <gvagnini@metroftz.com>, sylvia.malone@glencore-us.com
Date:
Fri, 05 Apr 2013 03:25:02 +0100

Matt – Rob and I are working on the rent in Baltimore. I will make sure it is user friendly.

From: "Matthew.Lucke@glencore.com" <Matthew.Lucke@glencore.com>
Date: Thursday, April 4, 2013 9:21 PM
To: Gabriella Vagnini <gvagnini@metroftz.com>, "Sylvia.Malone@glencore-us.com" <Sylvia.Malone@glencore-us.com>
Cc: Michael Whelan <mwhelan@metroftz.com>
Subject: Re: New Deal - Glencore Detroit

Thanks Gabriella
Can you confirm that rent rate is 7 cents/day in Baltimore and that we have until the end of the year to move the metal out?
Matt

From: Gabriella Vagnini [gvagnini@metroftz.com]
Sent: 04/04/2013 06:25 PM GMT
To: Matthew Lucke; Sylvia Malone
Cc: Michael Whelan <mwhelan@metroftz.com>
Subject: FW: New Deal - Glencore Detroit

Dear Matt,

Please note to apply Metro's deal/reference # DET-15245 to all documents pertaining to the below agreement.

Deal #: DET-15245
Date Accepted: 2 April 2013
Customer: Glencore
Location: DETROIT
MetalType: Aluminum
Brand: n/a
Quantity*: 41,000mt
ETA: May/June 2013 from Metro warehouse to another Metro warehouse.
WarrantingDate(s): any material not available for warranting by June 19 2013 will be placed onto warranting by July 17 2013.
Rent Free Days:** From the shipment date through the warranting dates in June/July 2013.
Rent amount after free period*:** ____
Freight Allowance Amount:

- Metro provides Glencore: 21,000 mt of units FOT Baltimore (no Alcan sows or any ingots) on June 19 2013 plus \$15 per mt – pending approval from the bank who owns the material.
- Metro provides Glencore: 20,000 mt of units FOT Mobile on June 19 2013 plus \$20 per mt – pending approval

Permanent Subcommittee on Investigations

EXHIBIT #26

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from the bank who owns the material.

Shipping Terms (Incoterms): Trucking for Metro's account.

Additional Terms That Apply:

- Glencore provides FOT Detroit.
- Any metal not placed onto LME warrant by the June/July 2013 warranting dates will be subject to full LME rent and FOT, as well as be subject to Metro's Detroit queue while it remains off warrant, until the material is placed onto LME warrant.

Shipping & Receiving contact- Tanya Rich trich@metroftz.com (734) 721-3334 Ext. 236

All invoicing email only to- Gabriella Vagnini (group email) gcctg@metroftz.com (734) 721-3334 Ext. 233

All invoicing address to (but not mail)****:

Metro International Trade Services, LLC

6850 Middlebelt Rd.

Romulus, MI 48174

**LME warrantable metal*

***Rent Free Days commencing from date metal is received in warehouse and expires as per the specified warranting date indicated above. Should the metal not be*

placed on warrant, then full prevailing LME rent rate will apply (to commence from date received).

****If there is no amount indicated, then full published LME rate will apply. Any excess metal (NON-LME) will be subject to rates commencing from received date*

thru release date (\$0.15/mt/day Rent & \$7.50/mt inbound handling, \$7.50/mt outbound handling).

*****The address listed above, along with the deal number and list of warrants, are required on the invoice in order to process a payment.*

From: Michael Whelan

Sent: Tuesday, April 02, 2013 10:20 PM

To: Gabriella Vagnini

Cc: Chris Wibbelman; David Grunehoff; David Warren; Doris Bravo; Leo Pritchard; Tanya Rich; Brigid Callaghan; Maria

Scott; Mark Askew; Curt Felch

Subject: New Deal - Glencore Detroit

Hi Gab -

Please issue a new, confirmed deal number for Glencore in Detroit. The first 50,000 mt is already covered under DET-1524. This new deal number is for the 41,000 mt we are swapping units in Baltimore and Mobile for Detroit.

We have had some discussion over the past few days on the structure so there should not be any surprises, but for good order, here are the terms:

- Glencore provides FOT Detroit: 50,000 mt of units scheduled to ship outbound from Metro Detroit in May/June 2013 and ships (trucking for Metro's account) to another Metro Detroit facility and remains off warrant until June 18 2013 at which time the material will be placed back onto LME warrant as per the terms of DET-1524 (\$198 per mt).
- Glencore provides FOT Detroit: 41,000 mt of units scheduled to ship outbound from Metro Detroit in May/June 2013 and ships (trucking for Metro's account) to another Metro Detroit facility and remains off warrant until June 18 2013 at which time the material will be placed back onto LME warrant - any material not available for warranting by June 19 2013 will be placed onto warranting by July 17 2013.
- Metro provides off warrant storage for all of the material above from the shipment date through the warranting dates in June/July 2013 free of charge. Any metal not placed onto LME warrant by the June/July warranting dates will be subject to full LME rent and FOT, as well as be subject to Metro's Detroit queue while it remains off warrant, until the material is placed onto LME warrant.
- Metro provides Glencore: 21,000 mt of units FOT Baltimore (no Alcan sows or any ingots) on June 19 2013 plus \$15 per mt - pending approval from the bank who owns the material.
- Metro provides Glencore: 20,000 mt of units FOT Mobile on June 19 2013 plus \$20 per mt - pending approval from the bank who owns the material.

Dave Warren - please remember that we need to hold back 21,000 mt of units in Baltimore that is not Alcan sows or any

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ingots since Glencore cannot take that material. Once you have had a chance to look at the list of material you are going to hold back maybe you could share that with me and I will send Glencore the list so they know what they are getting.

Doris/Tanya – all 91,000 mt for Glencore scheduled to ship outbound in May/June will do so as scheduled but will go to other Metro locations in Detroit (we of course decide) and remain off warrant until June/July 2013 at which point the material will be rewarranted. We will need to provide Glencore with the locations so they can issue shipping instructions as such. Metro will provide the trucking and the cost if for our account. Please work with Sylvia at Glencore on getting whatever you need.

Gab/Doris – all material available for warranting in June will go on for that date; the balance will go on for July. Glencore will issue warranting instructions as such. Obviously we want to push to have as much available for June as possible.

Gab – the first 50,000 mt is to be warranted at \$198 per mt as per DET-1524. The last 41,000 mt can go under this new deal number. Glencore will invoice Metro in June when the material is conveyed to them.

Thanks all. Please let me know if there are any questions or comments.

I appreciate everyone's hard work on this.

Michael

This message and any files transmitted with it are intended for the addressee only and may contain information that is confidential, privileged or otherwise protected from disclosure. The intended recipient may use the information contained herein for the sole and limited purpose of effecting the transaction referenced above. Any unauthorized use or disclosure by any recipient is strictly prohibited and may be unlawful. If you are not the intended recipient, you should not read, print, copy, distribute, disclose or otherwise use this message for any purposes. Any unintended recipient should immediately inform us and electronically and permanently delete the message. Messages and attachments are scanned for all viruses known. If this message contains password-protected attachments, the files have NOT been scanned for viruses by the mail domain. Always scan attachments before opening them.

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FW: New Deal # DET-1524 & DET-1525**From:**

Gabriella Vagnini <"first administrative group/cn=recipients/cn=gvagnini">

To:

matthew.lucke@glencore.com, "Sylvia Malone (sylvia.malone@glencore-us.com)" <sylvia.malone@glencore-us.com>

Cc:

Michael Whelan <mwhelan@metroftz.com>, Tanya Rich <trich@metroftz.com>, "Katie Kuhlman (Kkuhlman@metroftz.com)" <kkuhlman@metroftz.com>, Doris Bravo <dbravo@metroftz.com>

Bcc:

Gabriella Vagnini <gvagnini@metroftz.com>

Date:

Mon, 25 Feb 2013 21:04:45 +0000

Dear All,

Please note, there has been a new agreement with Glencore to warrant metal.

Once the warranting dates come near, we will advise the transfer of the off-warrant metal (in the NON-LME deals or any others that may apply, we will advise accordingly) to be moved to deal number(s) listed below.

There will also be an adjustment to the NON-LME deal terms (\$6/mt credit from Metro to issue when that metal is transferred to warrant), I will place this information in a separate email to alleviate any confusion.

(A)

Deal/Reference # DET-1524**Customer-** Glencore**Location-** DETROIT**MetalType***- Aluminum**Brand-** n/a**Quantity***- 50,000mt**WarrantingDate-** June 19, 2013 (prime date)**Freight Allowance Amount-** \$198/mtAll invoicing email only to- Gabriella Vagnini (group email) acctg@metroftz.com (734) 721-3334 Ext. 233

All invoicing address to**.

Metro International Trade Services, LLC

6850 Middlebelt Rd.

Romulus, MI 48174

*LME warrantable metal. The responsibility for provision of correct documentation for LME warranting (certificates of analysis etc) resides with the customer (not Metro).

**The invoicing address listed above, along with the deal number and list of warrants, are required (along with the basic billing information) on the invoice in order to process a payment.

(B)

Deal/Reference # DET-1525**Customer-** Glencore**Location-** DETROIT**MetalType***- Aluminum**Brand-** n/a**Quantity***- 25,000mt – 75,000mt (at Glencore's option)**WarrantingDate-** November 20, 2013 (prime date)

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Freight Allowance Amount- \$198/mt

All invoicing email only to- Gabriella Vagnini (group email) acctg@metroftz.com (734) 721-3334 Ext. 233

All invoicing address to**.

Metro International Trade Services, LLC

6850 Middlebelt Rd.

Romulus, MI 48174

**LME warrantable metal. The responsibility for provision of correct documentation for LME warranting (certificates of analysis etc) resides with the customer (not Metro).*

***The invoicing address listed above, along with the deal number and list of warrants, are required (along with the basic billing information) on the invoice in order to process a payment.*

1	A	B	C	D	E	F
2						
3	Re-issuance: Warrant is re-issued prior to shipment at the request of the customer. Metal is no longer part of cancelled warrants. Delivery slot is allocated to customer(s) next in queue.					
4	Cancellation weight (tonnes)	Date warrant cancelled	Company/ entity cancelling warrant	Address departed	Date Shipped Outbound from Premises	Company/ entity delivering out
	91,400	13-Jun-2012	Glencore Ltd	6490 Lynch Rd 13542 Helen St 6307 W. Fort St 308 S. Antoine St 17423 W. Jefferson 50750 Russel Schmidt Blvd 3801 W. Jefferson Ave. 9450 Buffalo St 4815 Cabot St 21100 Trolley 1200 E. McNichols Ave 1725 Cicotte Ave 151 Lafayette St 12850 E. Nine Mile Rd 360 Viger Rd 26090 23 Mile Rd (Whse A) 21140 Trolley 8650 Mt. Elliott Superior Pkwy A Superior Pkwy B 20495 Pennsylvania Rd 36253 Michigan Ave 7900 Hagerty Rd	2nd May - 20th June 2013	Glencore Ltd

Permanent Subcommittee on Investigations

EXHIBIT #27

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Processed for court (0000134_00054) (court has reviewed)

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APPENDIX A							
1							
2							
3							
4	of which re-issued prior to shipment	of which shipped to Non Metro facility	of which shipped off-warrant to Metro facility	Address arrived	Date arrived	Company/ entity delivering in	
	n/a	n/a	91,400	21100 Trolley 21150 Trolley 2599 22nd St 26590 23 Mile Rd (Whse A) 20495 Pennsylvania Rd 9450 Buffalo St 4815 Cabot St 1725 Clontz Ave 1200 E. McNichols Ave 7950 Haggerty Rd 151 Lafayette St 6490 Lynch Rd 17423 W. Jefferson 8650 Mt. Elliot 308 S. Antoine St 308 N. Antoine St 12840 E. Nine Mile Rd 50750 Russel Schmidt Blvd	2nd May - 20th June 2013	Glencore Ltd	

	M	N
1		
2		
3		
	Company/ entity/ instructing metal to be warranted (if applicable)	
4	Date New LME Warrant Created (if applicable) 50,000 MT 17-Jun-2013; 21,400 MT 15-Jul-2013; 20,000 MT 15-Nov-2013	Glencore Ltd
5		

	A	B	C	D	E	F
1						
2						
3	Re-issuance: Warrant is re-issued prior to shipment at the request of the customer. Metal is no longer part of cancelled warrants. Delivery slot is allocated to customer(s) next in queue.					
4	Cancellation weight (tonnes)	Date warrant cancelled	Company/ entity cancelling warrant	Address departed	Date Shipped Outbound from Premises	Company/ entity delivering out
	25,000	7-Nov-2012	Barclays Bank PLC with agent as Red Kite Master Fund Limited c/o RNY Services Ltd	6490 Lynch Rd 13542 Helen St 308 S. Antoine St 308 N. Antoine St 17423 W. Jefferson 50750 Russel Schmidt Blvd 3801 W. Jefferson Ave 9450 Buffalo St 4815 Cabot St 1200 E. McNichols Ave 1725 Cicotte Ave 151 Lafayette St 12850 E. Nine Mile Rd 160 Viger Rd 2592 22nd St 21150 Trolley 26090 23 Mile Rd (Whise A) 8650 Mt. Elliott Superior Pkwy A 20495 Pennsylvania Rd 7500 Haggerty Rd	30-Sep-2013 thru 15-Oct-2013	Barclays Bank PLC with agent as Red Kite Master Fund Limited c/o RNY Services Ltd
6				6490 Lynch Rd 308 S. Antoine St 308 N. Antoine St 17423 W. Jefferson 21100 Trolley 1200 E. McNichols Ave 1725 Cicotte Ave 151 Lafayette St 12850 E. Nine Mile Rd 160 Viger Rd 2592 22nd St 21150 Trolley 26090 23 Mile Rd (Whise A) 8650 Mt. Elliott Superior Pkwy A 20495 Pennsylvania Rd 7500 Haggerty Rd		
7	18,850	8-Nov-2012	Barclays Bank PLC with agent as Red Kite Master Fund Limited c/o RNY Services Ltd	6490 Lynch Rd 308 S. Antoine St 308 N. Antoine St 17423 W. Jefferson 21100 Trolley 1200 E. McNichols Ave 1725 Cicotte Ave 151 Lafayette St 12850 E. Nine Mile Rd 160 Viger Rd 2592 22nd St 21150 Trolley 26090 23 Mile Rd (Whise A) 8650 Mt. Elliott Superior Pkwy A 20495 Pennsylvania Rd 7500 Haggerty Rd	15 thru 22-Oct-2013; 6:27:15 MT Reissued 18-Dec-2012	Barclays Bank PLC with agent as Red Kite Master Fund Limited c/o RNY Services Ltd

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Printed on: 09/03/2013 14:00:00 (GMT+00:00)

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1		APPENDIX A				
2						
3						
4	of which re-issued prior to shipment	of which shipped to Non Metro facility	of which shipped off- warrant to Metro facility	Address arrived	Date arrived	Company/ entity delivering in
	n/a	n/a	25,000	3801 W. Jefferson 21150 Trolley 26090 23 Mile Rd (White A) 20495 Pennsylvania Ave 4815 Cabot St 1200 E. Nicholas Ave 7900 Haggerty Rd 151 Lafayette St 6490 Lynch Rd 8650 Mt. Elliott 308 N. Antoine St 308 S. Antoine St 12850 Nine Mile Rd 1550 Superior Pkwy A	30-Sep-2013 thru 15-Oct-2013	Barclays Bank PLC with agent as Red Kite Master Fund Limited c/o RKY Services Ltd
6						
	6,875	n/a	11,975	21140 Trolley 21150 Trolley 26090 23 Mile Rd (White A) 4815 Cabot St 36555 Ecourse Rd 151 Lafayette St 6490 Lynch Rd 8650 Mt. Elliott 308 N. Antoine St 308 S. Antoine St 160 Viger Rd	15 thru 22-Oct-2013	Barclays Bank PLC with agent as Red Kite Master Fund Limited c/o RKY Services Ltd
7						

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M		N	
1			
2			
3			
Date New LME Warrant Created (if applicable)		Company/ entity instructing metal to be warranted (if applicable)	
4	25,000 MT 28-Nov-2013	Barclays Bank PLC with agent as Red Kite Master Fund Limited c/o RKY Services Ltd	
5	11,575 MT 28-Nov-2013	Barclays Bank PLC with agent as Red Kite Master Fund Limited c/o RKY Services Ltd	
7			

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Physical Supply (000134) (0001) (Newbury Metals)

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1	A	B	C	D	E	F
2						
3	Re-issuance: Warrant is re-issued prior to shipment at the request of the customer. Metal is no longer part of cancelled warrants. Delivery slot is allocated to customer(s) next in queue.					
4	Cancellation weight (tonnes)	Date warrant cancelled	Company/ entity cancelling warrant	Address departed	Date Shipped Outbound from Premises	Company/ entity delivering out
	26,550	9-Nov-2012	Barclays Bank PLC with agent as Red Kite Master Fund Limited c/o RMY Services Ltd	13542 Helen St 6307 W. Fort St 308 S. Antoine St 308 N. Antoine St 17423 W. Jefferson 50750 Russel Schmidt Blvd 3801 W. Jefferson 9450 Buffalo St 4815 Cabot St 1200 E. McNichols Ave 151 Lafayette St 12850 E. Nine Mile Rd 2599 22nd St 21150 Trolley 26090 23 Mile Rd (Whise A) 21140 Trolley 8650 Mt. Elliott 20455 Pennsylvania Rd 7500 Haggerty Rd	22-Oct-2013 thru 5-Nov-2013	Barclays Bank PLC with agent as Red Kite Master Fund Limited c/o RMY Services Ltd
8				6490 Lynch Rd 13542 Helen St 6307 W. Fort St 308 N. Antoine St 17423 W. Jefferson 3801 W. Jefferson 4815 Cabot St 21100 Trolley 1200 E. McNichols Ave 1725 Crofte Ave 151 Lafayette St 12850 E. Nine Mile Rd 160 Vager Rd 21150 Trolley 26090 23 Mile Rd (Whise A) 8650 Mt. Elliott 20455 Pennsylvania Rd 7500 Haggerty Rd	5 thru 18-Nov-2013	Barclays Bank PLC with agent as Red Kite Master Fund Limited c/o RMY Services Ltd
9	20,800	9-Nov-2012	Barclays Bank PLC with agent as Red Kite Master Fund Limited c/o RMY Services Ltd			

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GSPSICOMMODS00046672

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	G	H	I	J	K	L
1	APPENDIX A					
2						
3						
4	of which re-issued prior to shipment	of which shipped to Non Metro facility	of which shipped off warrant to Metro facility	Address arrived	Date arrived	Company/ entity delivering in
8	n/a	n/a	26,150	21140 Trolley 21150 Trolley 2599 22nd St 26090 23 Mile Rd (Whse A) 4815 Cabot St 36555 Ecourse Rd 1200 E. McNichols Ave 151 Lafayette St 6490 Lynch Rd 8650 Mt. Elliott 308 N. Antoine St 308 S. Antoine St	22-Oct-2013 thru 5-Nov-2013	Barclays Bank PLC with agent as Red Kite Master Fund Limited c/o RNY Services Ltd
9	n/a	n/a	20,800	3801 W. Jefferson 26090 23 Mile Rd (Whse A) 4815 Cabot St 1725 Cicotte Ave 36555 Ecourse Rd 1200 E. McNichols Ave 13542 Helen St 151 Lafayette St 6490 Lynch Rd 8650 Mt. Elliott 12850 Nine Mile Rd 160 Viager Rd	5 thru 18-Nov-2013	Barclays Bank PLC with agent as Red Kite Master Fund Limited c/o RNY Services Ltd

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GSPSICOMMODS00046673

Financial Services\BIS\BIS-1000\BIS\BIS-1000

Confidential

M		N
1		
2		
3		
Date New LME Warrant Created (If applicable)		Company/ entity instructing metal to be warranted (If applicable)
4	26,550 MT 28-Nov-2013	Barclays Bank PLC with agent as Red Kite Master Fund Limited c/o RNY Services Ltd
5	20,800 MT 28-Nov-2013	Barclays Bank PLC with agent as Red Kite Master Fund Limited c/o RNY Services Ltd
6		
7		
8		
9		

	A	B	C	D	E	F
1						
2						
3	Re-issuance: Warrant is re-issued prior to shipment at the request of the customer. Metal is no longer part of cancelled warrants. Delivery slot is allocated to customer(s) next in queue.					
4	Cancellation weight (tonnes)	Date warrant cancelled	Company/ entity cancelling warrant	Address departed	Date Shipped Outbound from Premises	Company/ entity delivering out
10	17,600	19-Dec-2012	Barclays Bank PLC with agent as Red Kite Master Fund Limited c/o RNY Services Ltd	13542 Helen St 6307 W. Fort St 308 S. Antoine St 308 N. Antoine St 5075 Russel Schmidt Blvd 4815 Cabot St 21100 Trolley 1200 E. McNichols Ave 1725 Cicotte Ave 151 Lafayette St 12850 E. Nine Mile Rd 160 Viger Rd 20090 23 Mile Rd (Whise A) 8650 Mt. Elliott 20495 Pennsylvania Rd 7900 Haggerty Rd 6490 Lynch Rd 13542 Helen St 6307 W. Fort St 17423 W. Jefferson 3801 W. Jefferson 9450 Buffalo St 4815 Cabot St 21100 Trolley 1200 E. McNichols Ave 1725 Cicotte Ave 151 Lafayette St 12850 E. Nine Mile Rd 160 Viger Rd 2599 22nd St 21130 Trolley 20090 23 Mile Rd (Whise A) 21140 Trolley 20090 23 Mile Rd (Whise B) 8650 Mt. Elliott 20495 Pennsylvania Rd 7900 Haggerty Rd	3 Dec 2013 thru 12 Dec 2013	Barclays Bank PLC with agent as Red Kite Master Fund Limited c/o RNY Services Ltd
11	80,075	21-Dec-2012	Barclays Bank PLC with agent as Red Kite Master Fund Limited c/o RNY Services Ltd		12-Dec-2013 & currently scheduled to ship outbound FOT thru 3-Feb-2014 ⁴	Barclays Bank PLC with agent as Red Kite Master Fund Limited c/o RNY Services Ltd and release transferred to Mecuarie Bank Ltd with agent Red Kite Master Fund Ltd
12						
13						

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	G	H	I	J	K	L
1	APPENDIX A					
2						
3						
A	of which re-issued prior to shipment	of which shipped to Metro facility	of which shipped off-warrant to Metro facility	Address arrived	Date arrived	Company/ entity delivering in
	n/a	n/a	17,500	50750 Russel Schmidt Blvd 26090 23 Mile Rd (White A) 13542 Helen St 1200 E. McNichols Ave 1200 E. McNichols Ave 3801 W. Jefferson 21150 Valley 160 Visper Rd 308 N. Antoine St 20495 Pennsylvania Rd 4815 Cabot St 36555 Ecouse Rd	3 Dec 2013 thru 12 Dec 2013	Barclays Bank PLC with agent as Red Kite Master Fund Limited c/o RNY Services Ltd
10						
	n/a	3,225 of 10,000	53,125 of 70,075	26090 23 Mile Rd (White A) 50750 Russel Schmidt Blvd 1200 E. McNichols Ave 4815 Cabot St 1550 Superior Pkwy A 3801 W. Jefferson 20495 Pennsylvania Rd 36555 Ecouse Rd	12 Dec 2013 to date (24 Jan 2014)	Barclays Bank PLC with agent as Red Kite Master Fund Limited c/o RNY Services Ltd and release transferred to Red Kite Master Fund agent Red Kite Master Fund Ltd
11						
12						
13						

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	M	N
1		
2		
3		
4	Date New LIVE Warrant Created (If applicable)	Company/ entity instructing metal to be warranted (If applicable)
	17,600 MT 23-Dec-2013	Macquarie Bank with agent as Red Kite Master Fund Limited
10		
11		
12		
13		

	A	B	C	D	E	F
1						
2						
3	Re-Issue: Warrant is re-issued prior to shipment at the request of the customer. Metal is no longer part of cancelled warrants. Delivery slot is allocated to customer(s) next in queue.					
4	Cancellation weight (tonnes)	Date warrant cancelled	Company/ entity cancelling warrant	Address departed	Date shipped Outbound from Premises	Company/ entity delivering out
14						
15						
16						
17	If Customer decided to re-issue 6.875 MT prior to shipment (free delivery slots allocated to customer next in queue).					
18	Please be advised that the information and spreadsheets provided herein did not previously exist in the form requested, and their compilation required.					

	G	H	I	J	K	L
1	APPENDIX A					
2						
3						
4	of which re-issued prior to shipment	of which shipped to Non Metro facility	of which shipped out warrant to Metro facility	Address arrived	Date arrived	Company/ entity delivering in
14						
15						
16						
17						
18						

	M	N
1		
2		
3		
4	Date New LIVE Warrant Created (if applicable)	Company/ entity instructing medal to be warranted (if applicable)
14		
15		
16		
17		
18		

[illegible]

Confidential

	J	K	L	M	N
1					
2					
3					
4	option of customer				
5	If arrangement cancelled and shipped to non Metro facility				
6	N/A				
7					
8					
9					
10	Client pays break fee of \$66/r (reflects \$30 + Prepaid Incentive)				
11					
12					
13					
14					
15					
16					
17					

RE: Alcan

From:

Mark Askew </o=metro international trade services/ou=first administrative group/cn=recipients/cn=maskew">

To:

Chris Wibbelman <cwibbelman@metroftz.com>

Date:

Fri, 17 Dec 2010 15:29:54 +0000

Hi, Chris

We still need to go back to Alcan regarding their query (in long-term) if we could do biz direct without any trader (they don't like margin they're taking) and arrange payment against B/Ls direct to them via bank which likes their(excellent) credit-rating. I said we'd discuss(with you) and revert.

All best

Mark a

-----Original Message-----

From: Mark Askew

Sent: Saturday, December 04, 2010 2:04 PM

To: Chris Wibbelman

Subject: Montreal

Hi Chris

I left a message for you to call me but guess I need to cover with e-mail instead.

Alcan should have another 5 kt in Dec and then min 10 kt per month in 2011 which they plan to sell a quarter at a time. Supplementary amounts of 5 k should also be available occasionally.

They asked if we could do biz direct without any trader (they don't like margin they're taking) and arrange payment against B/Ls direct to them via bank which likes their(excellent) credit-rating. I said we'd discuss and revert.

They also asked about rumours they'd heard on 100 k cancellation in Sep that we were blocking others. I said there had been many rumours (incl Noble, Trafi, G'core etc) and it would not be appropriate for me to comment on such private matters as who is cancelling metals etc

I remain concerned, as I have expressed from start, regarding "Q management" etc (esp in light of conversation Michael said he had with Paco on same a few weeks back).

Also, it was mentioned by a reliable source confidentially last night that Quebec govt is selling half its share- holding in Alouette to Marubeni(who will hold about a sixth of total going forward, I believe). I sensed Marubeni were holding back on info when I saw them. Also, severe staffing implications at SGF/Albecourt likely....

All best

Mark a

Sent from my BlackBerry Wireless Handheld

Permanent Subcommittee on Investigations

EXHIBIT #28

CONFIDENTIAL

GPSICOMMODS00047422

Re: Stemcor 12 kt to Detroit

From:
Mark Askew <maskew@metroftz.com>
To:
Michael Whelan <mwhelan@metroftz.com>
Cc:
Leo Prichard <lprichard@metroftz.com>, Chris Wibbelman <cwibbelman@metroftz.com>
Date:
Sat, 25 Feb 2012 19:47:47 +0000

Thanks. Michael

I referred to my reservations regarding what was called "queue management" in previous times as an aside-I certainly did not expect it to become the primary topic....

All best

Mark A

From: Michael Whelan
Sent: Saturday, February 25, 2012 02:29 PM
To: Mark Askew
Cc: Leo Prichard; Chris Wibbelman
Subject: Re: Stemcor 12 kt to Detroit

Let's be clear, we are not participating in queue management. We have done an off warrant storage deal with a customer who was going to remove metal and place in an off warrant warehouse. We were able to provide an off warrant storage option and make a commercial deal that doesn't in any way violate the rules of the LME.

Sent from my iPhone

On Feb 25, 2012, at 11:56 AM, "Mark Askew" <maskew@metroftz.com> wrote:

Hi Chris

On reflection, until I spoke to Leo, I was, perhaps mistakenly, operating in the belief that CWT had recently taken metal for re warranting from Metro (eg in Asia-Pacific).

In the same way that I have expressed concerns regarding aspects of queue management, I am loath to start a war with CWT (even tho' I have questioned ethics of certain of their people on separate issues in past).

However, if instructed, I would of course proceed.

May I await your guidance Monday before proceeding further on this with Stemcor?

Sincere apologies and all best

Permanent Subcommittee on Investigations
EXHIBIT #29

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GSPSICOMMODS00047423

1054

Mark A

From: Leo Prichard
Sent: Friday, February 24, 2012 12:24 PM
To: Chris Wibbelman; Mark Askew
Cc: Michael Whelan
Subject: RE: Stencor 12 kt to Detroit

I don't believe we have had any recent releases of metal from our warehouses by CWT. It would be a good deal for us, we should just be aware that this may cause retaliation.

Leo S. Prichard
Metro International Trade Services
Office: 1-310-233-2800 Extension 19
Facsimile: 1-310-233-2811
Email: lpnichard@metroftz.com

From: Chris Wibbelman
Sent: Friday, February 24, 2012 9:04 AM
To: Mark Askew
Cc: Michael Whelan; Leo Prichard
Subject: Re: Stencor 12 kt to Detroit

Not for me. We are helping Jaron who already contracted with cwt. Leo, Michael, any other thoughts?

From: Mark Askew <maskew@metroftz.com>
Date: Fri, 24 Feb 2012 08:58:24 -0800
To: Christopher Wibbelman <cwibbelman@metroftz.com>
Subject: Stencor 12 kt to Detroit

Hi, Chris

Sorry to disturb with call earlier about conversation with Jean-Luc.. I also spoke to Michael (to keep in loop), Curt (for suggested consignment address- to be "blind" he likes Stencor c/o Wayne Steel) and Tanya (she will provide address specifics). When I next chatted to Leo he said he'd want to see certs or brand plus grade, if possible, before cancellation which I can request of Stencor However, he was also concerned about moving steel out of CWT because apparently we are co-operating with them and J Aron on some metal ex Pacorini in Asia? Is that a deal-stopper?

Thanks and all best

Mark a

From: Chris Wibbelman
Sent: Tuesday, February 21, 2012 5:19 AM
To: Mark Askew
Subject: Re: Incentive to keep 25kt in Nola...

I hoped to speak with you about that before pulling the trigger, but I am likely ok with it. Would be great to have a blind shipment.

From: Mark Askew

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GSPSICOMMODS00047424

1055

Sent: Tuesday, February 21, 2012 01:48 AM
To: Chris Wibbelman
Subject: Re: Incentive to keep 25kt in Nola...

Hi Chris

Only just out of Penoies do.

By the way, any thoughts on metal ex CWT-Chicago to Detroit?

Cheers/best

Mark A

From: Mark Askew
Sent: Monday, February 20, 2012 04:26 PM
To: Chris Wibbelman
Subject: Re: Incentive to keep 25kt in Nola...

Thanks, Chris

Be well

Mark A

From: Chris Wibbelman
Sent: Monday, February 20, 2012 04:14 PM
To: Mark Askew
Subject: Re: Incentive to keep 25kt in Nola...

Sleep Mark. Will catch up later

From: Mark Askew
Sent: Monday, February 20, 2012 04:11 PM
To: Chris Wibbelman
Subject: Re: Incentive to keep 25kt in Nola...

Hi, Chris

Just arrived-want to meet at say 1.30 pm?

Otherwise, hoping to put my head down for an hour or two before meetings start as I am pretty tired after being on go for 53 hours door-to-door....

All best, as ever

Mark A

From: Mark Askew
Sent: Monday, February 20, 2012 12:53 PM
To: Chris Wibbelman

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GSPSICOMMODS000047425

1056

Subject: Re: Incentive to keep 25kt in Nola...

Are you going to Penoles dinner tonight?
atb

Mark A

From: Chris Wibbelman
Sent: Monday, February 20, 2012 12:49 PM
To: Mark Askew
Subject: Re: Incentive to keep 25kt in Nola...

Tuesday morning. Still on my call

From: Mark Askew
Sent: Monday, February 20, 2012 12:38 PM
To: Chris Wibbelman
Subject: Re: Incentive to keep 25kt in Nola...

Hi Chris
When do you leave?
All best

Mark A

From: Mark Askew
Sent: Monday, February 20, 2012 12:10 PM
To: Chris Wibbelman
Subject: Re: Incentive to keep 25kt in Nola...

As mentioned when we spoke Sat, flight was delayed cos of mechanical difficulties.

Therafter passenger had stroke so we diverted

In line for security but please call
Thanks and best

Mark A

From: Mark Askew
Sent: Monday, February 20, 2012 12:01 PM
To: Chris Wibbelman
Subject: Re: Incentive to keep 25kt in Nola...

About 1-1,30 pm agw albeit severely jet-lagged...

Mark A

From: Chris Wibbelman
Sent: Monday, February 20, 2012 11:57 AM

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GSPSICOMMODS00047426

1057

To: Mark Askew
Subject: Re: Incentive to keep 25kt in Nola...

ETA?

From: Mark Askew
Sent: Monday, February 20, 2012 11:57 AM
To: Chris Wibbelman
Subject: Re: Incentive to keep 25kt in Nola...

Salt Lake City...

Mark A

From: Chris Wibbelman
Sent: Monday, February 20, 2012 11:49 AM
To: Mark Askew
Subject: Re: Incentive to keep 25kt in Nola...

Where are you?

From: Mark Askew
Sent: Monday, February 20, 2012 10:45 AM
To: Chris Wibbelman
Cc: Michael Whelan; Leo Prichard
Subject: Fw: Incentive to keep 25kt in Nola...

Hi Chris

See below-not good news.

However, I also spoke to him again and re-explained potential damage this could do to us and LME contract. He said he would recheck with physical desk.....

He also asked, to my surprise, if we could potentially look at metal previously warranted in CWT for Detroit ? What do you think?

All best

Mark A

From: Shahnawaz Islam [<mailto:shahnawaz.islam@stemcor.com>]
Sent: Monday, February 20, 2012 09:31 AM
To: Mark Askew
Cc: JeanLuc Fiorenzoni <jeanluc.fiorenzoni@stemcor.com>
Subject: RE: Incentive to keep 25kt in Nola...

Hi Mark,

Unfortunately we have not been advised by our physical desk of an incentive required to keep billets under warrant in Nola.

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GSPSICOMMODS00047427

1058

They are now looking to cancel 50 warrants of the inventory based on where physical and LME prices are today. You will see our request shortly.

Best regards,
Shahnawaz

From: Mark Askew [mailto:maskew@metroftz.com]
Sent: 20 February 2012 14:26
To: JeanLuc Fiorenzoni
Cc: Shahnawaz Islam
Subject: Re: Incentive to keep 25kt in Nola...

Hi JL

Any thoughts/feedback on this?

Thanks and best

Mark A

From: Mark Askew
Sent: Friday, February 10, 2012 09:55 AM
To: 'jeanluc.fiorenzoni@stemcor.com' <jeanluc.fiorenzoni@stemcor.com>
Cc: 'shahnawaz.islam@stemcor.com' <shahnawaz.islam@stemcor.com>
Subject: RE: Incentive to keep 25kt in Nola...

Thanks JL(and Shahnawaz)-trying hard- just arrived at a place called Crystal Springs overlooking "Robbers Pass" near old Pilgrim's Rest Gold Fields.....

Enjoy week-end!

Mark A

From: JeanLuc Fiorenzoni [mailto:jeanluc.fiorenzoni@stemcor.com]
Sent: Friday, February 10, 2012 09:28 AM
To: Mark Askew
Cc: Shahnawaz Islam <shahnawaz.islam@stemcor.com>; JeanLuc Fiorenzoni <jeanluc.fiorenzoni@stemcor.com>
Subject: RE: Incentive to keep 25kt in Nola...

Hi Mark,

I will not have a reply until next week.

Enjoy South Africa
JL

From: Mark Askew [mailto:maskew@metroftz.com]
Sent: 10 February 2012 12:10
To: JeanLuc Fiorenzoni
Cc: Shahnawaz Islam

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GSPSICOMMODS00047428

1059

Subject: Re: Incentive to keep 25kt in Nola...

Hi JL

Just wondered if you had any more thoughts/ideas on this?

Be well

Mark A

From: JeanLuc Fiorenzoni [mailto:jeanluc.fiorenzoni@stemcor.com]
Sent: Wednesday, February 08, 2012 10:29 AM
To: Mark Askew
Cc: Shah Nawaz Islam <shahnawaz.islam@stemcor.com>; JeanLuc Fiorenzoni <jeanluc.fiorenzoni@stemcor.com>
Subject: Incentive to keep 25kt in Nola...

Whilst the warrants have already been cancelled, we are considering your suggestion with the view, if positive, to come back to you with a number... bear with us

JL

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Resignation

From:

Michael Whelan <mwhelan@metroftz.com>

To:

Chris Wibbelman <cwibbelman@metroftz.com>

Bcc:

Michael Whelan <whelan12@me.com>

Date:

Fri, 14 Jun 2013 00:58:53 +0100

Dear Chris -

Following our discussion today, please allow this email to serve as formal notice that I am officially resigning from my position at Metro International effective immediately.

I am willing to discuss an exit strategy with you that makes sense for Metro and is acceptable to me - I remain available to discuss at your convenience.

I have some questions and concerns regarding the Chinese Wall Policy that is in place which regulates the interaction between Metro International, its customers, and J Aron. This morning's confrontation was extremely questionable.

I appreciate the relationship that you and I have built over the last 20 years. We built Metro. I wish you the best.

Very truly yours,

Michael

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Permanent Subcommittee on Investigations

EXHIBIT #30

GSPSICOMMODS00047430

1061

PSI Submission, Goldman Sachs - 10.2.14
Exhibit A

Metro International Trade Services
(2011 - 2013)

Invoice Date	Location	Customer	Amount (\$)
2/4/2010	Long Beach	Mitsubishi	112,000
5/16/2011	New Orleans	Glencore	600,000
6/23/2011	Chicago	Triland	25,000
6/23/2011	Mobile	Triland	50,000
6/23/2011	Mobile	Triland	55,000
11/21/2012	Incheon	Standard Bank	67,802
11/29/2012	Trieste	Glencore	1,900,000
11/30/2012	Trieste	Standard Bank	37,592
11/30/2012	Trieste	Standard Bank	97,805
11/30/2012	Trieste	Standard Bank	783,791
11/30/2012	Trieste	Standard Bank	300,632
12/18/2012	Detroit	Red Kite	103,125
12/18/2012	Detroit	Red Kite	1,021,875
1/18/2013	Trieste	Glencore	2,000,000
1/18/2013	Trieste	Glencore	375,000
1/23/2013	Busan	Glencore	160,000
3/11/2013	Trieste	Standard Bank	37,688
3/11/2013	Trieste	Standard Bank	120,060
3/11/2013	Trieste	Standard Bank	149,291
3/11/2013	Trieste	Standard Bank	21,711
3/11/2013	Trieste	Standard Bank	148,854
12/11/2013	Trieste	Standard Bank	74,309

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Permanent Subcommittee on Investigations
EXHIBIT #31

GPSICOMMODS00046531

1062

PSI Submission, Goldman Sachs - 10.3.14
Exhibit A

Metro International Trade Services
2014

Invoice Date	Location	Customer	Amount (\$)
6/19/2014	Mobile	BNP Paribas	1,301,488
7/9/2014	Vollers Rotterdam	Noble	1,701,384
7/17/2014	Mobile	BNP Paribas	1,308,169
8/1/2014	Toledo	Triland	130,050
8/21/2014	Mobile	BNP Paribas	1,308,393
8/22/2014	Toledo	Triland	66,300
9/17/2014	Mobile	BNP Paribas	1,308,354

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Page 1 of 1
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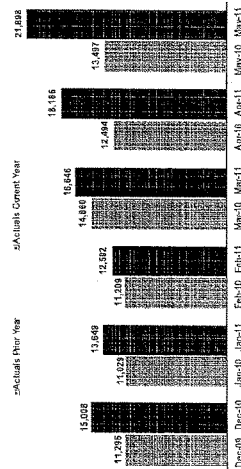
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GSPSICOMMODS00046630



Metro International Trade Services Management Brief – June 2011

YoY Gross Profit Evolution (US\$ '000)

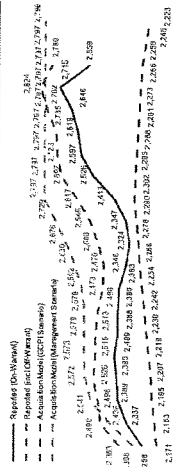


Investment Summary (US\$ m)

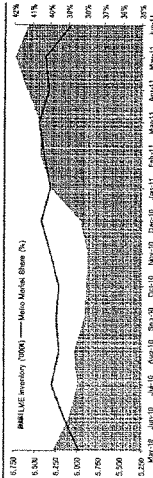
	Equity		Tranche A Loan		Tranche B Loan		Control		LME Real		Ref
	Balance	Amount	Balance	Amount	Balance	Amount	PAI (1)	PAI (2)	PAI (1)	PAI (2)	
At 1/1/10	-	451.1	44.2	-	44.2	-	-	-	96.3	-	-
FF 2010	(12.8)	419.1	97.2	(87.2)	-	-	(1.1)	15.2	114.8	128.0	-
Jan-11	-	418.1	11.0	-	11.0	-	(0.0)	14.8	16.3	130.1	-
Feb-11	-	418.1	-	-	11.8	-	(0.5)	14.3	6.5	128.8	-
Mar-11	-	418.1	-	-	(11.0)	-	-	14.3	4.4	-	-
Apr-11	(150.0)	268.1	14.0	-	14.0	-	(0.3)	13.8	8.5	95.7	-
May-11	-	268.1	20.0	-	20.0	-	-	13.3	10.2	26.5	-
Jun-11	-	268.1	(7.0)	-	27.8	-	-	13.9	13.9	94	-
Current	245.2	245.2	245.2	245.2	245.2	245.2	100.0	100.0	100.0	100.0	-

Notes: (1) LME Real is reported on a semi-monthly basis and displayed post interest rate changes. (2) Net LME Real Receivables represents the net receivables on a semi-monthly basis and displayed post interest rate changes at the end of the reporting period.

Long Term Metal Inventory Trend ('000)



Evolution of Market Share (%)



Monthly Business Highlights

- Metro showed another month of record financial performance with \$21.8m Gross Profit in May 2011.
- As indicated in the last brief the aluminum market has seen another tightness in May 2011, which forced Metro to drop most of its aluminum financing desks. This has an impact on Metro's financials at several levels:
 - High level of FTT revision from aluminum being cancelled that was previously under financing desks.
 - Positive impact on net discounts from dropping the majority of aluminum financing desks, negative impact on net discounts from dropping the majority of aluminum financing desks.
 - Financials impact from cancellations of aluminum financing desks, which will impact Metro's financials.
 - Previously under financing desks into the physical market.
 - Inventory balances are expected to decrease further over the coming months, which will reduce net revenues in the long term.
- The proposal to change the outflow regime from 1,500 to a sliding scale up to 3,000 above BODK inventory position has been accepted in principle. However the outflow rate above BODK will be discussed again at the LME Board on July 14, 2011. Proposed implementation date is April 2012.

Sean M. Berkowitz
Direct Dial: (312) 777-7016

LATHAM & WATKINS LLP

November 10, 2014

Via Electronic Mail

Tyler Gellasch, Senior Counsel
U.S. Senate Permanent Subcommittee on Investigations
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Dear Mr. Gellasch:

We are writing in response to your request for The London Metal Exchange (LME) voluntarily to provide answers to three questions. In the spirit of our ongoing cooperation, we provide the following responses.

Question 1: Does the LME consider it a violation of its load out rule for an owner of multiple warehouses to “load out” metal from one warehouse only to load it back in to another warehouse owned by the same company in the same geographic region?

Without addressing any specific actual conduct, we can answer this question on a hypothetical basis. In short, while the LME would view such behavior as a contravention of the “spirit” of the relevant requirements, it may be difficult to argue that it constituted a contravention of the “letter” of those requirements. We explain this answer further below, and we also note that the LME has recently released two separate consultations, which propose rule changes specifically designed to address the behavior which you describe.

By way of background to our answer, clause 4.2 of the current version of the Warehouse Agreement states that a “Warehouse is required to expedite delivery from warehouses at the minimum rates published from time to time by the Exchange.” The minimum rates are published by the LME in its Policy on Approval of Warehouses. Neither the Warehouse Agreement nor the Policy on Approval of Warehouses currently define the term “delivery from warehouses” or “delivery out.” When the Warehouse Agreement and the Policy on Approval of Warehouses were originally drafted, conduct such as that which you describe was not anticipated. Accordingly, the draftsman did not consider it necessary to further define what was meant by “delivery from warehouses.” In the LME’s view the words should arguably be given their ordinary meaning, implying that the metal should leave the premises of the warehouse company.

However, in the scenario you describe, the material would be placed on a truck or other form of transport and would leave the premises (*i.e.*, shed) of the warehouse company, albeit to

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return to another shed owned by the same warehouse company at a later date. The LME would not have visibility as to what happens to metal once it is cancelled and delivered out of the warehouse. While on warrant, it has an identifier number and is tracked within LMEsword. The LME also has visibility of cancelled stock, as warehouse companies are required to report cancelled stock to the LME. Once it is delivered out of the warehouse, however, the LME has no further visibility over that metal. The metal has arguably left the premises of the warehouse company, albeit to return to other premises owned by the same warehouse company at a later date. Therefore, while the LME would view such behavior as inconsistent with the "spirit" of the relevant requirements, it may not violate the "letter" of those requirements because the relevant terms may be susceptible to more than one interpretation.

It is important to note that the LME has now released two separate consultations on (a) proposed amendments to the LME's rules surrounding its physical network (including the Policy on Approval of Warehouses), and (b) to the Warehouse Agreement. The two consultation notices and accompanying documents are attached to this letter as Exhibit A (bates stamped LME_PSI0002280 – LME_PSI0002394) and Exhibit B (bates stamped LME_PSI0002395 – LME_PSI0002458). Among other things, these two consultations propose rule changes specifically designed to address the behavior which you describe, in particular:

The term "Load-out" is now defined as "a delivery of metal out of the premises of an Authorised Warehouse which meets the requirements of this policy (including for the avoidance of doubt paragraph C9)." See section H of the Policy (Ex. A at Appendix B).

"To qualify as a load-out:

(a) The load-out must be accompanied by a bill of lading or other document issued by a carrier to the Warehouse, no matter the form of transportation, listing and acknowledging receipt of goods for transport; and

(b) The recipient on the document at (a) above cannot be an entity which is an Authorised Warehouse or an off-Warrant warehouse located in the same Delivery Point where the metal is loaded out, if such Authorised Warehouse or off-Warrant warehouse is owned or operated by the Warehouse loading out the metal, or is a company in the Warehouse's Group.

Any movement of metal which is not accompanied by a bill of lading or equivalent meeting the requirements of paragraphs (a) and (b) above shall not be counted towards a Warehouse's load out requirements."

See section C paragraph 9 of the Policy (Ex. A at Appendix B).

The LME intends to check bills of lading and other transport receipts to ensure that they comply with these requirements on routine audits, once the proposed rules are in place.

The LME views these changes as important to ensure that behavior such as that which you describe will be encompassed by the letter of the LME requirements going forward. The timeline and process for implementing the changes proposed by the consultation notices are set

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out in the consultation notices themselves. Broadly, it is anticipated that the changes would be in place by June next year. *See* paragraph 16 of the Notice (Ex. A).

Questions 2 & 3: Does the LME consider what Metro did with the deals identified in response to the LME investigation to be consistent with the LME's load out rule? We understand that the LME conducted or is conducting an investigation into certain Metro practices, but the LME has heretofore declined to confirm it to the Subcommittee. Nevertheless, can you please provide the Subcommittee with an update on the status of any such investigation, including whether the LME has taken, or intends to take, action against Metro.

As we advised you previously, as an instrumentality of the government of the United Kingdom and a market regulator, the LME maintains strict confidentiality of ongoing investigations into approved warehouses and therefore we are unable to provide further information in response to questions 2 and 3. The LME's confidentiality obligations stem from multiple sources.

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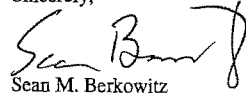
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Sincerely,

A handwritten signature in black ink, appearing to read "Sean Berkowitz", with a stylized flourish at the end.

Sean M. Berkowitz
of LATHAM & WATKINS LLP

LME_PSI0002462

Aluminum Users Group

To: Martin Abbott (LME)

Charles Li (HKE)

Oct. 29, 2012

Gentlemen,

On behalf of the AUG, I want to thank you for taking a few minutes on October 17th to discuss our continued concerns with the LME warehouse rules. As promised at our meeting, below is a recap of the key issues that the Aluminum User Group presented together with our response to Mr. Li's question.

1. Major flaws have become evident in the current LME settlement system.

The LME's terminal market model, which provided convergence between the derivative and physical aluminum markets through physical delivery, is broken. A warrant system is working when a buyer can access the product backing up the warrant. This, however, is not the case today under the LME's warehousing model. Whilst warehouses can accept deliveries at a seemingly infinite rate, the minimum rate set for load out has become the maximum rate the warehouses apply for load out of metal. The warehouses also apply the minimum rate as a combined maximum rate for all warehouses at a single warehouse location. These restrictions lead to long queues for load out of metal that adversely affect business efficiency and lead times.

We recognize that other factors such as macroeconomic conditions beyond the LME's control affect the situation; however, these should not detract from the fact that the issue needs resolution in order to have a properly functioning exchange.

The consequences of the LME's warehousing problem are painful for the consumer community. Aluminum buyers can no longer rely upon LME warehouses as a supply source. Warehouses offer incentives that lure metal away from the physical market and underpin the recent increase in premia. Load-out restrictions enable the warehouses to project the minimum period that they will be able to retain the metal, and thus the rent they will earn. As a result physical market premia are at least double their normal levels despite the fact that overall aluminum stocks have never been higher. We estimate that because of this dynamic between warehouses and producers, total metal costs have increased by approximately \$3B annually on the 27 million tonnes of annual primary aluminum production outside China. These issues also affect scrap, compounding the cost.

The LME leadership talked a lot during our meeting about financing deals. The AUG does not question the right of individuals, funds or companies to own metal, however, we strongly protest rules that prevent us from taking timely delivery of metal ourselves from LME warehouses and the inordinately long queues that hurt the supply chain. In our view, the long queues also undermine the LME's position as a Recognized Investment Exchange since the owners of metal may only get access to the warrant but

Permanent Subcommittee on Investigations

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not the underlying asset.

2. Mr. Li's questions.

We identify below the issues Mr. Li outlined according to three criteria during our meeting. He made similar comments in public earlier in the week. We also summarize our views as to how he should look at this issue:

- a. "Are you really not able to get metal?"
Yes, considering the long queues and increasing delays in getting metal from LME warehouses. For example, Novelis sourced warrants from Detroit in September 2011 and had to wait until late February 2012 for the metal to arrive at the plant. Delays like this have a direct adverse impact on aluminum user business planning, efficiency and cost.
- b. "Is 90% of the price wrong?" (referring to the LME price)
The absolute LME price is not in the scope of this discussion. As discussed at the meeting, the LME price is a hedgeable commodity and all consumers have policies and methodologies in place to manage this.
- c. "Is 10% of the price wrong?" (referring to global premia)
As a result of the warehouse incentives, global premia are at least twice their normal levels despite historically high stocks. These incentives provide an additional "customer" for the metal, who does not pay based on conventional market sources of supply and demand for metal but instead, pays based on the length of time they expect that metal to earn rent for the warehouse.

3. Our proposals.

The AUG presented the following ideas in our letter of October 3, 2012. These were broadly discussed along with other potential remedies during the meeting.

- a. Adjust daily minimum load out rates to match LME warehouse load-out demand "without limits" to mirror the LME warehouses' ability to receive metal "without limits".
- b. Apply load out requirements to individual warehouses, not simply warehouse locations.
- c. Require warehouses to have the proper equipment in order to meet load out requirements. Preclude warehouses from receiving additional metal until they reach the proper standards.
- d. Eliminate or reduce rent charges if a warehouse cannot deliver material in a timely manner; for example, there should be some penalty if a warehouse cannot load out on a warrant within 60 or 90 days of presentation.
- e. If possible, eliminate potential conflicts of interest by prohibiting LME members from ownership of, or relationships with LME-registered warehouses.

While we focused on warehouse behaviour, we also encouraged the LME to look at other areas including possible amendments to the warrant system.

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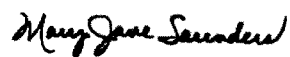
4. Timing.

The AUG is concerned that the situation is continuing to worsen. Metal supply lines are becoming more tenuous and premiums continue to increase. Therefore we seek a speedy resolution to this issue. We expect a response within two weeks of this addressing our concerns and include serious steps to alleviate this issue.

In the meantime, we have begun contacting relevant UK, US and EU regulatory and government bodies. In parallel, other significant metal consuming companies may join our group.

Thank you for taking time to meet us on October 17th. We would appreciate your help to eliminate these issues quickly.

Sincerely,

A handwritten signature in black ink that reads "Mary Jane Saunders". The script is cursive and fluid.

Mary Jane Saunders
AUG

cc: FSA

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Presentation to Firmwide Client and Business Standards Committee

Metro International Trade Services

August 03, 2011

In accordance with LME rules and Goldman Sachs' Conflict Management Procedures Between Metro and Other GS Businesses and Personnel, the information in this presentation is confidential and shall not be shared with anyone outside of this committee without prior approval from Legal and Compliance

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- I. Metro Business Overview
- II. Outbound Rule Overview & Discussion Points
- Appendix A: Media Debate: Key Discussion Areas

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I. Metro Business Overview

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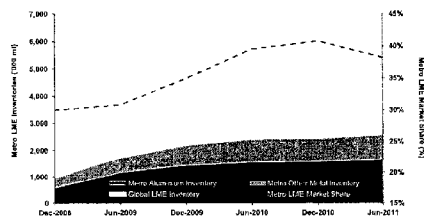
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Metro Business Snapshot

"Leading LME Warehouse Operator"

- Metro is a global warehouse operator primarily engaged in the storage of non-ferrous metals for customers of the London Metal Exchange (LME).
- Founded in 1991, the company is currently headquartered in Michigan, USA, and has 31 FTE and up to 500 contingent and third party employees.
- Since 2001, the company has grown from eight warehouses in three US cities to 108 warehouses in 21 cities.
- In February 2010, Goldman Sachs acquired 100% of Metro under the Merchant Banking Exemption.
- As of end June 2011, Metro had inventories of about 2.5 m tons of metal in its warehouses. This represents a market share of 39% of global LME inventory.

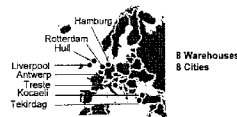
Evolution of Inventories ('000t)



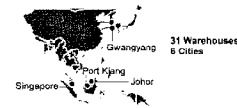
Operations in United States



Operations in Europe












































Operations in Asia





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LME Warehousing Players

Key Warehouse Operators							Commentary
							<ul style="list-style-type: none">■ There is a total of 30 registered LME warehouse operators, most of which are concentrated on a specific region or location■ Only a limited number of players are present in multiple locations and on a global scale■ Contrary to Metro the majority of global players have large-scale diversified operations outside of their LME business<ul style="list-style-type: none">— Steinweg's activities include port infrastructure investments and soft commodity storage— Henry Bath and Pacorini both operate logistic businesses■ LME warehouse sector has seen a wave of acquisitions by metal traders and/or investment banks over the last 18 months■ In addition a number of new entrants such as Barclays / Metallloyd have announced intentions to build a warehousing business
Company							
HQ							
Founding Date							
Ownership							
Geographic Presence							
Northern Europe							
Southern Europe							
UK							
USA							
Asia							
Business Model							
Pure Play?							
Number of Warehouses ¹							
Number of Employees							
M&A Activity	acquired by GS	acquired by Trafigura	acquired by JPM	acquired by Glencore	acquired metals trader	remains independent	acquired by Noble Group

¹ Represents the number of warehouses approved for storage of non-ferrous metals per the LME Website. Metro number includes as-used arrangements with third party operators.



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Metro Warehouse Operations

Metro Business Model			Metro's Customer Franchise	
Phase 1: Entry Point	Phase 2: Storage of Metal	Phase 3: Exit Point	Top Ten Inbound (2010)	Top Ten Outbound (2010) ¹
Metal Enters Warehouse	Warehouse	Metal Exit Warehouse	#	#
			Type	Type
			1. Mitsubishi	1. Kuchu Metals
			2. Hot Kix	2. Deutsche Bank
			3. Centorex	3. Metre
			4. Calliparis	4. Nippon
			5. JB Commodities	5. JP Morgan
			6. Tasek	6. Barclays Capital
			7. J. Kohn & Co	7. BSG
			8. Sunfurno	8. Triland
			9. JP Morgan / Sengra	9. Standard Bank
			10. Corbion	10. Mitsubishi
				<small>¹ on the basis of warrant cancellations</small>
Associated Revenues / (Costs)				
- Freight Incentives - Inbound Costs	+ LME Rent - Rent Discount	+ Exit Charge - Outbound Costs		
<p>Phase 1:</p> <ul style="list-style-type: none"> Metro often pays "Freight Incentives" to capture inbound flows. This is a standard competitive practice. Unlike competition Metro does not own or operate a logistics network. <p>Phase 2:</p> <ul style="list-style-type: none"> Metro manages the storage of metal according to specific rules and regulations. Daily "LME Rent" charges become payable. In some instances Metro offers a "Rent Discount" to the published rack rates. <p>Phase 3:</p> <ul style="list-style-type: none"> Metro prepares metal for outbound shipment, but is generally not involved in outbound logistics. Prior to metal leaving the warehouse, the LME "Exit Charge" becomes payable. 			<ul style="list-style-type: none"> Warehousing is vital to the operations and functionality of the LME as metal is traded in form of a "Bearer Documents" or "Warrants". Each Warrant lodged in the system represents designated parcels of metal stored within an approved LME warehouse. Warrants are frequently traded and Metro becomes aware of the identity of warrants holder only at cancellation or in case of rent discount deals. Metro's key customers are (i) Producers that place metal into the LME and (ii) Traders, Brokers, and Financial Institutions that place metal into the LME, hold trading positions or cancel warrants. As a general rule, very few metal consumers take metal directly from the LME as the exchange itself represents a market of last resort. 	

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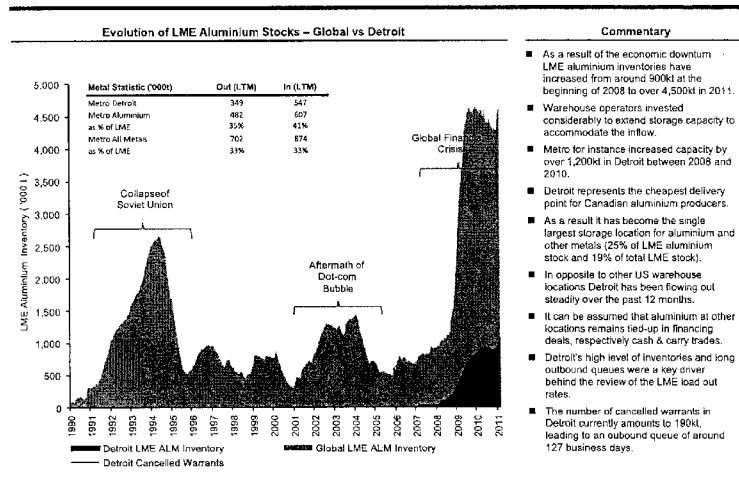
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Background On Detroit Inventories



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Metro Financial Summary

Financial Summary						Investment Overview	
(US\$, million)		2009	2010	2011 Proj.	2012 Proj.		
Inventory Balance	Start End	885kt 2,169kt	2,169kt 2,413kt	2,413kt 2,333kt	2,333kt 2,023kt	Acquisition Details	
Rent Revenues		\$220m	\$329m	\$334m	\$314m	■ GS through GCPI acquired Metro in Feb-2010 for an equity consideration of US\$450m.	
Rent Discounts		\$31m	\$64m	\$62m	\$49m	Equity Dividends	
FOT & Other Revenues		\$22m	\$25m	\$34m	\$21m	■ Since acquisition Metro has paid two cash dividends - US\$32m in Apr-2010 and US\$150m in Apr-2011.	
Total Revenues		\$211m	\$290m	\$336m	\$286m	■ Cash dividends up to Apr 2011 imply an annualised return on investment of 36%.	
Freight Incentives		\$71m	\$65m	\$65m	\$40m	■ Next two dividends in Apr 2012 and Apr 2013 are expected at or above the \$150m level each.	
OPEX / G&A		\$72m	\$63m	\$75m	\$69m	■ By April-2013 the investment is expected to have returned more than the full invested capital and continue to pay out substantial annual dividends.	
Total Cost		\$143m	\$134m	\$140m	\$109m	Commodities' P&L	
EBITDA		\$67m	\$156m	\$196m	\$177m	■ By end 2011 the investment is expected to have generated above \$200m in commodities' P&L (as of June 2011 it had generated \$167m).	
Cumulative Dividend			\$32m (a)	\$182m (a)	~\$330m (e)	'(a) actuals	
Annual Commed P&L	Acquisition Feb 2010		\$114m (a)	~\$100m (e)	~\$90m (e)	(e) expected	

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Metro Governance Structure

Metro is owned under the Merchant Banking exemption (10 year holding period and no involvement in day-to-day management). Metro's board consists of 7 GS employees as well as Metro's CEO, and meets on a quarterly basis. The two sub-committees meet more frequently on an ad-hoc basis.

Metro Board	Division	Role
Greg Agran	FICC / GCPI	Board Director
Victoria Attwood-Scott	Compliance	Board Director
Maxwell Bulk	Operations	Board Director
Jacques Gabillon	FICC / GCPI	Chairman of the Board
Philip Holzer	Securities / P/PG	Board Director
Robert Mancini	FICC / GCPI	Board Director
Dermot McDonogh	Finance	Board Director
Chris Wibbelman	CEO Metro	Board Director
Commercial Decision Board Sub-Committee	Compliance Board Sub-Committee	
Greg Agran	Victoria Attwood-Scott	
Jacques Gabillon	Maxwell Bulk	
Robert Mancini	Jacques Gabillon	

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II. Outbound Rule Overview & Discussion Points

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Change Of Load Out Rates

Background

- Following a number of private complaints about long warehouse queues and load out rates in 2010 the LME commissioned an independent study of the warehousing system
- Focus of the study was the minimum outbound delivery rate for warehouse operators. The rate represents the minimum amount of metal any given warehouse operator must deliver on any given day (currently set at 1,500 t/d)
- On July 14th, 2011 the LME board has accepted the proposal by the LME executives to implement a sliding scale from 1,500t/d up to 3,000t/d according to the amount of metal held by a warehouse operator at any specific location. Changes are proposed to become effective in April 2012.
- LME has started an official consultation period for the policy amendments. Warehouse companies and their London agents are invited to comment before September 30th, 2011

Key Issues

- Ongoing media debate around adequate level of outflows with a few very vocal market participants and a number of misperceptions about key market factors (please see **Annex A** for an overview of the debate)
- A particular focus of the debate has been the aluminium inventory and Metro's Detroit warehouse operations following criticism (mainly from certain particular traders) that long delays in accessing metal would impact consumers
- Practical issues with the implementation of a sliding scale that have not been addressed by the LME in their current proposal
- Loss of gross profit over time through metal leaving warehouse at a faster rate is currently estimated at around \$40-60m under a conservative scenario
- Metro is looking into additional operating costs and capex related to the change in load out rates. However these appear to be marginal and could potentially be offset by higher revenues (through increase in rent tariffs)

Response

- Metro Board together with Media Relations has actively engaged with media to educate journalists on the market and transmit Metro arguments
- Metro is preparing a submission for the LME consultation process addressing practical issues with the implementation of the new outbound regime
- In 2010, at the request of Metro's Board, GS Compliance supported by Internal Audit reviewed Metro's procedures with respect to outbound deliveries

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Other Discussion Points I/II

Goldman Sachs' Roles in the Base Metals Market

- Owner of Warehouse Operator (Metro)
- LME Trading Member (GSI)
- LME Shareholder
- LME Board Member

Customer Complaint – Koch Industries

- Koch Industries has filed a complaint with the LME claiming that Metro's re-warranting charge on one specific occasion was too high
- Metro met with the LME executive team. Following the meeting Metro is in the process of settling the complaint in exchange for decreasing the charges retro-actively

Customer Complaint – JP Morgan

- JP Morgan has filed a complaint that scheduling and outbound delivery of a large amount of cancelled metal in Asia were delayed and that Metro is not fulfilling the minimum outbound requirements. The LME is seeking additional information from JPM before investigating.
- At the request of Metro's Board GS Compliance supported by Internal Audit have investigated the issue and it appears that Metro reasonably complied with scheduling and outbound protocols relating to the metal under dispute.
- The review also highlighted a few operational areas for further study that will be addressed in due course. In addition Metro's Board will request GS Internal Audit to review Metro's compliance with outbound procedures globally in light of the issue above and the forthcoming change in the outbound regime

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Other Discussion Points II/II

Review of "Chinese Wall" Procedures by Third Party

- The LME requires information barriers between a warehouse company and a trading member. Goldman Sachs and Metro have developed policies and procedures to address the conflict and "Chinese Wall" requirements.
- The LME now proposes a new requirement that warehouse companies under trader ownership engage a third party to verify the effectiveness of the information barriers in place.
- Metro's Board is planning that in advance of the third party review GS Internal Audit would review the implementation of the procedures within GS.

New Health & Safety Regulations

- In order to ensure global safety standards for the LME and PWC staff visiting warehouses as well as warehouse staff in general, the LME has introduced a Warehousing Operations Health and Safety Policy.
- Metro has always been cognizant of HSE standards and is following the majority of standards under the new proposal already. The company is in the process of reviewing its procedures and Metro's Board is planning for GS Internal Audit to audit the implementation of the new policy.

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Appendix A: Media Debate: Key Discussion Areas

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Media Debate: Key Discussion Areas

- **"Cancellations Driven by Traders"**: One of the big misperceptions in the debate has been created by the press stating that it is consumers, who are trying to withdraw aluminium from the warehouses.
 - With the aluminium market continuing to be in a large surplus and the LME constituting a market of last resort cancellations are unlikely based on genuine consumer demand.
 - Current cancellations (and also the media debate) are driven by traders seeking to extract metal for off-warrant cash & carry trades
- **"Physical Premium Driven by Cash & Carry"**: Another key criticism in the media debate has been the fact that long warehouse queues allegedly pushed up the physical premium in the US aluminium market.
 - Metro Detroit has been shipping out aluminium constantly at the required outbound rate since 2010
 - An analysis of aluminium inventories in the US shows that aside from Metro Detroit only very few locations are shipping out aluminium at all
 - We strongly believe that high physical premia in Europe (which does not have an equivalent situation to that occurring in Detroit) and the US are driven by market participants doing aluminium cash & carry transactions, both on-exchange and off-exchange.
 - In addition some market participants have an interest in maintaining elevated physical premia. This is not the case for warehouses.
- **"Outbound Rate is Physically Constrained"**: Ultimately physical constraints limit the implementation of significantly higher outbound rates
 - Considerable investments were made to expand warehouse capacity during the economic crisis between 2008 and 2009. At the time market participants were worried about insufficient warehouse capacity. These investments were key to the functioning of the LME.
 - Warehouses have either been bought or rented on long term basis with a view to meet LME requirement at time of approval.
 - Outbound deliveries are fundamentally different to inbound deliveries. Inbound metal can be stored at the next best location. Since every warrant represents a designated parcel, outbound deliveries are much more complex. Metal has to be located and other metal displaced in order to prepare warrant for shipment

MITSI Holdings LLC
Board of Directors Meeting
Monday, 5th December 2011



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Permanent Subcommittee on Investigations
EXHIBIT #36a

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Board Meeting Agenda

Monday, 5th December 2011

New York, 20th West

Time	Item
08.00 – 8.20 (NY Time)	Intro / Company Administration <ul style="list-style-type: none">■ Changes to Board & Committees
08.20 – 10.00 (NY Time)	Business Review <ul style="list-style-type: none">■ Regular CEO Update■ Market Colour (incl. Competitive Environment)■ LME Notice on Load Out Rates■ 2012 / 2013 Rent & FOT
10.00 – 11.00 (NY Time)	Financial Review
11.00 – 11.30 (NY Time)	Federation Areas <ul style="list-style-type: none">■ Compliance: LME Notice Chinese Wall; Governance■ Internal Audit: Next Audit Round
11.30 – 12.00 (NY Time)	Any other business

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I. Company Administration

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Company Administration 1



Proposed Changes to Board & Board Committees

Greg Agran has resigned from the board of MITS1 LLC due to changes in the GS Commodities reporting structure. It is proposed that Owen West will replace him as board director. In addition it is proposed to rename the Compliance Committee to Control Committee and effect two changes to the composition of the Committees:

Commercial Committee	Control Committee
Proposed Changes <ul style="list-style-type: none">■ Greg Agran has resigned from the board of MITS1 LLC due to changes in the GS Commodities reporting structure■ It is proposed that Owen West would replace Greg Agran in the Commercial Committee New Composition <ul style="list-style-type: none">■ Jacques Gabillon■ Owen West■ Robert Mancini	Proposed Changes <ul style="list-style-type: none">■ Jacques Gabillon will resign from the Control Committee New Composition <ul style="list-style-type: none">■ Victoria Attwood-Scotts■ Max Bulk

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II. Business Review

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Goldman Sachs

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Metro's Current Inventory Level As of End November 2011

Location	Aluminum	Alloy	M554C	Copper	Lead	Nickel	Zinc	Steel	Total	Mkt Share
Asia										
Singapore										
Johor										
Busan										
Gwangyang										
Incheon										
Port Klang										
Asia Total	14,200	5,580	2,025	34,825			70,325	1,170	127,925	9%
EMEA										
Rotterdam										
Antwerp										
Trieste										
Hamburg										
Tekirdag										
EMEA Total	57,838	220	3,025	6,675	525	6,550	219	75,052	4%	
USA	1,150,000	47,880		47,025		84,625	5,580	1,335,120	98%	
New Orleans										
Chicago										
Mobile										
St. Louis										
Toledo										
Long Beach										
USA Total	1,351,800	117,540	217,250	66,800	202,075	41,990	1,997,255	63%		
Grand Total	1,423,638	5,800	117,540	222,300	108,100	525	278,950	43,379	2,200,231	34%
Off-Warrant	209,340	320	8,700	5,600		16,525	8,775		249,280	

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Metro's Market Share As of End November 2011

Current LME Inventory Level										Metro Market Share (% of Total LME Inventory)									
Region	Location	Asia	Europe	Lat	South	Tr	Other	Total		Region	Location	Asia	Europe	Lat	South	Tr	Other	Total	
Asia																			
Asia Total		80,725	67,230	43,750	106,875	9,100	11,085	168,875	6,680	463,104		2%	2%	2%	3%	17%	2%	64%	25%
Grand Total		80,725	67,230	43,750	106,875	9,100	11,085	168,875	6,680	463,104		2%	2%	2%	3%	17%	2%	64%	25%
Europe																			
Europe Total		2,024,552	1,021,800	271,150	68,350	400	584,025	4,469,877	44,880	7,163,335		27%	17%	62%	80%	80%	14%	81%	81%
Grand Total		2,024,552	1,021,800	271,150	68,350	400	584,025	4,469,877	44,880	7,163,335		27%	17%	62%	80%	80%	14%	81%	81%
USA																			
USA Total		2,024,552	1,021,800	271,150	68,350	400	584,025	4,469,877	44,880	7,163,335		27%	17%	62%	80%	80%	14%	81%	81%
Grand Total		2,024,552	1,021,800	271,150	68,350	400	584,025	4,469,877	44,880	7,163,335		27%	17%	62%	80%	80%	14%	81%	81%

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Current Deal Pipeline

Deal Pipeline As Of End Nov 2011

Commentary

- Metro currently has another 227kt booked in its deal pipeline with aluminium representing the largest metal followed by copper
- With an expected deal flow of 171kt out of 227kt, Detroit continues to be the key location for Metro

mt	Contract	Balance	Delivered
Aluminium	471,600	143,837	327,763
Aluminium Alloy	425	268	157
Copper	149,180	26,139	123,051
Nickel	0	0	0
Steel	80,500	16,397	44,103
Lead	32,085	21,313	10,772
NASAAC	41,319	12,416	28,903
Zinc	61,957	6,900	55,058
Total	617,076	227,270	588,806

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Recap of Load Out Rate Discussion

Timeline	Event
Late 2010 / early 2011	<ul style="list-style-type: none"> ■ European Economics conducts study on load out rates
June 16, 2011	<ul style="list-style-type: none"> ■ LME board discusses changes to load out rates
July 15, 2011	<ul style="list-style-type: none"> ■ LME board accepts to put forward changes as suggested by the LME executives
July 15, 2011	<ul style="list-style-type: none"> ■ LME proposes changes to load out rates and starts the consultation period for the proposed changes (deadline Sept 30, 2011). ■ Proposed changes include introduction of sliding scale according to amount of tonnage stored at each location.
Sept 30, 2011	<ul style="list-style-type: none"> ■ Metro submits a detailed load out rate paper outlining the technical issues and costs associated with the change (see last board presentation). ■ In addition to Metro three other warehouse operators made a submission
Oct 31, 2011	<ul style="list-style-type: none"> ■ LME proposes amendments to warehouse agreement and starts consultation period for the proposed changes (deadline Nov 30, 2011). ■ Proposed changes include (i) ability to unilaterally impose load out rates, (ii) adherence to UK Anti Bribery Act and (iii) adherence to Principles of Conduct
Nov 17, 2011	<ul style="list-style-type: none"> ■ On Nov 17, 2011 the LME issues a notice with definitive changes to load out rates becoming effective April 1, 2012. (see next page for details).
Nov 30, 2011	<ul style="list-style-type: none"> ■ In response to the LME's proposed amendments to the warehouse agreement (Oct 31, 2011) Metro submits a letter refuting strongly the LME's right to change load out rates unilaterally



LME Notice on Load Out Rates

LME Notice on Load Out Rates

Tonnage by Location	Min Delivery Out
Up to 300,000 tonnes	1,500 tonnes/day
300,000 to 600,000 tonnes	2,000 tonnes/day
600,000 to 900,000 tonnes	2,500 tonnes/day
More than 900,000 tonnes	3,000 tonnes/day

Key Discussion Points

Consultation Process

- Discontent that the LME has issued the notice without further feedback to Metro's submission or dialogue
- Metro's concerns expressed in the submission have largely not been taken into account
- There are new elements in the final notice that were not part of the consultation process

Asymmetric Scheduling Policy

- Negative economic impact from the fact warehouses have to keep higher load out rate when crossing a threshold going down, but have to adjust on the way up
- Limited economic impact from the asymmetry
 - Assuming tonnage thresholds are defined as current tonnage minus cancelled warrants the economics for a wind down scenario do not change
 - However there is a reduction in the upside since Metro has to schedule the new load out rate earlier when increasing inventory level

Calculation of Thresholds

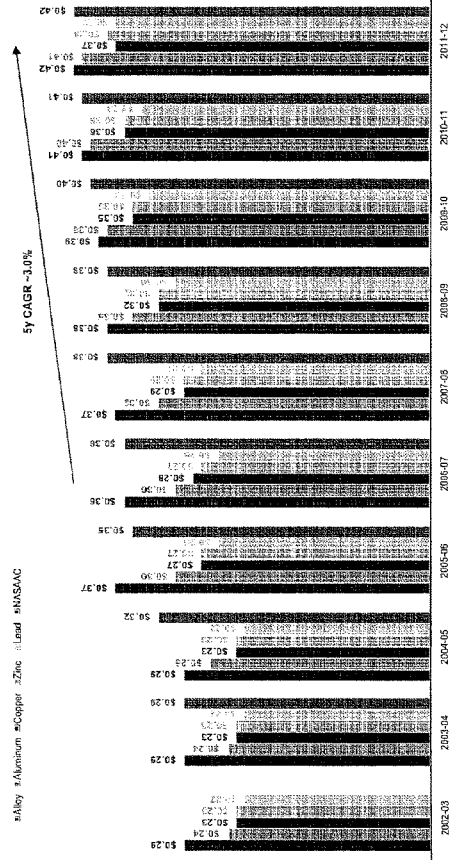
- Metro currently interprets the LME notice in way that cancelled warrants are subtracted from current tonnage in order to arrive at threshold
- This interpretation might lead to further discussions with the LME

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Historical Evolution of LME Rent

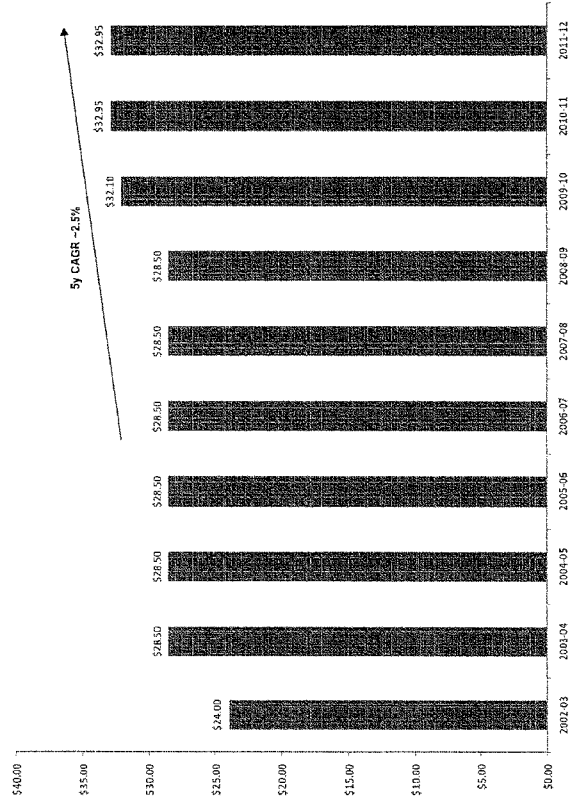


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Historical Evolution of FOT US Locations



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III. Financial Review

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Financial Review 15

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Impact of May Aluminium Tightness On Inventory Level

Evolution of Aluminium Inventory

Location	April 11		May 11		Change in		Under Financing	Dropped	Or which	
	Aluminium Inventory (\$)	Cancelled Warehouses (\$)	Net Inventory (\$)	Cancelled Warehouses (\$)	Inventory (\$)	Net Inventory (\$)			Sold	Cancelled
Asia	27,725	27,725	50,270	325	1,500	2,199	794	25,875	125,770	98%
Japan	52,228		31,103			50	794	31,103	171,960	98%
Germany	52,828		52,828			50	794	52,828	152,575	98%
Houston	28,853		28,853			7,020	794	32,873	152,575	98%
Port Moresby	31,850		31,850			50	794	31,850	152,575	98%
Asia Total	235,870	252,870	11,824	325	11,998	201,371	794	224,577	121,211	98%
EU/NA			4,808		17,883	12,883	794			
Belgium	500		500			500	794			
France	32,725		32,725			38,725	794			
Liverpool	26,575		26,575				794	26,575	158,575	98%
EU/NA Total	30,443	20,443	341	340	1	1	794	20,441	158,575	98%
USA			1,156,300	157,875	876,125	18,375	794	41,325	141,325	98%
New Orleans	41,325		41,325			175	794	41,325	141,325	98%
Chicago	2,600		2,600			100	794	2,600	141,325	98%
Mobile	253,175		253,175			138,225	794	253,175	141,325	98%
St. Louis	825		825			825	794	825	141,325	98%
Tomball	75,475		75,475			85,400	794	75,475	141,325	98%
Long Beach	24,150		24,150			24,150	794	24,150	141,325	98%
USA Total	478,200	282,800	1,160,200	158,025	1,172,125	18,375	794	322,275	183,775	57%
Grand Total	1,883,191	1,383,341	1,343,341	158,350	1,441,690	201,371	794	587,898	305,036	71%

Commentary

- All locations where aluminium financing deals were dropped in May have seen a surge in outflow and cancellations
- Some further aluminium has been cancelled in Mobile, but overall the picture remains the same from all the time of the last update
- Overall 76% of the aluminium from the dropped financing deals has been cancelled vs 70% in Aug 2011

1105

Note: Differences in rent discount numbers compared to last board presentation relate to a more precise calculation of monthly average rent discounts.



Metro's Annual Financial Performance

Based on Management Financials / Forecast

Similar to a trading business Metro's financial performance and forecasts are heavily dependant on market circumstances and a handful of key determinants.

(US\$, million)		2009	2010	2011 Mgmt Proj.	2011 Year to Date (up to Oct 2011)	
					Actuals	Mgmt Proj. Delta
Revenue Items	Inventory Balance	Start End	885kt 2,169kt	2,413kt 2,942kt	2,413kt 2,248kt	2,413kt 2,853kt
	Rent Revenues		\$ 220m	\$ 325m	\$ 301m	\$ 314m \$ (13)m
	Rent Discounts		\$ 31m	\$ 64m	\$ 51m	\$ 60m \$ 9m
	FOT & Other Revenues		\$ 22m	\$ 25m	\$ 14m	\$ 48m \$ 12m \$ 36m
	Total Revenues		\$ 211m	\$ 290m	\$ 325m	\$ 298m \$ 266m \$ 32m
Cost Items	Freight Incentives		\$ 71m	\$ 65m	\$ 63m	\$ 61m \$ 51m \$ 10m
	OPEX / G&A		\$ 72m	\$ 68m	\$ 71m	\$ 61m \$ 59m \$ 2m
	Total Cost		\$ 143m	\$ 134m	\$ 134m	\$ 122m \$ 110m \$ 12m
	EBITDA		\$ 67m	\$ 156m	\$ 191m	\$ 176m \$ 156m \$ 20m

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IV. Federation Areas

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Federation Areas 20

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Compliance: LME Notice & Governance

LME Notice on Chinese Wall Procedures

- "New LME 'Information Barrier between Warehouse Companies and Trading Companies' Rules"
- Effective 1st April 2012
- Introduces the concept of "Designated Individuals" -- those with management responsibility for both entities.
- Introduces requirement for Metro to engage a third party to assure that the information barriers in place are compliant with the rules and requirements of the Exchange.
- Metro and GS policies need to be updated to reflect these changes and we are also looking at additional further enhancements.

Metro Governance

- GS / Metro Governance discussion

Email Surveillance

- Update on email surveillance

MITSI Holdings LLC
Board of Directors Meeting
Wednesday, 21st March 2012



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Permanent Subcommittee on Investigations
EXHIBIT #36b

GSPSICOMMODS00009423



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Board Meeting Agenda

Wednesday, 21st March 2012

New York, 20th West

Time	Item
10.00 – 10.20 (NY Time)	Intro / Company Administration <ul style="list-style-type: none">■ Commercial Decisions■ Board Evaluation / composition review■ Open Task Tracker
10.20 – 11.20 (NY Time)	Business Review <ul style="list-style-type: none">■ Regular CEO Update■ Off-Warrant Deals■ Update on & Preparation For New Load Out Rate■ Strategic Discussions: Vollers, Steinhilber
11.20 – 12.00 (NY Time)	Financial Review <ul style="list-style-type: none">■ Financial Performance■ 2012 Projection■ Wind Down Scenario
12.00 – 12.30 (NY Time)	Federation Areas <ul style="list-style-type: none">■ Tax: Update Italy Tax Audit■ Compliance: Compliance Committee, Information Barrier Policy, Audit Chinese Wall Procedures■ Internal Audit: Update Action Items■ Environment: California Building Clean-Up
12.30 – 13.00 (NY Time)	Any other business

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I. Company Administration

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Open Task Tracker

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No.	Issue Date	Description	Responsibility	Due Date	Open/Closed	Comments
Open Items						
1.	Sept 10 / Sept 11	Internal Audit Tasks	Ian Campbell / Ingmar Griebien	Various	Open	Monitor implementation of internal audit tasks arising from two audits and update board on status.
Recently Closed Items						
2.	Dec 11	Interim Board Updates	Ingmar Griebien	Mar 12	Closed	Regular updates on Metro's business activities in-between board meetings are being sent out.
3.	Dec 11	Commercial Decision Committee reporting	Jacques Gabillon	Nov 11	Closed	Formal procedure for reporting decisions made by the Commercial Sub-Committee to the Board was established. Decisions are being reported in regular board updates and summarized at beginning of every board meeting.
4.	Dec 11	Review of California Building Cleaning Requirements				
5.	Jan 12	Document Board Composition Review				
6.	Jan 12	Board Evaluation				

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II. Business Review

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Business Review 4

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Metro's Current Inventory Level

As of End February 2012

	Location	Aluminum	Alloy	Al-SiAC	Copper	Lead	Nickel	Zinc	Steel	Total	Mkt Share
Asia	Singapore										
	Johor										
	Busan										
	Gwangyang										
	Incheon										
Asia Total	Port Klang										
		14,800	5,720		125	52,925		84,900	195	158,465	11%
	Rotterdam										
	Antwerp										
	Thieste										
EMEA	Hamburg										
		53,763	220			5,675	516	5,550		57,724	3%
		1,395,075		51,140		53,275		82,300	11,440	1,597,230	98%
	Detroit										
	New Orleans										
USA	Chicago										
	Mobile										
	St. Louis										
	Toledo										
	Long Beach										
USA Total		1,575,500	113,060	177,775	70,675			171,875	53,590	2,182,575	63%
		1,643,863	5,940	113,060	177,900	130,275	516	262,325	53,885	2,388,764	34%
	Grand Total										
Off-Warrant		99,850	260	8,900	3,575	1,025		4,050	65	116,725	

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Metro's Market Share
As of End February 2012

Current LME Inventory Level											Metro Market Share (% of Total LME Inventory)										
Region	Location	Asia	Aluminum	Alloy	Metalic	Copper	Lead	Nickel	Zinc	Total	Region	Location	Asia	Aluminum	Alloy	Metalic	Copper	Lead	Nickel	Zinc	Total
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EMEA											EMEA										
USA											USA										
EMEA Total											EMEA Total										
USA Total											USA Total										
Grand Total											Grand Total										
EMEA %											EMEA %										
USA %											USA %										

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Current Deal Pipeline

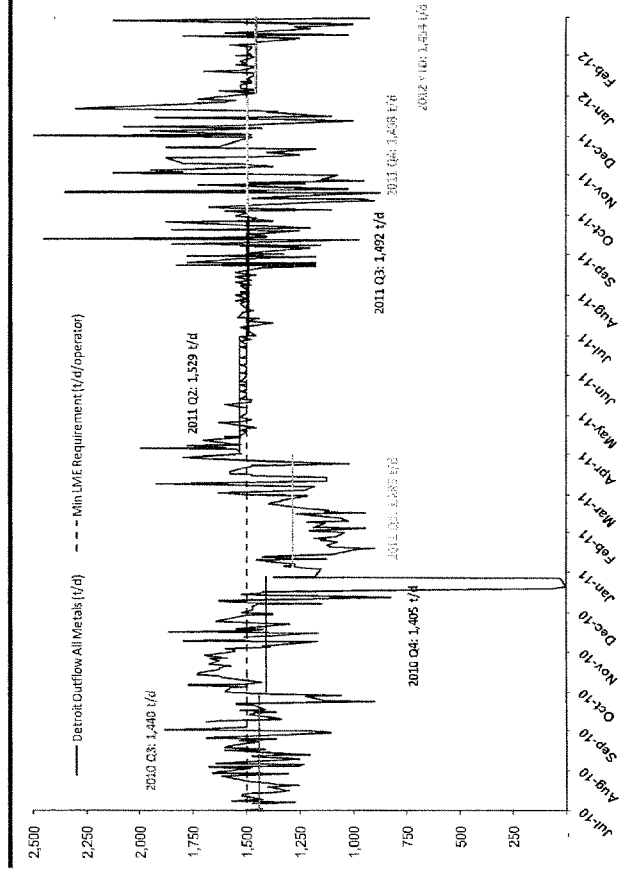
Deal Pipeline As Of End February 2012

- Metro currently has another 316K booked in its deal pipeline with aluminum representing the largest metal followed by copper
- Detroit continues to be the key inbound location for Metro

mt	Contract	Balance	Delivered
Aluminum	615,384	283,735	351,649
Aluminum Alloy	425	10	415
Copper	154,521	20,263	134,258
Nickel	0	0	0
Steel	60,580	11,126	49,454
Lead	18,200	6,280	11,920
NASAAC	13,589	2,167	11,422
Zinc	29,435	12,671	16,764
Total	892,134	316,252	575,992
Potential Add Tonnage	250,000	250,000	0

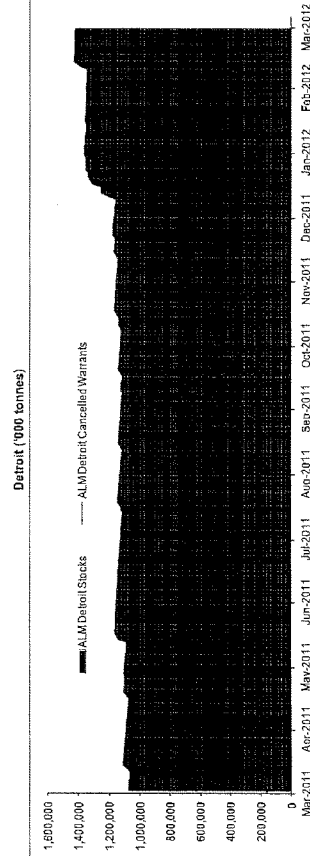
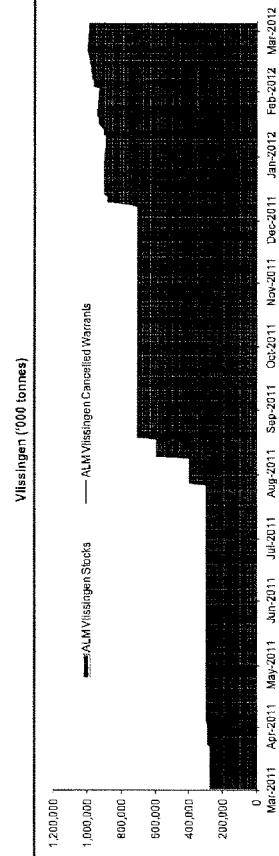


Update on Detroit Outflow Activity



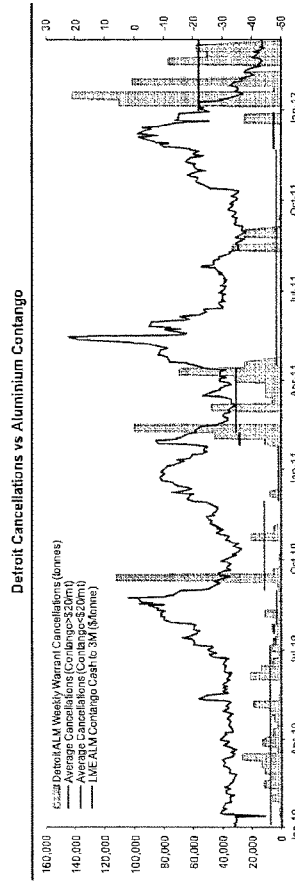
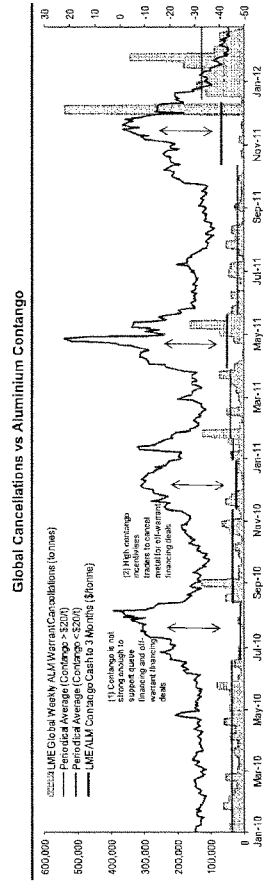


Aluminium Stocks & Cancellations





Impact of Financial Players on Warrant Cancellations





Overview Off-warrant Deals

Metro has been approached by a client planning to cancel metal for the purpose of off-warrant financing deals. In order to keep the business in-house Metro has decided to offer off-warrant storage space to the client in form of a structured off-warrant deal.

	Jan 2012 Deal		Feb 2012 Deal		Feb/Mar 2012 Deal	
Tonnage (kt)	■ 100 kt	■ 100 kt	■ 100 kt	■ 50 kt	■ 50 kt	
Rent & FOT Rate Structure	■ FOT and full rent in queue	■ FOT and full rent in queue	■ FOT and full rent in queue	■ FOT and full rent in queue	■ FOT and full rent in queue	
	■ 8 cents/t/d for off-warrant storage after initial 90 days of free rent	■ 8 cents/t/d for off-warrant storage after initial 90 days of free rent	■ 8 cents/t/d for off-warrant storage after initial 90 days of free rent	■ 8 cents/t/d for off-warrant storage after initial 90 days of free rent	■ 8 cents/t/d for off-warrant storage after initial 90 days of free rent	
	■ After 12 months from shipment date metal reverts back to full rent	■ After 12 months from shipment date metal reverts back to full rent	■ After 12 months from shipment date metal reverts back to full rent	■ After 12 months from shipment date metal reverts back to full rent	■ After 12 months from shipment date metal reverts back to full rent	
Day-One Incentive	■ Metro pays \$33/t	■ Metro pays \$58/t	■ Metro pays \$58/t	■ Metro pays \$58/t	■ Metro pays \$58/t	
Client Optionality	■ Cancel deal and sell metal/remove from Metro off-warrant storage or re-warrant with Metro	■ Cancel deal and sell metal/remove from Metro off-warrant storage or re-warrant with Metro	■ Cancel deal and sell metal/remove from Metro off-warrant storage or re-warrant with Metro	■ Cancel deal and sell metal/remove from Metro off-warrant storage or re-warrant with Metro	■ Cancel deal and sell metal/remove from Metro off-warrant storage or re-warrant with Metro	
Cancellation Terms	■ Client pays \$60/t	■ Client pays \$85/t	■ Client pays \$85/t	■ Client pays \$85/t	■ Client pays \$85/t	
Re-warranting Terms	■ Metro pays \$59, if re-warranted within 6 months from cancellation date (sliding scale down thereafter)	■ Metro pays \$44, if re-warranted within 9 months from cancellation date (sliding scale down thereafter)	■ Metro pays \$44, if re-warranted within 9 months from cancellation date (sliding scale down thereafter)	■ Metro pays \$47/t, if re-warranted within 9 months from cancellation date (sliding scale down thereafter)	■ Metro pays \$47/t, if re-warranted within 9 months from cancellation date (sliding scale down thereafter)	



Preparation for New Load-out Rate I/II Administration

Preparation Summary		Estimated Costs	
Staffing:	Staffing	Qty	\$/per annum
• Hired and in the process of training five additional administrators and two additional clerks.	Administrators	5	\$ 183,600.00
• Restructured supervision by assigning three administrators supervisory responsibilities. This will increase lead positions from three to six.	Computer Technician	1	\$ 50,000.00
• Cross trained staff to achieve higher level of flexibility in task assignments	Clerks	2	\$ 51,200.00
	Ongoing Oper		\$ 284,800.00
Work Stations:	Workstations	Qty	\$
• Added five work stations, with system access (+ increased number of licenses)	Add Workstations	2	\$ 5,298.00
• Created training room with ability to utilize space for data entry when activity requires	Software Licenses		\$ 57,998.00
• Established document/sort stations for centralized processing of document file retrieval, re-filing and for new filing			
Database Enhancements:	Database	Hours	
• Track dates that customer met various outbound requisites.	Solomon Customization	99.2	\$ 9,920.00
• Created system scheduling of outbound releases, currently testing with March implementation			
• Added screens to allow manual outbound scheduling adjustments.	Additional Equipment		
• Created various reports for management oversight and historical analysis of outbound scheduling versus actual shipments including missed load details	MP9001 (Copier)	1	\$ 24,327.00
• Added additional validations	FI-6670A (Scanner)	2	\$ 13,218.00
	Scanning Software	1	\$ 10,161.00
			\$ 47,706.00
Workflow Process:	One-off Cases		\$ 114,924.00
• Reviewed and amended outbound administrative procedures	<i>of which already spent</i>		\$ 57,718.00
• Increased verification of certificates of analysis heat numbers to 100% reconciliation of physical to document details.			
• Updated outbound administrative procedures manual			



Preparation for New Load-out Rate III/II Warehousing

Preparation Summary		Estimated Costs	
Staffing:		Labor	Qty \$/per annum
■ Added a total of 35 temporary employees increasing the total warehouse staff to 107 employees (supervisors and management included).		Add Warehouse Staff	35 \$ 1,575,000.00
■ As part of the above an additional Warehouse Supervisor was hired in 2011 and another Warehouse Supervisor began training in 2012.		Maintenance Staff	2 \$ 90,000.00
■ Also created Warehouse Operations Manager position and promoted within to fill the position in 2011.		Promotions	3 \$ 13,360.00
■ Three current employees were promoted to Warehouse Supervisor in 2011 to increase overall supervision and coverage.		Operating Expenses	
■ A total of six current employees were promoted to Warehouse Foreman in 2012 to increase overall supervision.		Insurance Rate Increase	\$ 120,000.00
■ Increased staffing at warehouses will allow spreading out shipping demand, improving space utilization and maximizing productivity.		Increased Forklift Mainten.	40 \$ 100,000.00
		Ongoing Opex	\$ 1,898,260.00
Equipment:		Capital Expenses	Qty \$
■ A total of 10 forklifts were delivered in 2011. An additional 16 forklifts are expected to be delivered in April 2012. Of these, six units are replacing existing rentals.		Maintenance Truck	1 \$ 65,000.00
■ 7 additional forklifts potentially kept on rental for increase in inbound activity (not in cost estimate)		Forklifts	20 \$ 700,000.00
■ Vendors have been contacted to increase services when needed (propane delivery, forklift PNTs).		Vehicles for Supervisors	2 \$ 27,994.00
■ Increased warehouse supply levels, e.g. seals, strapping, clips, dunnage, etc.		Fax Machines	\$ 7,500.00
		Baricades	\$ 50,000.00
		Yard Ramps	7 \$ 190,000.00
		New door/leveler	\$ 12,000.00
Workflow Process:		One-off Capex	\$ 1,052,494.00
■ Centralized outbound load scheduling to ensure best allocation of labor and equipment resources.		<i>of which already spent</i>	<i>\$ 855,494.00</i>
■ Provide early notification to warehouse partners of shipping activity to allow them ample time to ramp up/down.		Warehouse Area Opportunity Cost	
■ Opening up additional warehouse space at shipping docks to accommodate increased metal staging.		Lost Area [owned; one-off]	5% \$ 2,819,773.00
■ Ability to schedule second or third shifts at warehouses with heavy inbound/outbound activity to better utilize available space and equipment, improve productivity and reduce dock congestion.		Lost Area [leased; p.a.]	5% \$ 474,361.00

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III. Financial Review

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Metro's Key Business Metrics

Evolution of Key Business Metrics

Business Metric (2011)	Dec-10	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12
Inventory Balances															
■ In Dec 2011 metal balances were roughly flat to the Dec 2010 level	191	117	109	71	72	125	38	84	85	172	83	73	304	45	98
■ Metal outflows were high in mid-year due to May tightness in aluminum market that impacted most locations	2,173	2,507	2,507	2,619	2,619	2,185	2,869	2,440	2,320	2,378	2,218	2,200	2,181	2,302	2,391
■ Recent outflows have been concentrated in Detroit and New Orleans	2,173	2,507	2,507	2,619	2,619	2,185	2,869	2,440	2,320	2,378	2,218	2,200	2,181	2,302	2,391
— Detroit outbound queue is now scheduled through mid-Jan 2013	2,173	2,507	2,507	2,619	2,619	2,185	2,869	2,440	2,320	2,378	2,218	2,200	2,181	2,302	2,391
Key Metrics															
■ Freight incentives increased throughout the year due to a concentration of offers into Detroit	1,037	1,037	1,037	1,037	1,037	1,037	1,037	1,037	1,037	1,037	1,037	1,037	1,037	1,037	1,037
■ Total net discounts have increased in the last half of the year as a wider coverage allowed for more metal being placed under financing deals	1,037	1,037	1,037	1,037	1,037	1,037	1,037	1,037	1,037	1,037	1,037	1,037	1,037	1,037	1,037
2011/2012 Dividend															
■ Preliminary estimates show a dividend for the next cycle 2011/2012 of around \$140m															
■ Board to authorize dividend payment of up to \$150m (dividend resolution)															



Metro's Annual Financial Performance

Based on Management Financials / Forecast

(US\$, million)		2009	2010	Mgmt Proj.	2011 Actuals	Delta	2012 Mgmt Proj.
Revenue Items	Inventory Balance	Start	2,168kt	2,413kt	2,413kt	-	2,385kt
		End	2,169kt	2,942kt	2,385kt	(657)kt	2,282kt
	Rent Revenues		\$ 220m	\$ 329m	\$ 384m	\$ (28)m	\$ 357m
	Rent Discounts		\$ 31m	\$ 64m	\$ 73m	\$ (14)m	\$ 60m
	FOT & Other Revenues		\$ 22m	\$ 25m	\$ 14m	\$ 38m	\$ 58m
	Total Revenues		\$ 211m	\$ 290m	\$ 325m	\$ 24m	\$ 353m
	Freight Incentives	Delta	\$ 71m	\$ 65m	\$ 63m	\$ 15m	\$ 105m
	OPEX / G&A		\$ 72m	\$ 69m	\$ 71m	\$ 2m	\$ 73m
	Total Cost		\$ 143m	\$ 134m	\$ 134m	\$ 17m	\$ 178m
Cost Items							
EBITDA			\$ 67m	\$ 156m	\$ 191m	\$ 7m	\$ 175m



Metro's 2012 Financial Forecast Management Forecast

Similar to a trading business Metro's financial performance is heavily dependant on market circumstances and the evolution of a handful key determinants.

(US\$, million)		2012 Forecast	Commentary / Assumptions
Revenue Items	Inventory Balance	Start 2,385kt End 2,282kt	■ 4% decrease in stock levels due to increased load out rates in Detroit. Metro maintains a healthy pipeline of inbound stock.
	Rent Revenues	\$ 357m	■ Impact of 10% rent rate increase effective Apr '12 offset by 7% decrease in average stock levels compared to 2011
	Rent Discounts	\$ 60m	■ Assumed to be 17% of rent revenue (16.4% for 2011). EBITDA increases \$3m for each point of discount decrease
	FOI & Other Revenues	\$ 56m	■ Model assumes 2012 cancellations minor shipment levels
	Total Revenues	\$ 353m	
Cost Items	Freight Incentives	\$ 105m	■ Incentives assumed to remain at current levels. Average incentive increases to \$115 in 2012 (\$88 in 2011) as Detroit concentration increases from 50% to 80% of inbound metal
	OPEX / G&A	\$ 73m	
	Total Cost	\$ 178m	
	EBITDA	\$ 175m	

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IV. Federation Areas

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Compliance: Various

Control Sub-Committee

- As discussed in the last board meeting the scope of the sub-committee was changed to include all control issues and representation restricted to GS Federation staff only.
- Since the last board meeting there have been no control and/or compliance questions, the Sub-Committee did not meet and no decisions were taken.

Update Information Barrier Policy

- From April 1st, 2012 the new LME rules on information barriers between trading members and warehouses will come into force.
- GS Compliance is working with external counsel on the new procedures. The procedures will be signed up to by all relevant personnel at Metro and at GS.
- GS Compliance is also still in discussion with the exchange and seeking clarifications on a couple of points

Update LME Audit of Information Barriers

- Board to discuss the choice of external auditor and the scope of the audit



Internal Audit: Update Action Items

Finding	Finding Detail	Action Plan	Status
2010 Audit (Last Remaining Item)			
Key Person Dependency		Redacted by the Permanent Subcommittee on Investigations	
2011 Audit			
Outbound Scheduling	Need for centralized framework to support key warehousing activities and outbound scheduling	Centralized scheduling system to automate key elements	Open (Mar 2012)
Proactive Follow-Up on Outbound Deliveries		Redacted by the Permanent Subcommittee on Investigations	
Jobtor Warehouse Procedure Enhancements			
Preparation for increased outbound requirement	Need to perform analysis to assess ability to meet increased outbound requirement	Analysis	Open (Mar 2012)
Metro Website		Redacted by the Permanent Subcommittee on Investigations	
Vendor Management Contracts			
Conflicts Management Procedure	Metro / GS conflict management process should be enhanced	E-surveillance of communication, GCPi shared-drive, list of Metro employees with access to confidential information	Completed (Dec 2011)
Further audit activities on HSE and new outbound rule for 2012 to be discussed			

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MITSI Holdings LLC
Board of Directors Meeting
December 19th, 2012



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Permanent Subcommittee on Investigations
EXHIBIT #36c

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Board Meeting Agenda

Time	Item
8.00 – 8.30 (NY Time)	Intro / Company Administration <ul style="list-style-type: none">■ Board composition■ Control Committee Composition■ Commercial Decisions
8.30 – 10.00 (NY Time)	Business Review <ul style="list-style-type: none">■ CEO Business and Market Update (incl. HSE)■ Regulatory Update■ 2013/2014 Rent Submission■ Off-Warrant Deal Summary■ 2012 Compensation
10.00 – 11.00 (NY Time)	Financial Review <ul style="list-style-type: none">■ Recent financial performance
11.00 – 11.30 (NY Time)	Federation Areas <ul style="list-style-type: none">■ Internal Audit Findings■ Third Party Audit / PWC
11.30 – 12.00 (NY Time)	Any other business

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I. Company Administration

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Open Task Tracker

No.	Issue Date	Description	Responsibility	Due Date	Open/Closed	Comments
Open Items						
Recently Closed Items						
10.	Jun 12	Internal Audit	Ingmar Grebien	Dec 12	Closed	Engaged Internal Audit to review Chinese Wall procedures and 3.0000/d rule implementation
11.	Jun 12	External Auditor Appointment	Metro Management	Oct 12	Closed	PWC has been retained to conduct the external review and has started work.
12.	Jun 12	Premium vs Freight Incentive Level	Ingmar Grebien	Oct 12	Closed	Historical and current level of freight incentive vs physical premia had been included in last board pack.
13.	Oct 12	Balance Sheet				
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II. Business Review

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Metro's Current Inventory Level
As of End November 2012

Metro Stocks @ 30-Nov-12										
Location	Aluminum	Alloy	MnAlC	Copper	Lead	Nickel	Zinc	Steel	Total	Mt. Share
Asia										
Singapore										
Johor										
Busan										
Gwangju										
Indon										
Port Klang										
Asia Total	10,853	1,967		44,275	1,150		100	65	58,500	8%
EMEA										
Rotterdam										
Amst'rp										
Thames										
Hamburg										
EMEA Total	43,238	100		55,160			112	397	98,907	23%
USA										
Denial	1,403,100				48,750	402	114,175	14,850	1,630,537	97%
Near Orleans										
Chicago										
Mobile										
St. Louis										
Tulsa										
Long Beach										
USA Total	1,553,802		13,720	53,475	52,550	402	133,775	19,045	1,836,967	60%
Grand Total	1,607,688	2,067	13,720	107,850	53,812	789	140,423	19,110	2,045,454	27%
Off-Warrant	51,975	120	400	1,800	1,475		1,900		67,470	

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Metro's Market Share
As of End November 2012

LME Inventory Level										Metro Market Share (% of Total LME Inventory)									
LME Stocks @ 30-Nov-12										Metro Market Share @ 30-Nov-12									
Region	Location	Alumina	Alum	Comp	Med	Al	Al	Al	Total	Region	Location	Alumina	Alum	Comp	Med	Al	Al	Al	Total
Redacted by the Permanent Subcommittee on Investigations										Redacted by the Permanent Subcommittee on Investigations									
Total										Total									
79,375 22,840 107,800 99,335 10,249 108,600 359 1,182,821										7% 4% 41% 1% 41% 17% 1%									
EMEA										EMEA									
Total										Total									
2,411,580 5,180 61,726 167,375 96,443 79 148,038 26,069 3,195,372										1% 0% 0% 0% 0% 0% 0% 0% 0% 0%									
USA										USA									
5,633,374 25,100 46,172 111,775 10,229 1,182,821										2% 0% 100% 0% 0% 0% 0% 0% 0% 0%									
Redacted by the Permanent Subcommittee on Investigations										Redacted by the Permanent Subcommittee on Investigations									
Total										Total									
1,877,600 46,172 103,320 467 112 300,620 77,302 1,328,337										1% 0% 0% 0% 0% 0% 0% 0% 0% 0%									
Global Total										Global Total									
5,189,935 87,460 146,100 262,275 106,115 10,229 1,328,337 1,182,821										2% 0% 100% 0% 0% 0% 0% 0% 0% 0%									

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Current Deal Pipeline

Deal Pipeline As Of End November 2012

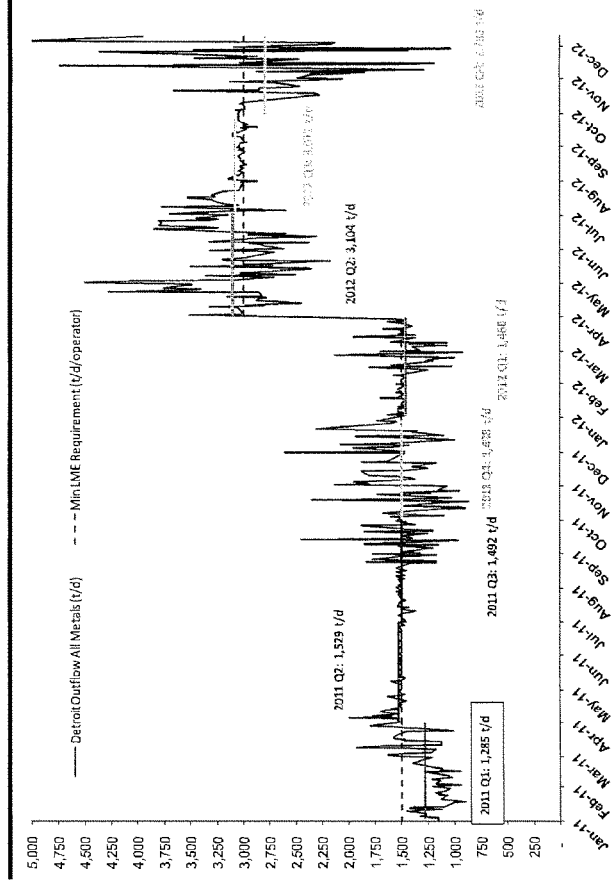
Commentary

- Metro currently has another 405K booked in its deal pipeline with aluminum representing the largest metal
- Detroit continues to be the key inbound location for Metro

mt	Contract	Balance	Delivered
Aluminum	483,126	287,118	216,008
Aluminum Alloy	425	10	415
Copper	257,500	27,915	229,584
Nickel	0	0	0
Steel	0	0	0
Lead	14,500	3,440	11,060
NASAAC	1,800	1,121	679
Zinc	113,728	105,197	8,530
Ferro Titanium	193	6	187
Total	871,272	404,808	466,464



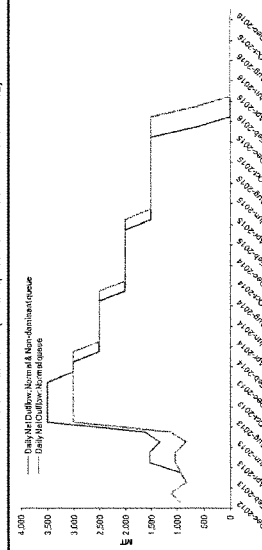
Implementation of 3,000t/d Outbound Rule



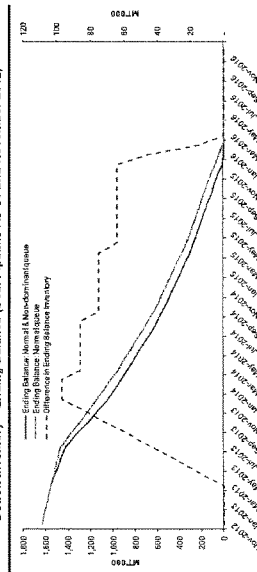


Recent Changes to Outbound Tonnage

Detroit Net Outflows – (Deal Pipeline As Of End November 2012)



Detroit Inventory – Ending Balance (Deal Pipeline As Of End November 2012)



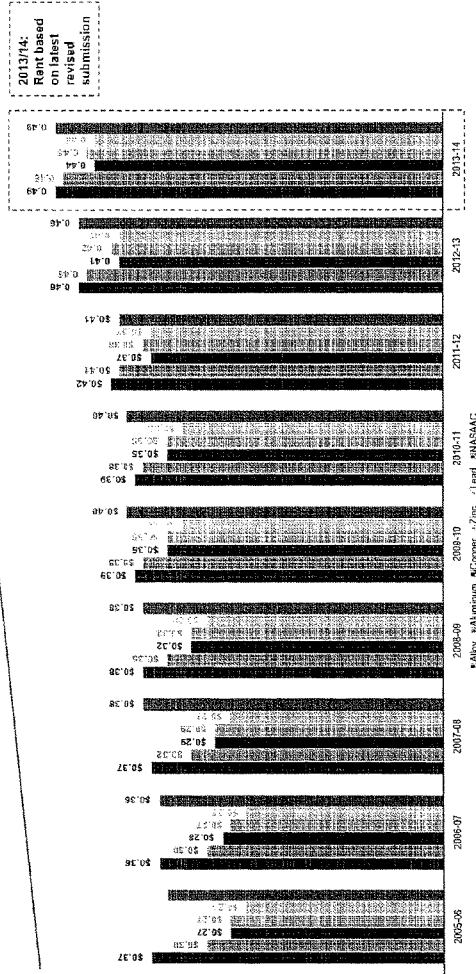
Commentary

- Consultation on multi-metal queues
 - Rule change: If one location has delivery out commitments of min 30,000mt for one dominant metal, then a warehouse company shall be required to deliver out 500mt of metals other than the dominant metal in addition to the prevailing outbound rates.
 - First estimates indicate that under wind-down assumptions the economic impact would be an EBITDA loss of around \$20-50m through 2016
- De-listing of steel billet in all non-European locations
 - Any steel billet on LME warrant remaining in the delisted locations at May 30, 2014 will be moved to another LME approved warehouse at the expense of the warehouse company concerned.
 - With 19Kt Metro only has a limited inventory of steel in its US warehouses. Management is working on a cost effective plan to have the metal removed from the warehouses prior to any delisting.



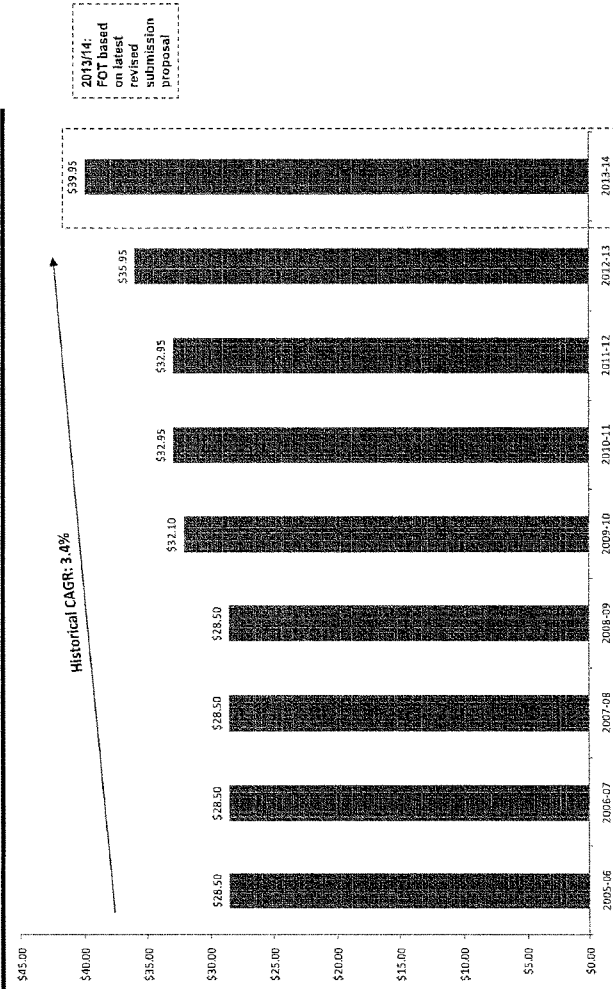
Historical Evolution of LME Rent

Historical CAGR: 5.0%





Historical Evolution of FOT US Locations



Overview Off-warrant Deals

Metro has been approached again by a client planning to cancel metal for the purpose of off-warrant financing deals. Similar to previous deals Metro has decided to offer off-warrant storage space to the client in order to keep the business in-house.

	Jan 2012 Deal	Feb/Mar 2012 Deal	Sept 2012 Deal
Tonnage (kt)	■ 100 kt	■ 100 kt	■ 50 kt ■ 160 kt
Rent & FOT	■ FOT and full rent in queue		■ FOT and full rent in queue
Rate	■ 8 cents/t/d for off-warrant storage after initial 90 days of free rent		■ Full LME rent for off-warrant material until Dec 2013
Structure	■ After 12 months from shipment date metal reverts back to full rent		
Day-One Incentive	■ Metro pays \$33/t	■ Metro pays \$58/t	■ Metro pays \$38/t
Client Optionality	■ Cancel deal and sell metal/remove from Metro off-warrant storage or re-warrant with Metro		
Cancellation Terms	■ Client pays \$60/t	■ Client pays \$85/t	■ Client pays \$85/t
Re-warranting Terms	■ Metro pays \$69/t, if re-warranted within 6 months from cancellation date (sliding scale down thereafter)	■ Metro pays \$49/t, if re-warranted within 9 months from cancellation date (sliding scale down thereafter)	■ Metro pays \$160/t, if re-warranted by Dec 2013 Metro reimburses the difference between current published rent and 2013/2014 published rent, if material is re-warranted
Status	■ Re-warranted		
	■ Of the three deals 100kt were re-negotiated to \$95/t and 100kt to \$120/t at re-warranting		■ Metal has not shipped out yet



Metro's Key Business Metrics

Evolution of Key Business Metrics													Commentary
Inventory Levels (000 t)													
Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Inventory Levels & Activity
Actual Inventory													
Inflow	75	264	45	108	40	74	89	101	63	38	231	31	■ Nov metal levels are down 14% from Dec-11 levels. YTD-Nov inflows totaled 918kt, compared to shipments of 1,268kt.
Outflow	(123)	(79)	(71)	(78)	(104)	(127)	(110)	(90)	(43)	(149)	(160)	(141)	
End Balance	2,200	2,295	2,380	2,390	2,331	2,279	2,258	2,270	2,180	2,079	2,149	2,038	■ Detail accounted for 75% of the inflows, but only 41% of the outflows as Metro had zinc in April during the summer due to zinc tightness
Inflow as % of End Balance	3.1%	11.7%	3.9%	4.5%	2.9%	3.2%	4.0%	4.0%	2.9%	1.8%	10.6%	1.5%	
Outflow as % of End Balance	5.5%	3.3%	3.0%	3.3%	4.4%	5.6%	4.9%	4.0%	6.5%	7.2%	7.5%	6.9%	■ YTD-Nov releases totaled 2,035kt, 65% of which occurred in Detroit contributing to an outboard share of \$30M (scheduled through Jan-2014)
Key Financials													
Total Revenues	24,762	26,382	32,799	31,428	25,826	26,233	31,106	36,275	35,511	31,544	29,463	34,806	■ High consolidation activity and related EOT revenue over the last half of the year have improved Metro's near term earnings and cash flow
% growth	(17.6)	6.0%	21.5%	(4.2)%	(17.6)%	8.3%	16.2%	15.5%	(2.4)%	(11.7)%	(9.1)%	21.8%	
Direct Costs	13,125	14,467	12,637	13,062	13,574	13,316	12,680	13,189	14,437	13,659	15,469	14,372	■ Average freight allowances have increased in recent months as warranting activity reflects higher incentives for Detroit (currently \$180M - \$200M).
EBITDA	1,338	933	870	858	1,055	1,087	899	892	938	955	868	985	
% margin	5.6%	3.5%	2.6%	2.7%	4.0%	3.5%	2.9%	2.7%	2.8%	3.0%	2.7%	2.8%	■ Incentives around Detroit recently ranged from \$70-\$80M
% growth	(9.9)	15%	(6.8)	(9.8)	(9.8)	(2.7)	20%	31%	26%	(10)%	(17)%	59%	
Key Business Drivers													
Cash-Right Income (\$ 000)	7,341	20,099	2,014	12,584	3,665	6,435	8,056	8,438	18,846	4,298	27,489	3,478	Preliminary dividend estimate
Actual													
Cash-Right Income (\$Bn)	9,775	79.40	65.34	116.59	79.68	86.50	95.78	83.23	314.05	132.21	119.04	13.05	■ Based on the current cash balance and expected needs, Metro projects to play a dividend in the \$150 million range.
Actual													
Financing Costs	413	466	512	516	507	501	514	511	333	263	253	237	Rem Discount/Share (% of Total L)
Financing Costs (\$Bn)	13.7%	15.2%	16.1%	16.1%	16.9%	16.1%	22.6%	13.9%	9.1%	4.9%	5.0%	5.0%	



Metro's Annual Financial Performance

Based on Management Financials / Forecast

(US\$, million)	2009 A	2010 A	2011 A	2012 - Mgmt Proj. (Original)	2012 - Mgmt Proj. (Revised)	2013 - Mgmt Proj.
Inventory Balance	Start	855kt	2,169kt	2,413kt	2,395kt	2,009kt
	End	2,169kt	2,413kt	2,395kt	2,009kt	1,889kt
Rent Revenues	\$ 220m	\$ 329m	\$ 356m	\$ 357m	\$ 349m	\$ 317m
Rent Discounts	\$ 31m	\$ 64m	\$ 59m	\$ 60m	\$ 41m	\$ 19m
FOT & Other Revenues	\$ 22m	\$ 25m	\$ 52m	\$ 55m	\$ 66m	\$ 45m
Total Revenues	\$ 211m	\$ 290m	\$ 349m	\$ 350m	\$ 376m	\$ 343m
Freight Incentives	\$ 71m	\$ 65m	\$ 78m	\$ 105m	\$ 112m	\$ 108m
OPEX / G&A	\$ 72m	\$ 68m	\$ 73m	\$ 73m	\$ 68m	\$ 62m
Total Cost	\$ 143m	\$ 134m	\$ 151m	\$ 176m	\$ 180m	\$ 198m
EBITDA	\$ 67m	\$ 156m	\$ 198m	\$ 175m	\$ 196m	\$ 145m

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Metro's YTD Financial Performance

Based on Management Financials

(US\$, million)		2009 – YTD (October)	2010 – YTD (October)	2011 – YTD (October)	2012- YTD (October)
Revenue Items	Inventory Balance	Start 914kt End 2,091kt (November)	2,169kt 2,347kt (November)	2,413kt 2,200kt (November)	2,385kt 2,045kt (November)
	Rent Revenues	\$ 173m	\$ 274m	\$ 301m	\$ 294m
	Rent Discounts	\$ 22	\$ 63m	\$ 51m	\$ 38m
	FDT & Other Revenues	\$ 18m	\$ 23m	\$ 46m	\$ 58m
	Total Revenues	\$ 169	\$244 m	\$ 298m	\$ 315m
	Freight Incentives	\$ 60m	\$ 55m	\$ 61m	\$ 90m
	OPEX / G&A	\$ 61m	\$ 59m	\$ 61m	\$ 56m
	Total Cost	\$ 121m	\$ 115m	\$ 122m	\$ 146m
	EBITDA	\$ 48m	\$ 129m	\$ 176m	\$ 169m
Cost Items					



III. Federation Areas

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Internal Audit: Information Barrier Review

Recent Audit Findings

Finding	Finding Detail	Action Plan	Target Date
List of GS Employees entitled to receive Metro Confidential Information	<ul style="list-style-type: none"> ■ Metro's list of GS employees that are authorized to receive Metro-specific confidential information is not reconciled with GS's wall cross log on a consistent and timely basis. ■ In mitigation, all names on Metro's list were also included on GS's log. All the GS individuals on the wall-cross log had signed an acknowledgment that they agreed to adhere to Metro's information barrier policy. As such, the risk of Metro providing confidential information to those GS employees was mitigated. 	<ul style="list-style-type: none"> ■ GS Compliance will send Metro an updated wall-cross log listing all GS individuals entitled to receive Metro confidential information each time an amendment is made to the log. Additionally, GS compliance will send the wall-cross log to Metro on a quarterly basis. 	Dec-12 Closed
Logical Access to Metro Systems	<ul style="list-style-type: none"> ■ Metro's systems have not historically been set up to require users to change their passwords periodically. Further, Metro systems do not retain a record of changes to access rights of users. 	<ul style="list-style-type: none"> ■ Metro will systematically require users to change passwords at least every 90 days. ■ Metro will create a system log that evidences changes to access rights of users in Metro systems. 	Dec-12 Closed
Monitoring for Sales of Suspected LME Warrants	<ul style="list-style-type: none"> ■ There is no systematic method for the firm to monitor LME warrants sold at discount, contrary to the requirements of the LME Notice 11334 - A326. ■ In mitigation, traders receive training on and certify that they understand and adhere to these requirements. 	Compliance have developed a report showing all LME warrant trading activity and are in the process of producing the surveillance procedure document to formalise the control around monitoring of sales of LME Warrants.	Jan-13
Annual Information Barriers Training	<ul style="list-style-type: none"> ■ The annual Metro Information Barrier training for required GS employees is not consistently completed on a timely basis. Specifically Internal Audit noted five GS employees as at November 2012 that were designated as 'overdue' to completing their 2012 annual training. ■ In addition, whilst Metro has annual compliance training in place, it noted that new Metro employees that have access to confidential information do not receive information barriers training as part of their on boarding process. 	<ul style="list-style-type: none"> ■ GS Compliance will ensure that all necessary GS employees have received their annual training on information barriers. ■ Metro will provide training on information barriers to all new joiners prior to allowing them access to confidential information. 	Jan-13
Metro Background Checks Not Completed Timely	<ul style="list-style-type: none"> ■ Metro does not require background checks to be completed on new employees prior to beginning work at the firm. As a result, certain employees may receive access to confidential information without appropriate evaluation/consent. 	As part of the vetting process, Metro will have background checks performed and reviewed by management on all employees before granting them access to confidential information.	Feb-13

Federation Areas 20



Internal Audit: Outbound Scheduling & Delivery

Recent Audit Findings

Finding	Finding Detail	Action Plan	Target Date
Documentation for Review of Outbound Numbers	<ul style="list-style-type: none">■ The review performed to confirm the accuracy of outbound delivery numbers is not formally evidenced.	<ul style="list-style-type: none">■ For outbound deliveries Metro Managers/ Supervisors will evidence their review of the Solomon system against source documents via a sign-off. This sign-off will be kept in the release folder and stored on file in a secure filing system.	Feb-13
	<ul style="list-style-type: none">■ Metro Operations Management verifies whether full payment on final invoices covering rent throughout queue period (all other rent is being paid up at cancellation) has been received prior to shipment of the metal, but is authorized to release metal from a warehouse without payment on a case-by-case basis.■ The decision to release metal is based on factors including Metro's relationship with the customer and its payment history. However, there is no formal procedure in place for the evaluation and reporting of credit risk.■ In mitigation, as of Sept 30, 2012 Metro held collateral for all outstanding receivables either in form of metal still in the warehouse or in form of payables from Metro to the specific customer. In addition Detroit, where lead times are longest and corresponding	<ul style="list-style-type: none">■ GCPI will work with Metro to determine appropriate reporting metrics and/or credit monitoring practices to be implemented.	Feb-13
Metro Credit Exposure Monitoring			

MITSI Holdings LLC
Board of Directors Meeting
March 26th, 2013



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Permanent Subcommittee on Investigations
EXHIBIT #36d

GSPSICOMMODS00009355



Board Meeting Agenda

Time	Item
8.00 – 8.30 (NY Time)	Intro / Company Administration <ul style="list-style-type: none">■ Board Composition■ Commercial Decisions
8.30 – 10.00 (NY Time)	Business Review <ul style="list-style-type: none">■ CEO Business & Market Update■ Operations Summary (incl. outbound rates)■ Real Estate & Capacity Strategy■ Freight Incentives & Management Authority■ Other Strategic Topics
10.00 – 11.00 (NY Time)	Financial Review <ul style="list-style-type: none">■ Recent Financial Performance■ Dividend Summary■ FOT Accounting Policy
11.00 – 11.30 (NY Time)	Federation Areas <ul style="list-style-type: none">■ Customs: FTZ Discussion■ Compliance: Update■ External Audit: Update PWC Audit
11.30 – 12.00 (NY Time)	Any other business <ul style="list-style-type: none">■ HR Discussion

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I. Company Administration

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Company Administration 1



Open Task Tracker

No.	Issue Date	Description	Responsibility	Due Date	Open/ Closed	Comments
Open Items						
15	Dec 12	PWC Chinese Wall Audit	Ingmar Greblen	n/a	Open	Update board on progress of PWC Chinese Wall audit.
Recently Closed Items						
10	Jun 12	Internal Audit	Ingmar Greblen	Dec 12	Closed	Engaged Internal Audit to review Chinese Wall procedures and 3,000/td rule implementation
11	Jun 12	External Auditor Appointment	Melro Management	Oct 12	Closed	PWC has been retained to conduct the external review and has started work.
12	Jun 12	Premium vs. Freight Incentive Level	Ingmar Greblen	Oct 12	Closed	Historical and current level of freight incentive vs physical premia has been included in last board pack.
13	Oct 12	Balance Sheet	Redacted by the Permanent Subcommittee on Investigations			
14	Oct 12	Market Summary				

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II. Business Review

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Business Review 3

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Metro's Current Inventory Level

As of End February 2013

Metro Stocks @ 28-Feb-13

Location	Aluminum	Alloy	MSAC	Copper	Lead	Nickel	Zinc	Steel	Total	Mkt Share
Asia										
Singapore										
Johor										
Busan										
Gwangyang										
Incheon										
Port Klang										
Asia Total	8,025	980		25,200	550		25	65	34,845	3%
EMEA										
Rotterdam										
Antwerp										
Trieste										
Hamburg										
EMEA Total	20,098	100			112	387	6,550		36,237	71%
USA										
Detroit	1,352,850				46,750	402	116,225	14,950	1,586,337	87%
New Orleans		55,960								
Chicago										
Mobile										
St. Louis										
Toledo										
Long Beach										
USA Total	1,487,425	114,520		23,950	46,275	402	116,950	19,045	1,810,567	87%
Grand Total	1,524,538	1,090	114,520	48,150	46,337	789	123,525	19,110	1,881,849	25%
Off Warrant	80,125	120		1,000					81,245	

Business Review

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Business Review 7



Current Deal Pipeline

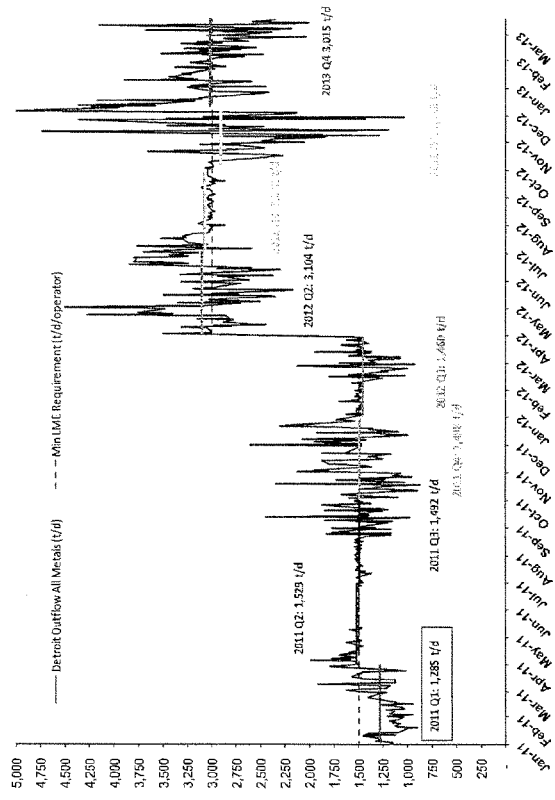
Deal Pipeline As Of End February 2013

- Meiro currently has another 528K booked in its deal pipeline with aluminum representing the largest metal
- Detroit continues to be the key inbound location for Meiro

mt	Contract	Balance	Delivered
Aluminum	596,056	400,414	195,642
Aluminum Alloy	425	10	415
Copper	229,546	19,765	209,781
Nickel	1,000	1,000	0
Steel	0	0	0
Lead	11,780	1,034	10,746
NASAAC	1,000	721	279
Zinc	114,728	105,598	9,130
Ferro Titanium	193	6	187
Total	954,721	628,548	426,179



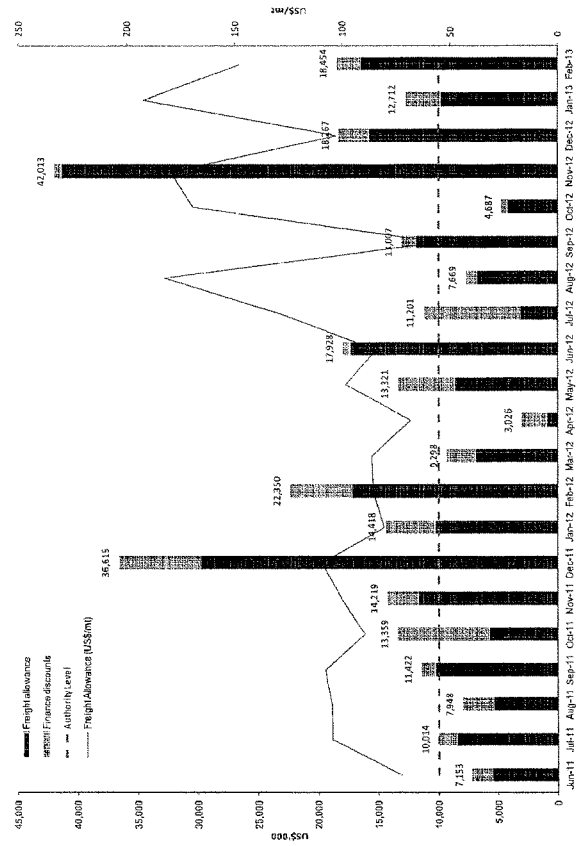
Detroit Outbound Rates & Rule Change



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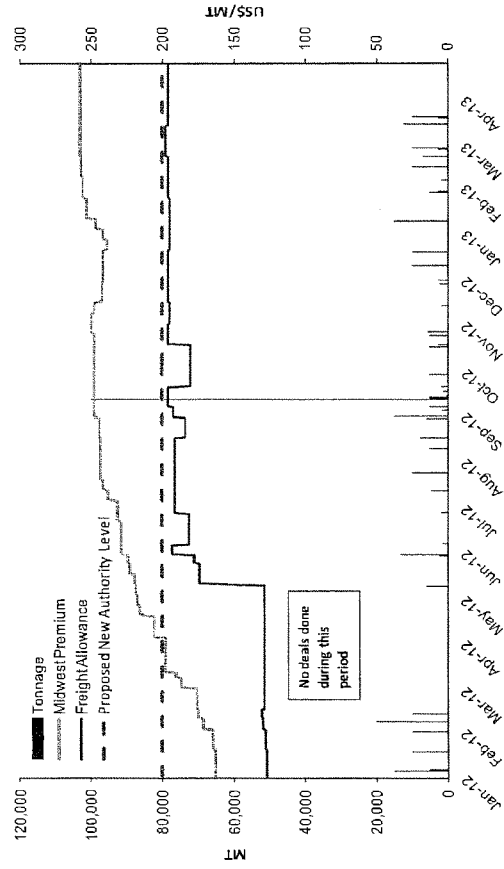


Historical Commitment Summary





Detroit Aluminium Freight Incentives & Authority Levels





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III. Financial Review

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Metro's Annual Financial Performance

Based on Management Financials / Forecast

(US\$, million)	2009 A	2010 A	2011 A	2012 A	2013 - Mgmt Proj.
Inventory Balance	Start	2,169kt	2,413kt	2,385kt	2,009kt
	End	2,169kt	2,385kt	2,029kt	1,889kt
Rent Revenues	\$ 220m	\$ 329m	\$ 356m	\$ 349m	\$ 317m
Rent Discounts	\$ 31m	\$ 64m	\$ 59m	\$ 43m	\$ 19m
FOT & Other Revenues	\$ 22m	\$ 25m	\$ 52m	\$ 82m	\$ 45m
Total Revenues	\$ 211m	\$ 290m	\$ 349m	\$ 388m	\$ 343m
Freight Incentives	\$ 71m	\$ 65m	\$ 76m	\$ 112 m	\$ 136m
OPEX / G&A	\$ 72m	\$ 69m	\$ 73m	\$ 66m	\$ 62m
Total Cost	\$ 143m	\$ 134m	\$ 151m	\$ 178	\$ 198m
EBITDA	\$ 67m	\$ 156m	\$ 198m	\$ 211	\$ 145m

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FOT Accounting Policy Review

- Metro is currently recognising its FOT revenue at the cancellation of warrants. While the name "Free-on-Truck" suggests a link to the logistics involved, the charge has evolved into a cancellation fee that is not linked to the actual cost of metal preparation. FOT charges have to be paid prior to metal entering the queue for outbound shipment.
- On the back of increasing outbound queues (and an increasing time delay between cancellation and actual shipment), GS Controllers have reviewed the current accounting policy in order to determine whether the policy is still appropriate and supported by accounting rules.
- Metro's auditor (PWC) believes the current accounting policy continues to be appropriate.
"The FOT amounts represent cancellation or termination fees that would be considered contingent revenue to be recorded when the contingency is resolves (When MITS is notified the customer cancels the arrangement). The actual obligation on your part to ship the metal is inconsequential / perfunctory to the overall arrangement."
- A change in accounting policy from recognition at cancellation to recognition at shipment would imply an adjustment of \$29.5m to 2012 accounts. The amount would be earned back gradually over the course of 2013 as metal ships out.



IV. Federation Areas

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V. Other Matters

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4/1/2014

Terms and conditions applicable to all LME listed warehouse companies**1 Conditions for and entitlements of listing****1.1 Application**

To become a Warehouse, a warehouse company shall:

- 1.1.1 execute the Agreement of which these terms and conditions form a part;
- 1.1.2 duly complete the forms prescribed by the Exchange attached as Schedule A and B hereto and pay any initial listing fees prescribed by the Exchange; and
- 1.1.3 comply with regulation 2.2 of the LMEsword Regulations.

1.2 Capital

- 1.2.1 Each Warehouse must be adequately capitalised at all times at levels determined from time to time by the Exchange and notified to all Warehouses by way of periodical circulars.
- 1.2.2 The Exchange shall assess whether a Warehouse's available capital is adequate by using the most recent audited accounts of the Warehouse and applying generally accepted accounting principles to determine the extent to which net assets exceed net liabilities. The Exchange shall, from time to time, publish the basis on which it determines capital adequacy for Warehouses. In assessing whether a Warehouse's available capital is adequate, the Exchange shall, at its discretion, disregard what are, in its view, immaterial or temporary failures to meet the capital adequacy requirements.
- 1.2.3 In the event that the Exchange is not satisfied with the financial status or the insurance arrangements of any Warehouse, it may require a performance bond issued by a bank or insurance company as it considers suitable for such sums and on such terms and conditions as it may determine. However, where the deficiencies in the financial status or the insurance arrangements of any Warehouse are, in the view of the Exchange, not likely materially to prejudice the Warehouse's ability to perform its obligations as an LME listed warehouse company and are capable of remedy, the Exchange may allow 7 Business Days for the Warehouse to rectify its financial status and/or insurance arrangements before requiring such a performance bond.

1.3 London Agent

- 1.3.1 Each Warehouse must appoint and maintain at all times an agent in or, in the opinion of the Exchange, sufficiently proximate to the City of London (a "London Agent") to act on its behalf, to carry out certain of its obligations under this Agreement and the LMEsword Regulations, and, if the Warehouse is not incorporated in England and Wales, also to act as its agent for service of process.
- 1.3.2 A London Agent may be a person independent from the Warehouse or be a branch or affiliated company of the Warehouse.
- 1.3.3 The Warehouse must obtain the prior approval of the Exchange to the appointment, or any change in the appointment, of its London Agent from time to time.

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EXHIBIT #37

LME_PSI0001406

- 1.3.4 Each Warehouse shall be responsible for all of the acts and omissions of its London Agent undertaken in its capacity as such. The Exchange and other persons shall be entitled to assume a Warehouse's London Agent acts with the full authority of the Warehouse until such time as the Exchange has received written notice from the Warehouse that the London Agent has ceased to act as such. This term shall not affect the rights and obligations of the Warehouse and its London Agent inter se.

1.4 LMEsword

Each Warehouse must comply, and procure that its London Agent complies, with the LMEsword Regulations and Operating Procedures, which shall insofar as they relate to the Warehouse or its London Agent be deemed to be incorporated into this Agreement.

1.5 Restrictions

- 1.5.1 An authorised warehouse may be used by only one Warehouse and to the extent that it is used for the storage of any metals which are permitted to be the subject of a Contract, may not also be used to store such metals which are deliverable on any other exchanges.
- 1.5.2 A Warehouse may not deal directly or indirectly in Contracts, and shall observe such other requirements contained in any Exchange notice relating to the separation of Warehouses from Members and the maintenance of confidentiality in respect of price sensitive and customer confidential information.

1.6 Description of Warehouse

Each Warehouse may, following its approval by the Exchange as a listed Warehouse, describe itself as an "LME listed warehouse company" and its authorised warehouse as "LME listed warehouses", for as long as it retains its listed status as provided for herein.

1.7 Availability of Rules

Warehouses shall be sent a copy of the Rules and LMEsword Regulations and Operating Procedures as amended from time to time. Warehouses shall ensure that their London Agent obtains and keeps up to date their own copies of such documents direct from the Exchange and is also provided with a copy of this Agreement. Where the Warehouse operates in more than one location it shall ensure that each location is kept up to date with changes to the Rules, the LMEsword Regulations and Operating Procedures and this Agreement.

2 Issue of Warrants

2.1 Metal delivery

- 2.1.1 When receiving metal for placing on Warrant, a Warehouse need not undertake an assay of the metal itself but must carefully undertake a visual inspection of the metal and all supporting documentation and, if the metal or the supporting documentation is in any way patently sub-standard or anomalous the Warehouse must not issue a Warrant until any such shortcoming has been remedied. Without limitation to the foregoing, metal will be deemed to be patently sub-standard if:

- 2.1.1.1 there is broken or visibly corroded strapping which could make the bundle of metal unsafe to handle;
- 2.1.1.2 there is visible contamination of metal;
- 2.1.1.3 there is inconsistent branding of metal (for instance, where all of the metal or some of the metal is patently not an LME brand or where different LME brands have been visibly mixed within a bundle); and
- 2.1.1.4 the supporting documentation and paperwork does not accord with the Rules.

For the avoidance of doubt, a Warehouse is not required to break bundles or inspect metal ingots hidden from view within bundles, unless there are visible signs indicating or suggesting a defect in quality within a bundle or the Warehouse is in any way aware that there is a defect within a bundle not apparent from a visual inspection.

- 2.1.2 All metal delivered for placing on Warrant must be weighed by Warehouse personnel on equipment which is regularly tested for accuracy in accordance with Clause 7.4.3.
- 2.1.3 Subject to Clause 2.1.1, no Warrant may be issued if the metal or supporting documentation does not conform to the relevant Special Contract Rules for Metals.
- 2.1.4 A Warrant may only be issued by the Warehouse or its London Agent when the metal in question is stored in an authorised warehouse of the Warehouse.

2.2 Form of Warrant

- 2.2.1 From the date prescribed by the Exchange, all Warrants must be issued in accordance with the LMEsword Regulations.
- 2.2.2 Each Warehouse shall ensure that the form of the Warrant is such that the requirements set out in the Special Contract Rules for Metals, this Clause 2.2 and Clause 2.3 are satisfied.
- 2.2.3 Each Warrant must have a clearly identifiable space for endorsements to allow for transfers of ownership to a named transferee and also have a clearly identifiable space for endorsement of rents paid to be marked on the Warrant.
- 2.2.4 Each Warrant must show the applicable rent rate and the date of commencement of the obligation to pay rent which must be the same as the date of issue of the Warrant.
- 2.2.5 Each Warrant must include a term stating that responsibility for insuring the metal subject to the Warrant is that of the holder of the Warrant.
- 2.2.6 Each Warrant should be numbered consecutively wherever practicable.
- 2.2.7 No Warrant may be issued by a Warehouse until the printed format which the Warehouse proposes to adopt has been delivered to and approved by the Exchange. Any proposed change to such format must similarly be approved by the Exchange prior to its use.

- 2.2.8 Each Warrant must be signed by an authorised signatory of the Warehouse or its London Agent.
- 2.2.9 Each Warrant shall state that the Warehouse's standard terms of business are available on request or are printed on the reverse side of the Warrant.

2.3 Legal status of Warrants

- 2.3.1 Each Warrant must be transferable by delivery or by delivery and endorsement by the transferor and without requiring registration, attornment or notice to the Warehouse. A transferee of a Warrant shall be treated by the Warehouse as having the benefit of the contract of storage of the metal to which the Warrant relates and shall be bound by the Warehouse's standard terms of business insofar as they do not conflict with the Rules, the LMEsword Regulations or the Operating Procedures.
- 2.3.2 Each Warrant must be a document of title (or local equivalent concept) established in accordance with the law of the country in which the Warehouse is situated, or in accordance with such other law recognised as applicable to the Warrant by such law.
- 2.3.3 It must be a term of issue of each Warrant that the metal which it represents shall only be delivered up to the holder by the Warehouse on the Warrant being presented to the Warehouse or its London Agent or, in the event of a Warrant being lost, stolen, damaged or destroyed, against the provision of an indemnity substantially in the form prescribed by the Exchange from time to time and attached as the Appendix to Schedule A.
- 2.3.4 Subject only to Clause 2.3.5, a Warrant must be unlimited as to duration and remain valid until presented for cancellation to the Warehouse or its London Agent or otherwise cancelled in accordance with this Agreement and the LMEsword Regulations.
- 2.3.5 A Warehouse may have a right of retention in respect of metal under Warrant for unpaid rent in respect of the metal and other charges owed by the current holder of the Warrant but not otherwise and, in particular, without limitation, no person may have any right of retention in respect of charges owed by any other person.
- 2.3.6 Nothing in Clause 2.3.5 shall require the Warehouse to oppose any legally enforceable court order in respect of metal which is binding on the Warehouse and which prevents it from delivering stored metal to the Warrant holder, provided that the Warehouse immediately notifies the Exchange of the existence of such a court order as soon as it becomes aware of the same.

2.4 Warehouse's liability to Warrant holders

The Warehouse is required to give undertakings to each Warrant holder from time to time in respect of the metal under relevant Warrant that:

- 2.4.1 the Warehouse has complied with all applicable regulations (including, without limitation, Clause 2.1 of this Agreement) in receiving that metal and placing it on Warrant;

2.4.2 the Warehouse will comply with the requirements of this Agreement concerning the storage of metal; and

2.4.3 the Warehouse is not aware of any latent defects in the metal.

It is a requirement of this Agreement that the undertakings referred to in Clauses 2.4.1 to 2.4.3 above are incorporated without delay into the Warehouse's written contract of storage with each Warrant holder. Pending such incorporation, the relevant undertakings shall be deemed to be incorporated into each such contract of storage immediately upon such contract arising.

3 Replacement of Warrants

3.1 Entitlement to replace

A Warehouse shall issue a replacement Warrant in accordance with this Agreement and the LMEsword Regulations and Operating Procedures in the following circumstances:

- 3.1.1 where a Warrant has been lost, stolen, destroyed, or damaged, on completion of its normal procedures and against delivery to it of an indemnity in the form prescribed by the Exchange from time to time and attached as the Appendix to Schedule A;
- 3.1.2 where any details on a Warrant which are capable of amendment in accordance with the LMEsword Regulations and Operating Procedures ("Amendable Details") require amendment, following the amendment of the electronic details of the Warrant in LMEsword in accordance with the LMEsword Regulations and against delivery to it of the original Warrant; and
- 3.1.3 where the space on a Warrant for endorsement of rent paid up and/or for transfers is full and against delivery to it of the original Warrant.

3.2 Entitlement to move metal

A Warehouse may move metal under Warrant between its own authorised warehouses within the same listed location at its own risk and expense subject to complying with Clause 3.3.

3.3 Notification of the Exchange

- 3.3.1 On the day that a Warehouse or its London Agent is notified or becomes aware that (a) a Warrant has been lost, stolen, destroyed or damaged; or (b) the Amendable Details on a Warrant require amendment; or (c) a Warrant requires cancellation in accordance with Clause 4.3, it shall forthwith notify the Exchange by fax (or by such other means as the Exchange may prescribe from time to time) containing full details thereof, including the following:
 - 3.3.1.1 the date and details of loss or damage to or other matter affecting the metal or Warrant;
 - 3.3.1.2 the Warrant number(s);
 - 3.3.1.3 date of the Warrant;
 - 3.3.1.4 brand and shape of metal; and
 - 3.3.1.5 the quantity of metal (if any) missing, damaged, or otherwise affected.

- 3.3.2 The Warehouse shall in addition take all such other steps, such as (without limitation) notifying police authorities and insurers, as is necessary to protect the holder of the Warrant in question (if applicable).
- 3.3.3 Where a Warrant that requires replacement or cancellation is not lodged with the Depository, the Warehouse shall take all reasonable steps to identify the holder of the Warrant and notify it of the event and require that the Warrant be delivered up for replacement.

3.4 Liability for replacement Warrants

- 3.4.1 Where a Warrant is being replaced due to a change to its Amendable Details, the Warehouse shall indemnify the person surrendering the Warrant in respect of any reasonable loss or damage they may suffer as a result of the Warehouse not properly cancelling and retaining the original Warrant in accordance with this Agreement.
- 3.4.2 The Warehouse shall be responsible for the cost of replacing Warrants other than in the case of Warrants which have been lost, stolen, destroyed or damaged where such costs shall be the responsibility of the holder.
- 3.4.3 The Warehouse shall take all reasonable steps to ensure that no duplicate Warrants issued by it are in circulation and, in particular, shall make a notification to the Exchange pursuant to Clause 3.3.1 above.

4 Cancellation of Warrants

4.1 Process on replacement

- 4.1.1 Where a Warrant is delivered to a Warehouse for replacement, the original Warrant must first be made properly null and void by being stamped "cancelled and replaced".
- 4.1.2 If the original of the Warrant has been lost, stolen or destroyed, a copy of the original must be duly marked and retained in lieu of the original.

4.2 Process on cancellation and metal take-up

Where a Warrant is delivered to a Warehouse for cancellation and metal take-up, the original must be made properly null and void by being stamped "cancelled". The Warehouse is required to expedite delivery from warehouses at the minimum rates published from time to time by the Exchange in accordance with Clause 9.11.1. For the avoidance of doubt, any change to the minimum rates would constitute a material increase in the obligations of a Warehouse which would require consultation and notification in accordance with Clause 9.11.4. The Warehouse shall prioritise all requests for cancellation strictly in the order in which they are received unless the Warrant holders seeking cancellation agree otherwise. The Warehouse shall use all reasonable endeavours to allocate to each Warrant holder seeking cancellation the delivery time that he has requested, unless that requested delivery time has already been allocated to another Warrant holder, in which case the Warehouse shall offer one or more alternative delivery times close to the time originally requested and shall allocate the delivery time which is acceptable to the Warrant holder. The Warehouse must prepare and maintain such documentation as is sufficient to evidence compliance with the aforesaid requirement (e.g. a schedule detailing (at least) the dates and times of receipt of

cancellation requests and the allocated dates and times of delivery) and shall provide a copy of the same to the Exchange if so requested. The Warehouse will, at all times, be responsible for ensuring that deliveries of metal are effected in accordance with the above requirements except where the person taking delivery of metal provides its own transport and fails, due to no fault of the Warehouse, to keep to the agreed delivery schedule, in which case the Warehouse and that person shall agree between them an alternative time for delivery.

4.3 Warrants requiring cancellation

Where a Warehouse or its London Agent is notified or becomes aware that any details on a Warrant which are not Amendable Details are incorrect, it shall:

- 4.3.1 notify the Exchange thereof in accordance with Clause 3.3;
- 4.3.2 take all reasonable steps to identify the holder of the Warrant and notify it of the event and require the Warrant to be delivered up for cancellation; and
- 4.3.3 on its being delivered to the Warehouse or London Agent, cancel the Warrant in accordance with the LMEsword Regulations and Operating Procedures and issue a new Warrant in respect of the relevant metal.

4.4 Storage

All cancelled Warrants (and a copy of the original in the event that it has been lost, stolen or destroyed) must be securely retained and be made available for inspection by the Exchange for five years or (if later) until any replacement Warrant is surrendered for cancellation and metal take-up.

5 Rent and FOT charges

5.1 Calculation

- 5.1.1 Calculations of rent due on Warrants must be on round tonnages and not actual weights.
- 5.1.2 Rent on metal under Warrant must accrue on a daily basis and rent accrued must be payable annually as at 31 March each year, or at such other times and for such other periods as the Exchange may prescribe, or upon cancellation of a Warrant whichever is the sooner.
- 5.1.3 Rent must be quoted in the Major Currency of the Contract to which the Warrant relates is traded.
- 5.1.4 Each Warehouse must fix its rent rates and FOT charges annually in respect of each 12 month period commencing 1 April by notification to the Exchange not later than 1 December in the preceding year. At any time within 10 Business Days of receiving such notification, the Exchange may, at its discretion, require the Warehouse to provide within 10 Business Days, a comprehensive, written explanation of the economic circumstances which, in the view of the Warehouse, necessitate the change in its rent rates and/or FOT charges. The Exchange shall publish the Warehouse's rent rates and FOT charges by 31 December provided that no change in rent rates or FOT charges shall become effective until the following 1 April.

5.2 Payment

Rent must be paid for metal under Warrant in stock at 31 March (or such other dates as the Exchange may prescribe) in each year by direct settlement between holders of Warrants and Warehouses.

5.3 LMEsword

Warehouses' other obligations in relation to rent shall be as set out in the LMEsword Regulations and the Operating Procedures.

6 Records**6.1 Storage records for metal under Warrant**

- 6.1.1 Warehouses must have clearly organised systems for recording storage of metal under Warrant for use in their office and in each authorised warehouse.
- 6.1.2 Storage records must have a separate entry record for each lot and each such record must be numbered consecutively.
- 6.1.3 Storage records in respect of metal under Warrant must clearly identify the fact that the metal is under Warrant, include the Warrant number and note the authorised warehouse in which the metal is stored.
- 6.1.4 Metal under Warrant must be identifiable in an authorised warehouse by means of a label, or other marking method, as to lot or Warrant number.

6.2 Warrant records

- 6.2.1 Each Warehouse must maintain a Warrant register which shows the dates of issue and cancellation of each Warrant, any corresponding lot numbers and the details of the metal as shown on the Warrant. Each entry on the Warrant register must be initialled by an authorised person or, in the case of a register maintained on a computer, have noted next to each entry the initials or other identity of an authorised person.
- 6.2.2 To the extent that any Warehouse has pre-printed warrants in blank, these must be kept secure. The Warehouse must ensure that it, or its London Agent, maintains a written record of the number of unused blank Warrants at any given time and will provide a copy of that record to the Exchange on request.
- 6.2.3 A copy of each Warrant issued by or for a Warehouse must be kept secure.

6.3 Stock records

- 6.3.1 The stock of metal under Warrant of each Warehouse must be reported to the Exchange by the due completion of the form prescribed by the Exchange which must be faxed to the Exchange by 1200 hours London time each Business Day or delivered by such other means as the Exchange may prescribe and/or pursuant to LMEsword as the Exchange may from time to time prescribe in the LMEsword Regulations and Operating Procedures.
- 6.3.2 Until such time as stocks of metal are reported pursuant to LMEsword alone, metal taken off Warrant, but which is still on the Warehouse's premises, must be combined on the stock return with those stocks actually on Warrant rounded to the nearest complete Warrant lot and also separately identified on the return,

or shown in such other manner as prescribed by the Exchange by notice. If no stocks are held, a nil return must be submitted on each Business Day.

- 6.3.3 The Exchange may publish such information concerning stocks and queues at Warehouses as is considered necessary by the Exchange, acting reasonably, for the purposes of market transparency or other regulatory purposes. Aside from this, information concerning stocks and queues at Warehouses shall be treated as confidential by the Exchange save that the Exchange may make such disclosure as is required by law or regulation or that is requested by any regulatory authority or to another regulator with whom the Exchange has entered into a memorandum of understanding relating to the sharing of information for regulatory purposes on a confidential basis. In addition, the Exchange may publish such information together with that of other Warehouses without identifying the Warehouse by name and also make reference to such information, identifying the Warehouse, in any notice of a decision given under the Disciplinary Procedures in the event of a breach of this Agreement. Warehouses are prohibited from revealing their stock of metal under Warrant to any person except that this prohibition shall not apply to:

- 6.3.3.1 information supplied to a Warehouse's London Agent;
- 6.3.3.2 information disclosed pursuant to any legal or regulatory requirement;
- 6.3.3.3 information disclosed to a Warehouse's professional advisers and to its usual bankers;
- 6.3.3.4 historical information on aggregate stocks held by a Warehouse without differentiation between stocks held under LME Warrants and other stocks which is required to be disclosed to the shareholders of the Warehouse;
- 6.3.3.5 historical information on aggregate stocks held by a Warehouse without differentiation between stocks held under LME Warrants and other stocks which is required to be disclosed to a parent company of the Warehouse for the purpose of that parent company preparing its budgets and financial forecasts for the group; or
- 6.3.3.6 information which has already been published by the LME pursuant to clause 6.3.3.

6.4 Duty and Tax Records

- 6.4.1 Each Warehouse must maintain records on the duty and tax status of each lot of metal.
- 6.4.2 The Warehouse shall make the records specified in Clause 6.4.1, or information derived from such records, available on request and at no cost to Warrant holders and the Exchange.

7 Continuing Obligations

7.1 Insurance

- 7.1.1 Each Warehouse must maintain insurance in respect of all the types of risks marked with an asterisk in paragraph 9 of Schedule A at least at the levels from

time to time prescribed by the Exchange. Such insurance must be maintained at all times until the Warehouse is no longer listed.

- 7.1.2 The Warehouse shall procure that the Exchange receives annually at renewal and/or at such other time as requested by the Exchange a certificate (or such other document as the Exchange may from time to time prescribe) evidencing that all the risks marked with an asterisk in paragraph 9 of Schedule A are protected and citing the maximum limit of cover per occurrence and the policy number. Any changes affecting the insurance cover are to be automatically notified to the Exchange by the insurance company. The Warehouse must ensure that its policy shows the Exchange as a notifiable party for amendments and renewal confirmations.

7.2 Security

- 7.2.1 The Warehouse must at least maintain the level of security measures referred to in its response(s) to Schedule B, Section (C) (as the same may be amended in writing between the Warehouse and the Exchange from time to time) at all its authorised warehouses and must keep them clean, dry (except outside storage areas as permitted by the LME), free from contaminants and in good repair. Without prejudice to the requirements of Clause 7.3, in the event of any material change in the details relating to its authorised warehouses as set out in its response(s) to Schedule B, Section (C), or in the event that the Warehouse otherwise fails to comply with this Clause 7.2.1, the Warehouse must notify the Exchange of such change or failure within 5 Business Days of becoming aware of the same. In the event of any material change in the details relating to the Warehouse's authorised warehouses which could in the Exchange's reasonable view result in a degradation in the level of security as set out in the Warehouse's response(s) to Schedule B, Section (C), or in the event that the Warehouse otherwise fails to comply with this Clause 7.2.1, the Exchange may, at its sole discretion, direct that any metal stored under Warrant in the authorised warehouse in question be relocated to another authorised warehouse, whether or not with the same Warehouse.
- 7.2.2 Any costs arising from such relocation, including, but not limited to, costs relating to re-inspection and re-approval, shall be met by the Warehouse.
- 7.2.3 The power of the Exchange under this Clause is without prejudice to its other powers under this Agreement, including the powers set out under the Disciplinary Procedures.

7.3 Monitoring and supply of information

- 7.3.1 Each Warehouse must notify the Exchange of any facts, events or changes which are material to their listing as Warehouses within 5 Business Days of becoming aware of the fact, event or change in question. This shall include, without limitation:
- 7.3.1.1 any changes that materially affect the information given by the Warehouse in connection with its application for listing as a Warehouse, or such other material information as it may have given to the Exchange in writing from time to time;

7.3.1.2 any changes affecting the Warehouse's ability to comply with its obligations hereunder or under the LMEsword Regulations.

- 7.3.2 A Warehouse shall not make any changes, and shall not allow any changes which are within its power to prevent being made to be made, to any of its authorised warehouses where such changes would involve a material change to any of the details provided in the answers given in Schedule B, without obtaining the Exchange's prior written approval in accordance with procedures published by the Exchange from time to time. In the event that the Warehouse becomes aware of such a change which is beyond its power to prevent, it must nonetheless notify the Exchange of such change immediately. The Exchange may, if it deems that the change materially affects the ability of the authorised warehouse(s) to operate, exercise its powers under this Agreement, including without limitation, those contained in Clause 9.2.
- 7.3.3 Each Warehouse shall provide to the Exchange on request such information from their storage records, Warrant records and/or stock records relating to the types of metals deliverable on the Exchange, as the Exchange may reasonably request from time to time in connection with any enquiries being made or to be made by the Exchange in accordance with the Rules. All such information so supplied shall be treated as confidential by the Exchange and shall be restricted to those authorised staff and officers within the Exchange responsible for conducting such enquiries in accordance with the Rules, the Exchange's professional advisors and other regulators with whom the Exchange has entered into memoranda of understanding relating to the sharing of information for regulatory purposes on a confidential basis or other person to whom the Exchange is required to disclose it by law or regulation. The Exchange shall not be entitled to have access to legally privileged documents. A list of those persons within the Exchange who are authorised to obtain information from Warehouses in accordance with this Clause 7.3.3 will be circulated to all Warehouses and will be updated from time to time.
- 7.3.4 Each Warehouse shall permit Exchange staff to conduct routine and other inspections of their premises used for the storage of LME metal, including access to each relevant authorised warehouse and their offices supporting the operating of such warehouses. Warehouses shall use reasonable endeavours to procure similar access to the offices of their London Agents supporting those operations. Each Warehouse shall co-operate with the Exchange in the conduct of such inspections and give all reasonable assistance to the Exchange.
- 7.3.5 The Exchange shall give reasonable notice of its intention to make inspections, except that no such notice will be required to be given where the Exchange deems it necessary or desirable in its absolute discretion for an immediate inspection to be undertaken by the Exchange or its appointed representatives.
- 7.3.6 Each Warehouse shall provide the Exchange with details of its officers and employees authorised to act as its authorised signatories for the purposes of this Agreement and keep such details up to date at all times, notifying the LME of any changes thereto promptly.

7.4 Periodical inspections

7.4.1 From time to time, and at least every 12 months, each Warehouse must carry out a visual inspection of all metal under Warrant in their authorised warehouses and of all supporting documentation. Each Warehouse shall make a notification to the Exchange without delay following the end of each calendar year, such notification to contain a record of all such inspections which have been carried out throughout the previous year.

7.4.2 Full records of such inspections must be kept, showing at least:

7.4.2.1 the details of all issued Warrants at the time of the inspection;

7.4.2.2 the date of the inspection; and

7.4.2.3 the name and job title of the person undertaking the inspection, who must also acknowledge that he has carried out the inspection and be of suitable seniority.

Without prejudice to the annual notification requirement in Clause 7.4.1, copies of such records will be made available to the Exchange at any time on request.

7.4.3 All weighing equipment used for weighing metal under Warrant must be checked for accuracy at least quarterly by an accredited and responsible institution which is not affiliated to the Warehouse and any material inaccuracies detected by such institution must be rectified by the Warehouse immediately. Written evidence of such inspections must be retained and made available to the Exchange on request.

7.5 Compliance with law

7.5.1 Each Warehouse shall at all times comply with all applicable law, including (without limitation) local port conditions, local and national customs, local anti-corruption laws, taxation and other rules and regulations (where the aforesaid are not in conflict with the requirements of either this Agreement or of the LMEsword Regulations or of the Operating Procedures).

7.5.2 The Warehouse shall immediately notify the Exchange when it becomes aware that such law, customs or regulations conflict, or are likely to conflict, with the requirements of this Agreement, the LMEsword Regulations or the Operating Procedures. In the event of any such conflict, the Exchange shall, without prejudice to its rights under this Agreement, assess whether, in its reasonable opinion, such conflict is reconcilable and shall determine in its absolute discretion what action (if any) to take. Where the Exchange is of the view that failure immediately to resolve the conflict will not materially prejudice the Warehouse's ability to comply with the requirements of this Agreement, the LMEsword Regulations or the Operating Procedures, it shall consult with the Warehouse as to the remedial action to be taken. In the event of a conflict between this Agreement and the LMEsword Regulations or Operating Procedures or any notice issued by the Exchange, the terms of this Agreement shall prevail.

7.5.3 The Warehouse will not, and nor will any of its officers, employees, shareholders, representatives or agents, directly or indirectly, either in private business dealings or in dealings with the public sector, offer, give or agree to

offer or give (either itself or in agreement with others) any payment, gift or other advantage with respect to any matters which are the subject of this Agreement which (i) would violate any anti-corruption laws or regulations applicable to the Warehouse, (ii) is intended to, or does, influence or reward a person and acting in breach of an expectation of good faith, upholding or trust, or which it would otherwise be improper for the recipient to accept, or (iii) is made to a Public Official with the intention of influencing them and obtaining or retaining an exchange with conduct of terms ("**Corrupt Act**").

7.5.4 The Warehouse represents and warrants that it has not, and so far as it is aware its directors and officers have not:

- (i) engaged in, admitted to, or been found by a court in any jurisdiction to have engaged in any Corrupt Act; or
- (ii) been investigated by a regulatory or law enforcement agency in any jurisdiction as a suspect in connection with an investigation into the commission of any Corrupt Act.

7.5.5 The Warehouse further agrees and undertakes:

- (i) to properly and accurately record in its books and records all transactions which relate in any way to this Agreement; and
- (ii) to provide any such information as the Exchange may reasonably require by notice in writing in order to monitor the Warehouse's compliance with its obligations under Clauses 7.5.1 and 7.5.3 and 7.5.4; and
- (iii) to notify the Exchange immediately if, at any time, it becomes aware that any of the representations set out at under Clause 7.5.4 are no longer correct.

7.6 Principles of Conduct

The Warehouse shall adhere to the Principles of Conduct set out at Clause 11.

8 Enforcement and Discipline

The terms of the Exchange's handbook on enforcement and disciplinary procedures applicable to Warehouses, as amended by the Exchange from time to time and issued to Warehouses (the "Disciplinary Procedures") shall be deemed to be incorporated into this Agreement as if set out in full herein.

9 General

9.1 Fees

- 9.1.1** Each Warehouse shall pay the Exchange the fees and levies prescribed by the Exchange from time to time. The Exchange shall provide all Warehouses with reasonable notice of changes in its prescribed fees and levies.
- 9.1.2** Each Warehouse shall be responsible for the cost of inspections undertaken by the Exchange in accordance with the terms of this Agreement except where the inspection is specific to a single Warehouse and is initiated by the Exchange in which case the Exchange shall be responsible for the cost thereof (but without

prejudice to the power of the Exchange to recover any such costs from a Warehouse pursuant to a sanction imposed under the Disciplinary Procedures).

- 9.1.3 Each Warehouse shall pay the fees prescribed by the LMEsword Regulations and Operating Procedures.
- 9.1.4 The Exchange shall consult with Warehouses if any proposed changes in its prescribed fees and levies or in the fees prescribed by the LMEsword Regulations and Operating Procedures would result in a material increase in such fees and/or levies. For these purposes, a "material increase" shall be any increase in the previously prescribed fee or levy of more than the greater of (a) 10 per cent or (b) the percentage figure equal to the aggregate of (i) the percentage increase in the retail prices index ("RPI") as published by the Office for National Statistics calculated by comparing the level of RPI (all items) for the month in which the previously prescribed fee or levy was fixed and comparing it to the level of RPI (all items) for the month in which the Exchange gives notice of its proposed increase and (ii) 5 per cent.

9.2 **Withdrawal of right to store particular metal**

Without prejudice to the other powers of the Exchange, the Directors may require a Warehouse to cease to store a metal of a particular type by giving the Warehouse 90 days' prior notice, or such shorter period as the Directors may consider in their sole discretion justified in the circumstances.

9.3 **Liquidity**

- 9.3.1 The proper functioning of the market through the liquidity and elasticity of stocks of metal under Warrant should not be artificially or otherwise constrained by Warehouses giving exceptional inducements or imposing unreasonable charges for depositing or withdrawing metals, nor by Warehouses delaying unreasonably the receipt or despatch of metal, save where unavoidable due to force majeure.
- 9.3.2 The Exchange reserves the right to investigate all charges levied including, for example, those for loading and unloading metal for Warrant purposes. In the event that a Warehouse fails to meet minimum loading standards and requirements from time to time laid down by the Exchange without justification, except in the case of force majeure, the Disciplinary Procedures shall apply.
- 9.3.3 Each Warehouse shall provide to the Exchange on request such information from their records as the Exchange may reasonably request from time to time in connection with any investigation being made or to be made by the Exchange under this clause 9.3. All such information so supplied shall be treated as confidential by the Exchange and shall be restricted to those authorised staff and officers within the Exchange responsible for conducting such investigations, the Exchange's professional advisors and other regulators with whom the Exchange has entered into memoranda of understanding relating to the sharing of information for regulatory purposes on a confidential basis or other person to whom the Exchange is required to disclose it by law or regulation. The Exchange shall not be entitled to have access to legally privileged documents. A list of those persons within the Exchange who are authorised to obtain information from Warehouses in accordance with this

Clause 9.3.3 will be circulated to all Warehouses and will be updated from time to time.

- 9.3.4** The Exchange shall have the power to compel Warehouses to provide any information in accordance with Clause 9.3.3, including, without limitation, details of all inducements paid to attract the load-in of metal, and details of the provenance of loaded-in metal, including information about metal which may have been held previously in that Warehouse, or in another facility operated by the same Warehouse or member of the Warehouse's group. On the basis of such information, the Exchange may, at its discretion, impose additional load-out requirements on a Warehouse which the Exchange considers to have intentionally created or caused, or attempted to create or cause, a queue by the use of inducements or any other method.

9.4 Termination

- 9.4.1** Without prejudice to the provisions of Clause 8, this Agreement may be terminated, and the Warehouse delisted on a permanent basis, with or without notice, if:
- 9.4.1.1** the Warehouse commits a serious breach of this Agreement, the LMEsword Regulations or the Operating Procedures;
 - 9.4.1.2** the Warehouse fails or ceases to satisfy the requirements of Clause 1.2 (capital) and/or becomes or is, in the opinion of the Exchange, likely to become insolvent;
 - 9.4.1.3** the Warehouse breaches Clause 7.5 (compliance with law);
 - 9.4.1.4** the Warehouse materially fails to meet any of its obligations to the holder for the time being of a Warrant and such obligations are not being disputed in good faith;
 - 9.4.1.5** the Warehouse fails to pay a sum of £10,000 or more when it becomes due, or a lesser sum within 7 Business Days of it becoming due, to the Exchange under Clause 9.1 or in respect of a fine imposed on it under the Disciplinary Procedures; or
 - 9.4.1.6** a Force Majeure occurs.

Any such termination and delisting will be effective upon by the Directors notifying the Warehouse accordingly. Without prejudice to Clause 9.4.1.5, and except in the case of a Force Majeure under Clause 9.4.1.6, the Exchange may at its discretion grant to the Warehouse 7 Business Days within which to remedy a default under this Clause 9.4.1.

- 9.4.2** The Exchange may by notice served on a Warehouse by no later than 1 October in any year delist the Warehouse with effect from the following 1 January where the Exchange reasonably believes that the Warehouse is no longer engaged in LME warehousing business.
- 9.4.3** Without prejudice to any other of the Exchange's powers, a Warehouse, or the Exchange, may terminate this Agreement and delist the Warehouse in question by the service of six months' prior notice (or such other period as they may agree or as provided under Clause 9.11) on the other. On the expiry of such

notice, this Agreement shall be terminated and the Warehouse delisted. Subject thereto and the other powers of the Exchange hereunder, this Agreement shall be for an indefinite term.

- 9.4.4 On and following termination of this Agreement and the delisting of a Warehouse, the Warehouse shall not be entitled to any rebate of fees paid to the Exchange but shall remain liable for all pre-existing liabilities to the Exchange. In addition, the Warehouse shall remain subject to the obligations imposed by this Agreement as if it were a Warehouse until a period of five years after delisting has elapsed but shall not be entitled to any of the benefits conferred hereunder, including the right to describe itself as an LME listed warehouse company, and may not issue any further Warrants.
- 9.4.5 On delisting, a Warehouse must, at its own expense, relocate all metal under Warrant to another Warehouse's authorised warehouse(s) and arrange for the cancellation of all of its issued and current Warrants. The Exchange's prior approval must be obtained before any relocation arrangements are finalised and in giving such approval (which may not be unreasonably withheld or delayed) the Exchange shall have all due regard to the reasonable instructions of the holders of the Warrants in question, to the extent known to it.

9.5 Notices

- 9.5.1 All notices and other communications shall be in writing and in the English language.
- 9.5.2 Subject to Clause 9.5.5, all notices and other communications required to be served under this Agreement shall be served by fax or by electronic messaging (i.e. e-mail). Service will be deemed effective:
 - 9.5.2.1 in the case of notices sent by fax, on the date and time that transmission is received by an employee of the recipient in legible form or, if that date is not a Business Day or, if the fax is sent after normal working hours, the next following Business Day the burden of proving receipt to be met by a transmission report generated by the sender's facsimile machine; and
 - 9.5.2.2 in the case of notices sent by electronic messaging, on the date and at the time that the sender receives a valid "read receipt".
- 9.5.3 All notices and other communication required to be served on the Warehouse shall be deemed to be validly served thereon if served on the Warehouse's London Agent. A copy of each such notice and communication shall also be sent to the registered office of the Warehouse but failure to send such a copy shall not affect valid service if the notice or other communication has been served on the Warehouse's London Agent.
- 9.5.4 In the event of difficulty in using fax or electronic messaging to send notices under this Agreement, notices and other communications may be served in person or by courier, with such service deemed effective on the date of receipt, unless that date is not a Business Day in which case the notice shall be deemed given and effective on the first following day that is a Business Day.

- 9.5.5 Notices and other communications shall only be validly served by a Warehouse if they are signed by an authorised signatory notified to the Exchange in accordance with Clause 7.3.6. For the avoidance of doubt, the effect of this Clause 9.5.5 is that, unless the Exchange otherwise prescribes, notices and other communications to be served by a Warehouse may not be served by electronic messaging.
- 9.5.6 The Exchange shall not be liable for any actions taken or omitted to be taken in good faith on the basis of any notice or other communication however served which purports to have been given by or on behalf of a Warehouse. The Exchange shall not be under any duty to verify the genuineness of any signature nor the authority of the person which purports to sign a notice or other communication on behalf of a Warehouse.
- 9.5.7 Each party shall respond promptly to the communications of the other party, where such communications require a response.

9.6 Release

Any liability to the Exchange under this Agreement may in whole or in part be released, compounded or compromised or time or indulgence given by the Exchange in its absolute discretion as regards any Warehouse under such liability without in any way prejudicing or affecting its rights against any other or others of the Warehouses under the same or a like liability, whether joint and several or otherwise provided that a Warehouse's liability shall not be increased by such action, nor shall its right to claim compensation or contribution from any person be thereby reduced.

9.7 Waiver

No failure of the Exchange to exercise, and no delay by it in exercising, any right, power or remedy in connection with this Agreement (each a "Right") will operate as a waiver thereof, nor will any single or partial exercise of any Right preclude any other or further exercise of such Right or the exercise of any other Right. The Rights provided in this Agreement are cumulative and not exclusive of any other Rights (whether provided by law or otherwise). Any express waiver of any breach of this Agreement shall not be deemed to be a waiver of any subsequent breach.

9.8 Invalidity

If any provision in this Agreement shall be held to be illegal, invalid or unenforceable, in whole or in part, under any enactment or rule of law, such provision or part shall to that extent be deemed not to form part of this Agreement but the legality, validity and enforceability of the remainder of this Agreement shall not be affected.

9.9 Governing law and submission to the jurisdiction arbitration

- 9.9.1 This Agreement shall be governed by and construed in accordance with English law.
- 9.9.2 Any dispute arising out of or in connection with this Agreement, including any question regarding its existence, validity or termination, shall be referred to and finally resolved by arbitration under the Rules of the London Court of International Arbitration, which rules are deemed to be incorporated by reference into this Clause. The LCIA Court shall appoint a sole arbitrator. The

place of arbitration shall be London. The language to be used in the arbitral proceedings shall be English.

- 9.9.3** If the Warehouse is not incorporated in England and Wales, it hereby appoints its London Agent as its agent for service of process.

9.10 Exclusion of Liability

Neither the Exchange nor any of its Directors nor other officers or members of its Warehousing Committee shall have any liability for any damage, loss, expense or liability of any nature which a Warehouse may suffer or incur in respect of any act or omissions in relation to the provision of warehouse services to Members or its activities or status as a listed Warehouse except to the extent of losses or expenses attributable to its fraud, negligence or wilful default. The terms of this Clause 9.10 shall take precedence over Regulation 11.8.1 insofar as that Regulation relates to Warehouses and the Exchange.

9.11 Notices and Amendments

- 9.11.1** The Exchange may issue notices from time to time concerning any matter relevant to the performance by a Warehouse of its obligations under this Agreement.
- 9.11.2** Each Warehouse shall comply with the terms of any such notice.
- 9.11.3** The Exchange may amend this Agreement from time to time. Unless it is considered to be an emergency and essential for the proper operation of the market, any such change shall, subject to Clause 9.11.4 below, only take effect after each Warehouse has been given 30 days' prior written notice of any proposed change.
- 9.11.4** In the event that any such proposed change, or any proposed change to the LMEsword Regulations or Operating Procedures, or any proposed notice under Clause 9.11.1, would have the effect of materially increasing the obligations of any Warehouse, it shall only take effect after the Warehouse has been given 90 days prior written notice thereof. The Exchange undertakes to consult with the affected Warehouses in relation to the proposed change, where practicable for a reasonable period and in reasonable time prior to the start of that 90 day period, and shall have reasonable regard to representations received. In the event that the Warehouse does not wish to be bound by any such proposed change which has the effect of materially increasing the obligations of the Warehouse, it may serve notice of termination of this Agreement at any time prior to the expiry of such notice period, in which event such change shall not at any time take effect with respect to the Warehouse in question and the Warehouse shall be delisted with effect from the date 90 days after the day the notice of termination is served.
- 9.11.5** Clauses 9.11.3 and 9.11.4 shall not apply to the Disciplinary Procedures

9.12 No Assignment

A Warehouse may not assign the benefit of this Agreement to any other person without the prior written consent of the Exchange.

9.13 Information Barriers

Each Related Warehouse shall maintain effective information barriers between it and the relevant Trading Company as specified by the Exchange from time-to-time. The Related Warehouse shall engage a firm of professional accountants in public practice, the choice to be agreed with the Exchange, to assure that the information barriers it has in place meet the criteria specified by the Exchange, under such assurance standard(s) and in such manner as the Exchange may specify from time to time.

10 Interpretation**10.1 Definitions**

In this Agreement, the following words and expressions shall, unless the context otherwise requires, bear the following meanings:

"Associated Party" has the meaning given in Clause 7.5.3;

"Amendable Details" has the meaning given in Clause 3.1.2;

"authorised warehouse" means a warehouse operated by a Warehouse and which has been approved by the Exchange for the purpose of this Agreement;

"Business Day" has the meaning given in the Rules;

"Contract" has the meaning given in the Rules;

"Corrupt Act" has the meaning given in Clause 7.5.3;

"Depository" means the person appointed by the Exchange from time to time to act as such for the purposes of LMEsword;

"Directors" means the directors of the Exchange from time to time;

"Disciplinary Procedures" has the meaning given in Clause 8;

"the Exchange" means The London Metal Exchange;

"Force Majeure" means an event which is beyond the reasonable control of the Warehouse and which is, in the opinion of the Exchange, likely to render the Warehouse unable to perform its obligations under this Agreement either permanently or for more than 30 days or such other period of time that would, in the Exchange's view, have such a serious effect on the Warehouse that in business terms it would be tantamount to a permanent cessation, including, without limitation, any act of war, terrorism, insurrection, revolution, act of God or the imposition of legal, regulatory or tax restrictions in any relevant location;

"LME" means The London Metal Exchange;

"London Agent" has the meaning given in Clause 1.3.1;

"Major Currency" has the meaning given in the Rules;

"Member" means a member of the Exchange;

"Operating Procedures" means the manual issued by the Exchange pursuant to the LMEsword Regulations setting out detailed procedures and information relating to the operation of LMEsword;

"person" includes an individual, partnership, unincorporated association and body corporate;

"Public Official" has the meaning given in Clause 7.5.5;

"Related Warehouse" means a Warehouse which is associated with a Trading Company. For the purpose of this definition, a Warehouse is associated with a Trading Company where the Warehouse is a subsidiary or holding company of a Trading Company, or a subsidiary or holding company of one of a Trading Company's subsidiaries or holding companies or otherwise has a Close Connection with a Trading Company. The terms "holding company" and "subsidiary" have the meanings given to them in section 1159 of the Companies Act 2006. A Warehouse shall have a "Close Connection" with a Trading Company if any person or company either directly or indirectly holds or otherwise effectively controls 20% or more of the shares or voting rights in both the Warehouse and the Trading Company;

"Rules" means the rules and regulations issued by the Exchange (and incorporating the LMEsword Regulations) governing the London Metal Exchange administered by the Exchange as the same may be amended in accordance with Article 58 of the Articles of Association of the Exchange and a reference to a Rule shall be construed accordingly;

"Secretary" means any person appointed to perform the duties of Secretary of the Exchange;

"Special Contract Rules for Metals" means Part 6 of the Rules as the same may be amended from time to time;

"LMEsword" means the system for, inter alia, the electronic transfer of title to Warrants governed and constituted by the LMEsword Regulations;

"LMEsword Regulations" means the regulations governing the operation of LMEsword issued by the Exchange as amended from time to time in accordance with the terms thereof;

"this Agreement" means the agreement between each Warehouse and the Exchange incorporating these terms and conditions as amended from time to time in accordance herewith and incorporating the Disciplinary Procedures in accordance with Clause 8 hereof;

"Trading Company" shall mean any Member or non-Member company that enters into Contracts or trades metal that is deliverable against a Contract;

"Warehouse" means a warehouse company which is party to this Agreement, accepted as such by the Exchange and listed in Appendix III of the Rules;

"Warrant" means a warehouse warrant issued by a Warehouse in accordance with this Agreement in respect of metal for the time being dealt in on the Exchange.

10.2 Interpretation

10.2.1 Where this Agreement refers to a document or thing being "prescribed", that shall mean prescribed by the Exchange from time to time in a notice issued by it to Warehouses.

10.2.2 Words importing the singular shall, where the context permits, include the plural and vice versa. Words importing gender shall include each gender.

- 10.2.3** Where this Agreement refers to an act being undertaken by the Exchange, that act may be performed by the Exchange acting through the Directors of the Exchange or any duly authorised Committee of the Directors of the Exchange or duly authorised individual.

11 Principles of conduct

A Warehouse shall:

- 11.1 Conduct its business with due skill, care and diligence, observing high standards of conduct and safety, complying with the warehouse agreement, the LMEsword regulations, these principles, the common standards of working practice for warehouse companies, other requirements for warehouse companies set by the Exchange and relevant legislation.
- 11.2 At all times observe high standards of integrity and shall not enter into any arrangement or agreement that prohibits the provision of any information that the LME requests in its role as a Recognised Investment Exchange.
- 11.3 Maintain financial resources at or above the minimum level set by the LME to ensure continuity in the provision of services for owners of metal on LME warrant, and shall have in place a performance bond (if required by the Exchange) in the manner and of the amount prescribed by the Exchange.
- 11.4 Manage conflicts of interest fairly, both between itself and holders of metal on LME warrant and between holders of metal on LME warrant, ensuring fair and equitable treatment to all holders of metal on LME warrant at all times.
- 11.5 Ensure that all metal held on LME warrants is stored continuously in good delivery condition and that it is identified and stored so as to facilitate easy access and delivery without undue delay.
- 11.6 Deal with those placing metal on LME warrant, those holding LME warrants and those taking metal off LME warrant on a fair and equitable basis.
- 11.7 Organise and control its affairs in a responsible manner, keep proper records, have well-defined procedures for handling metal stored on LME warrant and for delivering it out expeditiously, and ensure that its employees or agents are suitable, adequately trained and properly supervised.
- 11.8 Pay due regard to the information needs of LME warrant holders by having transparency of: normal hours of work, all delivery in and delivery out charges, rent and rent payment dates, and total average daily delivery out volume rates by metal and mode of transport.
- 11.9 Arrange adequate protection for metal held on LME warrant by insuring it against unexplained losses and losses caused by error, negligence, or fraudulent actions of its servants or agents or its personnel.
- 11.10 Deal with the LME in an open and co-operative manner, keeping it informed promptly of anything concerning the suitability of its warehouses or its continued suitability as a warehouse company, or about metal stored with it or that it knows will be placed on or taken off LME warrant, that the LME, as a Recognised Investment Exchange, which

has responsibility for ensuring that its markets are proper and orderly and not subject to abuse, might reasonably expect to be disclosed to it.

CONFLICT MANAGEMENT PROCEDURES BETWEEN METRO AND OTHER GS BUSINESSES AND PERSONNEL

Policy Issued To: Global Commodities Sales and Trading, Global Commodities Principal Investments, Metro Board Members, Metro Management and Staff

Date of Issue: Friday 19th February 2010

The Goldman Sachs Group Inc. and its affiliates ('GS') own and manage many different types of business in many different capacities. From time to time GS may own, operate or manage businesses which give rise to potential conflicts of interest and as such the firm needs to have appropriate procedures to ensure the conflict is managed and that confidential information that the firm receives is safeguarded from misuse, misappropriation, or improper dissemination.

One of the instances which potentially gives rise to such a conflict is the ownership of MITSU Holdings LLC ("Metro"), a global warehouse operator primarily engaged in the storage of non-ferrous metals and steel for customers of the London Metal Exchange ("LME") and the Goldman Commodity Sales and Trading business.

It is imperative from a regulatory, business principle and commercial perspective that Metro owned / acquired information is not shared inappropriately and therefore it is imperative that the below procedures are complied with.

The Commodities Compliance team and other Federation groups will conduct regular monitoring of all information sharing and interactions.

A. Background Information

Metro is owned by the Goldman Commodity Principal Investments Group ("GCPI") which is a sub division of the Goldman Sachs Commodities business. For the purpose of their dealings with the management of this company the London GCPI team ("GCPIIL") are permanently wall crossed on this entity. Refer Appendix 1 for details of relevant reporting structures.

This structure is designed to help ensure that Confidential and sensitive Information that GS receives as a result of its ownership of Metro does not come into the possession of those personnel engaged in trading activities on the London Metals Exchange ('LME'). Strict adherence by personnel in the handling of confidential and sensitive information and in the operation of the information barriers as set out in this procedure is therefore critical.

B. Metro Management Communications

This policy sets out below the information "touch points" between Metro and other areas of GS and what can and cannot be shared between those groups.

Permanent Subcommittee on Investigations

EXHIBIT #38a

FRB-PSI-602457

If there is any doubt as to what information can and cannot be shared or discussed please contact Commodities Compliance in the first instance i.e. **before any information is shared.**

Metro's "Senior employee" (as described in Appendix 2, section 6) will be responsible for the implementation and operation of confidentiality procedures at Metro and for ensuring their effectiveness. The Senior employee will work with Commodities Compliance to achieve this. The name of the nominated Senior Employee at Metro (please refer to Appendix 1), and an alternate contact in their absence, should be formally communicated to the GS appointed board members at board meetings. Any change by Metro as to who they designate as their Senior employee should be clearly communicated to all GS appointed board members on a timely basis.

C. GCPIIL Access to Metro Information and Data

GCPIIL is the area that will have access to the most sensitive Metro data and as such are permanently wall crossed on this data and the Metro entity. The data that GCPIIL will receive from Metro is restricted to the extent set out by this policy.

As good practice, when Metro are sending materially confidential documents to GCPIIL they should use a password protection protocol.

1. Data Available

It is intended that GCPIIL have regular discussions with the Metro management team.

GCPIIL will receive, from Metro, on a monthly basis:

- Deal Book (Pipeline). Information detailing how much metal is contracted¹ to come into Metro. Details of the metal balance² i.e. how much of that metal has yet to be delivered into Metro. Details of Warranted metal³ i.e. amount of metal that is already on warrant and finally details of Not Issued metal⁴ i.e. amount of metal in warehouse awaiting warranting.
- Company financials. Backward looking details of income statement, balance sheet and cash flows.
- Financing Deals. Details of all outstanding financial deals such as discounted rent agreements. GCPIIL to receive on a specific basis i.e. amounts and tenor of deals.

¹ Although described and considered "contracted" from a company perspective, these contracts are very fluid and clients are entitled and do put more or less metal on warrant. Therefore these numbers are used as a guide only and are subject to change on a regular basis.

² Again this number is subject to change given fluidity / informality of agreements to bring metal into warehouse and should be used as a guide only – it is not a reliable data point.

³ Amount of metal on warrant is disclosed to the market on a T+1 basis by location i.e. not by specific warehouse as received by GCPIIL, however the market does have a T+1 knowledge of the amount of metal on warrant across the market on a location basis.

⁴ This is the most sensitive information and for that reason will not be passed on outside of GCPIIL and Compliance.

Conflict Management Procedures Between Metro and Other GS Business and Personnel

- Rent Shares. Metro's outstanding rent share deals at month end i.e. deferred payment deals. For each deal the metal, quantity and freight incentive can be shared.
- Funding. GCPIL will receive an estimate of cash flow needs for the forthcoming month, cash balance, cost and revenue estimates, freight incentives and other capital needs.

All information received from Metro will be on an anonymous basis i.e. client / metal owner names will not be disclosed by Metro to GCPIL.

In the event GS require disclosure of a client name (in exceptional circumstances only), Compliance approval will need to first be obtained and an appropriate method and route of disclosure will be agreed upon.

2. Data Retention and Storage

GCPIL will be subject to the firm's general procedures on wall crossings when dealing with the aforementioned Metro data. Best practice includes:

- All data should be stored on GCPILs segregated Metro shared drive which cannot be accessed by anyone outside of GCPIL.
- All confidential market sensitive data (as received under this section of the policy must be password protected when being sent outside of GCPIL.
- All hard copy information must be stored in the locked Metro cabinet
- All conversations with Metro where this data (market sensitive as described above) is being discussed, including live discussions or telephone conversations must take place away from the trading floor
- All redundant paperwork to be discarded in the confidential waste bins

GCPIL will be responsible for fulfilling the firm's record keeping obligations by storing all information received from Metro and all Metro management information packs on the GCPIL confidential drive.

3. Data Usage

GCPIL will be provided with the above data in order to work with GS Treasury on financing Metro and in order to prepare analysis and information packs for the Board of Directors.

GCPIL are permitted to share this data with GS Controllers.

D. Board Members Access to Metro Information and Data

All Metro Board members are permanently wall crossed on Metro. The Board Information Pack received by the Board should not be passed on to anyone else, without first consulting with The GS Commodities Compliance Department ("Commodities Compliance").

Despite being wall crossed the Board will only be entitled to receive certain pieces of information in a pre-agreed format NB. this will not be the same

access to information as GCPIL. The structure of information supplied to the Board is intended to ensure that no forward looking price sensitive non-public information is disclosed.

On a monthly basis GCPIL will prepare a monthly board information pack to be distributed to the Board of Directors ("Board").

1. Board Information Pack

The board information pack will be prepared by the GCPI team on a monthly basis and submitted to the Board. This pack will be prepared using month end data (i.e. a snapshot of Metro company information on the last business day of the month) and will be supplied to the Board no earlier than 3 business days after the date of the snapshot. The board information pack must be simultaneously sent to the Commodities Compliance at the time of submission to the Board.

The board information pack will contain:

- Deal book. Board permitted to receive forward looking projections outlined on a \$ basis without dates of metal in and out, details of metal type or client names. If GCPIL believes that providing this information, even on an aggregated basis, is likely to provide information that is market sensitive, Commodities Compliance should be consulted prior to information being provided.
- Financing Deals. Current deals i.e. quantity can be disclosed without the forward looking dates of metal on and off of warrant.
- Metal balances
- Management summary report – a summary of the companies previous months activities
- Management financials. Unaudited income statements, balance sheet and cash flow.

In the event the board needs access to confidential, market sensitive information outside of what is approved under this policy i.e. the board information pack then Commodities Compliance will need to approve receipt of the information. Under these circumstances approval will only be granted if the following criteria are met:

- a specific market or company event has arisen which requires the company to react or prepare itself
- It is a one off request for the information i.e. a snap shot of information will be provided and information will not be provided on an ongoing basis
- Information is shared on a need to know basis only and is not broadly disseminated to all. The list of recipients to be approved by commodities compliance. It may be that information is shared with only some Board members and not all.
- The information is lagged, anonymous and aggregated as far as possible and the format pre-approved by commodities compliance.

Board members are not permitted to disclose any information to anyone outside of the Board.

The board information pack is permitted to be distributed, with commodities compliance approval, to:

- GS Management Committee members
- GS federation personnel, as approved by Commodities compliance

Note this should be conducted in line with firm's wall crossing procedures on conduct and data (Please also refer to the Goldman Sachs Group, Inc. (and its affiliates) Policies Regarding the Safeguarding of Confidential Information: The Chinese Wall and Other Information Barriers.

2. Data Retention and Storage

All Metro information received by the Board from GCPIL must be stored only on designated personal drives and must not be stored in any drive which can be accessed by any other team members or any other persons.

Board members are wall crossed on Metro and therefore are subject to the firm's wall crossing procedures on conduct and data (Please also refer to the Goldman Sachs Group, Inc. (and its affiliates) Policies Regarding the Safeguarding of Confidential Information: The Chinese Wall and Other Information Barriers.

3. Other Communications and Information Sharing

Board meetings will be conducted such that individuals can satisfy their responsibilities as a Board Member, which will include discussions between Metro's management team and the Board. All parties should only discuss data and information in line with descriptions above and should not be discussing any market sensitive information.

E. Metro Communication with GS Commodities Sales and Trading and Other GS Non-Exempt Personnel⁵ ("Sales and Trading")

It is very important that the appropriate Chinese Walls are maintained between Goldman Sachs commodities sales and trading and the Metro business. Much of Metro's business information is confidential and sensitive to either the underlying metal market or Metro's clients. **Metals Sales and Trading are not entitled to receive any of this information.**

Metro may only discuss with Sales and Trading non-confidential information which it would routinely share with other third party clients.

The types of discussions which are permitted between sales and trading and Metro are:

- discussions around warranting of metal on behalf of sales and trading
- logistical information about the current environment

⁵ Exempt personnel include GS Federation personnel who have been pre-approved by Commodities Compliance to receive information from Metro and who have been wall crossed.

- logistical advice about moving or storing metal

It is strictly prohibited for Metro staff to disclose to sales and trading any information about pending metal deposits or withdrawals or to give any specific information relating to storage terms, client deals or financing transactions. It is also prohibited for Metro staff to share any information which is reported to or published by the LME ahead of publication to the market (Refer to Appendix 2, section 2 for the LME's definition of "Confidential Information")

F. Separation of Personnel

1. Metro Management

All Metro management and staff are situated in office locations that are physically separate from those of GS management and staff i.e. The Metro team are not based in GS offices. All Metro staff are and will continue to be treated as visitors if they visit GS offices i.e. they will not be issued with employee security passes and will be escorted once on GS premises. None of the management of Metro's day to day activities including the arranging of financing deals, arranging of contracts for metal, movement of metal on and off warrant, should be conducted from GS premises.

If GS and Metro want to share an office location, then this should be referred to Commodities Compliance for consideration of the appropriate controls that would need to exist (Refer to Appendix 2, section 5C). This would require Commodities Compliance pre-approval.

2. GS Personnel

A similar restriction applies to GS personnel who should be located in office locations that are physically separate from those of Metro management and staff. Should GS employees need to visit Metro's offices they should be accompanied by Metro management when visiting. Any exception to this rule must be approved by Commodities Compliance. Metro should also include in their visitor log the time and date of any GS personnel that have visited their offices. This information should be made available to Commodities Compliance on request, within a reasonable timeframe.

Within GS offices it is similarly important that there is appropriate segregation between the GS appointed Metro Board members and those persons trading on behalf of GS as a member of the LME. The desk and office location of these staff should be discussed with and agreed with Commodities Compliance.

3. Board meetings

Board meetings will be an occasion when there will be attendance at the same location by both GS Appointed Board members and Metro management. Any board meetings that are held on GS premises should be held at a location that is physically remote from any trading floors. The board minutes should record details of the address location of the meeting and the attendees and invitees of

the meeting. This information should be made available to Commodities Compliance on request.

G. Inadvertent Receipt or Disclosure of Confidential or Nonpublic Information

In line with GS policy, if a GS employee inadvertently becomes aware of information they suspect may be non-public information about Metro, then they **must** restrict their activities relating to the information they have received and **must** contact the Control Room and/or Commodities Compliance.

In the event an individual is inadvertently or erroneously tainted i.e. is given information which under the terms of this procedure they are prohibited from receiving, it is the responsibility of the individual who gave the information and the individual who received the information to inform a member of Commodities Compliance IMMEDIATELY.

H. Personal Account Dealing

All Metro Board members, GCPI members and Metro staff and management are prohibited from executing any personal account trades in base metals contracts, physical base metals, contracts or derivatives with a base metal underlyer or any other base metals related investments.

I. Disciplinary Sanctions

In line with the LME Notice 98/213 issued on 13th October 1998 regarding the 'Relationship between members and warehouse companies' a breach of the procedures that they set out by either a member or related warehouse company will be regarded as an act of misconduct and will result in disciplinary action and the imposition of a severe penalty.

Therefore all relevant personnel who receive this procedure and are involved with this business should also familiarize themselves with the details of the Notice which is included in Appendix 2 of this document and is also available at the following website link
http://www.lme.co.uk/downloads/notices/98_362_A350.pdf.

The firm takes any misuse, misappropriation, or improper dissemination of confidential information seriously. Misuse and misappropriation of confidential information can violate contractual obligations, laws, rules, or regulations in various jurisdictions in which the firm does business and give rise to both civil liabilities and criminal penalties for the firm and for individual employees. Furthermore, even the suggestion of misuse or misappropriation of confidential information can lead to serious reputational harm for the firm. For employees, violations of these policies may lead to disciplinary action, including dismissal, and may need to be reported to regulatory or legal authorities and/or future employers.

J. Complaints and Dispute Resolutions

Should a dispute or complaint arise then this should be escalated to Commodities Compliance and handled in accordance with the normal complaint and dispute procedures. Details of the dispute or complaint should not be discussed with any other parties until it has been reviewed by Commodities Compliance.

K. Gifts and Entertainment

Any request to provide gifts or entertainment by either GS or Metro should be approved and provided in accordance with the firm's gifts and entertainments policy. No gifts should be made between GS and Metro. All Entertainment requests between GS and Metro will need to be pre approved by Commodities Compliance. In all cases regard must be given to any potential conflicts that could be seen to arise as a result of GS and Metro's relationship and / or the nature of the gift or entertainment..

Appendix 1 – GS Individuals Responsible Under the Terms of this Policy

London GCPI team (“GCPIL”)

Francesco Ciardi
 Jacques Gabillon
 Ingmar Grebien
 Chen-ryung Leo

Commodities Business Reporting Structure

The London GCPI team reports into Greg Agran and ultimately Isabelle Ealet, Greg Agran has no responsibility for the Metals sales and trading business and is not able to manage or influence risk management of that business. Isabelle Ealet is ultimately responsible for both the GCPI business and the Metals sales and trading business, Isabelle is a member of the Goldman Sachs Management Committee and is one of the employees at the firm who is considered to be a ‘Supra Wall’ individual i.e. is a person who by virtue of their function and level of seniority may have ongoing access to information from departments that are separated by a Chinese Wall and/or informational barrier.

Metals sales and trading is a part of the Commodities Division and is managed by Steve Branton-Speak (Trading) and Leslie Biddle (Sales) who report directly into Isabelle Ealet.

Metro Board Members

Greg Agran	GCPI
Victoria Attwood Scott	Compliance
Max Bulk	Operations
Jacques Gabillon	GCPI
Philip Holzer	Securities Division
Bob Mancini	GCPI
Dermot McDonogh	Controllers
Ken Murphy	Archon

Stephen Branton-Speak

Stephen Branton-Speak is an LME Board Member. In the same way that Stephen removes himself from any decisions or discussions regarding Goldman Sachs International he will also remove himself from any discussions or decisions regarding Warehouses and / or specifically Metro. The LME are aware of Stephen’s relationship with Goldman Sachs International and Goldman Sachs International’s relationship with Metro.

Metro Senior Employee

Chris Wibleman is the nominated Senior Employee at Metro responsible for the implementation and operation of confidentiality procedures. Chris will work with Commodities Compliance to fulfil his obligations in this role.

GS Commodities Compliance Contacts:

Victoria Attwood Scott	Global	+ 44 207 552 2401
Seung Earm	London	+ 44 207 552 4270
Oliver Haynes	London	+ 44 207 TBC
Yael Levy	New York	+ 212 357 2332
David Herrmann	New York	+ 212 902 0187
Gail Koh	Singapore	+ 65 6889 2399
Naoko Ehara	Tokyo	+ 81 3 6437 1793

APPENDIX 2 – LME Notice 98/213 issued on 13th October 1998**-----From Executive Director: Regulation and Compliance**

To: ALL MEMBERS, WAREHOUSE COMPANIES AND THEIR
LONDON AGENTS

Ref: **98/362, A:350, R:020, W:071**

Date: 13 October 1998

Subject: **RULE ADDITION – RELATIONSHIP BETWEEN MEMBERS
AND WAREHOUSE COMPANIES: CONFIRMATION OF
NOTICE 98/213, A:207, W:033**

Introduction

Notice 98/213, A:207, W:033 set out proposals by the Board of Directors to introduce rules to require "chinese walls" between a member of the Exchange and a related warehouse company. The proposed provisions were designed to prevent the misuse of confidential and price sensitive information and to ensure that members and warehouse companies could compete with each other on equal terms. The proposals were subject to consultation.

Consultation

Of the responses to the consultation, all but one were supportive of the Board's proposals. The one non-supportive respondent believed that members of the Exchange should not be allowed to own warehouses. Any rule which attempted to prevent members owning warehouses would, however, be in conflict with UK competition law and with the way potential conflicts of interest are addressed elsewhere in the UK's financial regulatory structure.

Several respondents suggested, in order to prevent warehouse abuses with any party, that the proposals should be widened to include all commercial agreements/relationships between members and warehouse companies which fall short of ownership. The Board's attention has been drawn to various comments and reports alleging payment of exceptional inducements, demand for a variety of substantial charges in addition to FOT charges and impediments to speedy physical re-delivery out of warehouses. The Exchange is looking into these matters and is reviewing, as a matter of urgency, its contractual arrangements with warehouse companies to ensure that LME approved warehouse companies and their placing metal on warrant adhere to the spirit as well as the letter of the LME rules. The Board will give consideration to making changes to warehousing rules where considered appropriate in the light of this review. The specific issues relating to common ownership of members and warehouse companies need to be addressed separately through the introduction of "chinese walls" procedures.

On the details of the Board's proposals, amendments have been introduced in

two areas in the light of the consultation. Under section 2 of the proposals – Definitions – it has been made clear that 'confidential information' includes any information which a warehouse company acquires through its warehousing activities in respect of specific LME brands, ahead of general publication by the LME. This clarification is incorporated by a new 2iv of the new rule addition set out below. Second, Ci of the proposals has been amplified to require that where the personnel of the related warehouse

company and the member occupy the same premises, security access systems must be installed to prevent unauthorised access by the related company's personnel.

Rule Addition

The Board of Directors has approved the rule changes and guidance as set out below. The new procedures come into effect immediately.

1 Background

The review by the Financial Services Authority (formerly the Securities and Investments Board) of the LME and the metals markets raised aspects of the relationship between warehouse companies and members which are potentially open to anti-competitive and distorting behaviour.

Concern centred around the independence of members and warehouse companies from one another, the flow of information between them and the existence of systemic advantages which could restrict the ability of both members and warehouse companies to compete with each other on equal terms. The main areas of concern are:-

- i the possibility that a member might gain access to price and/or commercially sensitive information from a warehouse company;
- ii the possibility that a member could pass commercially sensitive information gained from having access to one warehouse company to another warehouse company;
- iii the ability of a member to advantage one warehouse company by offering warrants from a competing warehouse company to customers at a discount; and
- iv the effect of long term storage deals restricting the amount of LME stocks in circulation.

These issues are of most concern and give rise to serious potential conflicts of interest where a member and a warehouse company are both part of the same group.

In the light of both UK competition law and the dependence, throughout the UK's regulatory structure, on "chinese walls" to handle conflicts of interest, it is

not open to the LME to prevent the common or related ownership of LME members and warehouse companies. This Notice, therefore, proposes provisions and procedures to establish and enforce strict "chinese walls" between a member and a related warehouse company. These provisions are designed to prevent the misuse of confidential and price sensitive information.

2 Definitions

For the purposes of this Notice:

"Confidential Information" means, in respect of a warehouse company's business, any of the following, ahead of general publication by the LME:

- i stock figures for LME deliverable metal;
- ii all information relating to proposed or actual shipments of LME deliverable metal to be made or received by that warehouse company (including, in respect of shipments to be made by that warehouse company, any information of a commercially sensitive nature given to that warehouse company by the shipper, his agent or the recipient of that shipment, such as the identity of the customer, customs information, etc);
- iii all information related to the issuance, holding and cancellation

of LME warrants by that warehouse company; and
 iv any other information in relation to specific LME brands which a warehouse company acquires through its warehousing activities.
 "Related warehouse company" means a warehouse company which is a subsidiary or holding company of a member, or a subsidiary or holding company of one of a member's subsidiaries or holding companies. The terms "holding company" and "subsidiary" have the meanings given to them in section 736 of the Companies Act 1985.

3 Members' and Warehouse Companies' Obligations

Under the terms of the Conditions and Obligatory Procedural Notes for warehouse companies, a warehouse company is prohibited from revealing Confidential Information to other entities. This prohibition is an important part of the Exchange's rules and practices designed to ensure the orderliness of its market.

A member which encouraged or facilitated a warehouse company to breach these prohibitions would itself be in breach of its obligation to observe high standards of integrity and fair dealing and high standards of market conduct under Regulation 9.6 of Part 2 of the LME's Rules and Regulations. Equally, a member which took advantage in its trading of Confidential Information would be in breach of Regulation 9.6.

4 Members and Related Warehouse Companies

The risk that Confidential Information may pass between a warehouse company and a member is increased if they are both companies in the same group. A member must not unfairly take advantage of its group relationship with a related warehouse company by utilising Confidential Information in a way which would jeopardise the proper functioning of the metals market, or breach any of the Financial Services Authority's Statements of Principle, with which all members must comply, along with the LME's own Rules and Regulations.

It is essential that personnel engaged in trading activities do not come into possession of any Confidential Information. The LME considers that members will only be able to satisfy this requirement if appropriate procedures exist within both the member and the related warehouse company. Within the member itself, this will require that all personnel engaged in trading activities are made aware of the confidentiality procedures adopted by the related warehouse company to comply with the requirements set out in 5 below, and advised that if they inadvertently come into possession of any Confidential Information they must not trade on the basis of the information. Strict procedures as set out below must be put in place within the member itself to ensure these provisions are complied with.

5 Procedures to be followed

In order to ensure that Confidential Information is properly protected where a member has a related warehouse company, the Exchange will expect the member and the related warehouse company to put in place procedures which satisfy the following requirements:

A "Need to Know" Principle

Access to Confidential Information must be given only to those personnel whose responsibilities could not be carried out without such access. The LME expects related warehouse companies to organise

their affairs in such a way that this number is kept to a minimum. This should be the case both for personnel within the related warehouse company and within the related member. Normally, for the related member, and even then only in exceptional circumstances, such information will be confined to common directors.

B Physical Separation

- i All Confidential Information must be kept in a secure location to which only authorised personnel have access. Access to unauthorised personnel must be effectively restricted (i.e. by locked door, security card, signing in and out procedure etc.).
- ii All Confidential Information held within a computer system must be accessible only by authorised personnel and be protected by a password. Passwords should be changed at regular intervals.

C Separation of Personnel

- i Related warehouse company personnel should be physically separated from the personnel of the member. Where they occupy the same premises, security access systems must be installed to prevent unauthorised access.
- ii It is obviously essential that personnel with access to Confidential Information do not also carry out any functions for the member, although the LME acknowledges that for strategic reasons it may be necessary for an employee of the member or related warehouse company to be a director of both that related warehouse company and a member. In these circumstances strict procedures must be put in place regarding board meetings etc, to ensure that no Confidential Information is disclosed by that director to other personnel of that member.
- iii Both the member and the related warehouse company must maintain a contemporary record of personnel sitting on each side of the "chinese wall".

D Employee Awareness

- i It is essential that related warehouse companies ensure that relevant personnel are familiar with the procedures adopted to comply with this Notice and abide by them. It must be impressed upon relevant personnel that their obligations apply both during and outside of office hours. Employees must be trained in the procedures adopted and reminded of their obligations on a periodic basis.
- ii Each employee who has access to Confidential Information should also be given a set of written procedures to follow.
- iii Relevant employees should sign acknowledgements that they understand and will adhere to the confidentiality procedures.
- iv Internal sanctions should be established for breach of the confidentiality procedures and strictly enforced. Depending on the nature of the breach, sanctions may range from written warnings to dismissal.

6 Senior Employee

Related warehouse companies will be expected to appoint a senior employee who will be responsible for ensuring that the confidentiality procedures adopted are effective and are followed. Members' own compliance officers

will be responsible for ensuring that members adopt and follow fully compliant procedures. Ultimately however, the LME will look to directors of the member to put in place procedures designed to ensure compliance with the terms of this Notice.

7 Duty to Inform LME

A member which comes into possession of any Confidential Information, whether through an employee or any other related party such as a Non-Executive Director or consultant, and whether from a related warehouse company or otherwise (or which is otherwise aware of a breach of these procedures) must immediately inform the LME of that fact.

8 Discounted LME Warrants

A member with a related warehouse company which is operating a listed warehouse in a particular location may not sell or offer to sell LME warrants issued in respect of other listed warehouses in the same LME approved Location or within a 250 mile radius of the related warehouse company at a discount to the related warehouse company's LME warrants, unless it can demonstrate that it would have offered the same discount even if it did not have a related warehouse company. Subject to the above proviso, a member must not otherwise offer any incentive to customers to exchange or substitute LME warrants issued by a related warehouse company for LME warrants issued by any other warehouse company's listed warehouse in the same Location or within a 250 mile radius of the related warehouse company. Any member or warehouse company which is aware of any such sale or offer must immediately inform the LME of that fact.

9 Access to Warehouses

Personnel of a member with responsibilities for a related warehouse company may not inspect metal held on LME Warrant by that member at another warehouse.

10 LME Inspections

The LME intends to make periodic and thorough inspections of members' and related warehouse companies' procedures to ensure compliance with the provisions of this Notice. These inspections may be conducted by third party professionals appointed by the LME. The cost of these inspection visits and any subsequent action taken will be paid for by the relevant member.

11 Disciplinary Sanctions

Breach of these procedures by a member or a related warehouse company will be regarded as an act of misconduct and will result in disciplinary action and the imposition of a severe penalty.

12 Review Procedures

The new procedures will be strictly monitored and will be reviewed after one year to ensure that the new system is delivering fair and transparent trading relations and preventing the misuse of confidential and price sensitive information.

A WHITING

cc Board of Directors

INFORMATION BARRIER POLICY: METRO AND OTHER GS BUSINESSES AND PERSONNEL

Effective Date: March 26, 2014

Revision History, page 14

For: Global Commodities Sales and Trading, Global Commodities Principal Investments, Metro Board Members, Metro Management and Staff

This Policy should be read in conjunction with the London Metal Exchange ("LME") Notice reference 11/334 : A326 : W173 dated 17 November 2011 (the "Exchange Notice"), the wording of which is reproduced in Appendix 2, and Goldman Sachs' Policy regarding Safeguarding Confidential Information: The Chinese Wall and Other Information Barriers. Terms not defined in this Policy (including the term "Confidential Information") shall have the meaning given to them in the Exchange Notice.

The Goldman Sachs Group Inc. and its affiliates ("GS" or the "Firm") own and manage many different types of business in many different capacities. From time to time GS may own, operate or manage businesses which give rise to potential conflicts of interest and as such the Firm needs to have appropriate procedures to ensure the conflict is managed and that confidential information that the firm receives is safeguarded from misuse, misappropriation, or improper dissemination.

One of the instances which potentially gives rise to such a conflict is the Firm's ownership of MITSU Holdings LLC ("Metro"), a global warehouse operator primarily engaged in the storage of non-ferrous metals and steel for customers of the London Metal Exchange ("LME"), given that the Firm has a commodities sales and trading business ("Commodities Sales and Trading").

It is essential from a regulatory, business principle and commercial perspective that Confidential Information relating to Metro and its business is not shared inappropriately and therefore it is imperative that the below procedures are complied with.

Divisional Compliance and other Federation groups will conduct regular monitoring of information sharing and interactions.

A. Background Information

Metro is owned by the Global Commodity Principal Investments Group ("GCPi"), which is a sub-division of the Commodities Business. In accordance with LME guidance and for the purpose of GCPi's dealings with the management of Metro, certain authorized individuals within the GCPi team (the "GCPiL Individuals") are considered to be on the Metro side of the Chinese wall/information barrier that exists between Metro and the rest of the Firm (the "Information Barrier"). They will not however have free or unrestricted access to all Metro confidential information but instead will comply with the provisions of this policy. Refer to Appendix 1 for details of relevant reporting structures and a list of the GCPiL Individuals.

CONFIDENTIAL

Permanent Subcommittee on Investigations
EXHIBIT #38b

GPSICOMMODS00004059

This structure is designed to help ensure that Confidential Information which GS receives as a result of its ownership of Metro is not shared with those individuals engaged in sales and trading activities on the LME or in the sale and trading of related products. Strict adherence by all personnel to the rules and requirements applicable to the handling of Confidential Information and the operation of the Information Barrier as set out in this Policy is therefore critical. These procedures apply to employees of both GS and Metro at all times, both during and outside of office hours.

The "need to know" principle

Overarching all of the procedures and requirements set out below is the "need to know" principle: Confidential Information may only be shared with those individuals who could not carry out their responsibilities without access to such Confidential Information, and only to the extent required to enable them to carry out those responsibilities. You should not ask for or make an effort to obtain Confidential Information if you do not need to know the information. You are responsible for considering what information needs to be shared, in what form and with what level of detail before sharing any Confidential Information. Confidential Information should not be shared with others simply because this Policy allows it to be shared.

For further guidance on the "need to know" principle and "need to know" policies, see relevant sections of Goldman Sachs' Policy regarding Safeguarding Confidential Information: The Chinese Wall and Other Information Barriers and/or the Metro employee handbook.

Definitions

"Designated Individuals" are individuals who work for GS who have some degree of responsibility over Metro including GCPI, Metro Board Members and relevant Senior Management within the Securities Division. Note this definition is different to the definition set out by the LME in the LME Notice (as per discussions with the exchange). These individuals should comply with the LME rules in relation to designated individuals.

"GCPIL" or "GCPIL individuals" A subset of GCPI (includes the London and Singapore teams only). Names provided in [Appendix 1](#).

"Metro Employee" means all staff (including full time consultants) who work for the Metro entity. It does not include GCPI (including GCPIL) personnel and / or the Metro Board.

B. Metro Management Communications

This Policy sets out below the information "touch points" between Metro and other areas of GS and explains what information can and cannot be shared between them. If you are in any doubt as to what information can and cannot be shared or discussed please contact Divisional Compliance or Legal in the first instance, **before any information is shared**.

Metro's senior employee (as described in paragraph 21 of the Exchange Notice) (the "Senior Employee") is responsible for the implementation and operation of

confidentiality procedures at Metro. The Senior Employee will work with the Metro board of directors (the "Metro Board"), the Control Sub Working group of the Board and Divisional Compliance to achieve this. The name of the Senior Employee (see [Appendix 1](#)), and an alternate contact in their absence, should be formally communicated to the Metro Board Members at Metro Board meetings. In the event that Metro appoints a different individual from the person named in [Appendix 1](#) to be Senior Employee, this should be clearly communicated to all Metro Board Members as soon as possible and in any event no later than the first Metro Board meeting following such appointment.

Divisional Compliance is responsible for the implementation and operation of confidentiality procedures at GS and for ensuring the effectiveness of such procedures.

C. GCPIL Access to Metro Information and Data

The GCPIL Individuals are likely to have access to the most sensitive Metro data and, as noted above, are considered to be on the Metro side of the Information Barrier for the purposes of this policy. The restrictions and requirements of this Policy apply both to the extent of the information and data that the GCPIL Individuals may receive from Metro and to the way in which such information and data should be handled.

In order to preserve confidentiality and to ensure that Confidential Information cannot be accessed by unauthorized individuals, all Confidential Information relating to Metro that is sent to GCPIL Individuals must be appropriately password protected.

1. Data Available

The GCPIL Individuals will receive a monthly data package from Metro (the "Metro Data"). The data will be correct as at the last business day of the month and will be sent to GCPIL no earlier than 3 business days from that date. The package will include the following information:

- **Inventory Balances:** Inventory levels broken down by location and metal type including details on inflows, outflows, on-warrant inventory, off-warrant inventory and cancelled warrants
- **Deal book (pipeline):** Details of agreed and expected inbound deals including details such as freight incentives, tonnage, outstanding balance, warranted and unissued material. It should be noted that these numbers are used as a guide only, since they represent a snapshot at a specific point in time and are subject to change on a regular basis.
- **Company financials:** backward looking income statement, balance sheets and cash flow statements.
- **Financing deals/ Commitment Summary:** Financing deals i.e. Discounted rent agreements on a deal by deal basis including amounts, discounts, tenor etc. Commitment summary also includes freight incentive commitments for a specific month
- **Funding Requirements:** Detailed cash flow forecast and funding requirement estimate.

In addition GCPIL Individuals will be able to receive specific data on an ad hoc basis (not ongoing or systematic) in order to answer or prepare for any queries from the board of directors, the board's sub groups and or individual board directors. For this data the 3 business day rule should apply.

All information given to the GCPIL Individuals by Metro should be provided on an anonymised basis, i.e. client or metal owner names must not be disclosed.

Any exceptions to C.1. must be pre-approved by Divisional Compliance and an appropriate route of disclosure must be agreed upon.

2. Data Retention and Storage

GCPIL are subject to the Firm's general procedures on handling confidential information when dealing with the Metro Data, and as such must comply with the following requirements:

- All electronic Metro Data and any other Confidential Information received electronically by any GCPIL Individual must only be stored on the GCPIL Individuals' segregated secure Metro shared drive, which cannot be accessed by anyone other than the GCPIL Individuals.
- All hard copy Metro Data and any other hard copy Confidential Information received by any GCPIL Individual must only be stored in a locked cabinet to which only the GCPIL Individuals have access.
- All Metro Data and any other Confidential Information received in accordance with this section of the Policy must be password protected when being sent by email to any individual who is not a GCPIL Individual but who is allowed to receive the information under the provisions of this policy.
- All conversations between GCPIL Individuals and Metro during which Confidential Information will or may be discussed, including live discussions or telephone conversations, must take place away from and out of earshot of the trading floor.
- All redundant paperwork must be discarded in secure confidential waste bins.

The GCPIL Individuals are responsible for fulfilling the Firm's record keeping obligations by ensuring that all Metro Data and other Confidential Information received from Metro is stored on the GCPIL Individuals' segregated secure Metro shared drive or (in the case of hard copy documents) in a locked cabinet to which only the GCPIL Individuals have access.

3. Data Usage

The GCPIL Individuals are provided with Metro Data in order to support the supervisory role of the Metro Board and its directors.

The GCPIL Individuals are permitted to share Metro Data with GS Divisional Compliance and GS Controllers. In certain circumstances and with approval

of Divisional Compliance, Metro Data may be shared with GS Tax, GS Legal or GS Internal Audit to ensure oversight over financial reporting and / or discussion of legal and tax matters.

4. Other Communications and Information Sharing

GCPIL individuals are restricted to sharing Metro information in the manner described in this policy only. Formally the GCPIL reporting line is into Heads of Commodities Trading Globally. If any circumstance arises which requires the disclosure of Metro confidential information to a business supervisor for the purpose of escalation or decision making then this should be pre-approved by Divisional Compliance and the GCPIL reporting line should be redirected and therefore information shared with Securities Division Head directly and not with Commodities Trading management.

D. Metro Board Members' Access to Metro Data and other Confidential Information

Any information packs provided to members of the Metro Board (the "Board Information Pack") must not be passed on to anyone else without first obtaining the approval of Divisional Compliance. A list of current Metro Board Members is provided in Appendix 1.

As part of their supervisory mandate Metro Board Members are only entitled to receive certain specific types of information in a pre-agreed format. The pre-agreed format limits the disclosure of forward looking information to a minimum and ensures that no market sensitive non public information is disclosed. Board Members, in their capacity as Board Members, do not have access to the same information as GCPIL Individuals.

1. Board Information Packs

Board Information Packs are prepared in advance of board meetings by GCPIL Individuals for submission to the Metro Board. The packs are prepared using month-end data as detailed under C.1. and ad-hoc data addressing specific agenda items. For all data the 3 days business days rule applies. Before Board Information Packs are sent to the Metro Board Members, they must be reviewed and approved by Divisional Compliance. If the Board Information Packs contain any data or issues which GCPIL feels would give rise to a conflict for any Board Member, Divisional Compliance should opine on exclusion of the Board Member from discussion.

Board Information Packs contain in general the following information:

- Inventory Levels: Historical and current on-warrant and off-warrant inventory levels broken down by location and metal type.
- Deal book: Aggregated forward looking projections on a \$ basis without details of metal movements, locations or freight incentives. If GCPIL Individuals have any concerns about the market sensitivity of the data provided (even on an aggregated basis) they should consult Divisional Compliance.
- Financing deals: Aggregated quantity of current and historical financing deals without details of dates or discounts

- Company Financials: Actual and projected income statements, balance sheets and cash flow statements
- Other data: Analysis and data addressing other agenda items. Other data should be discussed on a case by case basis with Divisional Compliance

The Metro Board may only be provided with market or price sensitive information that is not contained within the Board Information Pack if the provision of such information has first been approved by Divisional Compliance. Such approval may only be given in the following circumstances:

- a specific market or company event has arisen which requires Metro to react or to prepare itself;
- it is a one off request for the information (i.e. a snapshot of information will be provided and information will not be provided on an ongoing basis);
- the information is shared on a need-to-know basis only and is not broadly disseminated to all, in which case the list of recipients must first be approved by Divisional Compliance – it may be that, in the event of any conflict of interest involving one or more Metro Board Members, certain information is shared with only some, rather than all, Metro Board Members; if the GCPIIL Individuals are concerned that there is or may be such a conflict, they should consult with Divisional Compliance who will consider the issue and advise as to the appropriate course of action; and
- the information is appropriately time-lagged, anonymised and aggregated as far as possible, and the content and format have been pre-approved by Divisional Compliance.

Metro Board Members are not permitted to disclose any information they receive in accordance with the procedures and requirements set out above to anyone who is not a member of the Metro Board. However, the Board Information Pack may be distributed to the following individuals, but only if and to the extent that such distribution has first been approved by Divisional Compliance:

- GS Management Committee members; and
- GS federation personnel.

Any such distribution should be conducted in line with the Firm's Policies Regarding the Safeguarding of Confidential Information: The Chinese Wall and Other Information Barriers.

Board Members should recuse themselves from any Board meeting or part of a Board meeting or issue if they feel they are in any way conflicted.

2. Board Interim Updates

GCPIL Individuals will provide Board Members with Interim Board updates. These may contain the same data as discussed above.

3. Data Retention and Storage

All Metro-related information received by the Metro Board from GCPIL must be stored only on designated, secure personal drives and must not be stored on any drive which can be accessed by any other team members or any other persons. All hard copy documents must be kept in locked cabinets to which only authorised staff have access.

4. Other Communications and Information Sharing

Metro Board meetings will be conducted in such a way as to enable Metro Board Members to meet their responsibilities, and will include discussions between Metro's management team and the Metro Board. However, management presentations and discussions between Metro's management team and the Metro Board must be limited and structured in such a way as to ensure that no market or price sensitive non-public Information is disclosed to Metro Board Members.

5. Sub Working Groups of the Board

There are two sub working groups of the Board, the Commercial working group and the Control working group. These sub working groups will meet on an ad hoc basis when necessary to discuss and approve commercial decisions, in the case of the Commercial working group and control issues, in the case of the Control working group. Procedures under this policy apply equally to these sub working group.

Among others the Commercial working group approves large (above a set threshold) expenditures and deals. As part of this process the working group might receive (anonymous) deal information on a more granular and timely basis than contemplated under C and D. Such information should only be disclosed in relation to the deal being discussed at the working group and disclosure should be strictly limited to GCPIL and the Commercial Working Group Members. Once a deal has been approved there is no certainty as to whether it will occur. Information about whether a deal has or has not occurred should not be communicated to GCPIL individuals or Working Group Members unless required for the purpose of further sub working group discussions. Any such information sharing must be disclosed to Commodities Compliance.

The Control Working group retrospectively reviews incidents and issues of a control nature and will also work with the Senior Employee at Metro on the adherence to these information barrier procedures.

All Metro Board meetings and Sub Working group meetings must be conducted away from the GS trading floor.

E. Designated Individuals

There are a small number of individuals within the Firm who have management or control responsibility both for Metro and for GS's metals sales and trading business ("Designated Individuals"). In addition there are a small number of individuals who have control oversight over Metro and who work with, to some degree, the GS metals sales and trading business. For the purpose of this policy and per discussions with the LME, these individuals will also be considered Designated Individuals. Designated Individuals may receive Confidential Information relating to Metro on a need-to-know basis. This information may only be shared in compliance of the terms of this policy. The level of information Designated Individuals are permitted to receive differs according to the individual and it should not be assumed that Designated Individuals have any specific rights to have access to Metro data. A record of Designated Individuals is maintained in Appendix 1, and will be updated on a regular basis. Designated Individuals are required to confirm in writing on an annual basis that they have complied with the requirements of paragraph 11 of the Exchange Notice by signing a declaration in the form set out in Appendix 3.

F. Metro Communication with Commodities Sales and Trading and Other GS Non-Exempt Personnel¹ (together the "Business")

It is very important that the Information Barrier is maintained between Metro and the Business. Much of Metro's business information is confidential and sensitive to either the underlying metal market or Metro's clients. **Individuals within the Business are not entitled to receive any of this information.**

Metro may only discuss with individuals within the Business non-confidential information which it would routinely share with other third party clients. Permitted types of discussion include:

- discussions around warranting of metal on behalf of Commodities Sales and Trading;
- logistical information about the current environment; and
- logistical advice about moving or storing metal.

It is strictly prohibited for Metro staff to disclose any information about pending metal deposits or withdrawals or to give any specific information relating to storage terms, client deals or financing transactions to individuals within the Business. It is also prohibited for Metro staff to share any information which is reported to or published by the LME ahead of publication to the market.

¹ Exempt personnel include GS Federation personnel who have been pre-approved by Divisional Compliance to receive information from Metro, GCPIIL Individuals or the Metro Board

G. Allowing Other GS Personnel Access to Confidential Information

It is not envisaged that other GS personnel will require, or be given, access to Confidential Information relating to Metro. In the event that an exception to this rule is sought a written request must be sent to Divisional Compliance. Divisional Compliance will then evaluate the request by applying the 'need-to-know' standard and with consideration of the risks associated with sharing the information, and will decide whether or not to allow the individual or individuals in question to be given access to the Confidential Information. Confidential Information may only be shared in this way after written approval has been obtained from Divisional Compliance. In the event that such approval is obtained, the Confidential Information will be provided on a very limited, exceptional basis [as specified by Divisional Compliance]. Adequate training must be given to the individual(s) receiving the Confidential Information, and appropriate information barriers and procedures must be put in place. Appropriate records must also be kept setting out the nature of the Confidential Information, the individual(s) to whom it has been provided and the measures taken to ensure that the Confidential Information is protected (training, information barriers and procedures).

Commodities Compliance will have access to Metro Confidential Information to exercise supervision of the Information Barrier and controls as described in this policy.

H. Separation of Personnel**1. Metro Management**

All Metro management and staff (excluding Metro Board Members, who are subject to the controls set out in Section D above) ("Metro Operational Staff") are and must continue to be situated in office locations that are physically separate from those of GS management, Commodities Sales and Trading and the Business more generally, i.e. Metro Operational Staff must not be located within GS's offices. Metro Operational Staff must be treated as external visitors if they visit GS's offices – they may not be issued with employee security passes and must not come onto the GS trading floors. All meetings with Metro employees should be conducted in a conference room away from the trading floor. None of the management of Metro's day-to-day activities, including arranging financing deals, arranging contracts for metal and moving metal on and off warrant, should be conducted from GS premises.

GS staff and Metro Operational Staff may not share an office location. Any proposed exception to this rule must be referred to Divisional Compliance, who will review the proposal and consider what additional controls will need to be put in place to ensure that Confidential Information is protected.

2. GS Personnel

A similar restriction applies to GS personnel, who must be located in premises that are physically separate from those of Metro Operational Staff. Should any GS employees need to visit Metro's offices, they must be accompanied by Metro management at all times during their visit. Any exception to this rule must be approved by Divisional Compliance.

The date of the visit and the arrival and departure times of any GS personnel who visit Metro's offices must be included in Metro's visitor log, and this information should be made available to Divisional Compliance on request, within a reasonable timeframe.

Within GS's offices it is equally important to ensure that there is appropriate segregation arrangements between GCPIL Individuals, the GS appointed Metro Board Members and Commodities Sales and Trading staff, and in particular those individuals who are involved in trading on the LME. The desk and office locations, dedicated printers, telephone set up changes, Metro related IT servers and distribution lists of GCPIL Individuals, Metro Board Members who are have interaction with the Global Commodities business and Commodities Sales and Trading staff should be discussed and agreed with Divisional Compliance ahead of any changes.

The Metro Confidentiality Room ("the Confi Room") should be used by GCPIL individuals, Metro Board Members and Divisional Compliance to conduct meetings and phone calls which require the discussion of confidential information and when preparing the Board Information pack. In addition the room contains a locked cabinet for storage of sensitive Metro information and Metro confidential information. The Confi Room is controlled by key card access.

3. Metro Board meetings

Metro Board meetings will necessarily involve GS appointed Metro Board Members and Metro management being together in the same location at the same time. In order to minimise the risks involved, any Metro Board meetings that are held on GS premises should be held in a location that is physically remote from any trading floors. The minutes of such meetings should record details of the address and specific location of the meeting, as well as all attendees and invitees. This information should be made available to Divisional Compliance on request. Where appropriate, certain Designated Individuals and or Board Members should leave Metro Board meetings for the duration of discussions involving Confidential Information.

I. Inadvertent Receipt or Disclosure of Confidential or Non-Public Information

In the event that an individual is inadvertently or erroneously given information which they are prohibited from receiving under the provisions of this Policy, it is the responsibility of both the individual who provided the information and the individual who received the information to inform a member of Divisional Compliance IMMEDIATELY. An individual must not trade based on information received in contravention of this policy or the GS Market Abuse policies.

J. Duty to Notify the LME

Any breaches of the requirements of the Exchange Notice which lead to GS coming into possession of Confidential Information via an employee or any other

party, whether or not such Confidential Information originates from Metro, must be notified to the LME as soon as reasonably practicable.

K. Technology Controls

All technology controls around Confidential Information within GS and Metro should be compliant with password best practices (i.e. passwords should be of an appropriate length and format complexity, should be changed on a regular basis, and must not be shared under any circumstances).

All changes to technology and systems that impact or potentially impact Metro Confidential Information should be tested ahead of rollout to ensure that security is not compromised and security measures remain in place.

L. Discounted LME Warrants

As GS is both an LME trading member and the owner of a Related Warehouse Company (i.e. Metro), both Metro and GS are subject to the following provisions of the Exchange Notice:

26. *A Member with a Related Warehouse Company which operates a listed warehouse in a particular Location may not sell or offer to sell LME warrants issued in respect of other Warehouse Companies operating in the same location or within 250 mile radius of the Related Warehouse Company at a discount to the Related Warehouse Company's LME warrants, unless it can demonstrate that it would have offered the same discount even if it did not have a Related Warehouse Company.*

All trades by Commodities Sales and Trading which involve the sale of LME Warrants at Metro or within a 250 mile radius at a discount must therefore be approved by the Head of Metals Trading and Divisional Compliance in writing prior to execution.

27. *Subject to the proviso in Paragraph 26, a Member must not otherwise offer any incentive to customers to exchange or substitute LME warrants issued by a Related Warehouse Company for LME warrants issued by any other Warehouse Company's listed warehouse in the same location or within a 250 mile radius of the Related Warehouse Company. Any member or Warehouse Company which is aware of any such sale or offer must immediately inform the LME of that fact.*

Therefore in the event an individual at Metro or at GS becomes aware of such a situation it must be escalated immediately to Divisional Compliance.

M. Access to Warehouses

GS employees with responsibilities for Metro may not inspect GS's metal held on LME warrant at another Warehouse Company (other than Metro).

All other GS employees must obtain pre-approval from Divisional Compliance before visiting any Warehouse Company (including Metro) to inspect GS's metal

held on LME warrant. Following a visit to any Warehouse, GS employees must confirm to Divisional Compliance that they did not receive any confidential information during their visit or escalate any potential receipt of confidential information immediately.

N. Personal Account Dealing

All Metro Board Members, GCPI Individuals and Metro staff and management are prohibited from executing any personal account trades in base metals contracts, physical base metals, contracts or derivatives with a base metal underlying or any other base metals related investments.

O. Disciplinary Sanctions

Pursuant to the Exchange Notice, a breach of the procedures set out therein by either a Member or a Related Warehouse Company may be regarded as an act of misconduct and may result in disciplinary action and the imposition of a severe financial penalty.

All relevant personnel will therefore be provided with a copy of this Policy, and must familiarize themselves with both the terms of this Policy and the details of the Exchange Notice (see Appendix 2 – it is also available via the following website link: <http://www.lme.com/notices/12540.asp>). Such personnel must also sign a written acknowledgement confirming their understanding of and adherence to this Policy and the Exchange Notice in the form set out in Appendix 3.

GS takes any misuse, misappropriation, or improper dissemination of confidential information very seriously. Misuse and misappropriation of confidential information may violate contractual obligations, as well as the laws, rules and/or regulations of various jurisdictions in which the Firm does business. It may also give rise to both civil liabilities and criminal penalties for the Firm and for individual employees. In addition, even just the suggestion of misuse or misappropriation of confidential information can lead to serious reputational damage to the Firm. Violations of this Policy and/or the Exchange Notice by employees may lead to disciplinary action, including dismissal, and any such violations may also need to be reported to regulatory or legal authorities and/or future employers. GS reserves the right to take steps to vet any Related Warehouse Company personnel for their fitness and propriety to hold Confidential Information in accordance with *[procedures required]*.

P. Complaints and Dispute Resolutions

Customer complaints should be escalated to Divisional Compliance and Legal and handled in accordance with normal complaint and dispute procedures. Details of the dispute or complaint should not be discussed with any other parties until the dispute or complaint has been reviewed by Divisional Compliance and Legal.

Q. Gifts and Entertainment

Designated Individuals do not require approval to provide or receive gifts or entertainment to or from Metro providing the offer is in accordance with GS's Gifts and Entertainment Policy. If an offer falls outside of GS's Gifts and Entertainment Policy, Designated Individuals must obtain pre-approval from Divisional Compliance.

All other GS employees must obtain PMD pre-approval to provide or receive any gifts or entertainment to or from Metro and any offer must be provided in accordance with GS's Gifts and Entertainment Policy. If an offer falls outside of GS's Gifts and Entertainment Policy, pre-approval from Divisional Compliance must be obtained.

In all cases regard must be given to any potential conflicts of interest that could be seen to arise as a result of GS and Metro's relationship and/or the nature of the gift or entertainment.

R. Third Party Assurance of Information Barriers

Pursuant to the Exchange Notice, Metro is required to engage a Practitioner to provide regular assurance that the information barriers it has in place are compliant with the requirements set out in the Exchange Notice. Such assurance must be given in accordance with the International Standards on Assurance Engagement 3000: Assurance Engagements other than Audits or Reviews of Historical Information issued by the International Auditing & Assurance Standards Board, or such other standards as are notified by the Exchange for time-to-time. The review must be carried out and the assurance given on an annual basis by Metro's auditors or any other person who meets the requirements set out in the Exchange Notice, as agreed between Metro and the LME. The report should comply with the requirements of the Exchange Notice and must be provided to both Metro and the LME. Metro is not permitted to share the report with other parties other than:

- (a) as required by the Exchange Notice;
- (b) confidentially with its own professional advisors and affiliates (except any Trading Company, i.e. GS);
- (c) as required by law or regulatory authority; or
- (d) as directed by a court or other regulatory body of competent jurisdiction.

All requests to disclose this report to a third party other must be reviewed and approved by Divisional Compliance and Legal before the report is disclosed to the third party.

The report can be shared with all Metro Board Members in their capacity as a Metro Board Member. Metro Board Members may only receive and use the report for the purpose of fulfilling their role on the Metro Board. The report cannot be shared with GS in any other capacity.

Any remedial actions arising from the report should be addressed in accordance with the Exchange Notice.

S. Serious breaches of these procedures may be regarded as an act of misconduct and may result in disciplinary action.

Revision History

- 26 March 2014 (current; replaced FSA with FCA)
- 23 July 2012
- 19 February 2010 (original; *Conflict Management Procedures Between Metro and Other GS Businesses and Personnel*)

APPENDIX 1 – GS INDIVIDUALS RESPONSIBLE UNDER
THE TERMS OF THIS POLICY

1230

Information Barrier Policy: Metro and Other GS Businesses and Personnel

APPENDIX 2 – LME NOTICE 11/334 : A326 : W173
ISSUED ON 17 NOVEMBER 2011



London Metal
Exchange for Inf...

APPENDIX 3 – ANNUAL CERTIFICATION

**CONFLICT MANAGEMENT PROCEDURES BETWEEN
METRO AND OTHER GS BUSINESSES AND PERSONNEL:
CERTIFICATION**

I,
(print name)

confirm that I (a) have read, (b) understand and (c) will comply with the terms of the Information Barrier Policy: Metro and Other GS Businesses and Personnel (the "Policy"), and that I will notify any inadvertent disclosures of confidential information to which the Policy applies or breaches of the Policy of which I become aware to Divisional Compliance immediately.

If I have any questions or concerns I will refer these directly to Divisional Compliance.

.....
(signature)

.....
(date)

*****For Designated Individuals ONLY*****

I confirm that I have complied with the terms of Paragraph 11 of LME Exchange Notice 11/334 : A329 : W173.

.....
(signature)

.....
(date)

Please circle your position below:

Board Member	Metals Sales /Trading	Designated Individual
GCPI	Metro	

[Add other positions that may be held by relevant individuals, e.g. GS Controller, persons who GCPI Individuals report into named in Appendix 1, etc.]



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September 17, 2014

By E-mail

Mr. Tyler Gellasch
Permanent Subcommittee on Investigations
Homeland Security & Governmental Affairs Committee
United States Senate
199 Russell Senate Office Building
1st & Constitution, N.E.
Washington, D.C. 20510

Re: Follow-Up Requests

Dear Mr. Gellasch:

I write on behalf of The Goldman Sachs Group, Inc. ("Goldman Sachs" or the "Firm") in connection with the efforts of the Permanent Subcommittee on Investigations (the "Subcommittee") to better understand the nature and scope of activities of U.S. banks in physical commodities.¹ Goldman Sachs responds to the last remaining requests set forth in your email dated August 22, 2014, which we reproduce below for your convenience.

Request No. 4: Please provide the average freight incentive per tonne of aluminum offered by Metro for each month during the period beginning February 1, 2010 through June 2014. For each calendar year from 2010 through 2013, please provide the total amount of incentives paid by Metro for aluminum and indicate what portion, if any, was paid to Goldman.

¹ The Goldman Sachs Group, Inc. is the Firm's publicly-held parent company. Information relevant to the Subcommittee's requests involves the activities of affiliates controlled by the Firm operating both inside and outside the United States.

PSI-GoldmanSachs-15-000001

Permanent Subcommittee on Investigations

EXHIBIT #39

New York | Washington, DC | Los Angeles |

Warsaw | Istanbul | Dubai | Beijing

1234

PSI Submission, Goldman Sachs - 9.17.14
Exhibit A

Year	Total Annual Freight Allowance Paid by Metro	Annual Freight Allowance Paid by Metro to J. Aron*
2010	\$ 36,886,081.53	\$ 4,833,782.97
2011	\$ 78,705,509.76	\$ 42,837,549.73
2012	\$ 102,810,074.24	\$ 21,239,974.82
2013	\$ 128,841,024.47	\$ 19,115,351.31

* The spread that J. Aron earned on the trade constituted a very small portion -- approximately 2% -- of the actual freight allowance that J. Aron received from Metro.

PSI-GoldmanSachs-15-000006

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Confidential

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PSI Submission, Goldman Sachs - 9.17.14
Exhibit A

Month/Year	Average Monthly Freight Allowance Paid by Metro \$/MT
Feb-10	\$ 60.08
Mar-10	\$ 83.06
Apr-10	\$ 85.05
May-10	\$ 99.51
Jun-10	\$ 102.95
Jul-10	\$ -
Aug-10	\$ 60.00
Sep-10	\$ -
Oct-10	\$ 60.00
Nov-10	\$ -
Dec-10	\$ 60.00
Jan-11	\$ 87.72
Feb-11	\$ 84.63
Mar-11	\$ 102.26
Apr-11	\$ 117.44
May-11	\$ 120.23
Jun-11	\$ 98.54
Jul-11	\$ 117.56
Aug-11	\$ 135.41
Sep-11	\$ 128.46
Oct-11	\$ 104.82
Nov-11	\$ 119.05
Dec-11	\$ 80.14
Jan-12	\$ -
Feb-12	\$ 122.57
Mar-12	\$ 83.65
Apr-12	\$ 112.49
May-12	\$ 115.15
Jun-12	\$ 109.11
Jul-12	\$ 105.25
Aug-12	\$ 149.82
Sep-12	\$ 122.67
Oct-12	\$ 186.89
Nov-12	\$ 144.78
Dec-12	\$ 172.18
Jan-13	\$ 150.48
Feb-13	\$ 160.42
Mar-13	\$ 183.88
Apr-13	\$ 109.59
May-13	\$ 97.49
Jun-13	\$ 163.84
Jul-13	\$ 183.79
Aug-13	\$ 181.92
Sep-13	\$ 195.16
Oct-13	\$ 181.35
Nov-13	\$ 174.55
Dec-13	\$ 163.02
Jan-14	\$ 146.46
Feb-14	\$ 153.87
Mar-14	\$ 155.32
Apr-14	\$ -
May-14	\$ -
Jun-14	\$ -

PSI-GoldmanSachs-15-000007

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GSPSICOMMODS00046233

CHADBOURNE
& PARKE LLPAbbe David Lowell
direct tel (202) 974-5605
adlowell@chadbourne.com

August 15, 2014

By E-mailMr. Joe Bryan
Permanent Subcommittee on Investigations
Homeland Security & Governmental Affairs Committee
United States Senate
199 Russell Senate Office Building
1st & Constitution, N.E.
Washington, D.C. 20510Re: Follow-Up Requests

Dear Mr. Bryan:

I write on behalf of The Goldman Sachs Group, Inc. ("Goldman Sachs" or the "Firm") in connection with the efforts of the Permanent Subcommittee on Investigations (the "Subcommittee") to better understand the nature and scope of activities of U.S. banks in physical commodities.¹ Goldman Sachs responds to all the remaining requests contained in your emails dated July 22, 2014 and July 29, 2014, which we reproduce below for your convenience.

Request No. 6: Describe Goldman Sachs's business relationship with Alcoa and provide the value as of the end of 2013 of Goldman Sachs's holdings in Alcoa debt and stock, respectively.

As of December 31, 2013, Goldman Sachs' position in Alcoa's equity was 1,707,113 physical shares representing approximately 0.1596% of common stock outstanding and a market value of \$18,146,610. These shares were held by Goldman Sachs in its capacity as a prime

¹ The Goldman Sachs Group, Inc. is the Firm's publicly-held parent company. Information relevant to the Subcommittee's requests involves the activities of affiliates controlled by the Firm operating both inside and outside the United States.

Employee	Department Name	Status	From Date	To Date
Agran, Greg	Global Commodities	Board Member	9/25/2009	12/1/2011
Atwood Scott, Victoria (Left GS)	Securities Div Compliance	Board Member	2/1/2010	11/16/2012
Bulk, Maxwell (Left GS)	Global Deriv Ops Mgmt	Board Member	12/1/2009	7/1/2014
Ciardi, Francesco (Left GS)	Assetco	GCPL	9/21/2009	4/11/2011
Ealet, Isabelle	Securities Divisional Mgmt	Senior Management	4/1/2012	CURRENT
Gabillon, Jacques	Assetco	Board Member, GCPL	9/21/2009	CURRENT
Grebien, Inghar	Assetco	GCPL	9/21/2009	CURRENT
Haynes, Oliver (Left GS)	Securities Div Compliance	Board Member	10/30/2012	4/1/2014
Holzer, Philip	EQ PIPG Sales	Board Member	2/15/2010	3/1/2014
Ken Murphy	Archon	Board Member	3/1/2010	5/1/2011
Lau, Carlson (Left GS)	Assetco	GCPL	4/11/2013	6/8/2013
Leo, Chen-ryung	Assetco	GCPL	9/21/2009	CURRENT
Lourenco, Tiago (Left GS)	Assetco	GCPL	9/3/2012	2/7/2014
Mancini, Robert (Left GS)	Assetco	Board Member	9/25/2009	12/1/2012
McDonough, Dermot	Controllers' Admin	Board Member	3/1/2010	CURRENT
Stewart, Richard	Media Relations	Board Member	10/1/2012	CURRENT
Stromberg, David (Left GS)	Assetco	GCPL	9/19/2011	4/17/2013
Stuart-Grant, Alan (Left GS)	Assetco	GCPL	8/25/2010	6/6/2013
Weiss, Michael	Securities Div Compliance	Board Member	1/23/2013	CURRENT
West, Owen	Natural Gas Trading	Board Member	11/28/2011	CURRENT
Yu, Audrey	Assetco	GCPL	5/9/2013	CURRENT

PSI Submission, Goldman Sachs - 8.15.14
Exhibit B

Employee	Department Name	From Date	To Date
Ahern, Daniel	FICC Product Control	11/17/2012	CURRENT
Aliebest, Jared	Communications Compliance	7/27/2014	CURRENT
Bakkar, Imene (Left GS)	NRMA - Market Risk Analysis	10/30/2012	4/22/2014
Bartlett, Meg	Litigation-Regulatory	5/29/2014	CURRENT
Bhatt, Niling	NRMA - Market Risk Analysis	10/30/2012	4/22/2014
Broedel, Janet	Litigation-Regulatory	5/29/2014	CURRENT
Brown, Aaron	Corporate Treasury	11/14/2012	4/22/2014
Bunlin, Steven	Derivatives & Commodities	10/30/2012	CURRENT
Campbell, Ian	Internal Audit - Securities	9/5/2010	4/24/2014
Carman, Jeff	FICC Product Control	10/15/2012	CURRENT
Chong, Yoon (Left GS)	Internal Audit - Securities	9/17/2010	11/9/2010
Clifford, Raymond	Internal Audit - Securities	10/30/2012	4/22/2014
Crompton, Sinead	Securities Div Compliance	10/30/2012	CURRENT
Donaio, Zali (Left GS)	Internal Audit - Securities	9/6/2010	11/9/2010
Duvall, Marie-Lucie	NRMA - Market Risk Analysis	10/30/2012	4/22/2014
Felt, Norman	Litigation-Regulatory	5/29/2014	CURRENT
Fredman, Sherna	FICC Product Control	9/7/2013	5/6/2014
Herrmann, David	Securities Div Compliance	10/30/2012	CURRENT
Keyworth, Christopher	Corporate Accounting	10/15/2013	11/20/2012
Hughes, Jon	NRMA - Market Risk Analysis	10/30/2012	4/22/2014
Javadi, Fazel (Left GS)	NRMA - Market Risk Analysis	10/30/2012	9/6/2013
Jarzon, Robert	Corporate Accounting	1/9/2013	CURRENT
Lehite, Michael	Accounting Policy Unit	11/17/2012	CURRENT
Lim-Khalil, Olga	Tax Compliance - S&P	10/15/2012	CURRENT
Lipincott, Eric (Left GS)	Tax Compliance - S&P	11/9/2012	3/7/2014
Lyons, Samuel (Left GS)	Accounting Policy	11/17/2012	2/14/2014
MacDonald, William	Internal Audit - Securities	9/6/2010	11/9/2010
Manabishvili, Zeynab (Left GS)	Internal Audit - Technology	11/17/2012	7/28/2014
McGee, Jon	Operations & Compliance	5/29/2014	CURRENT
McNair, Jonathan	Litigation-Regulatory	5/29/2014	CURRENT
Mwa, Gnanarajah (Left GS)	Tax Compliance - Federal	4/5/2013	4/18/2014
Nichols, David	Tax Compliance - Federal	3/20/2014	CURRENT
Smith, Yael	Corporate Accounting	10/15/2012	10/15/2012
Snowden, Richard (Left GS)	Internal Audit - Securities	10/30/2012	4/22/2014
Wardner, Kory	Internal Audit - Securities	10/16/2013	CURRENT
Wade, Kimberly	Tax Compliance - S&P	11/14/2012	CURRENT
Wilson, John	Tax Reporting And Analysis	11/14/2012	CURRENT
Yang, Stephanie	Tax Compliance - S&P	10/15/2012	CURRENT

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Global Commodities Overview

Simon Greenshields – Co-Head Global Commodities

Colin Bryce – Co-Head Global Commodities

May 7, 2009

Permanent Subcommittee on Investigations

EXHIBIT #41

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FRBPSI-618889

Agenda

- Executive Summary
- Timeline
- Organization Structure
- Business Lines
- Revenue and Balance Sheet Metrics
- Business Model & Key Revenue Contributors
- Business Initiatives
- Disclosures

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Executive Summary

- Business Overview
 - The Commodities Division has considerable experience and a long history of successful earnings and risk management performance
 - 25 year old franchise, generating consistently high revenues per headcount
 - Posted positive quarterly earnings for 100 consecutive quarters
 - Maintains a diversified geographic footprint and product base
 - Efficient balance sheet utilization with low overall asset levels
 - 22% and 26% Compound Annual Growth Rates for revenues and Profit Before Tax, respectively
 - Provides diversification benefit to portfolio risk of Morgan Stanley (MS)

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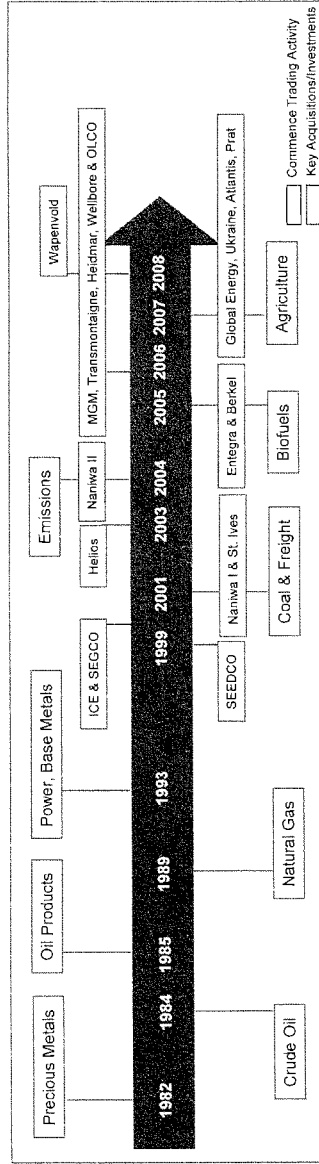
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Commodities Timeline



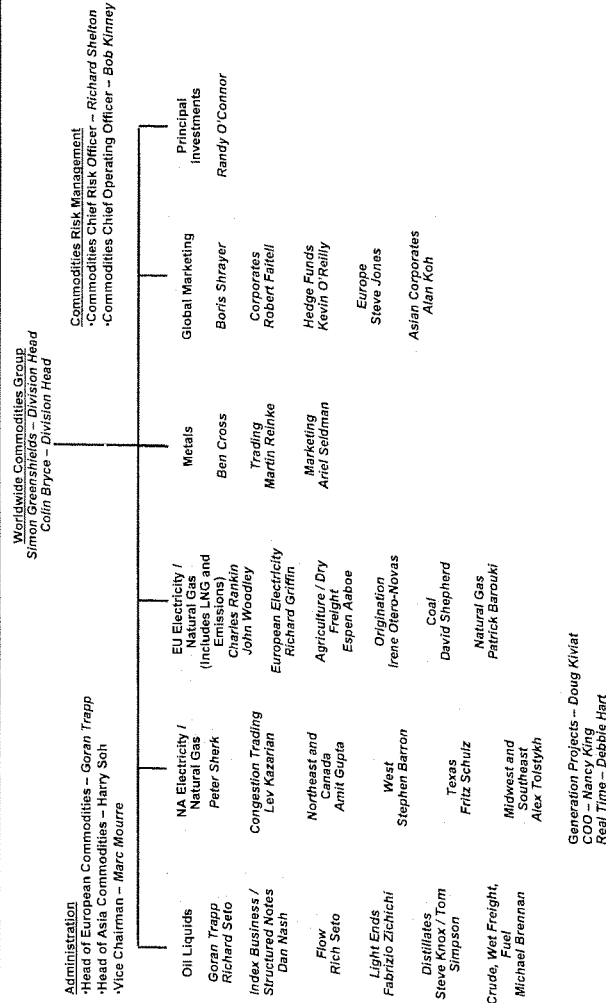
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4

Management Organizational Chart



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Commodities Management Experience

Commodities Management Committee

<u>Area of Responsibility</u>	<u>Business Head</u>	<u>MS Experience</u>	<u>Industry</u>
Co-Head Global Commodities	Simon Greenshields	25	26
Co-Head Global Commodities	Colin Bryce	22	30
Commodities Chief Operating Officer	Robert Kinney	20	23
Commodities Chief Risk Officer	Richard Shelton	18	27
Vice Chairman	Marc Murre	22	29
Global Oil & Head of Europe	Goran Trapp	18	22
North American Oil	Richard Seto	20	20
Global Marketing	Boris Shrayev	12	17
Global Metals	Ben Cross	14	22
North America Power & Gas	Peter Sherk	9	14
Co-European Power & Gas	Charles Rankin	14	21
Co-European Power & Gas	John Woodley	14	25

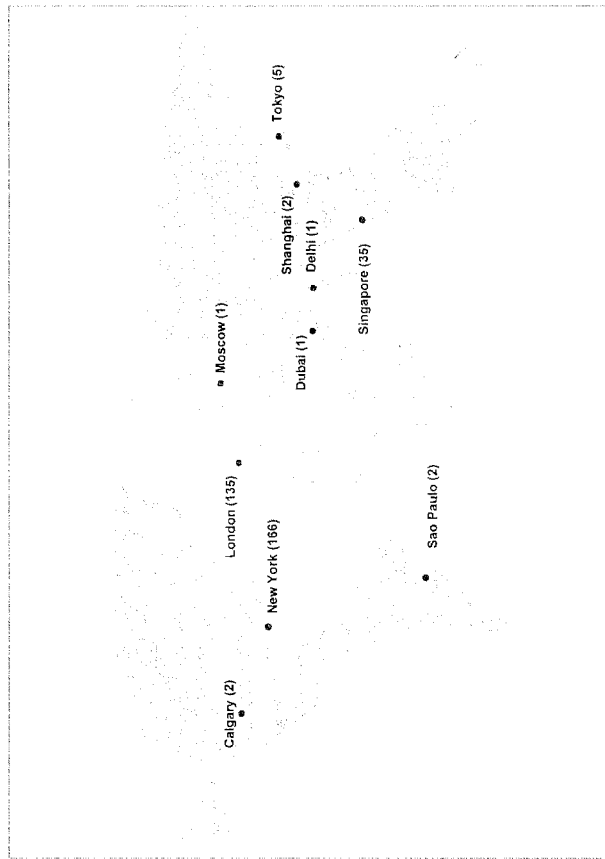
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Global Coverage

- Global presence with major offices in London, New York, and Singapore and 350 professionals
- Major offices contain regional expertise across a diverse product base
- Satellite Marketing offices reside in Brazil, China, Russia, India, and Japan
- Calgary office focuses on sour crude trading
- Shanghai office trades base metals
- Excludes employees of TMG and other Principal Investments



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Balance Sheet, VaR and Headcount Metrics

Key Points:

- Low balance sheet utilization, with derivative contracts representing the largest component
- Oil Liquids accounts for approximately 50% of balance sheet; primary driver of Physical Inventory and Receivable balances
- Small headcount requirements to generate \$3Bn in revenues
- Commodities VaR provides diversification benefits to the Firm as a whole.

Asset Category	March 31, 2009 (MM's)
Derivative Contracts	
Physical Inventory	
Initial Margin	
Customer Receivables	
Principal Investments	
Fixed Assets	
Other	
Total	\$29,764

BU Headcount	March 31, 2009
Trading	166
Marketing	59
Origination	19
Traffic/Scheduling	71
Administration	34.5
Total	350

VaR - March 31, 2009

\$21

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Business Model & Key Revenue Contributors

Business Model

Utilize specialist expertise to provide intermediation for counterparties who need to transfer, transform or acquire commodity price risk. Traders assume measured principal risk positions in physical and financial markets that enhance the returns from counterparty flow.

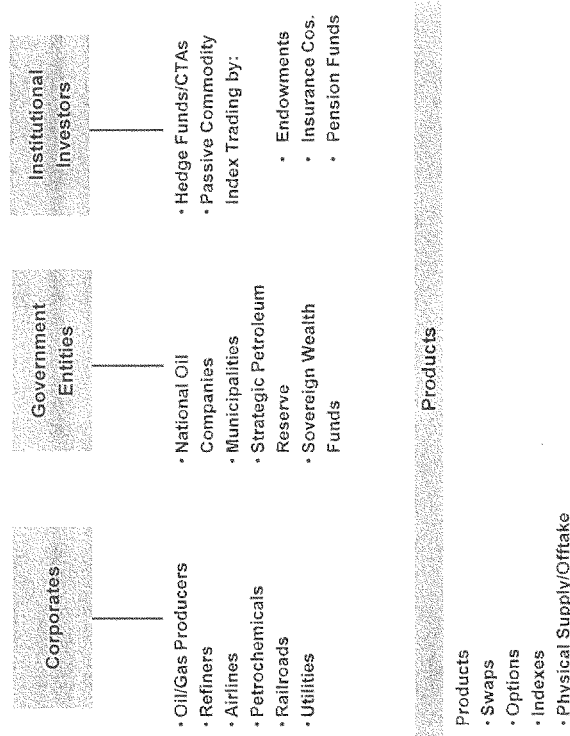
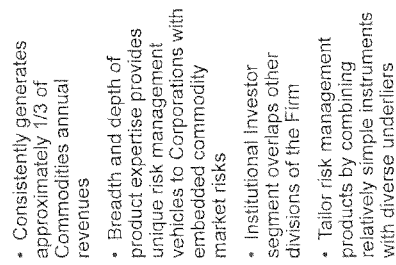
Key Revenue Contributors

- Counterparty Flow – 38%
- Physical Supply, Distribution, and Arbitrage – 18%
- Structured Transactions – 10%
- Principal Trading – 22%
- Asset/Principal Investments – 12%

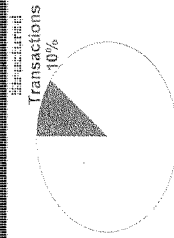
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Structured Transactions



- Refinery Supply Arrangements – MSCG provides commodity services to support refining operations of specific companies
- Crude and Product Monetization – MSCG provides price risk management and physical offtake in conjunction with counterparty note offering
- Overriding Royalty Interests – MSCG purchased Volumetric Production Payments ("VPP) related to two offshore acquisitions
- Electricity Capacity Purchases – Long-term purchase of capacity, firm energy and certain ancillary services from a power facility in McKittrick, California
- Jet Fuel Supply Contracts – MSCG supplies most of its U.S. jet fuel requirements (125 MBD) on a delivered basis to a specific airline company.
- Tolling Agreements – Obtain the right to supply fuel and market electricity from physical electricity generation. Agreements can be physical or financial.

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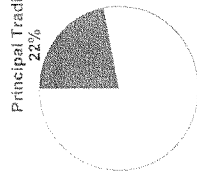
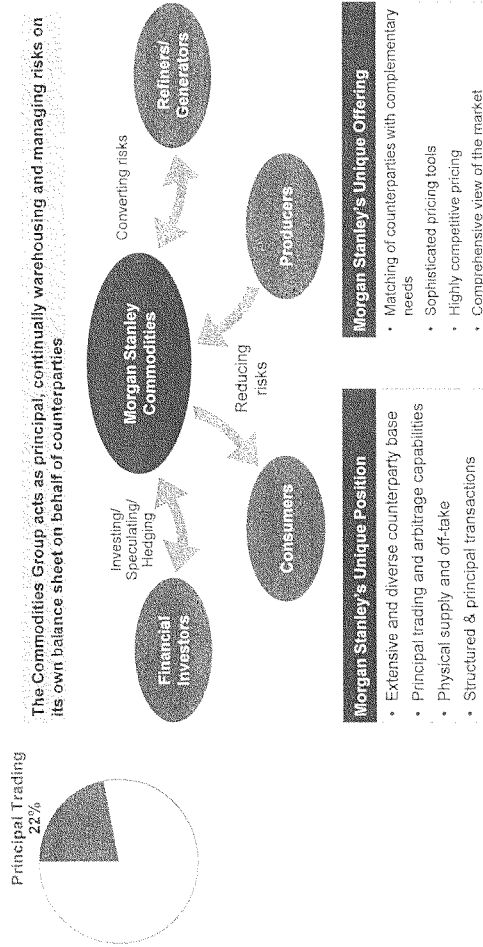
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Principal Trading Role

Interplay Between Principal Trading, Counterparty Flow, Physical Trading and Structured Transactions

The Commodities Group acts as principal, continually warehousing and managing risks on its own balance sheet on behalf of counterparties



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Relative Value Trading

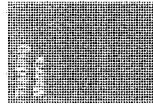
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- Focused on taking positions based on fundamental assessment of markets and, when possible, capitalize on market inefficiencies

Relative Value vs. Outright

- Relative Value trades make up the majority of our proprietary trading and are used across product areas and geographies
- Outright trades are often used in conjunction with the relative value trading book to achieve a desired risk profile—occasionally to anticipate market moves

Example: Oil



- Quality—WTI, Brent, Dubai, Gasoline and Jet Fuel
- Location—U.S. Gulf, NY Harbor, Mediterranean, Singapore
- Time—September, December, 2009, 2010
- Volatility—ATM, Out-of-the-Money, December, 2010

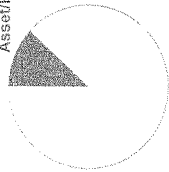
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Asset/Principal Investment
12%



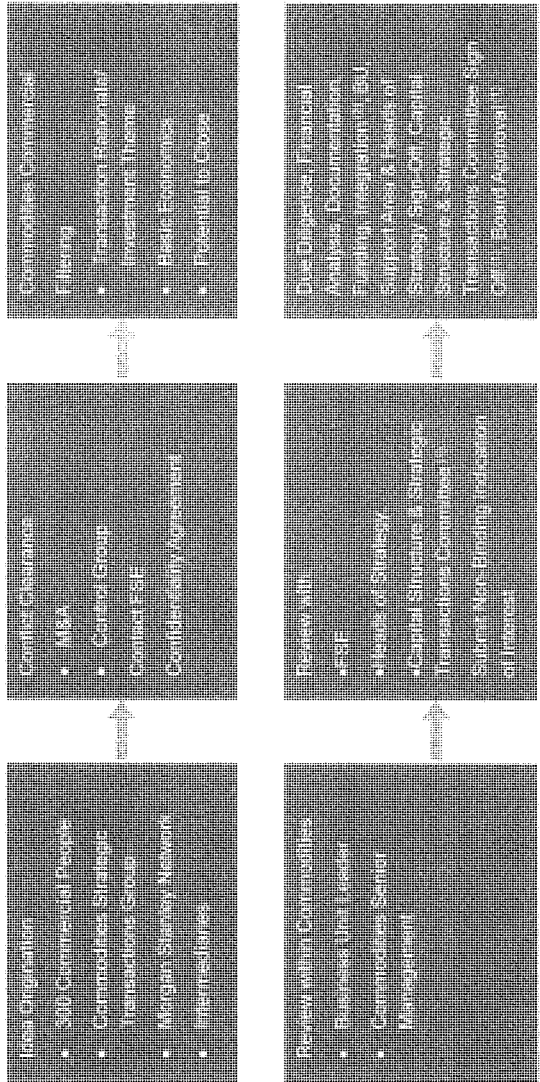
Type	Description
Trading	Investments driven by MSCG's ability to inject risk management expertise or human capital to optimize commercial opportunity around assets
Relative Value	Investments designed to extract value from inefficiencies between commodity markets and asset/capital markets
Network Extension/Critical Mass	Investments that allow MSCG to enter a new market or expand an existing business
Market Transformation	Investments driven by potential fundamental changes in commodity markets

Participation in unique
interactions across many
diverse commodity markets
uncover opportunities for key
strategic investments.

Production	<ul style="list-style-type: none">• Helios Fund—Operated Producing Properties• Gold Royalty Trust—Australian gold reserves• Wellbore Exploration—Undeveloped oil and natural gas properties
Conversion	<ul style="list-style-type: none">• Lion Oil—TMG oil refinery investment• Generation—three U.S. power plants, three European power plants
Infrastructure	<ul style="list-style-type: none">• TransMontaigne—Refined product terminaling and distribution• Hedmar Shipping—Tanker pool, trans-shipment• Global Energy—Bunkering and marine logistics
Exchanges	<ul style="list-style-type: none">• ICE—Electronic Trading• Dubai Mercantile Exchange• The Green Exchange
Alternatives	<ul style="list-style-type: none">• Range Fuels—Cellulosic ethanol• Atlantis—Tidal energy• MGM

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Transaction Process



(1) Size dependent.
(2) If applicable.

Include compliance

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Business Initiatives

- Physical Oil – Continue global physical oil expansion, both geographically and product lines.
- European Electricity and Natural Gas – Broaden existing platform with expansion into new markets. Strengthen presence/market share in established businesses and commodity products.
- Agricultruals – Build on current agriculture business by executing proven commodities' strategy, which includes creation of physical business coupled with new product expansion – commodities, locations, and deal structures. Leverage existing Dry Freight business in development process.
- Metals – Integrate current client flow dominated business with expanded risk taking. Increase presence in Chinese and Indian markets with a focus on principal trading. Pursue asset plays which will provide additional trading opportunities.
- Asia – Promote autonomous management behavior by focusing on independent development and execution of business ideas, while maintaining current synergies within established business lines. Increase productivity of existing personnel by advocating an Asian centric entrepreneurial spirit, hiring key risk takers, and expansion into more regional markets. Iron ore, metals, physical oil are primary target areas.
- Global Commodities – Opportunistically participate in distressed asset and portfolio sales as competitors exit business.
- Diversify counterparty flow base to reduce concentration risk
- Execute current plan for creation of Private Equity Fund
- Implement Global Treasury function
- Explore franchise defining acquisitions

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FRB, OCC and FDIC Disclosure

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SEC Disclosure

Please note that the information and materials that we are providing are highly sensitive, confidential information of Morgan Stanley, its subsidiaries and affiliates. The Documents are protected from disclosure by Exemption 4 of the Freedom of Information Act, 5 U.S.C. 552(b)(4), and may be protected from disclosure by other pertinent provisions of law because these materials constitute i) examination, inspection, or condition reports prepared by, on behalf of, or for the use of the Securities and Exchange Commission. Morgan Stanley hereby requests that the information and materials submitted hereto be treated accordingly and not be disclosed in response to a request under the Freedom of Information Act. Morgan Stanley has numerous competitors and disclosure of this information or materials would likely result in substantial competitive injury. In the event there are any requests for public disclosure of this information or materials, including any segregable portion of this information or materials after deletion of the portions which are exempt under 5 U.S.C. 552 (b) (8) and 12 CFR 4.12 (b) , we would expect to be notified in advance and to have the opportunity to substantiate our claim of confidentiality.

UK Financial Services Authority

Please note that the information and materials that we are providing are highly sensitive, confidential information of Morgan Stanley, its subsidiaries and affiliates and are provided to enable the Financial Services Authority to discharge its statutory functions.

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Morgan Stanley Commodities
Business Overview
February 11, 2013

Permanent Subcommittee on Investigations
EXHIBIT #42

Morgan Stanley

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PSI-MorganStanley-01-000001

Contents

Section 1: General Business Overview

Section 2: Business Line Segments

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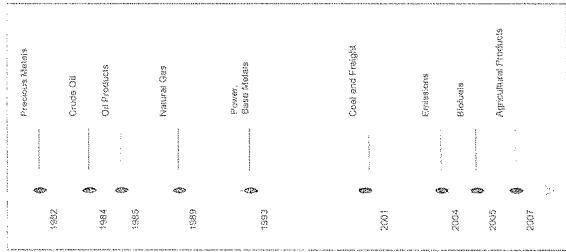
Section 1

General Business Overview

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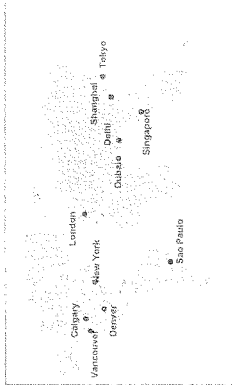
Morgan Stanley Commodities at a Glance



Background

- Since 1982, Morgan Stanley Commodities has been trading physical and financial commodities providing intermediation for counterparties who need to transfer, transform, or acquire commodity price risk.
- As of 2010, MS Commodities' global financial network of physical assets connected 2,000+ counterparties across the full commodity complex from power and oil to metals.
- Headquartered in Westchester, New York, MS Commodities has 365 dedicated front office employees and over 1,000 total employees, from 30+ different nationalities, covering markets 24 hours per day.

Global Coverage



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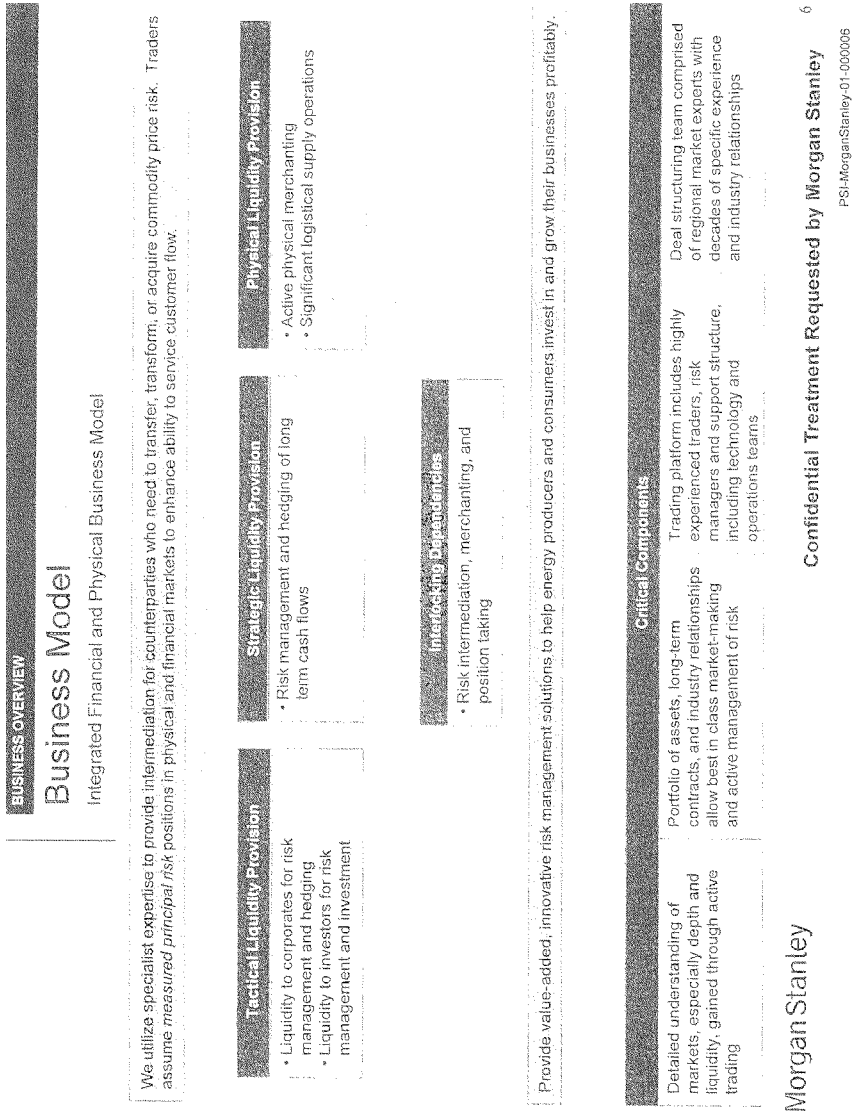
BUSINESS OVERVIEW

Morgan Stanley Commodities Activities

- Morgan Stanley Commodities is a significant participant in the energy markets, with substantial activity (both physical and financial) in crude oil and refined products, as well as natural gas, coal, and power.
- Morgan Stanley Commodities also participates in commodity markets for some industrial and precious metals, particularly gold and silver.
- Morgan Stanley Commodities is not a key participant in the agricultural commodity markets and has, at most, de minimus physical holdings in the agricultural commodities listed in the Subcommittee's January 11, 2013 Questionnaire.

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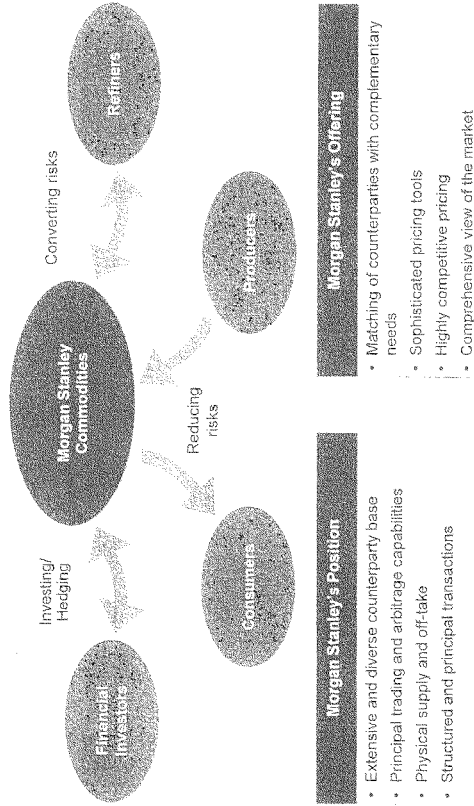


BUSINESS OVERVIEW

Principal Trading Role

Interplay Between Principal Trading, Counterparty Flow, Physical Trading, and Structured Transactions

The Commodities Group acts as principal, continually managing risks on its own balance sheet on behalf of counterparties



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BUSINESS OVERVIEW

Physical Capabilities

Crude Oil Products

- Long-term storage capacity worldwide (leased and owned)
 - ~50 million bbl of leased oil liquids storage capacity
- ~ 100 vessels on average under time and spot charter

Power/Natural Gas/Coal

- North American power wholesaler
- Contract monetisation and tolling arrangements in the independent power producer market worldwide
- Physical transmission positions and trading in the congestion market

Assets and Investments

- Power plants (4 power plants, 3 in North America, 1 in Europe)
- Upstream (Wellbore)
- Midstream (Transmontaigne)
- Shipping Logistics (Heidmar Group, Global Energy—minority stake)

Bespoke Structured Transactions

- Supply and off-take agreements
- Working capital facilities and credit enhancement
- Volumetric production payments

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BUSINESS OVERVIEW

Commodities Division Revenue

Global Commodities Division Net Revenue (USD Millions)*

	2008	2009	2010	2011	2012
Break					
Agriculturals					
AP EU Electric/Nat Gas					
Credit					
Investor Business					
Metals					
MS CVA MNE					
NA Electric/Nat Gas					
Oil Liquids					
Other					
Total	3,018	1,964	1,506	1,301	912

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Global Commodities Division Net Revenue as a Percent of Firm Net Revenue*

	2008	2009	2010	2011	2012
Break					
Agriculturals					
AP EU Electric/Nat Gas					
Commodities Other					
Credit					
Investor Business					
Metals					
MS CVA MNE					
NA Electric/Nat Gas					
Oil Liquids					
Total	13.85%	8.45%	4.30%	4.02%	3.50%

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*Drawn from revenues reported in the Firm's financial statements for 2008-2012

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BUSINESS OVERVIEW

Benefits to the Economy

- **Integrated Solutions for Innovative Businesses:** Morgan Stanley helped a private buyer purchase three struggling U.S. refineries in late 2010 and mid-2011. The private buyer needed working capital along with logistical expertise to supply crude oil at one Ohio refinery and offtake the refined products at two other refineries located in New Jersey and Delaware.
- **Lowering Costs for Businesses Facing Economic Challenges:** Morgan Stanley helped a leading U.S. airline under Chapter 11 restructuring to reduce its operating costs, working capital requirements, and balance sheet associated with jet fuel supply. Morgan Stanley provided the airline a long-term contract for delivery of jet fuel, typically one day prior to the airline's daily need to service its fleet. Morgan Stanley also provided logistical support and sold the airline jet fuel at a lower price than it was previously paying, lowering the airline's operating expenses and reducing the size of its balance sheet and interest expenses.
- **Facilitating Capital Investment, Spurring Economic Recovery:** Morgan Stanley has helped domestic natural gas producers price hedge on future production during the recent domestic shale gas boom, facilitating expansion of operations and development of new fields. The increase in the gas supply during that period led to record low prices in natural gas, benefitting the U.S. economy as a whole.

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BUSINESS OVERVIEW

Business Unit Segmentation

Organization by Product

Morgan Stanley Commodities

Oil Liquids	NA Electricity / Natural Gas	EU / AP Electricity / Natural Gas	Metals	Other
<ul style="list-style-type: none">• Crude• Distillate• Light Ends• Oil Flow• Freight	<ul style="list-style-type: none">• Power / Electricity• Transmission• Gas• Power Options• Emissions• Asset Management• Solar Development	<ul style="list-style-type: none">• Power / Electricity• Natural Gas• Coal• Dry Freight• Emissions	<ul style="list-style-type: none">• Gold• Copper• Aluminum• Silver	<ul style="list-style-type: none">• Agriculture• Credit• Investor Business• Other

Section 2

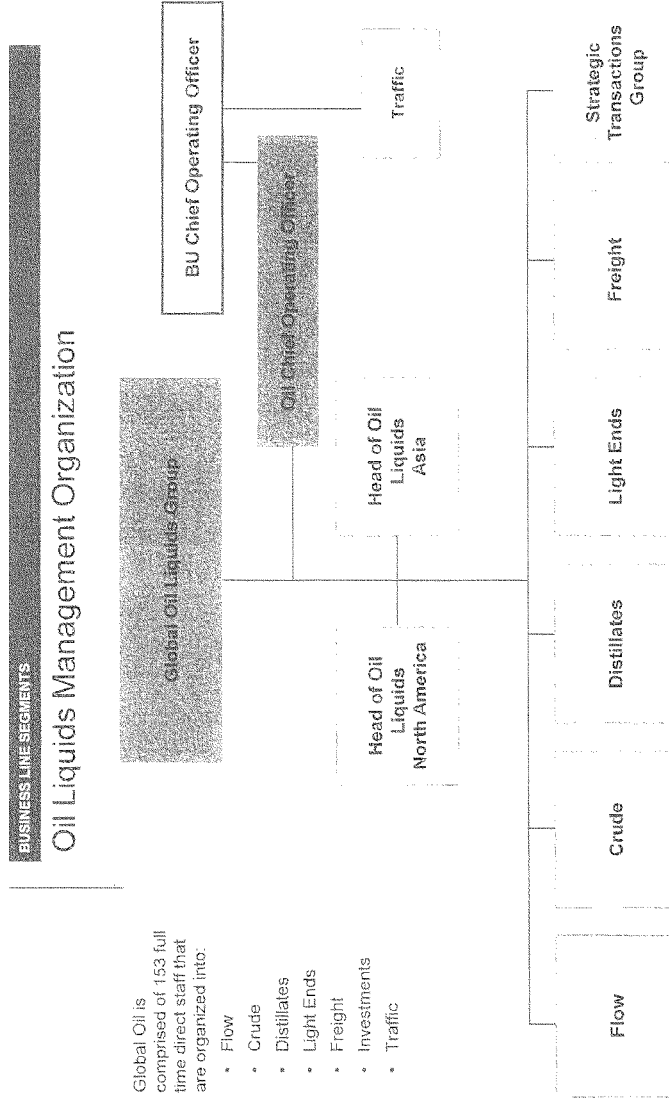
Business Line Segments

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Oil Liquids

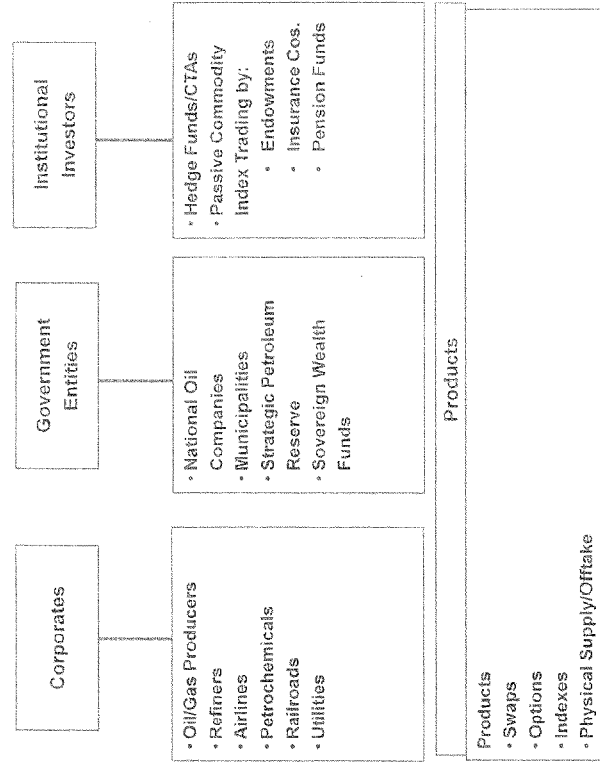
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- Breadth and depth of product expertise provides unique risk management vehicles to corporations and government entities with embedded commodity market risks
- Institutional Investor segment overlaps other divisions of the Firm
- Tailor risk management products by combining relatively simple instruments with diverse underliers
- *Southwest Airlines 2011Q1 10Q*: "Because jet fuel is not widely traded on an organized futures exchange, there are limited opportunities to hedge directly in jet fuel. However, the Company has found that financial derivative instruments in other commodities, such as crude oil, and refined products, such as heating oil and unleaded gasoline, can be useful in decreasing its exposure to jet fuel price volatility."

BUSINESS LINE SEGMENTS

Counterparty Flow



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BUSINESS LINE SEGMENTS

Physical Supply, Distribution, and Arbitrage

Enables IMS to service physical needs of airlines, shipping companies, and other consumers

Oil/Refined Products

- Blending to reflect value relationships between grades
- Capturing distribution margin in the wholesale sector, TMG
- Storage capacity provides flexibility in varying market conditions

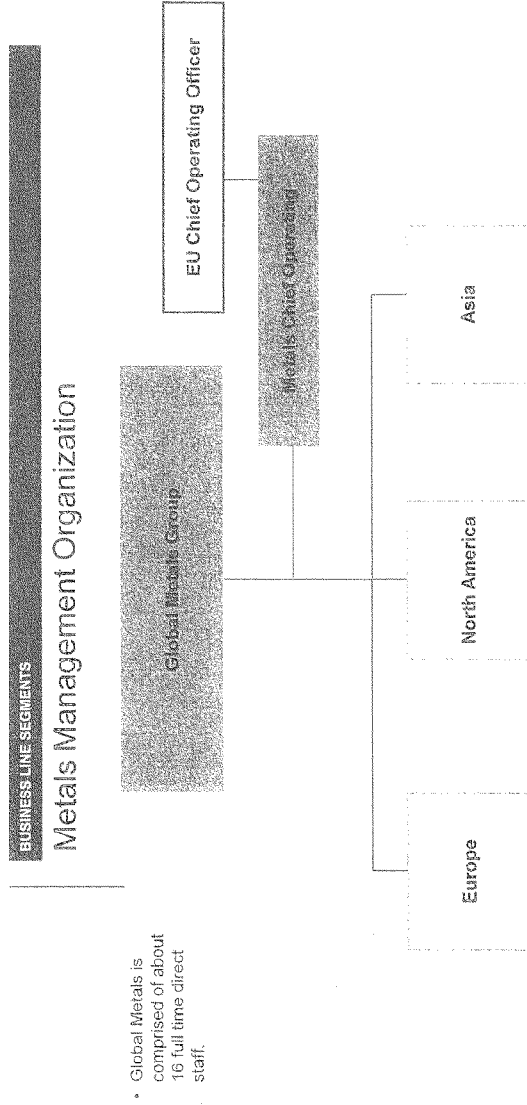
Freight

- Provides certainty of logistics capacity
- Provides origin/destination flexibility to take advantage of locational value relationships
- Allows for purchase in bulk and sale in parcel

Global Metals

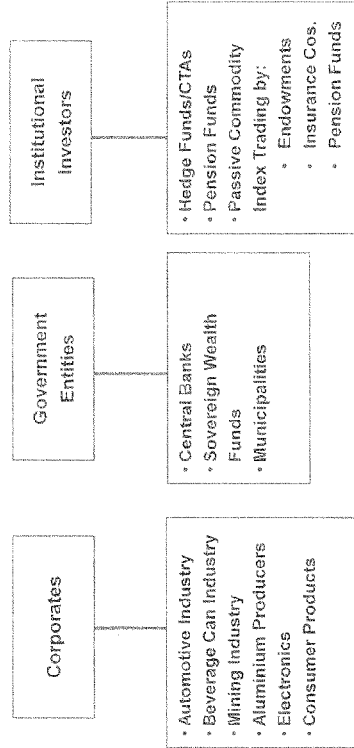
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Counterparty Flow

- Breadth and depth of product expertise provides unique risk management vehicles to corporations and government entities with embedded commodity market risks
- Institutional Investor segment overlaps other divisions of the Firm
- Tailor risk management products by combining relatively simple instruments with diverse underliers



Products
<ul style="list-style-type: none"> • Forwards • Swaps • Options • Indexes

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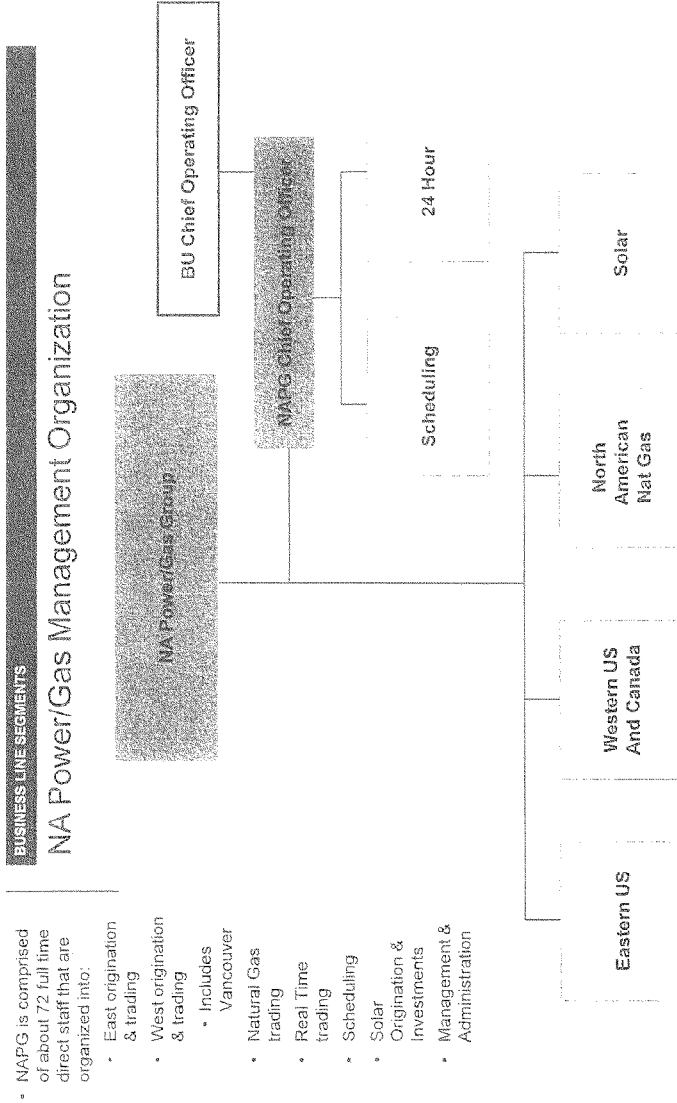
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North America Power & Gas

Morgan Stanley

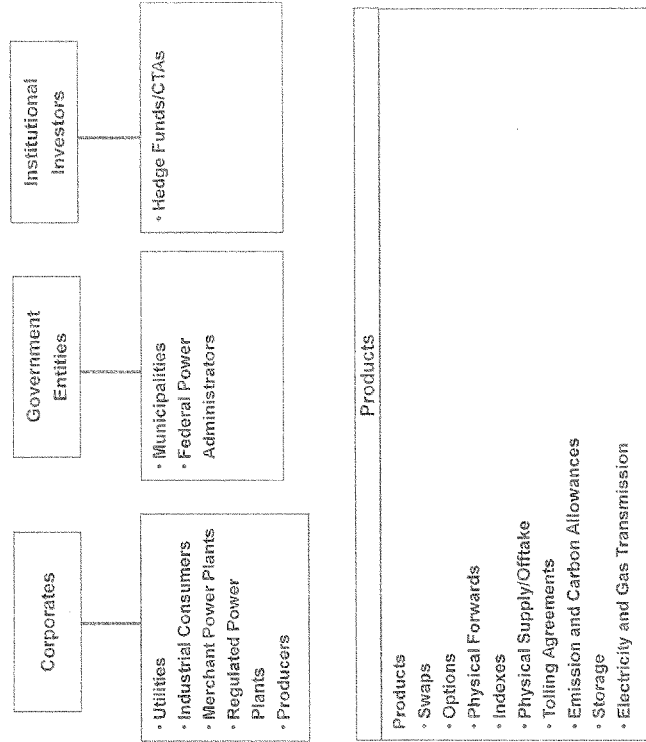
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BUSINESS LINE SEGMENTS

Counterparty Flow

- Breadth and depth of product expertise provides unique risk management vehicles to corporations and government entities with embedded commodity market risks
- Institutional Investor segment overlaps other divisions of the Firm
- Tailored risk management products by combining relatively simple instruments with diverse underliers



Morgan Stanley

Physical Supply, Distribution, and Arbitrage

Power/Natural Gas

- Providing ancillary services to support the power grid
- Provide optional fuel source and pricing
- Provide pricing certainty for carbon and emissions
- Optimizing gas/power transmission paths and storage

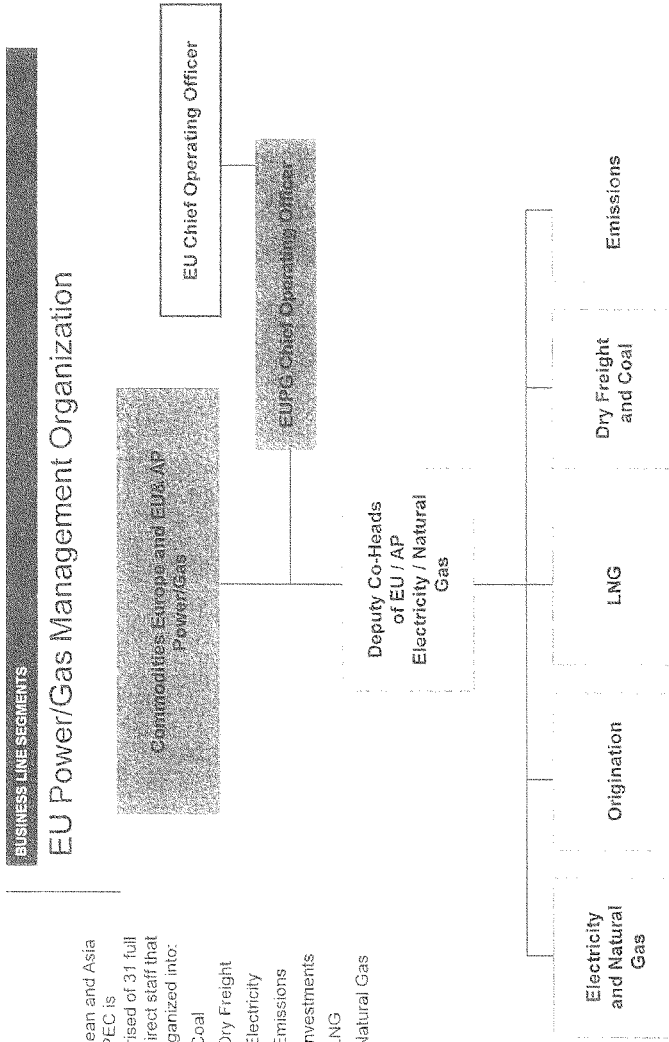
Physical Power Plants

- Provide capacity to end user and power grid
- Provide certainty of supply to long term end users
- Provide daily option to delivery based upon market signals

EU/AP Power & Gas

Morgan Stanley

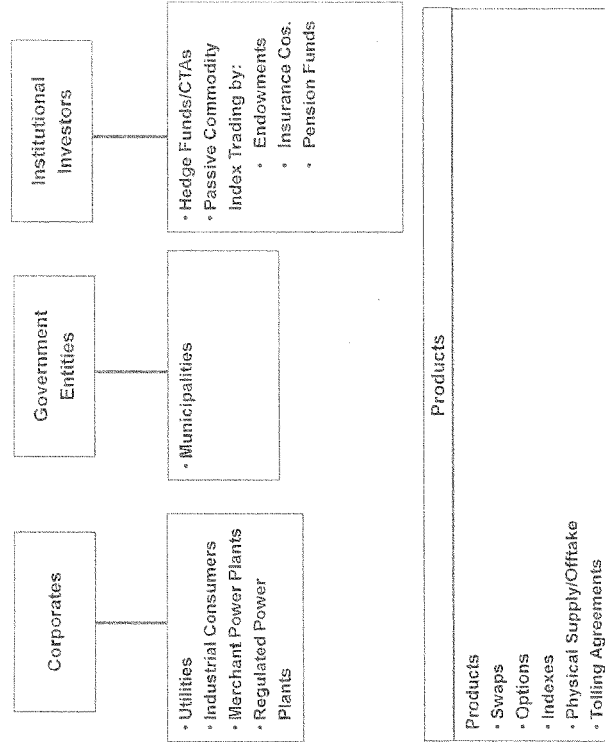
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- Breadth and depth of product expertise provides unique risk management vehicles to corporations and government entities with embedded commodity market risks
- Institutional Investor segment overlaps other divisions of the firm
- Tailor risk management products by combining relatively simple instruments with diverse underliers

BUSINESS LINE SEGMENTS

Counterparty Flow



Morgan Stanley

BUSINESS LINE SEGMENTS

Physical Supply, Distribution, and Arbitrage

Power/Natural Gas

- Gas storage and transportation capacity across Europe
- Providing ancillary services to support the power grid
- Optimize optionality in fuel sources
- Provide optionality for supply and capacity sales related to Physical Power Plants

Thermal Coal

- Physical optimisation and trading that gives optionality on location, quality, quantity, and timing
- Combine flexible term thermal supply coal contracts out of the US Gulf, Colombia, Indonesia, and South Africa with flexible sales contracts, particularly into Hawaii, UK, South Korea, and Taiwan
- Location flexibility in our coal portfolio and the internal requirement to move cargoes, complements our dry freight business

Dry Freight

- We move third party cargoes of other bulk commodities, particularly iron ore shipments from Brazil or Australia to China and grain shipments out of the Americas

LNG

- Alleviating shortages by redistributing product from areas of abundance to areas of limited supply
- Market presence in a number of locations: China, Korea, UK, Greece, Turkey, Kuwait, Portugal, Brazil, Japan, Spain, and Argentina

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INTERNAL FR

June 30, 2014

RSSDID: 2162966

FR Y-12
OMB Number 7100-0300
Approval expires December 31, 2015
Page 1 of 4

Board of Governors of the Federal Reserve System



Consolidated Holding Company Report of Equity Investments in Nonfinancial Companies—FR Y-12

Report at the close of business as of the last calendar day of the reporting period.

This report is required by law: Section 5(c) of the Bank Holding Company Act (12 U.S.C. § 1844(c)) and Section 10 of the Home Owners Loan Act (12 U.S.C. § 1467a(b)).

The Consolidated Holding Company Report of Equity Investments in Nonfinancial Companies is to be prepared in accordance with

the instructions provided by the Federal Reserve System. The Federal Reserve may not conduct or sponsor an organization (or a person) is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

NOTE: The Consolidated Holding Company Report of Equity Investments in Nonfinancial Companies must be signed and attested by an Executive Officer of the reporting holding company.

Date of Report: June 30, 2014
Month / Day / Year (BHEI 9999)

I, the undersigned Executive Officer of the named holding company, attest that the Consolidated Holding Company Report of Equity Investments in Nonfinancial Companies for this report date has been prepared in conformance with the instructions issued by the Federal Reserve System and is true and correct to the best of my knowledge and belief.

Sergio Lupetin

Printed Name of Executive Officer at Holding Company (BHEI C490)

Managing Director

Title of Executive Officer of Holding Company (BHEI C491)

Signature of Executive Officer of Holding Company

08/04/2014

Date of Signature (MM/DD/YYYY) (BHEI J196)

MORGAN STANLEY

Legal Name of Holding Company (TEXT 9010)

1585 BROADWAY

(Mailing Address of Holding Company) Street / P.O. Box (TEXT 9110)

NEW YORK

City (TEXT 9130)

NY

State (TEXT 9200)

10036

Zip Code (TEXT 9220)

Person to whom questions about this report should be directed:

Name / Title (TEXT 8901)

Area Code / Phone Number (TEXT 8902)

Area Code / FAX Number (TEXT 9116)

E-mail Address (TEXT 4086)

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RSSD ID

C.I.

S.F.

Public reporting burden for this information collection is estimated to average 18.5 hours per response, including time to gather and maintain data in the required form and to review instructions and complete the information collection. Comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing the burden, may be sent to Secretary, Board of Governors of the Federal Reserve System, 1700 P Street, NW, Washington, DC 20563, and to the Office of Management and Budget, Paperwork Reduction Project (7100-0300), Washington, DC 20503.

Permanent Subcommittee on Investigations

EXHIBIT #43

FRB-PSI-800009

05/2013
PSI-FRB-12-000012

INTERNAL FR

June 30, 2014

RSSDID: 2162966

MORGAN STANLEY

Legal Name of Holding Company

June 30, 2014

As-of Date

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CI

FR Y-12
Page 2 of 4**Schedule A: Type of Investments**

(If no activity or if the following section does not apply, please enter zero "0".)

	(Column A) Acquisition Cost			(Column B) Net Unrealized Holding Gains Not Recognized as Income			(Column C) Carrying Value			(Column D) Publicly Quoted Value		
	BHEI	BI	MI	BHEI	BI	MI	BHEI	BI	MI	BHEI	BI	MI
Dollar Amounts in Millions												
1. Direct investments in public entities	C088		951	C089		0	C090		891	C091		891
2. Direct investments in nonpublic entities	C093	4	217	C094		0	C095	2	815			
3. All indirect investments	C097	5	847	C098		0	C099	6	325			
4. Total portfolio (sum of items 1, 2, and 3)	C101	11	025	C102		0	C103	10	031			

Memoranda

					BHEI	1-10	11-25	26-100	100+	
1. Total portfolio.....					C100			100		M.1.

	(Column A) Acquisition Cost			(Column B) Net Unrealized Holding Gains Not Recognized as Income			(Column C) Carrying Value		
	BHEI	BI	MI	BHEI	BI	MI	BHEI	BI	MI
Dollar Amounts in Millions									
Financial holding companies only									
2. Investments held under Merchant Banking (GLBA) authority.....	C104	5	156	C105		0	C106	4	471

Financial holding companies only

2. Investments held under Merchant Banking (GLBA) authority.....	C104	5	156	C105		0	C106	4	471	M.2.			
Dollar Amounts in Millions													
Income Amount													
BHEI										BI	MI		
Only for holding companies filing FR Y-9C													
3. Pre-tax impact on net income from items 1, 2, and 3 above										B498		281	M.3.

Only for holding companies filing FR Y-9C

	Off-Balance-Sheet Amount			
	BHEI	BI	MI	
Dollar Amounts in Millions				
For all holding companies				
4. Investments managed for others	C716	538	942	M.4.

For all holding companies

			Income Amount		
			BHEI	BI	MI
Dollar Amounts in Millions					
Only for holding companies filing FR Y-9C					
5. Pre-tax impact of management fee income (from item M4 above)			J443	1	794

Only for holding companies filing FR Y-9C

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09/2013
PSI-FRB-12-000013

INTERNAL FR

June 30, 2014

RSSDID: 2162966

MORGAN STANLEY

Legal Name of Holding Company

June 30, 2014

As-of Date

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Schedule B: Type of Security

	(Column A) Acquisition Cost			(Column B) Carrying Value			
	BHEI	BI	MI	BHEI	BI	MI	
Dollar Amounts in Millions							
1. Common stock	C107	1	676	C108	1	453	1.
2. Convertible debt and convertible preferred stock	C109		152	C110		88	2.
3. Other equity instruments	C111	9	197	C112	8	510	3.
4. Total portfolio (sum of items 1, 2, and 3)	C113	11	025	C114	10	031	4.

	Off-Balance-Sheet Amount			
	BHEI	BI	MI	
Dollar Amounts in Millions				
1. Unused equity commitments	C115		386	M.1.

	Warrants		
	0=No	BHEI	
2. Does the holding company hold any warrants or similar instruments received in connection with equity investment activity? (Enter "1" for yes; enter "0" for no.)	1=Yes	C717	1
			M.2.

Schedule C: Type of Entity within the Banking Organization

	(Column A) Acquisition Cost			(Column B) Net Unrealized Holding Gains Not Recognized as Income			(Column C) Carrying Value			
	BHEI	BI	MI	BHEI	BI	MI	BHEI	BI	MI	
Dollar Amounts in Millions										
1. Depository institutions:										
a. SBICs	C117		0	C718		0	C118		0	1.a.
b. Edge and agreement corporations	C121		0	C719		0	C122		0	1.b.
c. All other	C126		0	C720		0	C127		0	1.c.
2. Parent holding and other nonbank subsidiaries:										
a. SBICs	C136		0	C721		0	C137		0	2.a.
b. Edge and agreement corporations	C722		0	C723		0	C724		0	2.b.
c. Broker/Dealers	C131		541	C725		0	C132		435	2.c.
d. Private equity subsidiaries	C726		543	C727		0	C728		946	2.d.
e. All other	C145	9	941	C729		0	C146	8	650	2.e.
3. Total portfolio (sum of items 1.a through 2.e)	C150	11	025	C730		0	C151	10	031	3.
Memoranda										
1. Domestic investments	C155	8	022	C749		0	C156	7	769	M.1.
2. Foreign investments	C157	3	003	C750		0	C158	2	282	M.2.

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MORGAN STANLEY

Legal Name of Holding Company

June 30, 2014

As of Date

June 30, 2014

RSSDD: 2162966

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Schedule D: Nonfinancial Investment Transactions During Reporting Period

Dollar Amounts in Millions									
Type of Transaction									
Direct Public Investments									
(Column A) Acquisition Cost									
(Column B) Carrying Value									
Direct Nonpublic Investments									
(Column C) Acquisition Cost									
(Column D) Carrying Value									
Indirect (Fund) Investments									
(Column E) Acquisition Cost									
(Column F) Carrying Value									
Type of Transaction									
1. Purchases									
2. Less: return of capital									
3. Net valuation changes									
4. Other									
5. Total transactions (sum of items 1 through 4)									

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EXHIBIT #44

Federal Reserve Bank of New York

Morgan Stanley Infrastructure Platform Review

September 11, 2013

EXCERPT

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Federal Reserve Bank of New
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	Overview of Infrastructure Investment Activities
	MSI's Infrastructure Investing Strategy
	Infrastructure Investor Needs
	MS Comparative Advantage for Infrastructure
	Competitive Landscape
	Growth Initiatives
	Legal Entities Used
	Impact of Regulatory and Accounting Developments on Business
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	Business Environment, Macroeconomic Factors
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	Valuations

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	Conflicts of Interest Management
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	Additional Physical Handouts

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Section 1

Strategy and Business Mix

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Overview of Infrastructure Investment Activities

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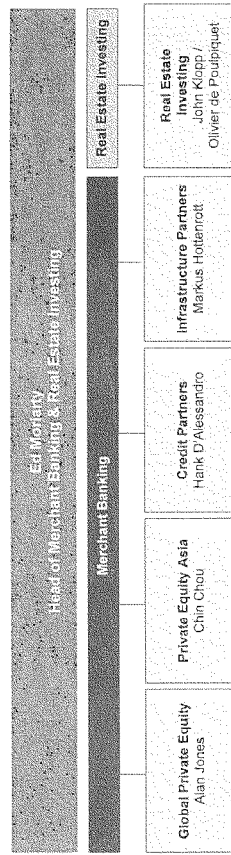
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OVERVIEW OF INFRASTRUCTURE INVESTMENT ACTIVITIES

Merchant Banking & Real Estate Investing

As of June 30, 2013



AUM (\$Bn)	\$2	\$3	\$1	\$3	\$20
Number of Funds ⁽¹⁾	9	5	1	1	17
Active Funds	MSCP V MSEC	PEA III PEA IV RMB Fund	Credit Partners	MSIP I	MSREF G7 PRIME PROPERTY
Active Investments	44	26	14	14	476
Capital Deployed (\$MM) - 2012	247	225	138	731	2,017
Employees	50	63	11	41	247

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Notes:
1. Includes active and legacy funds.

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- Defining Characteristics of Infrastructure Investments**
- Essential underlying product or service to broader economic activity
 - Long, useful lives
 - High barriers to entry
 - Operate in regulated environments and/or exhibit reduced business cyclicality
 - Low demand elasticity
 - Cash flow stability and predictability
 - Linkage to inflation with appropriate pass through mechanics
 - Difficult to replicate due to high construction costs, zoning and scarcity of resources

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OVERVIEW OF INFRASTRUCTURE INVESTMENT ACTIVITIES

Product Description – What Defines Infrastructure

- Infrastructure refers to large-scale systems, services and facilities that provide goods and services that serve as the underlying basis for broader economic activity
- Infrastructure investments tend to be asset or system specific, with a dedicated function, and in many cases are regulated as a result of their monopolistic or oligopolistic characteristics
- Morgan Stanley Infrastructure (“MSI”) seeks investments that ideally have defining characteristics shown to the left

<p>Transportation Assets</p> <ul style="list-style-type: none">• Toll roads• Bridges• Tunnels• Airports• Ports• Municipal Parking	<p>Energy and Utilities</p> <ul style="list-style-type: none">• Oil and gas pipelines• Regulated electricity assets• Transmission and distribution systems• Water distribution and treatment	<p>Social Infrastructure</p> <ul style="list-style-type: none">• Education facilities• Healthcare facilities	<p>Communications</p> <ul style="list-style-type: none">• Communication towers• Satellite systems

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Institutional

- Total investors: 49

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Wealth Management

- Total investors: 202

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Morgan Stanley Commitment

- Morgan Stanley as a GP LP committed ~10% of MSIP I's total capital commitments
- Morgan Stanley pays no management fee and no carried interest on this amount

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OVERVIEW OF INFRASTRUCTURE INVESTMENT ACTIVITIES

Client Base

MSIP I - Final Fund Size—\$4Bn ⁽²⁾

Investors by Region ⁽¹⁾	Investors by Type ⁽¹⁾
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	<ul style="list-style-type: none">• Predominantly pension funds

Notes

- 1. Excludes Morgan Stanley Commitment
- 2. Includes Morgan Stanley co-

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- MSIP I deployed \$4.1 billion in investments during the fund's Commitment Period, which ran from May 2007 through May 2013
- MSIP I deployed the majority of its capital in 2010 following the Global Financial Crisis

OVERVIEW OF INFRASTRUCTURE INVESTMENT ACTIVITIES

Revenues

MSIP I - GAAP Financial Reporting Summary - Annual Revenues

Total Revenues
\$ Values in Thousands



Source: MSIP I Financial Statements

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MSI's platform is scalable to accommodate the management of additional infrastructure related equity and debt funds

OVERVIEW OF INFRASTRUCTURE INVESTMENT ACTIVITIES

Business Outlook and Number of Funds

MSI's Existing, In Process and Contemplated Funds

Current Business Outlook

Fund	Existing	In Process	Contemplated
	MSIP I	MSIP II	Emerging Markets Infrastructure Fund Infrastructure Debt Fund
Strategy	Infrastructure Core Plus Investment Mandate	Infrastructure Core Plus Investment Mandate	
Region	Global	Global	
Focus Sectors	Energy, utilities and transportation	Energy, utilities and transportation	
Size	\$4.0 Bn (Closed)	\$4.0 Bn (Target)	
Term	15 years	12 years	
Targeted Investors	<ul style="list-style-type: none">• Pensions, Financial Institutions• Insurance Companies• Government Agencies• Sovereign Wealth Funds• Corporations• Endowments• Individuals	<ul style="list-style-type: none">• Pensions, Financial Institutions• Insurance Companies• Government Agencies• Sovereign Wealth Funds• Corporations• Endowments• Individuals	

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OVERVIEW OF INFRASTRUCTURE INVESTMENT ACTIVITIES

MSI Fund Overview

Current Carry Value, Capital Raised and Invested, Unfunded Commitments and Firm Commitments

MSIP I – (Established) ¹		MSIP II – (In Process / Fundraising)	
\$ Values in Millions		\$ Values in Millions	
1 st Closing:	May 2007	1 st Closing:	Q4 2013 (Anticipated)
Term:	15 Year	Term:	12 Year
Fund Size:	\$4,003	Fund Size:	\$4,000
Total Capital Deployed:	\$4,100	Total Capital Deployed:	N/A
Capital Returned to Investors ² :		Capital Returned to Investors:	N/A
Current NAV:		Current NAV:	N/A
Morgan Stanley Commitment ³ :	\$417	Morgan Stanley Commitment:	Up to 3%
Unfunded Commitments:		Unfunded Commitments:	N/A
Number of Investments:		Number of Investments:	12 to 15 (Anticipated)
Total Uplift:		Total Uplift:	N/A
Gross IRR:	12.1%	Gross IRR:	12% to 15% target
Value of Accrued Carry:		Value of Accrued Carry:	N/A

— = Redacted by the Permanent Subcommittee on Investigations

Notes

1. Performance figures as of March 31, 2013.
2. Includes all cash distributions (return of capital, realized gain / loss) and total cash distributions.
3. Includes amounts from Morgan Stanley employees.

















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OVERVIEW OF INFRASTRUCTURE INVESTMENT ACTIVITIES

Capital Invested

MSIP I Portfolio Investments - \$4.1 billion of gross capital deployed¹

Americas		Europe		Asia	
Gross Capital Invested: \$2,185MM		Gross Capital Invested: \$1,293MM		Gross Capital Invested: \$646MM	
 Mid-West Southern Star Gas Interceptor and storage facility provider for Midwestern U.S.	\$435MM	 Spain Mauritania Red de Gas First stand-alone natural gas distribution company in Spain		 India Toll Roadway developer, constructing three highway projects in India	
 Chicago Chicago Parking Meters Third-largest metered parking system in the U.S.		 United Kingdom Affinity Water Largest regulated water-only company in the U.K., providing water to over 3.6 million people		 China Zhaoshang Hydropower Ltd. Leading operator of small and medium-sized hydropower plants in China	
 Boston WATER Tri-generation facility providing heating, cooling, and electricity		 United Kingdom Eversholt Rail Group Leading rolling stock company in U.K.		 India Asian Gasco Developer of clean power generation assets, with majority interests in a 4,000MW portfolio	
 Montreal Montreal Gateway Terminals Largest operator at Port of Montreal, the 3rd largest container port on the NE coast		 Italy Agrok Investimenti S.r.l. Shareholder in Venice and Treviso airports		 India PASGIC/SVB India's largest Build-Operate-Transfer bridge project	
 Chicago Chicago Loop Parking Largest underground parking system in the U.S.		 United Kingdom Sapphire Holdings BV Purchase of BAA subordinated debt, realized (Nov '11)		 India Continuum Wind Energy Wind power generation asset operator and developer	
 Chile SAESA Group Third-largest electricity distributor in Chile, realized (Nov. '11)					

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INFRASTRUCTURE INVESTOR NEEDS

Process for Introducing New Funds

MSIP II – Estimated Timeline to Fund Raise

- MSI formally launched MSIP II in May 2013 with initial distribution of Private Placement Memorandum ("PPM")
- Team will be meeting with prospective investors around the world over the next several months, with the goal of reaching a first fund close in Q4'13

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2Q13	3Q13	4Q13	2014
<ul style="list-style-type: none"> Global distribution of MSIP II PPM Commence global roadshows 	<ul style="list-style-type: none"> Continue roadshows Draft Limited Partnership Agreement Standard Due Diligence Questionnaire and Dataroom available to prospective investors 	<ul style="list-style-type: none"> Continue roadshows with prospective investors at MSI's offices in NY and London Negotiate side letter agreements and finalize subscription documentation Achieve first fund closing in Q4 	<ul style="list-style-type: none"> Additional fund closings Continue roadshows Ongoing diligence performance by prospective investors Expected final close in 2014 or early 2015

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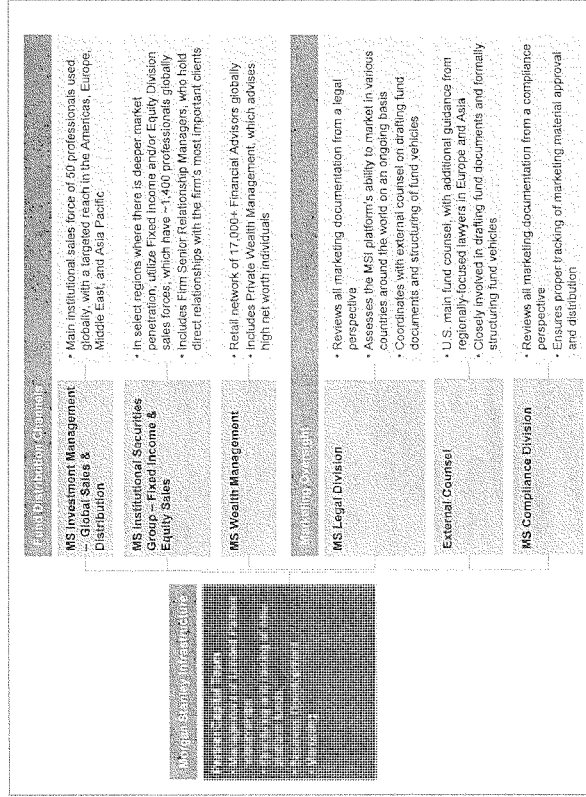
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- In addition to leveraging its own relationships with investors in the asset class, the Partner Capital Team works through three sales channels of Morgan Stanley to source commitments from new investors, including:
 - Investment Management Sales & Distribution (Institutional)
 - Institutional Securities Group's Fixed Income & Equity Sales (Institutional)
 - Wealth Management (retail)
- Furthermore, the Partner Capital Team utilizes Morgan Stanley's Legal and Compliance divisions, as well as external counsel, for review and oversight of marketing activities

MS COMPARATIVE ADVANTAGE FOR INFRASTRUCTURE

Marketing Channels

MSI utilizes Morgan Stanley's institutional and wealth management distribution networks



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- US transaction flow continues to be robust on a "go forward" basis
- MSI expects that energy-related infrastructure will constitute a majority of the deal flow in MSIP II
- Concession-based transportation infrastructure will constitute a minority, but still important part of the opportunity set
- PPP deal flow, while not a "flood", has improved relative to prior years

MS COMPARATIVE ADVANTAGE FOR INFRASTRUCTURE

Key Industries and Areas of Focus

Americas

Role of Shale in U.S. Energy Supply	<ul style="list-style-type: none">• Shale opportunities continue to be "transformational" in U.S. energy supply picture. Key gas-related opportunities are:<ul style="list-style-type: none">– Gathering and processing– Storage– LNG terminals converting to export• Shale oil opportunities are primarily transportation and storage related• Potential for water remediation and storage
Gasification Economics Outlook	<ul style="list-style-type: none">• Majority of the opportunity will continue to be in wind and solar• Solar has been advancing relative to wind as panel prices drive solar closer towards grid parity• Distributed generation (DG) is an increasingly more important part of the picture, but "scale" still limits opportunities in the DG space• Smaller developers are taking projects to a given stage, but lack resources to complete, providing a market for larger developers/aggregators who in turn require capital
Conventional	<ul style="list-style-type: none">• New construction of efficient, gas-fired CCGTs is more of an intermediate-term, rather than a "short-term", phenomena• Driven by coal plant retirements, and need for redundant "back-up" system to support renewables• Secondary opportunities will involve plants requiring commercial optimization
State / Municipal Budget Shortfalls	<ul style="list-style-type: none">• Continued shortfalls at state and municipal levels will encourage transportation PPPs• Several states (Ohio, New York, Pennsylvania, Florida, and Puerto Rico etc.) continue to move forward• With the success of Ohio State University Parking, other universities are contemplating

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IMPACT OF REGULATORY AND ACCOUNTING DEVELOPMENTS ON BUSINESS

External Factors and Regulatory Bodies Impacting Portfolio Companies

MSIP I - Transportation



External Factors	Regulatory Bodies
<ul style="list-style-type: none"> Inflation – parking rates 100% indexed to inflation Parking demand Demand elasticity GDP-linked asset Debt financing environment 	<ul style="list-style-type: none"> Concession governed by ordinance City of Chicago, City Council (indirectly)



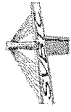
External Factors	Regulatory Bodies
<ul style="list-style-type: none"> Fleet re-letting risk Cost of newly built trains Inflation – while there is no explicit inflation protection, ERT's capital rents typically inflation expectations Debt financing environment 	<ul style="list-style-type: none"> UK Department for Transport ("DfT") UK Office of Rail Regulation ("ORR")



External Factors	Regulatory Bodies
<ul style="list-style-type: none"> Global GDP – demand impacts on maritime shipping Diesel fuel pricing Trade tariffs Rail rates – impacts competitiveness of the port Labor rates – unionized labor Inflation – component of labor rates and customer handling rates Debt financing environment 	<ul style="list-style-type: none"> None Indirect – related to Port of Montreal as Lessor



External Factors	Regulatory Bodies
<ul style="list-style-type: none"> Italian Airport passenger tariffs Global GDP – demand driven related to airline passenger travel Through new Contratto di Programma, tariffs increase as inflation increases are tied to cost of aviation and services 	<ul style="list-style-type: none"> Ente Nazionale per l'Aviazione Civile – "ENAC" (Italian Civil Aviation Authority)



External Factors	Regulatory Bodies
<ul style="list-style-type: none"> India Regional GDP – demand driven aspects related to vehicular traffic Demand elasticity Toll Rates – determined pursuant to formula related to local inflation and exchange rate (USD / INR) Debt financing environment 	<ul style="list-style-type: none"> National Highways Authority of India



External Factors	Regulatory Bodies
<ul style="list-style-type: none"> India Regional GDP – demand driven aspects related to vehicular traffic Demand elasticity Toll Rates – determined pursuant to formula related to local inflation, interest rates and exchange rate (USD / INR) Acquisition of Rights of Way Construction environment Debt financing environment 	<ul style="list-style-type: none"> National Highways Authority of India

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IMPACT OF REGULATORY AND ACCOUNTING DEVELOPMENTS ON BUSINESS

External Factors and Regulatory Bodies Impacting Portfolio Companies
MSIP I - Energy & Utilities



External Factors				
<ul style="list-style-type: none">• Customer demand• Natural gas pricing• Inflation – implicit inflation linkage through FERC rate case (indirectly linked to inflation and interest rates)• Cost of capital and environment (debt and equity)	<ul style="list-style-type: none">• Inflation – parametric tariff formula reflects ~70% of inflation in annual revenue adjustments• Housing growth and increased electricity demand leads to more connection points• Debt financing environment	<ul style="list-style-type: none">• Natural gas prices – impact efficiency and ability to generate peak revenues• Weather – steam and chilled water volumes are directly impacted by weather• Local utility distribution tariffs – primary component of contract rates charged to customers	<ul style="list-style-type: none">• Power prices impact electricity tariffs• Weather and rain impact hydro powered facilities• Project / Construction delays• Debt financing environment	<ul style="list-style-type: none">• Inflation – implicit inflation link in power tariffs, which are set by individual provincial governments• Local hydrology• Acquisition environment – growth is directly impacted on acquisition of facilities• Debt financing environment
<ul style="list-style-type: none">• Federal Energy Regulatory Commission (FERC)• Environmental Protection Agency (indirect)• Local Public Utility Commissions (indirect)	<ul style="list-style-type: none">• Spanish Ministry of Industry, Tourism, and Commerce	<ul style="list-style-type: none">• Federal Energy Regulatory Commission• New England System Operator	<ul style="list-style-type: none">• India Ministry of Energy• Government of Sikkim (local)• India Ministry of Environment and Forest	<ul style="list-style-type: none">• Chinese Provincial Government serves as separate regulatory bodies• UK - Department for Environment, Food and Rural Affairs• UK - OFWAT• UK - DfE• UK - Environment Agency• UK - Consumer Council for Water
<ul style="list-style-type: none">• Wind resource – level of long-term wind resource has direct impact on CFE's ability to provide energy• Equipment cost• Project / Construction delays• Debt financing environment• New entrant equity appetite				<ul style="list-style-type: none">• India Ministry of Energy• Government of municipalities where have specific regulatory bodies for land acquisition and power off-take agreements

Morgan Stanley

CONFIDENTIAL

FRB-PSI-400366

RECEIVED*By Docket Room at 8:00am, May 13, 2014*

UNITED STATES OF AMERICA
BEFORE THE DEPARTMENT OF ENERGY
OFFICE OF FOSSIL ENERGY

WENTWORTH GAS
MARKETING LLC

)
)
)

FE Docket No. 14-63-CNG

APPLICATION OF
WENTWORTH GAS MARKETING LLC
FOR LONG-TERM AUTHORIZATION TO
EXPORT COMPRESSED NATURAL GAS

Pursuant to Section 3 of the Natural Gas Act ("NGA")¹ and Part 590 of the Department of Energy's ("DOE") regulations,² Wentworth Gas Marketing LLC ("Wentworth Gas") hereby submits this application with the DOE, Office of Fossil Energy ("DOE/FE") for long-term authorization for Wentworth Gas to export up to approximately 60 billion cubic feet ("Bcf") per annum (60 trillion Btu/year) (equivalent to approximately 5.0 Bcf per month (5.0 trillion Btu/month) or 0.166 Bcf per day (0.166 trillion Btu/day)) of domestically produced compressed natural gas ("CNG") for a 20-year period, commencing on the earlier of the date of first export or five (5) years from the date the requested authorization is granted (the "Application"). Wentworth Gas seeks authorization to export CNG using intermodal transportation containers via truck and ocean-going carrier from the State of Texas to any country with which the United States currently has, or in the future may enter into, a free trade agreement ("FTA") requiring national treatment for trade in natural gas.

Wentworth Compression LLC ("Wentworth Compression"), an affiliate of Wentworth Gas, intends to construct, own and operate a CNG compression and container loading facility (the "Facility") near the Port of Freeport, Texas, off Brazoria Interconnector Gas Pipeline

¹ 15 U.S.C. § 717b (2013).

² 10 C.F.R. Pt. 590 (2013).

Permanent Subcommittee on Investigations

EXHIBIT #45a

("BIG"), an intrastate pipeline performing natural gas transportation within Texas. Wentworth Compression will receive gas from the BIG system via a third-party, intrastate lateral pipeline, approximately eleven miles in length. Wentworth Compression will compress and containerize the natural gas, and sell up to 60 Bcf per year (0.166 Bcf per day) of containerized CNG to Wentworth Gas. Wentworth Compression will ensure that all requisite regulatory approvals are obtained for the CNG compression and loading facilities contemplated in this Application. The timing for completion of the Wentworth Compression Facility is approximately 12 months from the date that final regulatory approvals are obtained.

Wentworth Gas, in turn, will make both domestic and export sales of the containerized CNG purchased from Wentworth Compression. At this time, potential domestic markets include vessel fuel sales, enhanced oil recovery applications, and local CNG fueling stations. It currently is contemplated that all containerized CNG sold by Wentworth Gas for export will be sold to entities located in FTA countries. Wentworth Gas will act as export agent for these CNG sales to entities in FTA countries. Wentworth Gas reserves its right to seek an export authorization to countries with which the United States does not have a Free Trade Agreement (non-FTA) in the future, should appropriate market opportunities present themselves in such jurisdictions.

Wentworth Gas's authorization as described herein is consistent with the public interest and should be granted by DOE/FE under the applicable statutory provisions governing the exportation of natural gas to FTA countries.³ Wentworth Gas requests this authorization both on its own behalf and as agent for others for up to approximately 5.0 Bcf/month of CNG to any permitted destination. In the near term, the project intends to sell domestically produced CNG to entities in the Dominican Republic, Panama, Guatemala, El Salvador, Honduras and Costa Rica (each an FTA country).

³ 15 U.S.C. § 717b.

In support of this Application, Wentworth Gas respectfully states the following:

I. COMMUNICATIONS AND CORRESPONDENCE

All communications and correspondence regarding this Application should be directed to the following persons:

Deborah Hart
Vice President
Wentworth Gas Marketing LLC
2000 Westchester Avenue
Purchase, New York 10577-2530
Tel: 914-225-1430
Fax: 212-507-8843
Email: Deborah.Hart@morganstanley.com

Paul F. Forshay
Michael A. Stosser
Sutherland Asbill & Brennan LLP
700 Sixth Street, N.W., Suite 700
Washington, D.C. 20001-3980
Tel.: 202-383-0100
Fax: 202-637-3593
Email: paul.forshay@sutherland.com;
michael.stosser@sutherland.com

II. DESCRIPTION OF THE APPLICANT

The exact legal name of the applicant is Wentworth Gas Marketing LLC, a Delaware limited liability company with its principal place of business at 2000 Westchester Avenue, Purchase, New York 10577. Wentworth Gas is a wholly owned subsidiary of Wentworth Holdings LLC, a limited liability company organized under the laws of Delaware, which in turn is indirectly owned by Morgan Stanley, a corporation formed under the laws of Delaware, with its principal place of business at 1585 Broadway, New York, New York. Wentworth Holdings LLC also wholly owns Wentworth Compression LLC, a Delaware limited liability company with its principal place of business at 2000 Westchester Avenue, Purchase, New York 10577, which will construct, own and operate the Facility. Upon completion of the Facility and the initiation of service by Wentworth Compression, Wentworth Gas will engage in the business of natural gas sales through the sale of CNG produced at the Facility. The gas sold by Wentworth Gas will be consumed in both domestic and export markets, and Wentworth Gas also will act as export agent for sales of CNG to entities in FTA countries.

III. DESCRIPTION OF THE PROPOSED EXPORT ACTIVITY

Wentworth Gas seeks long-term, multi-contract authorization to export domestically produced CNG obtained from the natural gas compression and container loading facility to be constructed, owned and operated by its affiliate Wentworth Compression. Wentworth Compression intends to construct the Facility on a 50-acre site near the Port of Freeport, Texas. The parcel where the Facility will be built will be leased from the Port of Freeport. The Facility will have the capacity to load up to 270 Department of Transportation-approved International Organization for Standardization (“ISO”) containers of CNG per day. Wentworth Compression will sell up to 60 Bcf per year (0.166 Bcf per day) of containerized CNG to Wentworth Gas. All of the Facility’s output would be sold to Wentworth Gas.

Once sourced, CNG will be compressed and stored in ISO containers, staged temporarily and transported from the Facility via truck approximately one mile to the Port of Freeport, and shipped on vessels chartered by Wentworth Gas to various destinations. There will be no facilities for permanent or long-term gas storage at the Facility, nor will there be a warehouse to store the ISO containers. Of course, Wentworth Compression will comply with all of the Port of Freeport’s regulations relating to container storage, as will be set forth in the lease agreement between Wentworth Compression and the Port of Freeport.

As contemplated, the Facility would comprise a “mixed use” CNG project. As described above, Wentworth Gas anticipates selling CNG to be consumed in both domestic markets and export markets in FTA countries located in the Caribbean and Central America regions. Wentworth Gas has not yet entered into any long-term supply agreements with entities in the Caribbean, Central America or elsewhere. As described in Section IV of this Application, Wentworth Gas commits to filing with DOE/FE copies of any future executed agreements. As

indicated in the attached letter, Wentworth Compression has entered into a letter of intent regarding CNG supply with Wentworth Gas, and Wentworth Compression has entered into (i) as indicated in the attached letter, Wentworth Compression has entered into an engineering, procurement and construction (“EPC”) contract for construction of the Facility and (ii) Wentworth Compression’s EPC contractor has entered into an access agreement with the Port of Freeport regarding the site for the Facility, a copy of which is attached. In addition, Wentworth Compression anticipates executing additional agreements to purchase containers and to finalize arrangements with the Port of Freeport regarding the loading of containerized CNG onto ships for export.

IV. AUTHORIZATION REQUESTED

Wentworth Gas requests authorization to export up to approximately 60 Bcf per year (0.166 Bcf per day) of domestically produced CNG, via truck and ocean-going carrier for export from Texas to any country with which the United States currently has, or in the future will have, an FTA requiring national treatment for trade in natural gas. Wentworth Gas requests this long-term authorization for a 20-year period, commencing on the earlier of the date of first export or five (5) years from the date the requested authorization is granted. Wentworth Gas requests this authorization both on its own behalf and as agent for others.

DOE/FE’s regulations require applicants to submit information regarding the terms of the transaction, including long-term supply agreements and long-term export agreements.⁴ DOE/FE has found that an applicant need not submit this information at the time of its original application if such transaction-specific information is not available because the contracts have not yet been executed.⁵ In such instances, DOE/FE has permitted applicants to submit such information

⁴ 10 C.F.R. § 590.202(b)(4).

⁵ See, e.g., *Jordan Cove Energy Project, L.P.*, DOE/FE Order No. 3413 (Mar. 24, 2014).

within 30 days of contract execution, which DOE/FE has found conforms to the requirement in its regulations that such information be submitted “to the extent practicable.”⁶ Wentworth Gas requests that DOE/FE make the same finding in this proceeding and commits that it will file within 30 days of execution, a copy (both a confidential, non-redacted version and a publically available, redacted version) of any long-term agreement entered into between Wentworth Gas and an entity for the export and sale of CNG.⁷

V. PUBLIC INTEREST

Wentworth Gas’s authorization as described herein is consistent with the public interest and should be granted by DOE/FE under the applicable statutory provisions governing the exportation of natural gas to FTA countries.⁸ NGA Section 3(e), as amended by Section 201 of the Energy Policy Act of 1992 (Pub. L. 102-486), provides that:

[T]he exportation of natural gas to a nation with which there is in effect a free trade agreement requiring national treatment for trade in natural gas, shall be deemed to be consistent with the public interest, and applications for such importation or exportation shall be granted without modification or delay.⁹

Under this statutory presumption, this Application to export CNG to nations with which the United States currently has, or in the future may enter into, a FTA requiring national treatment for trade in natural gas, shall be deemed consistent with the public interest and should be granted by DOE/FE without modification or delay. Consistent with this statutory provision, Wentworth Gas requests that DOE/FE promptly grant its request to export CNG to FTA countries.

⁶ *Id.*

⁷ *See, e.g., Dominion Cove Point LNG, LP*, DOE/FE Order No. 3331 (Sept. 11, 2013).

⁸ 15 U.S.C. § 717b.

⁹ 15 U.S.C. § 717b(c).

VI. EXPORT SOURCES

Wentworth Gas seeks authorization to export natural gas available from the United States natural gas pipeline supply and transmission system. The Wentworth Compression Facility will interconnect with the BIG system via a third-party, intrastate pipeline approximately eleven miles in length. Through this interconnection with BIG, Wentworth Compression will be able to indirectly access the national natural gas pipeline grid, providing Wentworth Gas and its potential customers with a variety of stable and economical supply options.

VII. APPENDICES

The following appendices are included with this Application:

Appendix A	Opinion of Counsel
Appendix B	Verification
Appendix C	Letter of Intent and Access Agreement
Appendix D	Letter of Intent

CONCLUSION

For the reasons set forth above, Wentworth Gas respectfully requests that the DOE issue an order granting Wentworth Gas long-term authorization to export up to approximately 60 Bcf per annum (approximately 0.166 Bcf per day) of CNG for a 20-year term to any country with which the United States currently has, or in the future may enter into, an FTA requiring national treatment for trade in natural gas. Wentworth Gas requests this authorization on its own behalf and as agent for others. As demonstrated herein, the authorization requested is consistent with the public interest and, accordingly, should be granted pursuant to Section 3 of the NGA without modification or delay.

1314

Respectfully submitted,



Michael A. Stosser
Paul F. Forshay
Sutherland Asbill & Brennan LLP
700 Sixth Street, N.W., Suite 700
Washington, D.C. 20001-3980
Tel.: 202-383-0100
Fax: 202-637-3593
Email: michael.stosser@sutherland.com
paul.forshay@sutherland.com

Counsel for
Wentworth Gas Marketing LLC

Dated: May 12, 2014

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APPENDIX A
OPINION OF COUNSEL



SUTHERLAND ASBILL & BRENNAN LLP
First City Tower
1001 Fannin, Suite 3700
Houston, TX 77002-6760
713.470.6100 Fax 713.654.1301
www.sutherland.com

CHAD E. MILLS
DIRECT LINE: 713.470.6167
E-mail: chad.mills@sutherland.com

May 12, 2014

Mr. John Anderson
Office of Fuels Programs, Fossil Energy
U.S. Department of Energy
Docket Room 3F-056, FE-50
Forrestal Building
1000 Independence Avenue, S.W.
Washington, D.C. 20585

Re: Wentworth Gas Marketing LLC
Application for Long-Term Authorization to Export Compressed Natural Gas (FE
Docket No. 14 - _____-CNG)

Dear Mr. Anderson:

This opinion is furnished to you pursuant to Section 590.202(c) of the Department of Energy's Regulations, 10 C.F.R. § 590.202(c) and in connection with the application of Wentworth Gas Marketing LLC (Wentworth Gas) for long-term authorization to export compressed natural gas. I am counsel for Wentworth Gas, a limited liability company organized under the laws of the State of Delaware. I have reviewed and relied upon the corporation formation documents of Wentworth Gas and information provided to me by its upstream parent company Morgan Stanley Capital Group Inc. Based on the foregoing, and for the purposes of Wentworth Gas's application to the Office of Fossil Energy, I am of the opinion that the proposed exports as described in the application are within the corporate powers of Wentworth Gas.

Respectfully submitted,

A handwritten signature of Chad E. Mills, written in dark ink, appearing as a stylized, cursive "C.E. Mills".

Chad E. Mills, Partner
Sutherland Asbill & Brennan LLP
1001 Fannin Street, Suite 3700
Houston, TX 77002-6760
Tel.: 713-470-6100
Fax: 713-654-1301
Email: chad.mills@sutherland.com

Counsel for Wentworth Gas Marketing LLC

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APPENDIX B
VERIFICATION

UNITED STATES OF AMERICA
BEFORE THE DEPARTMENT OF ENERGY
OFFICE OF FOSSIL ENERGY


WENTWORTH GAS
MARKETING LLC

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)
)

FE Docket No. 14-____-CNG

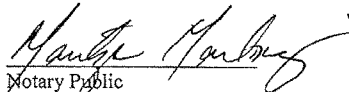
VERIFICATION

The undersigned, being duly sworn, states that I am the authorized representative of Wentworth Gas Marketing LLC; that I am duly authorized to make this Verification; that I have read the foregoing application and am familiar with the contents therein; that all the statements and matters contained therein are true and correct to the best of my information, knowledge and belief; and that I am authorized to execute and file this application with the United States Department of Energy.



Michael A. Stosser
Of Counsel
Sutherland Asbill & Brennan LLP

Subscribed and sworn to before me
this 12th day of May 2014.


Notary Public
for the State of New York

My commission expires: July 21, 2015

MARITZA MARTINEZ
Notary Public, State of New York
No. 01MA8096008
Qualified in Kings County
Commission Expires July 21, 2015

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APPENDIX C
LETTER AND ACCESS AGREEMENT



111 West Olmos San Antonio TX 78212

PO Box 436317 Louisville KY 40253

9 May 2014

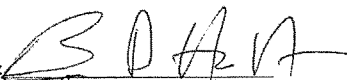
Wentworth Compression LLC
2000 Westchester Avenue
Purchase, NY 10577
USA

Re: EPC Contract and Access Agreement - CNG Project

Ladies and Gentlemen:

This letter confirms that HP Industries, LLC ("Holt") and Wentworth Compression LLC ("Wentworth") are parties to an Engineering, Procurement, and Construction Contract, dated April 2, 2014 (the "EPC Contract") pursuant to which Holt has agreed to construct a facility for the compression of natural gas to be owned by Wentworth (the "CNG Facility"). In connection with the EPC Contract, Holt has entered into an [Access Agreement] with the Port Freeport dated [5-12-14] for purposes of obtaining rights to access the real property on which the CNG Facility will be located, a copy of which is attached.

Very truly yours,

By: 
Name: Benjamin D. Holt
Title: President

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Access Agreement

May 12, 2014

H.P. Industries LLC
111 W Olmos Drive
San Antonio Texas 78212
Attention : Ben Holt - 502-724-7225

Re: Request H.P. Industries LLP ("Licensee") for authorization to conduct environmental studies, surveying and geotechnical investigations on property belonging to Port Freeport (the "Port")

Inspection Authorization and Hold Harmless Agreement

Dear Mr. : Ben Holt

You have requested that the Port allow H.P. Industries LLP access to certain tracts of land owned by the Port for the purpose of conducting surveying, geotechnical studies, environmental studies and other investigations ("Inspections"). We understand that this request is being made for the purpose of evaluating the property's suitability for development of your project. This letter sets forth the terms on which the Port will allow Licensee, its surveyors, agents, contractors, subcontractors and employees (collectively, the "Authorized Persons") access to property owned by the Port for such purposes of performing the Inspections you deem necessary. This letter does not constitute a lease or an easement or an agreement to grant a lease or an easement.

1. License. Subject to the terms and provisions set forth herein, the Port hereby grants Licensee a limited, non-exclusive and non-transferable license to enter upon the property more particularly described as Parcel 19 as shown on the Port Property map attached hereto (the "Property") for the sole purpose of the Inspections. The foregoing license shall automatically terminate on the earlier to occur of (i) completion of the fieldwork required for the Inspections, or (ii) (insert Dates please). 12-31-14

2. Rules and Regulations. At all times while on the Property, Licensee will and will cause all Authorized Persons to comply with all state and federal safety rules and regulations now in effect or hereafter promulgated by the Port and governing activities on Port lands. In addition, Licensee will identify to the Port, in a manner satisfactory to the Port, all employees, agents, contractors, subcontractors and surveyors of Licensee who are to enter upon the Property. The Port shall have the absolute right to refuse entry upon the Property to any person (a) who fails to comply with the Port's safety rules and regulations, or (b) to whom the Port has a reasonable objection.

3. Insurance Requirements. Licensee agrees that all contracts entered into by and between Licensee and a third party (including but not limited to surveyors, contractors and subcontractors) for the work relating to the Inspections and all contracts providing for the use of the Port's land for ingress and egress to other areas, shall contain a clause requiring such third party to assume liability for loss to the Port's property, facilities, and its operations, and loss to property of third parties, and for injury to or death of the Port's employees, agents or any other persons caused by or arising from the work performed by such third party on the Property. Such clause shall also require the third party to furnish and maintain in force throughout the time that work is being performed, a general comprehensive liability insurance

policy (in the case of a contractor a comprehensive Commercial General Liability Insurance Policy), the limits of the liability of such policy to be not less than \$500,000.00 per person and \$1,000,000.00 per accident for bodily injury or death, but not limited as to the number of accidents and in an amount of not less than \$500,000.00 for property loss or damage. Such clause will further provide that prior to commencement of any work the third party will tender to the Port a certificate or written statement from the insurance carrier evidencing the above required insurance, and showing the Port as an additional insured party. The policies evidencing the required insurance will contain an endorsement to the effect that cancellation or any material change in the policies adversely affecting the interests of the Port in such insurance shall not be effective until 20 days after written notice thereof to the Port. Licensee will carry and maintain similar coverage with similar endorsements in favor of the Port (and shall furnish copies of same to the Port before any fieldwork relating to the Inspections begins).

4. Indemnity. Licensee hereby assumes all liability for, and agrees to defend, indemnify and hold the Port, its commissioners, directors, employees, attorneys, agents, successors and assigns (collectively, the "Indemnified Parties"), harmless from all claims, demands, fines, damages, liabilities, losses, costs, expenses (including without limitation reasonable attorneys' fees and court costs), penalties, assessments, environmental response costs, and/or injunctive obligations, which may be suffered or incurred at any time by the Indemnified Parties, on account of injuries to or death of any persons, damage to or destruction of any property, and/or any violation of any applicable law, rule, regulation, or order of any governmental entity, caused by, resulting from, or arising out of the entry upon the Property by any of the Authorized Persons and the fieldwork relating to the Inspections to be performed hereunder or the rights granted herein.

It is the intention of the Port and Licensee that the indemnity obligations of Licensee are without regard to whether the strict liability, fault, concurrent or contributory negligence of any of the Indemnified Parties is a factor and such obligations are intended to protect the Indemnified Parties against the consequences of their own strict liability, fault, concurrent or contributory negligence. Only those matters which are determined to be a result of the sole negligence of any of the Indemnified Parties not caused or contributed to by the negligence or fault of Licensee, its employees, agents, contractors, subcontractors, surveyors or other third parties, shall be excluded from Licensee's obligations to indemnify. The obligations of this paragraph shall survive the cancellation, expiration, or termination of this letter agreement and shall be binding upon Licensee, its successors and assigns.

5. Delivery of Reports. Licensee will deliver to the Port (on or before thirty (30) days following the expiration date of this authorization) a copy of all surveys, studies, investigations, tests, test results, reports or other work product produced by any of the Authorized Persons with respect to any of the samples taken. As to each of the Authorized Persons performing physical work to the Property, prior to the commencement of any such work, Licensee shall:

- (a) give written notice to the Port listing the work to be performed and the name, address, telephone number and the individual responsible for the work;
- (b) obtain and deliver to the Port the written agreement of the Contractor that a copy of any survey, study, investigation, test, report or other work product will be delivered to the Port at the same time that it is delivered to Licensee, and confirming that the Port is a named indirect beneficiary of the written product of the work without any obligation to pay any related fees or expenses and that the Port is entitled freely to the use and benefit of the written product of the work and to rely on any express and all usual and customary implied warranties.

In addition, upon request of the Port, Licensee will return all soil samples taken pursuant to this authorization (to the extent that same were not destroyed in the course of testing). It is understood and

agreed that all such soil samples shall be and remain the sole property of the Port.

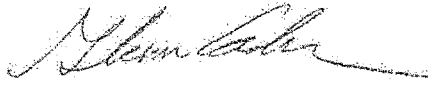
6. Property Conditions. Licensee will promptly repair and restore all damage to the Property arising out of or in connection with any entry upon the Property by Licensee or any of the Authorized Persons.

7. Confidentiality. Licensee shall keep, and shall cause all of its agents, employees, and consultants to keep, all information or data obtained from any review of the records, inspection, test, or report confidential, except for disclosures required by law. The provisions of this subsection shall survive termination of this Agreement.

8. Port Representative; Reimbursement of Expenses. The Port shall have the right, but shall not be obligated, to have a representative present during the Inspection work. ~~Although the representative shall have the right to stop work at any time, the representative is present at the site solely for the benefit of the Port and is not responsible for the safety of work crews.~~ If the Port requires a representative to be present, Licensee agrees to pay the Port a reasonable fee in an amount to be established by the Port from time to time (subject to such documentation as Licensee may reasonably request), which fee covers reimbursement of the cost of the representative and related administrative costs. The fee for this representative will be billed when the work has been completed and is to be paid within thirty (30) days of invoice.

Please evidence your acceptance of and agreement to the foregoing terms by signing in the space provided below and returning a copy of this letter to me at your earliest convenience. Work related to the inspections can begin once we have received a signed copy of this letter along with the insurance certificates described above. If you have any questions, please let me know.

Port Freeport

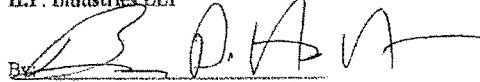


Glenn Carlson
CEO/Executive Port Director
Port Freeport

AGREED TO and ACCEPTED on this

the 12 day of May, 2014.

H.P. Industries LLP



Name: Benjamin D. Holt

Title: President

APPENDIX D
LETTER OF INTENT

WENTWORTH COMPRESSION LLC
2000 WESTCHESTER AVENUE | FLOOR 01
PURCHASE, NEW YORK 10577-2530

May 12, 2014

Wentworth Gas Marketing LLC
2000 Westchester Avenue
Purchase, New York 10577

Re: CNG Sales Transaction

Dear Sirs:

This letter ("Letter") confirms the intent, subject to Paragraph 1 below, of the undersigned, Wentworth Compression, LLC (the "Seller") and Wentworth Gas Marketing LLC (the "Buyer") to engage in discussions with the objective of Seller and Buyer entering into a definitive agreement or agreements (collectively, and together with any related or supporting documents, the "Definitive Agreement") regarding the sale of compressed natural gas to Buyer (the "Transaction"). Seller and Buyer may each be referred to in this Letter as a "Party" and, collectively, as the "Parties".

1. Obligations of the Parties. The terms and conditions of the Definitive Agreement and the rights and obligations of each party with respect to the Transaction would be governed by the terms set forth on the term sheet attached as Exhibit A to this Letter (the "Term Sheet"). The Parties acknowledge and agree that (i) essential terms required to be addressed in the Definitive Agreements have not been agreed as of the date hereof and (ii) without prejudice the provisions of this Letter.
2. Announcements. There will be no public announcement made relating to the proposed transaction unless agreed to in writing by Seller and Buyer.
3. Expenses. Each Party shall pay its respective costs for all consulting, legal, accounting fees and other expenses incurred by it in connection with the preparation, negotiation, execution and delivery of the Definitive Agreement and with respect to the Transaction, unless otherwise specified in the Definitive Agreement. In the event the Parties are unable to conclude the Definitive Agreement for any reason, no Party shall be required to reimburse any other Party for any losses, foregone profits, expenses or any other damages associated with such unsuccessful conclusion.
4. Assignment. Any assignment of this Letter by either Party shall be null and void without the express written consent of the other Party.


5. Third Party Compensation. No Party has been contacted by or negotiated with any finder, broker or other intermediary in connection with the Transactions who is entitled to any compensation with respect thereto.
6. Governing Law, Jurisdiction and Waiver of Jury Trial. This Letter shall be governed by, construed and enforced under the laws of New York. Each Party hereby irrevocably submits to the exclusive jurisdiction of any federal court of competent jurisdiction situated in New York, New York, or, if any federal court declines to exercise or does not have jurisdiction, in any New York state court in New York, New York, and to service of process by certified mail. Each Party hereby irrevocably waives, to the fullest extent permitted by law, any objection to personal jurisdiction, whether on grounds of venue, residence or domicile. Each Party waives, to the fullest extent permitted by law, any right it may have to a trial by jury in respect of any proceedings relating to this Letter.
7. Entire Agreement. This Letter constitutes the entire agreement of the Parties regarding the matters contemplated herein or related thereto, and supersedes any prior agreement or understanding between the Parties, whether written or oral. No representations or warranties shall be implied or provisions added hereto in the absence of a written agreement to such effect between the Parties after the date of this Letter.
8. Invalidity. If any provision of this Letter is determined to be null and void, voidable or invalid by a court of competent jurisdiction, then for such period that the same is void or invalid, it shall be deemed to be deleted from this Letter and the remaining portions of this Letter shall remain in full force and effect.
9. Interpretation. All headings herein are intended solely for convenience of reference and shall not affect the meaning or interpretation of the provisions of this Letter. Unless expressly provided otherwise, the word "including" as used herein does not limit the preceding words or terms.
10. Counterparts. This Letter may be executed by the Parties in separate counterparts and initially delivered by facsimile transmission or otherwise, with original signature pages to follow, and all such counterparts shall together constitute one and the same instrument.

[Signature Page Follows]

Please indicate your agreement to the terms of this Letter by signing and returning a copy of this Letter to the undersigned. We look forward to working with you towards execution of Definitive Agreements.

Sincerely,

Wentworth Compression LLC

By: 
Name: Deborah L. Hart
Title: Vice President

Accepted and agreed as of
May 12, 2014

Wentworth Gas Marketing LLC

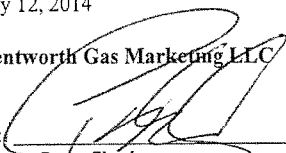
By: 
Name: Peter Sherk
Title: Vice President

EXHIBIT A**Indicative Terms for CNG Sales Agreement**

THESE INDICATIVE TERMS ARE FOR DISCUSSION ONLY. THE SUMMARY THAT FOLLOWS IS SUBJECT TO INTERNAL APPROVAL AND SATISFACTORY DUE DILIGENCE AND DOES NOT CONSTITUTE AN OFFER OR COMMITMENT TO ENTER ANY TRANSACTION.

Buyer	Wentworth Gas Marketing LLC
Seller	Wentworth Compression LLC
General	Seller will sell and Buyer will purchase containerized compressed natural gas ("CNG") on terms consistent with the terms set forth in this Term Sheet and pursuant to a sales agreement ("Sales Agreement").
Monthly Volume	To be agreed.
Term	Twenty (20) years, subject to extensions.
Price	Buyer will purchase CNG at prevailing market prices in accordance with a mutually acceptable gas pricing index.
Force Majeure	The Sales Agreement will include customary force majeure provisions.
Payment Terms	Net 15 days.
Conditions Precedent	Seller's obligations will be subject to the satisfaction or waiver of certain conditions precedent to be specified separately in the Sales Agreement, including Seller having made a final investment decision to construct its CNG project. Such final investment decision will be dependent upon: (a) arrangement of logistics and construction arrangements with third parties on terms that are acceptable to Seller, including, without limitation, with respect to the construction of compression facilities, transportation of natural gas to the compression facilities, rail transportation, acquisition or leasing of containers, and chartering of vessels; and (b) receipt by Seller of necessary governmental approvals, including, without limitation, the export authorization required from the US Department of Energy.

Governing Law	New York
Additional Terms	The Sales Agreement would include, numerous essential terms not detailed herein, including: (a) customary representations, warranties and covenants, and (b) customary indemnification provisions.

1326

UNITED STATES OF AMERICA

DEPARTMENT OF ENERGY

OFFICE OF FOSSIL ENERGY

WENTWORTH GAS MARKETING LLC

FE DOCKET NO. 14-63-CNG

ORDER GRANTING LONG-TERM AUTHORIZATION
TO EXPORT COMPRESSED NATURAL GAS BY VESSEL
FROM A PROPOSED CNG COMPRESSION AND LOADING FACILITY
AT THE PORT OF FREEPORT, TEXAS,
TO FREE TRADE AGREEMENT NATIONS

DOE/FE ORDER NO. 3515

OCTOBER 7, 2014

Permanent Subcommittee on Investigations

EXHIBIT #45b

PSI-DOE-01-000004

I. DESCRIPTION OF REQUEST

On May 13, 2014, Wentworth Gas Marketing LLC (Wentworth Gas) filed an application (Application) with the Office of Fossil Energy (FE) of the Department of Energy (DOE) under section 3 of the Natural Gas Act (NGA)¹ for long-term, multi-contract authorization to export compressed natural gas (CNG) produced from domestic sources in a volume equivalent to approximately 60 billion cubic feet per year (Bcf/yr) of natural gas, or 0.166 Bcf per day (Bcf/d). Wentworth Gas seeks authorization to export the CNG for a 20-year term from a proposed CNG compression and loading facility (Facility) to be constructed, owned, and operated near the Port of Freeport, Texas, by its affiliate, Wentworth Compression LLC, to any country with which the United States has, or in the future will have, a free trade agreement (FTA) requiring national treatment for trade in natural gas, and with which trade is not prohibited by U.S. law or policy (FTA countries).² Wentworth Gas seeks to export this CNG on its own behalf and as agent for other entities who hold title to the CNG at the time of export. Wentworth Gas requests that this authorization commence on the earlier of the date of first export or five years from the date the authorization is issued (*i.e.*, October 7, 2019).

II. BACKGROUND

Description of Applicant. Wentworth Gas is a Delaware limited liability company with its principal place of business in Purchase, New York. Wentworth Gas is a wholly owned subsidiary of Wentworth Holdings, LLC (Wentworth Holdings), a limited liability company organized under the laws of Delaware. Wentworth Gas states that Wentworth Holdings is

¹ The authority to regulate the imports and exports of natural gas, including liquefied natural gas, under section 3 of the NGA (15 U.S.C. § 717b) has been delegated to the Assistant Secretary for FE in Redelegation Order No. 00-002.04F, issued on July 11, 2013.

² The United States currently has FTAs requiring national treatment for trade in natural gas with Australia, Bahrain, Canada, Chile, Colombia, Dominican Republic, El Salvador, Guatemala, Honduras, Jordan, Mexico, Morocco, Nicaragua, Oman, Panama, Peru, Republic of Korea, and Singapore. FTAs with Israel and Costa Rica do not require national treatment for trade in natural gas.

indirectly owned by Morgan Stanley, a corporation formed under the laws of Delaware with its principal place of business in New York, New York.

Wentworth Holdings also wholly owns Wentworth Compression LLC (Wentworth Compression), a Delaware limited liability company with its principal place of business in Purchase, New York. Wentworth Gas states that Wentworth Compression will construct, own, and operate the Facility. Upon completion of the Facility and the initiation of service by Wentworth Compression, Wentworth Gas intends to engage in the business of natural gas sales by selling CNG produced at the Facility for both domestic and export markets and by acting as export agent for the sale of CNG, as described below.

CNG Export Project. Wentworth Gas states that Wentworth Compression intends to construct the Facility on a 50-acre site near the Port of Freeport, Texas, which it will lease from the Port of Freeport. According to Wentworth Gas, the Facility is anticipated to be completed approximately 12 months from the date that final regulatory approvals are obtained.

Wentworth Gas asserts that the Facility will be located off of the Brazoria Interconnector Gas Pipeline (BIG), an intrastate pipeline providing natural gas transportation within Texas. According to Wentworth Gas, Wentworth Compression will receive gas from the BIG system via a third-party, intrastate lateral pipeline approximately 11 miles in length. Wentworth Compression will sell up to the requested volume of CNG (60 Bcf/yr) —all of the Facility's output—to Wentworth Gas. Once sourced, Wentworth Compression will compress the CNG, store it in ISO containers staged temporarily at the Facility, then transport the ISO containers approximately one mile via truck to the Port of Freeport, where it will be shipped to various destinations on vessels chartered by Wentworth Gas.

Wentworth Gas notes that the Facility will have the capacity to load up to 270 ISO containers of CNG per day. According to Wentworth Gas, there will be no facilities for permanent or long-term gas storage at the Facility, nor will there be a warehouse at the Facility to store the ISO containers. Wentworth Gas states that Wentworth Compression will comply with all of the Port of Freeport's regulations relating to container storage, which will be set forth in the lease agreement between Wentworth Compression and the Port of Freeport.

Source of Natural Gas. Wentworth Gas states that it seeks to export natural gas available from the U.S. natural gas pipeline supply and transmission system. As noted above, the Facility will interconnect with the BIG system via an intrastate pipeline approximately 11 miles in length. Wentworth Gas asserts that, through the interconnection with BIG, Wentworth Compression will be able to indirectly access the natural gas pipeline grid, which will provide Wentworth Gas and its potential customers a variety of stable and economical supply options.

Business Model. Wentworth Gas states that the Facility will comprise a "mixed use" CNG project. Wentworth Gas anticipates selling CNG to be consumed in domestic and export markets in FTA countries located in the Caribbean and Central America regions, and acting as export agent for sales of CNG to entities in those regions.³

Wentworth Gas notes that it has not yet entered into any long-term supply agreements with other entities for the export and sale of CNG. Wentworth Gas commits to observing all DOE/FE reporting requirements for exports. Citing DOE/FE precedent,⁴ Wentworth Gas commits to filing a copy of any relevant long-term commercial agreement entered into between

³³ Wentworth Gas states that, in the near term, the project intends to sell CNG to entities in the Dominican Republic, Panama, Guatemala, El Salvador, Honduras, and Costa Rica, which it states are "each an FTA country." Application at 2. As noted above in footnote 2, however, Costa Rica is not considered a FTA country for purposes of this authorization. See also *infra* at 9 (Ordering Para. B) (listing FTA countries).

⁴ See, e.g., *Dominion Cove Point, LNG, LP*, DOE/FE Order No. 3331, FE Docket No. 11-128-LNG, Order Conditionally Granting Long-Term Multi-Contract Authorization to Export Liquefied Natural Gas by Vessel from the Cove Point LNG Terminal to Non-Free Trade Agreement Nations (Sept. 11, 2013).

Wentworth Gas and an entity for the sale and export of CNG within 30 days of the agreement(s) being executed, including both a confidential, non-redacted version and a publicly available, redacted version.

As Appendix D to its Application, Wentworth Gas submits a signed letter of intent between Wentworth Compression and Wentworth Gas, dated May 12, 2014, regarding the sale of CNG. As Appendix C to its Application, Wentworth Gas submits additional documents purporting to show that: (i) Wentworth Compression has entered into an engineering, procurement and construction (EPC) contract for construction of the Facility, and ii) Wentworth Compression's EPC contractor has entered into an access agreement with the Port of Freeport regarding the site for the Facility. Wentworth Gas further asserts that Wentworth Compression plans to execute additional agreements to purchase containers for the Facility and to finalize arrangements with the Port of Freeport regarding the loading of containerized CNG onto ships for export.

III. FINDINGS

(1) Section 3(c) of the NGA was amended by section 201 of the Energy Policy Act of 1992 (Pub. L. 102-486) to require that applications authorizing (a) the import and export of natural gas, which includes CNG, from and to a nation with which there is in effect a FTA requiring national treatment for trade in natural gas, and (b) the import of LNG from other international sources, be deemed consistent with the public interest and granted without modification or delay. This Application falls within section 3(c), as amended, and therefore, DOE/FE is charged with granting the Application without modification or delay.⁵

⁵ DOE further finds that the requirement for public notice of applications and other hearing-type procedures in 10 C.F.R. Part 590, are applicable only to applications seeking to export natural gas, including LNG, to countries with which the United States does not have a FTA requiring national treatment for trade in natural gas.

(2) In light of DOE/FE's statutory obligation to grant the FTA portion of the Application without modification or delay, there is no need for DOE/FE to review other arguments asserted by Wentworth Gas in support of the Application. The instant grant of authority should not be read to indicate DOE's views on those arguments.

(3) The countries with which the United States has an FTA requiring national treatment for trade in natural gas currently are: Australia, Bahrain, Canada, Chile, Colombia, Dominican Republic, El Salvador, Guatemala, Honduras, Jordan, Mexico, Morocco, Nicaragua, Oman, Panama, Peru, Republic of Korea, and Singapore.

(4) As described above, Wentworth Gas requests authorization to export CNG on its own behalf and as agent for other entities who hold title to the CNG at the time of export. DOE/FE previously addressed the issue of Agency Rights in DOE/FE Order No. 2913,⁶ which granted Freeport LNG Expansion, L.P. and FLNG Liquefaction, LLC (collectively, FLEX) authority to export LNG to FTA countries. In that order, DOE/FE approved a proposal by FLEX to register each LNG title holder for whom FLEX sought to export LNG as agent. DOE/FE found that this proposal was an acceptable alternative to the non-binding policy adopted by DOE/FE in *The Dow Chemical Company*,⁷ which established that the title for all LNG authorized for export must be held by the authorization holder at the point of export. We find that the same policy considerations that supported DOE/FE's acceptance of the alternative registration proposal in DOE/FE Order No. 2913 apply here as well.

⁶ *Freeport LNG Expansion, L.P. and FLNG Liquefaction, LLC*, DOE/FE Order No. 2913, FE Docket No. 10-160-LNG, Order Granting Long-Term Authorization to Export Liquefied Natural Gas from Freeport LNG Terminal to Free Trade Nations (Feb. 10, 2011).

⁷ *The Dow Chemical Company*, DOE/FE Order No. 2859, FE Docket No. 10-57-LNG, Order Granting Blanket Authorization to Export Liquefied Natural Gas (Oct. 5, 2010), at 7-8, discussed in *Freeport LNG*, DOE/FE Order No. 2913, at 7-8.

DOE/FE reiterated its policy on Agency Rights procedures in *Gulf Coast LNG Export, LLC*.⁸ In *Gulf Coast*, DOE/FE confirmed that, in LNG export orders in which Agency Rights have been granted, DOE/FE shall require registration materials filed for, or by, an LNG titleholder (Registrant) to include the same company identification information and long-term contract information of the Registrant as if the Registrant had filed an application to export LNG on its own behalf.⁹

To ensure that the public interest is served, the authorization granted herein shall be conditioned to require that where Wentworth Gas proposes to export CNG as agent for other entities who hold title to the CNG (Registrants), Wentworth Gas must register with DOE/FE those entities on whose behalf it will export CNG in accordance with the procedures and requirements described herein.

(5) Section 590.202(b) of DOE's regulations requires applicants to supply transaction specific factual information "to the extent practicable."¹⁰ Additionally, DOE regulations at 10 C.F.R. Part 590.202(e) allow confidential treatment of the information supplied in support of or in opposition to an application if the submitting party requests such treatment, shows why the information should be exempted from public disclosure, and DOE determines it will be afforded confidential treatment in accordance with 10 C.F.R. § 1004.11.¹¹

(6) DOE/FE will require that Wentworth Gas file or cause to be filed with DOE/FE any relevant long-term commercial agreements (contracts) pursuant to which Wentworth Gas exports CNG as agent for a Registrant once they have been executed. DOE/FE finds that the submission

⁸ *Gulf Coast LNG Export, LLC*, DOE/FE Order No. 3163, FE Docket No. 12-05-LNG, Order Granting Long-Term Multi-Contract Authorization to Export Liquefied Natural Gas By Vessel from the Proposed Brownsville Terminal to Free Trade Agreement Nations (Oct. 16, 2012).

⁹ *See id.* at 7-8.

¹⁰ 10 C.F.R. § 590.202(b).

¹¹ *Id.* § 590.202(e).

of all such agreements or contracts within 30 days of their execution using the procedures described below will be consistent with the “to the extent practicable” requirement of section 590.202(b). By way of example and without limitation, a “relevant long-term commercial agreement” would include an agreement with a minimum term of two years, such as a long-term contract involving CNG stored or compressed at the Facility.

(7) DOE/FE also will require Wentworth Gas to file any long-term contracts Wentworth Gas enters into providing for the long-term export of CNG on its own behalf from the Facility. DOE/FE finds that the submission of these contracts within 30 days of their execution using the procedures described below will be consistent with the “to the extent practicable” requirement of section 590.202(b).

(8) DOE/FE finds that section 590.202(c) of DOE/FE’s regulations¹² requires that Wentworth Gas file, or cause to be filed, all long-term contracts associated with the long-term supply of natural gas to the Facility within 30 days of their execution that either Wentworth Gas or the Registrant enters into.

(9) DOE/FE recognizes that some information in Wentworth Gas’s or a Registrant’s long-term commercial agreements associated with the export of CNG, and/or long-term contracts associated with the long-term supply of natural gas to the Facility, may be commercially sensitive. DOE/FE therefore will provide Wentworth Gas the option to file or cause to be filed either unredacted contracts, or in the alternative: (A) Wentworth Gas may file or cause to be filed, long-term contracts under seal, but it also will file either: i) a copy of each long-term contract with commercially sensitive information redacted, or ii) a summary of all major provisions of the contract(s) including, but not limited to, the parties to each contract, contract term, quantity, any take or pay or equivalent provisions/conditions, destinations, re-sale

¹² *Id.* § 590.202(c).

provisions, and other relevant provisions; and (B) the filing must demonstrate why the redacted information should be exempted from public disclosure.

To ensure that DOE/FE destination and reporting requirements included in the Order are conveyed to subsequent title holders, DOE/FE will include as a condition of this authorization that future contracts for the sale or transfer of CNG exported pursuant to the Order shall include an acknowledgement of these requirements.

ORDER

Pursuant to section 3 of the NGA, it is ordered that:

A. Wentworth Gas is authorized to export domestically produced CNG by vessel from a proposed CNG compression and loading facility to be located at the Port of Freeport, Texas. The volume of CNG authorized in this Order is equivalent to approximately 60 Bcf/yr of natural gas for a 20-year term, beginning on the earlier of the date of first export or five years from the date the authorization is issued (*i.e.*, October 7, 2019). Wentworth Gas is authorized to export this CNG on its own behalf and as agent for other entities who hold title to the natural gas, pursuant to one or more long-term contracts (a contract greater than two years).

B. This CNG may be exported to Australia, Bahrain, Canada, Chile, Colombia, Dominican Republic, El Salvador, Guatemala, Honduras, Jordan, Mexico, Morocco, Nicaragua, Oman, Panama, Peru, Republic of Korea, and Singapore, and to any nation with which the United States subsequently enters into a FTA requiring national treatment for trade in natural gas, provided that the destination nation has the capacity to import CNG via ocean going vessels. FTA countries are currently identified by DOE/FE at:

<http://www.fossil.energy.gov/programs/gasregulation/index.html>.

C. Wentworth Gas shall ensure that all transactions authorized by this Order are permitted and lawful under U.S. laws and policies, including the rules, regulations, orders, policies, and other determinations of the Office of Foreign Assets Control of the United States Department of the Treasury. Failure to comply with this requirement could result in rescission of this authorization and/or other civil or criminal remedies.

D. (i) Wentworth Gas shall file with the Office of Oil and Gas Global Security and Supply a non-redacted copy of all executed long-term contracts associated with the long-term export of CNG from the Facility. The non-redacted copies may be filed under seal and must be filed within 30 days of their execution. Additionally, if Wentworth Gas has filed the contracts described in the preceding sentence under seal or subject to a claim of confidentiality or privilege, within 30 days of their execution, Wentworth Gas shall also file for public posting either: i) a redacted version of the contracts described in the preceding sentence, or ii) major provisions of the contracts. In these filings, Wentworth Gas shall state why the redacted or non-disclosed information should be exempted from public disclosure.

(ii) Wentworth Gas shall file with the Office of Oil and Gas Global Security and Supply a non-redacted copy of all executed long-term contracts associated with the long-term supply of natural gas to the Facility. The non-redacted copies may be filed under seal and must be filed within 30 days of their execution. Additionally, if Wentworth Gas has filed the contracts described in the preceding sentence under seal or subject to a claim of confidentiality or privilege, within 30 days of their execution, Wentworth Gas shall also file for public posting either: i) a redacted version of the contracts described in the preceding sentence, or ii) major provisions of the contracts. In these filings, Wentworth Gas shall state why the redacted or non-disclosed information should be exempted from public disclosure.

E. Wentworth Gas shall include the following provision in any agreement or other contract for the sale or transfer of CNG exported pursuant to this Order:

Customer or purchaser acknowledges and agrees that it will resell or transfer CNG purchased hereunder for delivery only to countries identified in Ordering Paragraph B of DOE/FE Order No. 3515, issued October 7, 2014, in FE Docket No. 14-63-CNG, and/or to purchasers that have agreed in writing to limit their direct or indirect resale or transfer of such CNG to such countries. Customer or purchaser further commits to cause a report to be provided to Wentworth Gas Marketing LLC that identifies the country of destination, upon delivery, into which the exported CNG was actually delivered, and to include in any resale contract for such CNG the necessary conditions to ensure that Wentworth Gas Marketing LLC is made aware of all such actual destination countries.

F. Within two weeks after the first export of domestically produced CNG occurs from the Facility, Wentworth Gas shall provide written notification of the date that the first export of CNG authorized in Ordering Paragraph A above occurred.

G. Wentworth Gas shall file with the Office of Oil and Gas Global Security and Supply, on a semi-annual basis, written reports describing the progress of the Facility. The reports shall be filed on or by April 1 and October 1 of each year, and shall include information on the progress of the Facility, the date the Facility is expected to be operational, and the status of the long-term contracts associated with the long-term export of CNG and any long-term supply contracts.

H. Prior to any change in control of the authorization holder, Wentworth Gas must obtain the approval of the Assistant Secretary for Fossil Energy. For purposes of this Ordering Paragraph, a "change in control" shall include any change, directly or indirectly, of the power to direct the management or policies of Wentworth Gas, whether such power is exercised through one or more intermediary companies or pursuant to an agreement, written or oral, and whether such power is established through ownership or voting of securities, or common directors, officers, or stockholders, or voting trusts, holding trusts, or debt holdings, or contract, or any

other direct or indirect means. Wentworth Gas may submit a statement of change in control to DOE using one of the three methods set forth below. Upon receipt of the statement, DOE will give immediate effect to the change in control and take no further action. Three methods to submit a statement of change in control to DOE: (1) e-mailing the filing to fergas@hq.doe.gov with CIC and the FE Docket No. in the title line; (2) mailing an original and three paper copies of the filing to U.S. Department of Energy (FE-34), Office of Oil and Gas Global Security and Supply, P.O. Box 44375, Washington, DC 20026-4375; or (3) hand delivering an original and three paper copies of the filing to U.S. Department of Energy (FE-34), Office of Oil and Gas Global Security and Supply, Office of Fossil Energy, Forrestal Building, Room 3E-042, 1000 Independence Avenue, SW, Washington, DC 20585.

I. Monthly Reports: With respect to the CNG exports authorized by this Order, Wentworth Gas shall file with the Office of Oil and Gas Global Security and Supply, within 30 days following the last day of each calendar month, a report indicating whether exports of CNG have been made. The first monthly report required by this Order is due not later than the 30th day of the month following the month of first export. In subsequent months, if exports have not occurred, a report of "no activity" for that month must be filed. If exports of CNG have occurred, the report must give the following details of each CNG cargo: (1) the name(s) of the authorized exporter registered with DOE/FE; (2) the date of departure from the U.S. export port or terminal; (3) the country (or countries) of destination into which the exported CNG was actually delivered; (4) the name of the supplier/seller; (5) the volume in thousand cubic feet (Mcf); (6) the CNG container loading facility and location; (7) the mode(s) of transport from the CNG container loading facility to the U.S. export port or terminal; (8) the name of the U.S. export port or terminal; (9) the price at the point of export in U.S. dollars per million British

thermal units (MMBtu); (10) the name of the ocean going vessel; (11) the name(s) of the purchaser(s); and (12) the duration of the supply agreement.

(Approved by the Office of Management and Budget under OMB Control No. 1901-0294)

J. All monthly report filings shall be made to U.S. Department of Energy (FE-34), Office of Fossil Energy, Office of Oil and Gas Global Security and Supply, P.O. Box 44375, Washington, D.C. 20026-4375, Attention: Natural Gas Reports. Alternatively, reports may be e-mailed to ngreports@hq.doe.gov, or may be faxed to Natural Gas Reports at (202) 586-6050.

Issued in Washington, D.C., on October 7, 2014.



John A. Anderson
Director, Division of Natural Gas Regulatory Activities
Office of Oil and Gas Global Security and Supply
Office of Oil and Natural Gas

EXCERPT

MS-PSI-00000001

Morgan Stanley Infrastructure Partners
Overview of Southern Star

August 29, 2014

Permanent Subcommittee on Investigations
EXHIBIT #46

Morgan Stanley

BACKGROUND

Overview

- Morgan Stanley (through its subsidiaries) is the General Partner and an investor in Morgan Stanley Infrastructure Partners LP (“MSIP” or the “Fund”), which holds an interest in MSIP-SSCC Holdings LLC (“MSIP-SSCC”), which owns 100% of Southern Star Central Corp. (“Southern Star”)– By virtue of that investment, Morgan Stanley has an indirect ownership interest of 10.74% in Southern Star– The interest held by the Fund has no overlap or business interaction with Morgan Stanley’s commodities division
- The investors in MSIP are predominantly pension funds and other institutional investors– See answer to Question 6 for additional detail
- MSIP seeks core infrastructure investment opportunities that do not involve significant risks related to fluctuations in commodity prices
- Southern Star is independently managed by an executive team comprised of non-Morgan Stanley employees with decades of experience in the interstate natural gas pipeline industry
- Southern Star has a strong safety record and has had no material safety incidents over the past ten years
- Morgan Stanley has robust risk management and due diligence controls
- Morgan Stanley is required, in accordance with its obligations under the Bank Holding Company Act, to divest its interest in Southern Star by 2020 (10 years from the date of initial acquisition)

Question 1:
Morgan Stanley's purchase of Southern Star – the timing, mechanics, legal authority, ownership structure, voting and equity rights acquired, business units involved, and any regulatory input

RESPONSES TO QUESTIONS

Answer to Question 1

Timing:

- Morgan Stanley Infrastructure Partners LP acquired its interest in MSIP-SSCC, which owns 100% of Southern Star in two separate transactions: March 2010 (40% equity interest) and September 2012 (remaining 60% equity interest)

Mechanics:

- Southern Star's ownership structure is a typical Holding Company, Operating Company ownership structure commonly used for regulated pipelines under Federal Energy Regulatory Agency ("FERC") oversight
- Morgan Stanley Infrastructure Inc. ("MSI"), the manager of MSIP, formed two intermediate holding companies: MSIP Southern Star, LLC (March 2010) and MSIP Southern Star II, LLC (September 2012) to acquire and hold its interests in Southern Star. These two entities wholly own MSIP-SSCC
- MSIP Southern Star I, LLC and MSIP Southern Star II, LLC are owned by 3 master limited partnerships within MSIP, which in turn, are owned by the Limited Partners and General Partner of MSIP
- By virtue of being an investor in MSIP through its GP and LP Capital Commitments, Morgan Stanley has an indirect ownership interest in Southern Star of 10.74%

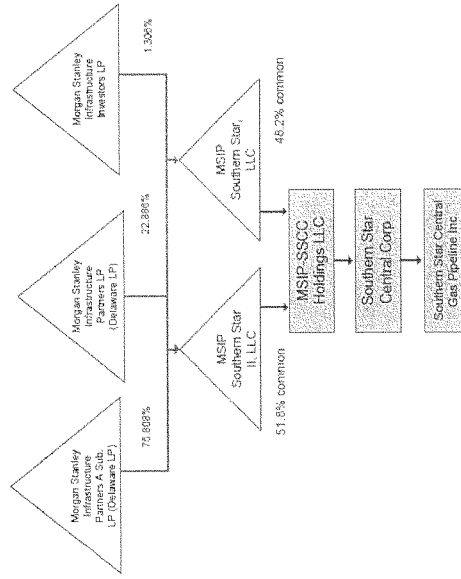
Legal Authority:

- MSIP's investment in Southern Star was made pursuant to its merchant banking authority set forth in Section 4(k)(5)(H) of the Bank Holding Company Act and Subpart J of the Federal Reserve Board's Regulation Y (collectively, the "Merchant Banking Authority")

RESPONSES TO QUESTIONS

Answer to Question 1 (Cont'd)

MSIP Ownership Structure of Southern Star:



Voting and Equity Rights Acquired:

- March 2010 acquisition
- September 2012 acquisition and consolidation of equity ownership

RESPONSES TO QUESTIONS

Answer to Question 1 (Cont'd)

Business Units Involved:

- MSI, through MSIP, was responsible for the acquisition of Southern Star
- MSI is a business unit of Merchant Banking and Real Estate Investing ("MB & REI")
 - MB & REI, in turn, is a component of Morgan Stanley's Investment Management division ("Investment Management")
 - MSIP, a Fund managed by MSI, is a \$4.0 billion private infrastructure investment closed end fund
- MSIP, MB & REI, and Investment Management are managed independently of the Morgan Stanley Institutional Securities Group ("ISG"), within which Morgan Stanley's commodities business is managed
- Please see answer to Question 2 for additional organizational information
- Please see answer to Question 6 for a summary of the investment decision making process used by MSIP

Regulatory Input:

- FERC
- Hart Scott Rodino ("HSR")
- State public utility commissions in Missouri and Kansas

RESPONSES TO QUESTIONS

Answer to Question 2

Role of MSIP in the Purchase of Southern Star:

- Please see answer to Question 1

MSIP's History, Ownership and Relationship to Morgan Stanley Investment Management and MS Holding Company:

- MSIP completed its first close in May 2007 and final close in May 2008
- MSIP's capital is primarily sourced from 3rd party limited partners (primarily pension funds and other long-term institutional investors), which represent approximately 90% (approximately \$3.6 billion) of MSIP's total capital; the remaining portion is from Morgan Stanley
- MSIP has a 15-year fund life, which takes the maturity of the partnership through May 2022
- MSIP is managed by MSI, which acts as the General Partner of Morgan Stanley Infrastructure GP LP, the General Partner of MSIP
- MSI is indirectly wholly owned by Morgan Stanley and is responsible for the identification, due diligence, acquisition, management (strategic and board of directors level) and disposition of investments on behalf of MSIP
- MSI is a registered investment adviser (subject to the Investment Advisers Act of 1940)
- MSI and its private equity infrastructure fund, MSIP, are operated within the MB & REI group within Investment Management

Question 2:
Role of Morgan Stanley Infrastructure Partners (MSIP) in the purchase of Southern Star, as well as MSIP's history, ownership, and relationship to Morgan Stanley Investment Management (MSIM) and MS holding company

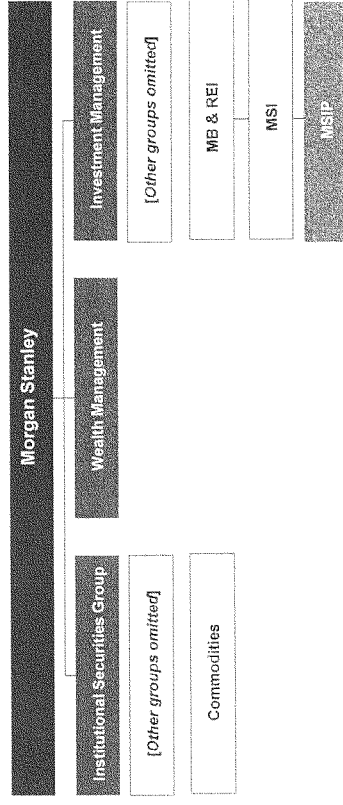
Morgan Stanley

RESPONSES TO QUESTIONS

Answer to Question 2 (Cont'd)

Organizational Structure Chart:

- MSIP sits within the Merchant Banking & Real Estate Investing group in Investment Management



Firm-wide Resources:
Operations, Technology & Data, Finance, Risk, Legal & Compliance, Administration & Internal Audit

Question 3:
MSIP's management structure,
decision making process, and
employees

RESPONSES TO QUESTIONS

Answer to Question 3

MSIP's Current Management Structure:

- MSIP has 37 dedicated and full-time employees
- MSIP related decisions are made by Senior Professionals
- For additional discussion, please see the answer to Question 6 - Investment Evaluation Process

Senior Professionals

Redacted By

Permanent Subcommittee on Investigations

Investment Team

Americas
15 employees

Europe
6 employees

Asia-Pacific
8 employees

Partner Capital Group
2 employees

RESPONSES TO QUESTIONS

Answer to Question 4

MSIP I's Investors:

- MSIP I has 380 investors
- The charts below summarize those investors by region and type based on commitment size

Investors by Region ⁽¹⁾

Investors by Type ⁽¹⁾

Redacted By

Permanent Subcommittee on Investigations

MSIP's Funds:

- MSIP I: \$4 billion fund that began investing in 2007 and has reached the end of its investment period
- MSIP II: Currently in the process of raising funds, with \$1.5 billion raised to date; MSIP II has not yet made any investments

Notes

1. Excludes Morgan Stanley commitment of approximately \$430 MM to MSIP I
2. Private investors that invested in MSIP through Morgan Stanley's Wealth Management business

Contains Competitively Sensitive Information

MS-PSI-0000009

9

Question 4:
MSIP's investors and funds

Morgan Stanley

Question 5:
MSIP's overall revenues,
distributions, and returns

Confidential Treatment Requested by Morgan Stanley

RESPONSES TO QUESTIONS

Answer to Question 5

MSIP's Distributions and Returns from Inception of MSIP through March 31, 2014:

- MSIP has received total cash distributions of \$2.0 billion from its portfolio companies, which includes distributions from operating income, returns of capital from refinancing activities and gross sale proceeds from dispositions of investments
- MSIP has a gross Internal Rate of Return ("IRR") of 12.9%
- MSIP revenues over the past 3 years¹

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Notes

1. MSIP revenues include (i) dividends from investments, (ii) realized gains / losses on investments, (iii) realized gains / losses on derivatives associated with investments, (iv) net change in unrealized value of investments, and (v) net change in unrealized derivatives associated with investments, net of expenses, such as management fees and deal expenses.

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Contains Competitively Sensitive Information

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Question 6:
MSIP's overall commodities
investments, investment evaluation
process, and typical investment
turnover

RESPONSES TO QUESTIONS

Answer to Question 6

MSIP's Overall Commodities Investments:

- MSIP does not have any investments that derive revenue directly from physical commodity trading, energy tolling or energy management services
- MSIP does own energy generation and distribution assets consistent with its investment thesis (e.g. utilities)

Investment Evaluation Process:

- MSI is responsible for the identification, due diligence, acquisition, management (strategic and board of directors level), and disposition of investments conducted on behalf of the infrastructure funds it manages, such as MSIP
- Investment opportunities identified by MSI are reviewed based on preliminary discussions with the seller, industry experts and consultants, prospective partners, and lenders to determine the key parameters of the opportunity, the value drivers of the asset or company, its competitive strengths, and an understanding of the overall industry dynamics and the competitive positioning of the opportunity
 - MSI seeks core infrastructure investment opportunities that do not involve significant risks related to fluctuations in commodity prices
- Once an opportunity passes this initial review, MSI constructs business and financial scenarios that test operating and capital structure assumptions and then estimates potential returns from the investment
 - MSI also draws on 3rd party experts to enhance its understanding of the investment opportunity and its prospects, including economic environment, business and market conditions, competition, physical and environmental concerns, and other factors.
- As part of its evaluation of potential investments, MSI undertakes an internal review process designed to ensure a high level of scrutiny and due diligence prior to consummating an investment
- MSI, guided by its Global Head of Investment Strategy and the relevant regional head, selects a review team normally consisting of three MSI professionals—often including a team member who is primarily focused on operational aspects—who are not working on the particular investment opportunity on a day-to-day basis but who possess experience in the relevant sector, and who are typically based in locations different from the target asset
- The Senior Professionals of MSI meet at least weekly, and as necessary, to discuss prospective deal opportunities
 - The group assesses each deal for its fit in the scope of MSIP's investment mandate and strategy, as well as how it will affect overall portfolio construction targets
 - Proposals are reviewed by the Senior Professionals before presentation to the Investment Committee

RESPONSES TO QUESTIONS

Answer to Question 6 (Cont'd)

Investment Evaluation Process (Cont'd):

- The Investment Committee, comprised of Managing Directors of MSI and senior Morgan Stanley employees from Investment Management, Risk Management, and Firm Management, is involved throughout the investment process, including initial review and evaluation of potential investments, consideration of applicable industry dynamics, and approval of MSIP investments, and is responsible for making final investment and divestment decisions
 - Each deal is typically brought to the Investment Committee several times before an investment approval decision is taken
 - The Investment Committee brings to bear the combined global investment experience and expertise of MSI and Morgan Stanley to ensure that each investment meets MSIP's defined investment criteria
 - No members of the Morgan Stanley Commodities Division sit on the Investment Committee or participate in Investment Committee meetings

Typical Investment Turnover:

- MSIP is a closed end fund structure with a 15 year life that commenced in May 2007 and will reach the end of its term in May 2022
- MSIP, pursuant to its Limited Partnership Agreement ("LPA"), was required to invest its Limited Partner Capital within a 6 Year Commitment Period, which ended on May 2013
- MSIP seeks to hold investments for a period of 4 to 8 years from the date of original acquisition
- MSIP executed 17 investments during the Commitment Period
- To date, MSIP has consummated three investment realizations

Question 7:
How MSIP views Southern Star as
an investment and MSIP's plans for
Southern Star over the next ten
years

RESPONSES TO QUESTIONS

Answer to Question 7

How MSIP views Southern Star as an Investment:

- MSIP views Southern Star as an investment within its portfolio that is consistent with its investment strategy
- **Stable and Predictable Revenue Stream**
 - Long-term contracts with high quality customers, primarily Local Distribution Companies (LDCs)
 - Substantially all system capacity fully subscribed with ~95% of revenues provided through fixed reservation charges
 - FERC regulated tariffs with minimal commodity price risk
- **Minimal Customer Credit Risk**
 - Top 10 corporate customers are utility/energy companies and top 10 corporate customers account for 90% of revenues
 - Seven of top 10 corporate customers have investment grade ratings
- **Exceptionally Strong Competitive Position with Strategically Located Storage Facilities**
 - Only service provider in the region offering flexible storage capabilities and no-notice transportation
 - Web-like system configuration provides customers with multiple gas receipt and delivery options
 - Among the lowest rates in the region
- **Abundant Gas Supply**
 - Access to diverse, long-lived natural gas supplies with multiple receipt points with other major natural gas pipelines
- **Experienced Management Team, with Proven Record**
 - Average of over 30 years of service in pipeline industry
- **Workforce dedicated to Quality, Reliability and Compliance**
 - Stable, experienced workforce with strong safety performance
- **Prudent Risk Management**
 - Industry-leading Pipeline Safety and Integrity Management Programs
 - In compliance with all Pipeline Safety regulations and requirements
 - Robust insurance program covering all aspects of organization, including liability and property

RESPONSES TO QUESTIONS

Answer to Question 7 (Cont'd)

Question 7:
How MSIP views Southern Star as
an investment and MSIP's plans for
Southern Star over the next ten
years

MSIP's Plans for Southern Star Over the Next Ten Years:

- MSIP anticipates continuing to work with Southern Star's management team to identify strategic growth opportunities in relation to the transportation and storage of natural gas
- MSI's management philosophy for Southern Star has been to focus on making the company a best-in-class operator, with primary focus on pipeline integrity and safety and customer satisfaction. Since MSIP became an owner of Southern Star in 2010, over \$280MM (2010 through 2013) has been spent on capital investment programs focused on pipeline integrity and safety and system expansion and replacement. In addition, MSI has retained existing management who on average have over 30 years of pipeline experience. In February 2014, Southern Star was ranked #2 in MASTIO's 2014 Customer Satisfaction Index for Major Pipelines
- MSIP continually evaluates potential opportunities to sell investments in its portfolio, particularly those that it has held for several years, in order to achieve optimal returns for its investors
- Morgan Stanley is required, in accordance with its obligations under the Bank Holding Company Act, to divest its interest in Southern Star by 2020 (10 years from the date of initial acquisition)

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Question 8:
Southern Star Central Corp. and
Southern Star Central Gas Pipeline
Inc.'s ownership, management, key
subsidiaries, and employees

RESPONSES TO QUESTIONS

Answer to Question 8

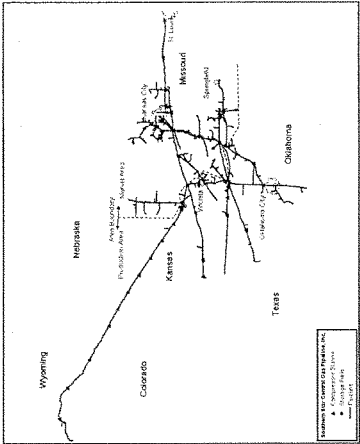
SSCC and SSCGP's Ownership:
• Please see answer to Question 1

Management and Employees:

- Southern Star has a well-established management team that is responsible for the day to day operations of the business
- Southern Star had 498 full time employees as of December 31, 2013
- The management team includes Jerry L. Morris, President and Chief Executive Officer of both Southern Star Central Corp. and Southern Star Central Gas Pipeline, Inc.
 - Morris has 35 years of experience in the interstate natural gas pipeline industry and is active in several industry organizations
- Southern Star Central Gas Pipeline, Inc.'s management team also includes Robert W. Carlton, Vice President and Chief Compliance Officer, and Phillip A. Rullman, Vice President and Chief Commercial Services Officer
 - Carlton has 29 years of experience in the interstate natural gas pipeline industry and is a member of the Interstate Natural Gas Association of America's Operations, Safety, and Environmental Committee
 - Rullman has 33 years of experience in the interstate natural gas pipeline industry

Key Subsidiaries:

- The key subsidiary for Southern Star Central Corp. is Southern Star Central Gas Pipeline Inc., which holds the operating assets of the business
- Please see the answer to Question 1 for the legal entity structure of Southern Star

<p>Question 9: Southern Star's major business activities, including its pipelines, storage facilities, customer base, major customers, and major contracts</p>	<div><div>RESPONSES TO QUESTIONS</div><div><div>Answer to Question 9</div><div><p>Southern Star's Major Business Activities, Including its Pipelines, Storage Facilities¹:</p><ul style="list-style-type: none">• FERC regulated interstate Natural Gas Pipeline• Safety regulated by U.S. DOT/PHMSA• System Capacity: 2.4 Bcf/day• Storage Working Gas Capacity: 47 Bcf• Supply Basins:<ul style="list-style-type: none">– Anadarko, Rockies, Hugobon• Pipeline Interconnects: 23• Operating Locations: CO, KS, MO, NE, OK, TX, WY• Compressor Stations: 41• Certificated horsepower:<ul style="list-style-type: none">– Approx. 206,000• Miles of Pipeline:<ul style="list-style-type: none">– Approx. 6,000• SSCGP owns 8 storage fields with aggregate delivery capacity of 1,258 Bcf/day and aggregate working gas capacity of 46.7 Bcf @ 14.73 PSIA and 60o F<p>Southern Star's Service Area and Markets Served</p><ul style="list-style-type: none">• SSCGP divides its service territory into two discrete areas for rate purposes – the Production Area and the Market Area<ul style="list-style-type: none">– Production Area is generally located in Wyoming, Colorado, Texas, Oklahoma and western Kansas– Market Area is generally located in Missouri, Nebraska and eastern Kansas• SSCGP serves several major metropolitan areas including Kansas City, Springfield, St. Louis, St. Joseph and Joplin, Missouri; and Kansas City, Wichita, Topeka and Lawrence, Kansas as well as power generation facilities in those market areas• As of December 31, 2013 –96% of the Company's firm contracted market area capacity, –96% firm contracted production area capacity and 100% of firm contracted storage capacity were under long-term contracts (terms longer than 1-year)<div><p>SSCGP System Map</p></div><p>Southern Star's Service Area and Markets Served</p><ul style="list-style-type: none">• SSCGP divides its service territory into two discrete areas for rate purposes – the Production Area and the Market Area<ul style="list-style-type: none">– Production Area is generally located in Wyoming, Colorado, Texas, Oklahoma and western Kansas– Market Area is generally located in Missouri, Nebraska and eastern Kansas• SSCGP serves several major metropolitan areas including Kansas City, Springfield, St. Louis, St. Joseph and Joplin, Missouri; and Kansas City, Wichita, Topeka and Lawrence, Kansas as well as power generation facilities in those market areas• As of December 31, 2013 –96% of the Company's firm contracted market area capacity, –96% firm contracted production area capacity and 100% of firm contracted storage capacity were under long-term contracts (terms longer than 1-year)<div><p>Notes</p><p>1. Sources include publicly available information and company information.</p></div></div></div></div>
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RESPONSES TO QUESTIONS

Answer to Question 10

Any Involvement With Natural Gas Production, Refining or LNG:

- Southern Star does not have any businesses activities involved in natural gas production, refining or LNG.

Question 10:
Any involvement with natural gas
production, refining, or LNG

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RESPONSES TO QUESTIONS

Answer to Question 11

Any Non-U.S. Business Activities:

- Southern Star does not have any non-U.S. business activities

Question 11:
Any non-U.S. business activities

Morgan Stanley

RESPONSES TO QUESTIONS

Answer to Question 13

Question 13:
How Southern Star Central Corp.
and Southern Star Central Gas
Pipeline Inc. interact with MSIP,
MSIM, and MS

Summary of Interactions:

MSIP:

- On behalf of MSIP, senior professionals of MSI comprise the Board of Directors of Southern Star
- Consistent with their fiduciary duties as directors and the requirements of the Merchant Banking Authority under the Bank Holding Company Act, such senior professionals frequently interact with the senior management team of SSCC, focusing on:
 - Business performance
 - Discussion of strategic initiatives with a focus on the strategic growth and direction of SSCC and SSCGP
 - Data requests on behalf of MSIP for use solely by MSI and MSIP

MB & REI:

- MSI is supported by a number of value added shared services provided by MB & REI on behalf of the investments held within MSIP, including legal support
 - Insurance – Members of the MB & REI insurance team, in conjunction with MSI, provide advice and guidance in relation to the structuring, solicitation and placement of insurance for SSCC and SSCGP
 - Tax – SSCC is responsible for tax filings for SSCC and SSCGP. SSCC also provides information to assist Morgan Stanley in the filing of tax returns for MSIP, as well as all other entities involved in the ownership chain

MSIM:

- SSCC and SSCGP do not have interactions with other areas of MSIM

MS:

- SSCC and SSCGP do not have interactions with other areas of Morgan Stanley, including the commodities divisions

Morgan Stanley

RESPONSES TO QUESTIONS

Answer to Question 14

Nature of Banking, Financing, Trading, Derivative, Administrative or Other Services Provided by MS or an MS Subsidiary to Southern Star:

- Morgan Stanley does not provide banking, financing, trading or derivative services to Southern Star Central Corp. or Southern Star Central Gas Pipeline, Inc.
- As it relates to administrative services, please see the answer to Question 13

Question 14:
Nature of any banking, financing, trading, derivative, administrative, or other services provided by MS or an MS subsidiary to Southern Star

Morgan Stanley

RESPONSES TO QUESTIONS

Answer to Question 15

Any Natural Gas or Related Services Provided by Southern Star:

- Southern Star does not provide natural gas or related services to Morgan Stanley, including the Morgan Stanley commodities division
- MSIM is subject to informational barriers with regard to other firm clients and does not have knowledge about whether Southern Star provides services to clients of other Morgan Stanley divisions

Question 15:
Any natural gas or related services
provided by Southern Star to MS or
any MS subsidiary or client

Morgan Stanley

RESPONSES TO QUESTIONS

Answer to Question 16

Southern Star's Safety and Environmental Record, Including any Industrial Accidents or Incidents Over the Past Ten Years:

- Southern Star has a strong safety and environmental record
- Over the past ten years, Southern Star has not experienced any incidents that were material or caused significant damage, nor has it had any incidents that posed any risk of leading to a catastrophic event
- Southern Star tracks natural gas release incidents as required by 49 CFR 191.3

Question 16:
Southern Star's safety and environmental record, including any industrial accidents or incidents over the past ten years

Morgan Stanley

Question 17:
How Southern Star maintains,
inspects, and ensures the safety of
its pipelines and storage facilities

RESPONSES TO QUESTIONS

Answer to Question 17

How Southern Star Maintains, Inspects and Ensures the Safety of its Pipelines and Storage Facilities⁽¹⁾:

- Integrity Management Plan:
 - As required by the Pipeline and Hazardous Materials Safety Administration ("PHMSA"), Southern Star has developed an Integrity Management Plan with detailed policies and procedures based on the Code of Federal Regulations Title 49 Part 192 Subpart O, which addresses the identification and remediation of High Consequence Area ("HCA") pipe segments
 - HCAs are determined by validating the number of structures intended for human occupancy (e.g., houses, apartments) and identified sites (e.g., hospitals, day cares, nursing homes) within the Potential Impact Radius ("PIR") of the pipeline segments on an annual basis
 - The assessment plan identifies the threats associated with each segment and the corresponding assessment method(s). Initial assessments are scheduled based on RISK model and follow up reassessments are scheduled in accordance with criteria provided in the American Society of Mechanical Engineers ("ASME") document B31.8S
 - Remediations are completed as required based on the outcome of the assessments. The methods used to remediate the various conditions are outlined in Southern Star Central Gas Pipeline ("SSCGP") Operations and Maintenance Manual. The methods are based on the Pipeline Research Council International ("PRCI") Pipeline Repair Manual as well as ASME B31.8S

Question 22:
MS natural gas trading – nature of its natural gas trading desk, financial instruments used, trading volumes, financing activities, any physical holdings at or apart from Southern Star

RESPONSES TO QUESTIONS

Answer to Question 22

- Morgan Stanley's Commodities Division executes transactions in North American natural gas markets principally through "Morgan Stanley Capital Group Inc." ("MSCG"), a Delaware corporation and a direct, wholly-owned subsidiary of Morgan Stanley
 - MSCG transacts natural gas through a variety of instruments, including listed derivatives (e.g., futures and options on futures), over-the-counter derivatives (e.g., swaps, cash-settled options and options on swaps), and physically-settled forwards
 - MSCG also reserves transportation capacity on certain natural gas pipelines and leases rights to store natural gas at various storage facilities
 - Neither MSCG, nor any of its subsidiaries possesses any ownership of any interstate natural gas pipelines or storage facilities, including Southern Star
- MSCG undertakes these activities primarily in connection with its provision of risk management services to its clients and its management of the commercial risk associated with those client transactions
- In 2013, MSCG reported to the Federal Energy Regulatory Commission an aggregate total of physical natural gas transactions of 61.1 trillion British thermal units (TBTus) and 38.2 TBTus in sales
 - During that period, MSCG also reported swap agreement transactions to swap data repositories (SDRs) pursuant to Commodity Futures Trading Commission regulations
 - None of these reported transactions were with Southern Star

Question 24:
MS access to information from Southern Star about natural gas activities, including volumes, prices, transport, storage, supplies, refining issues, or client activities

RESPONSES TO QUESTIONS

Answer to Question 24

MS Access to Information from Southern Star:

- Morgan Stanley business units, outside of MB & REI, are subject to informational barriers to prevent access to information from Southern Star, outside of what resides in the public domain and within Southern Star's SEC filings (10-K, 10-Q, 8-K, etc.) as a result of Southern Star's registered debt ⁽¹⁾
- MSI, on behalf of MSIP, receives the following information from Southern Star:
 - Board of Director presentations – Quarterly
 - Management Reports – Monthly
 - Responses to ad hoc requests
 - The Board of Directors presentations and monthly reports include information pertaining to:
 - Financial performance
 - Business development projects
 - Operational statistics
 - Volume throughput
 - Storage levels
 - Operations and engineering reports
 - Compliance
 - Employee safety
 - Environmental
 - Capital expenditure
 - Construction / capital budgeting summaries

Notes

1. Such debt was refinanced in June 2013. Southern Star will not be a public filer or SEC registrant going forward.

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September 19, 2014

Reginald J. Brown

By E-Mail

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Hon. Carl Levin, Chairman
 Hon. John McCain, Ranking Member
 Permanent Subcommittee on Investigations
 Committee on Homeland Security and Governmental Affairs
 United States Senate
 SR-199 Russell Senate Office Building
 Washington, DC 20510

Dear Chairman Levin and Ranking Member McCain:

We submit this letter on behalf of Morgan Stanley Capital Group Inc. ("MSCG") in response to follow-up questions e-mailed by staff on September 10, 2014 regarding Morgan Stanley's purchase of the Deutsche Bank natural gas portfolio and involvement with Wentworth Holdings, LLC. Your staff has asked for information and documents on a rolling basis. Accordingly, Morgan Stanley today is producing additional preliminary information in response to staff's questions. As a courtesy, the letter also contains all previously submitted responses. Morgan Stanley anticipates providing responses to the remainder of your staff's questions under separate cover.

We have responded to staff's questions in good faith to the best of our ability based on readily accessible data and information. Should additional or revised data or information responsive to the questions come to light, we respectfully request, as we become aware of a need, an opportunity to supplement or amend our response.

Responses to questions outlined in your staff's September 10, 2014 e-mail follow.

* * * *

Question 1: Morgan Stanley's purchase of the natural gas trading book from Deutsche Bank, including:

A. a list of the categories of assets purchased, including any futures, swaps, options, forward contracts, physical inventory, or physical facilities involving natural gas;

On August 15, 2014, MSCG executed definitive agreements to acquire from Deutsche Bank ("DB") its North American natural gas portfolio, held by three DB subsidiaries (the "DB Portfolio"). The DB Portfolio did not include physical natural gas inventory, storage agreements, transportation agreements, or other ancillary agreements.

Wilmer Cutler Pickering Hale
 Beijing Berlin Boston Brussels Frankfurt

Permanent Subcommittee on Investigations
EXHIBIT #47

Washington, DC 20006
 Palo Alto Waltham Washington
 PSI-MorganStanley-13-000001

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The DB Portfolio overwhelmingly consisted of financially-settled, as opposed to physically-settled, contractual assets. To illustrate, the DB Portfolio consisted of approximately 13,200 discrete transactions, of which only 24 were physically-settled forward transactions. Specifically, the DB Portfolio included:

- listed commodity futures contracts and options on commodity futures contracts;
- cash-settled over-the-counter swap and swap option agreements; and
- physical forward agreements.

B. a description of any natural gas supply contracts or other arrangements, including the key terms, counterparties, and volumes of natural gas involved;

With regard to physical natural gas forward agreements, MSCG acquired from DB approximately 22 fixed price forward agreements, and 2 basis transactions. These agreements average a daily volume for 2014 of 55,363 gigajoules ("GJ"), and are projected to decrease to 5,138 GJ by 2017. All of the delivery obligations with these transactions occur at the AECO pricing and delivery hub in Alberta, Canada. The duration of these transactions vary; the latest delivery date for two of the transactions is October 31, 2014, and the latest delivery date among the remaining transactions is October 31, 2017. These transactions originally were executed between DB and approximately five middle-market Canadian gas marketers and Natural Gas Exchange, Inc., as counterparties.

C. where the assets are located, including the extent to which they involve the United States;

MSCG did not acquire any physical commodity infrastructure assets as part of the DB Portfolio transaction and, apart from the physical natural gas forward agreements described above in the response to Question 1(B), MSCG acquired no other physical North American natural gas-related assets from DB.

D. the dollar value of each category of assets as well as the overall purchase price;

The value MSCG will pay to DB for the portfolio will be finalized at the conclusion of the transaction (i.e., when all transactions are novated to MSCG), but MSCG estimates that the mark-to-market value of the portfolio at the time of acquisition was approximately U.S. [REDACTED] million. The purchase price has not been further apportioned among the asset classes comprising the portfolio.

E. the timing and mechanics of the purchase and how and when the asset transfer will take or has taken place;

Upon execution of the definitive Master Transaction Agreement, MSCG and DB entered simultaneously into a total return swap and related Transition Services Agreement with each of

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the three DB entities. Under the terms of the total return swaps, MSCG agreed to take both the future commodity price and credit risk of the DB contracts being sold. Following execution of the total return swap, MSCG and DB agreed to cooperate in seeking consents from DB's counterparties to novate the transactions from DB to MSCG. As each of DB, MSCG, and DB's counterparties agrees to novate their transactions (which may consist of physically-settled forward agreements and/or over-the-counter cash-settled derivatives) from DB to MSCG, MSCG and DB will adjust the terms of their total return swap to reflect the novated transactions. As of September 11, 2014, approximately six counterparties have agreed to novate their transactions from DB to MSCG and MSCG anticipates that the remainder of the DB portfolio should be novated to MSCG by the end of March 2015.

F. why Morgan Stanley made the purchase when it told the Subcommittee it was winding down its involvement with physical commodities; and

In a conversation with Subcommittee staff on September 11, 2014, counsel for Morgan Stanley clarified the scope of this question and Morgan Stanley's statements in its February 2014 briefing to the Subcommittee, as set forth herein.

Morgan Stanley has decided to exit certain of its physical commodities business lines, including its global physical oil merchanting business and its investment in TransMontaigne, Inc.

Morgan Stanley plans to realign its commodities business to be more client focused. It plans to continue developing its global commodities business, which is focused on providing risk management and financing services to its clients across the commodities space, including risk intermediation, liquidity provision, lending and investor business, as well as providing supply solutions to its clients. MSCG's acquisition of the DB Portfolio is consistent with its role as a registered swap dealer that also has the ability to make markets in certain physical commodities. As noted above in the response to Question 1(A), the DB Portfolio consisted of approximately 13,200 discrete transactions, of which only 24 were physically-settled forward transactions

G. any interactions with the Federal Reserve related to the purchase.

MSCG participates in competitive bidding processes for transaction portfolios in the ordinary course of its business, and did not discuss the acquisition of DB's North American natural gas portfolio with the Federal Reserve.

Question 2: Morgan Stanley's involvement with Wentworth Holdings LLC and its related entities, including:

A. when Wentworth Holdings LLC and related entities were incorporated, with copies of their incorporation papers;

Wentworth Holdings LLC ("Holdings") was incorporated on April 1, 2014. Its two operating subsidiaries, Wentworth Gas Marketing LLC ("Marketing") and Wentworth Compression LLC

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("Compression," and together with Holding and Marketing "Wentworth"), were incorporated on October 21, 2013. Copies of each of their respective Wentworth entities' certificates of formation are attached at MS-COM-0001 – MS-COM-0006.

B. why the Wentworth name was selected;

Since the early phases of the project, MSCG has considered locating a CNG compression facility near the Port of Savannah in the City of Port Wentworth.

C. an organizational chart showing all Wentworth entities, including Wentworth Holdings LLC, Wentworth Gas Marketing LLC, and Wentworth Compression LLC;

The organizational structure of the Wentworth entities is as follows:

- Wentworth Gas Compression LLC and Wentworth Gas Marketing LLC are wholly-owned subsidiaries of Wentworth Holdings LLC;
- Wentworth Holdings LLC is, in turn, a wholly-owned subsidiary of MSDW Power Development Corp.;
- MSDW Power Development Corp. is a wholly-owned subsidiary of MSCG, which is wholly owned by Morgan Stanley.

D. a chart showing the ownership structure of the Wentworth entities, including any ownership interest held by any Morgan Stanley entity, and the dollar value of any investments made by third parties unrelated to Morgan Stanley;

As stated in the response to Question 2(C), each of the Wentworth entities is a subsidiary of Morgan Stanley and its affiliates. There is no third-party equity or debt.

E. the legal authority relied on by Morgan Stanley to incorporate these companies, construct a compressed natural gas (CNG) facility, and market the compressed gas, including whether Morgan Stanley is relying on grandfathering authority or merchant banking authority;

MSCG's participation in CNG (including the formation of the Wentworth entities, the contemplated construction of a compression facility and subsequent marketing of CNG) does not rely on merchant banking authority, but rather on section 4(o).

F. any interactions with the Federal Reserve related to the Wentworth entities and the CNG facility;

Although Morgan Stanley is not required to obtain formal approval for this investment, it has engaged in discussions with the Federal Reserve at various levels of the firm to explain the investment and Morgan Stanley's reasons for pursuing it.

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G. whether the Wentworth entities' principal place of business is at the Morgan Stanley offices in Purchase, New York, where the Commodities group is located;

The principal administrative business for each of the Wentworth entities is conducted within the Commodities group at Morgan Stanley's offices located in Purchase, New York.

H. whether any employees of the Morgan Stanley Commodities group are directors, officers, or employees of any of the Wentworth entities;

I. the name of the Chairman and Board of Directors members for each Wentworth entity and, if they are Morgan Stanley employees, their Morgan Stanley job titles;

J. the name of the president of each of the Wentworth entities and, if he or she is a Morgan Stanley employee, his or her Morgan Stanley job title;

K. the positions held by Deborah L. Hart and Peter Sherk at each of the Wentworth entities, including whether they are officers or managers of the companies;

L. the total number of Wentworth employees and whether all of Wentworth's employees are also employees of Morgan Stanley;

Question 2(H)-(L) are answered as follows:

None of the Wentworth entities have any employees at present and a number of MSCG employees are directors and officers of certain Wentworth entities. It is MSCG's practice to use Senior Managers as Board of Managers members and officers of its wholly-owned subsidiaries in order to assure standardized practices. Set forth below are the Board of Managers members for the Wentworth entities.

Table 1: Board Members of the Wentworth Entities

Name	Wentworth Entity Position	Employed By	MSCG Title
Simon T.W. Greenshields	Manager, Board of Managers; President	MSCG	President, and Global Co-Head of Commodities
Deborah Lynn Hart	Manager, Board of Managers; Vice President, Commodities	MSCG	Vice President, COO of North American Power and Gas
Nancy A. King	Manager, Board of Managers; Vice President, Commodities	MSCG	Vice President, Global Head of Oil Liquids Flow
Peter Sherk	Manager, Board of Managers; Vice President, Commodities	MSCG	Vice President, Head of North American Power & Gas

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M. the management structure and decisionmaking process at the Wentworth entities and how they interact with Morgan Stanley, including the Commodities group;

As evidenced by the response to Question 2(H)-(L), strategic management and operational decision-making at the Wentworth entities at present is made by MSCG employees. Ongoing operations, logistics, and maintenance of the proposed compression facilities will be outsourced to qualified third parties.

N. a financial statement for the Wentworth entities for each year they have been in existence;

In the normal course of business, stand-alone financial statements are not prepared for this consolidated entity.

O. the current status of the 4/2/2014 Engineering, Procurement, and Construction Contract between Wentworth Compression LLC and H.P. Industries to construct a CNG facility, including

The Engineering, Procurement, and Construction ("EPC") Agreement with H.P. Industries was executed on April 2, 2014.

i. what steps have been taken to survey or evaluate tracts of land for the CNG facility;

After evaluating the Port of Freeport parcel, a professional consulting firm based in Houston, Texas, has been engaged by H.P. Industries to provide the required site assessment to satisfy Wentworth that the Parcel 19 location is suitable for the location of the compression facility.

ii. what steps have been taken to draw plans for the design the CNG facility;

Wentworth contracted with a specialized engineering firm to provide the initial site design.

iii. what steps have been taken to construct the CNG facility;

Construction of the facility is dependent upon the receipt of the necessary regulatory approvals, including DOE export authority. Currently H.P. Industries has contracted with a third party for the facility design, commenced the Phase I environmental review, and has placed an order for compressors (which are considered long lead items for the facility). Wentworth continues to negotiate the final terms of the lease for the Parcel 19 at Port Freeport; and is engaged in discussions to connect with a provider of electrical service to the facility; and is engaged in negotiations with various pipeline companies to obtain firm delivery of natural gas to the compressor site.

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iv. what steps have been taken to procure insurance in connection with the CNG facility; and

Wentworth worked closely with the Morgan Stanley internal risk management team to identify the appropriate insurance coverage required for the facility. As the facility is not under construction at this time no insurance has been procured, but will be required upon signing of the final lease with Port Freeport. H.P. Industries has provided the insurance certificate required under the access agreement that was signed with Port Freeport. Additionally, H.P. Industries has provided a certificate of insurance in the form and amounts required under the EPC Agreement.

v. the total dollar value of the contract and the total projected cost to construct the facility;

Wentworth has budgeted up to \$55 million for the development and construction of the CNG facility in Port Freeport. It is anticipated that the development costs would be equivalent for a second facility near the City of Port Wentworth, Georgia.

P. the current status of the license obtained by H.P. Industries LLP from Port Freeport in Texas related to Parcel 19 in connection with the CNG facility;

A May 12, 2014 access agreement granted H.P. Industries a license to access Parcel 19 to inspect the site. Field work is ongoing, and the site license remains in effect until either the completion of the field work or December 31, 2014.

Q. the current status of the DOE application filed by Wentworth seeking authorization to export compressed natural gas, and an estimate of the costs incurred to date in connection with drafting and filing of that application;

The DOE application filed by Wentworth seeking authorization to export compressed natural gas to free trade agreement countries is pending. The costs incurred to date in connection with drafting and filing the application are approximately \$23,000.

R. the current status of any actions taken under the National Environmental Policy Act (NEPA) to obtain an environmental assessment (EA) or environmental impact statement (EIS) in connection with the CNG facility, including who is involved with that effort, what steps have been taken to date, and the estimated total cost incurred to date;

We are undertaking a Phase 1 environmental review of the Freeport site. To date, no action has been taken under the National Environmental Policy Act.

S. Morgan Stanley's projected total cost to construct the CNG facility and the total approximate amount of money expended to date on the project;

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WILMERHALE

Morgan Stanley anticipates that the Freeport natural gas compression facility will cost up to \$55 million to construct, including gas pipeline and power transmission line interconnections. Upon obtaining all needed approvals and permits, construction will require approximately three months. In addition to the facility, Wentworth also will purchase ISO containers in quantities sufficient to serve all offtake agreements. Based upon initial sales estimates, Wentworth will make an initial investment of up to \$300 million for ISO containers.

T. Morgan Stanley's plans for the Wentworth entities and the CNG facility over the next ten years;

The CNG business is being developed in order to deliver a cheaper and cleaner source of fuel to power generators and other commercial end users who need access to reliable natural gas supplies. It is our plan to assure long term delivery of this fuel source to those parties who contract for this supply.

U. whether Morgan Stanley has provided any banking, financing, legal, insurance, administrative, or other services to the Wentworth entities and, if so, a brief description of those services;

As with other affiliated entities of Morgan Stanley, the Wentworth companies rely upon the expertise and day-to-day involvement of employees of Morgan Stanley. This includes the breadth of the firm, including support in legal, tax, risk management and many other areas.

V. any Morgan Stanley capital requirements or charges related to the Wentworth entities;

[Response to follow under separate cover.]

W. the name and location of any other companies operating CNG facilities in the United States.

Public source documents¹ indicate that there are 1,200 natural gas compression stations located on the U.S. interstate natural gas pipeline network. In addition to these facilities, there are multiple compressed natural gas facilities that fuel municipal and commercial vehicles.

While Wentworth's proposal to construct and operate a CNG container filling station is unique in its planned output, there are other facilities in existence that both fill ISO containers and export these containers from the United States. These companies include, among others:

- Xpress Natural Gas
- Emera

¹ See, e.g., Natural Gas Compressor Stations on the Interstate Pipeline Network, Energy Information Administration, Office of Oil and Gas (Nov. 2007), available at http://www.eia.gov/pub/oil_gas/natural_gas/analysis_publications/ngcompressor/ngcompressor.pdf.

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Hon. John McCain, Ranking Minority Member
September 19, 2014
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WILMERHALE

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Permanent Subcommittee on Investigations

Thank you for the opportunity to provide this response.

Sincerely,

A handwritten signature in black ink that reads "Reginald Brown / AHD".

Reginald J. Brown
Alyssa DaCunha

1373

EXCERPT

1

MS-PSI-00000455

Morgan Stanley Infrastructure Partners
Southern Star Follow Up Questions

October 24, 2014

Permanent Subcommittee on Investigations
EXHIBIT #48

Morgan Stanley

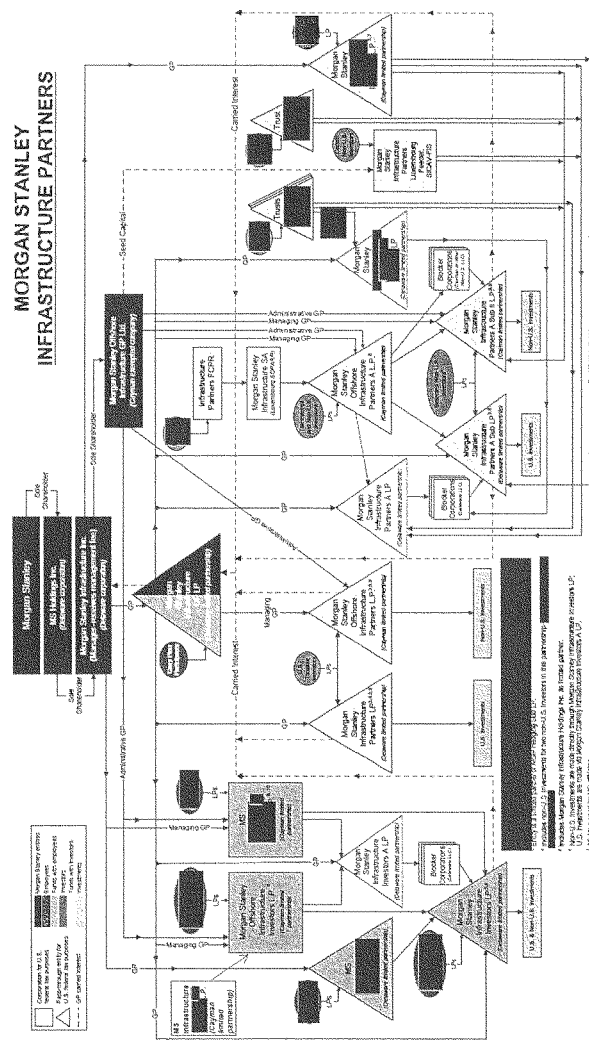
Confidential Treatment Requested by Morgan Stanley

Question 1:
Complete ownership structure
chart for MSIP*, including all
funds that feed into the master
limited partnerships for MSIP I
and all MS Ownership Interests.

RESPONSES TO QUESTIONS

Answer to Question 1

MORGAN STANLEY
INFRASTRUCTURE PARTNERS



Morgan Stanley

Contains Competitively Sensitive Information

Question 2:
General partnership and limited partnership through which MS holds ownership interests in MSIP, indicating the percentage of their respective ownership interests, and how they fit in the ownership chart above.

RESPONSES TO QUESTIONS

Answer to Question 2

MS Partnership Structure

- Please refer to the legal entity structure chart provided in the answer to Question 1.
 - Morgan Stanley owns 100% of MS Holdings Inc., which in turn owns 100% of Morgan Stanley Infrastructure Inc. ("MSI").
 - Morgan Stanley also owns approximately 80.1% of MSI German Investors L.P.
- MSI is the general partner of Morgan Stanley Infrastructure GP LP, which also has as limited partners Morgan Stanley Infrastructure SLP, L.L.C. and individual limited partners. On average, MSI has an ownership interest of 0.22% amongst MSIP I Portfolio companies. Morgan Stanley Infrastructure GP LP is in turn the general partner of Morgan Stanley Infrastructure Partners LP ("MSIP").

Morgan Stanley

Contains Competitively Sensitive Information

Question 3:
Where MS Infrastructure, Inc. fits in the ownership structure, as well as MSI's role as key manager and registered investment advisor for MSIP, and its employees' positions in MSIP.

RESPONSES TO QUESTIONS

Answer to Question 3

MSI Ownership Structure and Employees

- Please refer to the legal entity structure chart provided in the answer to Question 1.
 - MS Infrastructure, Inc. ("MSI") is wholly-owned by MS Holdings Inc., which is wholly-owned by Morgan Stanley.
 - MSI is the general partner and manager of Morgan Stanley Infrastructure GP LP and registered investment adviser for MSIP.
 - The 37 MSI employees indicated on page 7 of the August 29, 2014 presentation are all Morgan Stanley employees. However, they are dedicated to the management and operation of MSI and its related Infrastructure funds.
- MSIP holds investments through a subset of the 5 main Master Limited Partnerships in the MSIP structure:
 - *MSIP U.S. Investments are owned by:*
 - Morgan Stanley Infrastructure Partners LP
 - Morgan Stanley Infrastructure Partners A Sub LP
 - Morgan Stanley Infrastructure Investors LP
 - *MSIP Non U.S. Investments will be owned by:*
 - Morgan Stanley Offshore Infrastructure Partners LP
 - Morgan Stanley Infrastructure Partners A Sub II L.P.
 - Morgan Stanley Infrastructure Investors LP
- These Master Limited Partnerships are owned by the Limited Partners of MSIP and are used to own and hold investments on behalf of MSIP. They are not used to hold investments for any other Morgan Stanley Merchant Banking & Real Estate Investing Funds.

Morgan Stanley

Question 4:
Ownership structure of Morgan Stanley Global Private Equity and its funds.

Morgan Stanley Global Private Equity is a business unit in Merchant Banking & Real Estate Investing which currently has one active fund, Morgan Stanley Capital Partners V (its four predecessor funds have either been fully realized or are in liquidation). This chart indicates its structure.

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MS-PSH-00000459

RESPONSES TO QUESTIONS

Answer to Question 4 (cont'd)

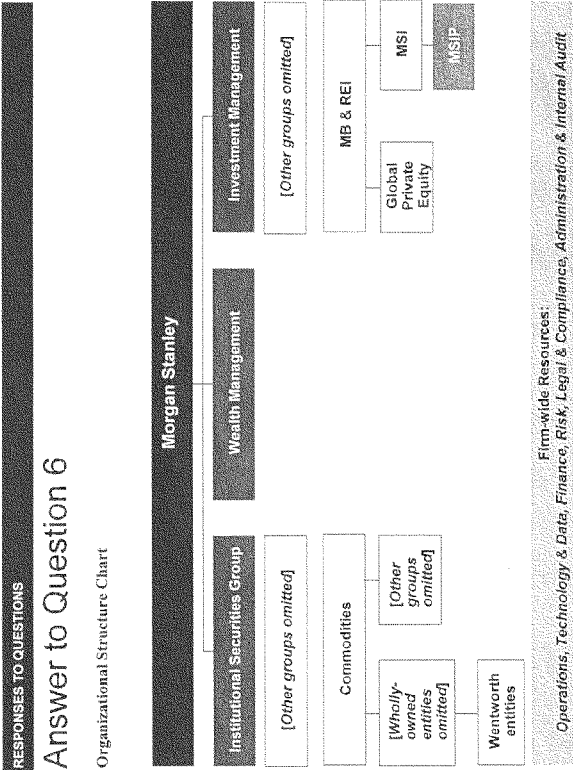
Question 4:
Ownership structure of Morgan Stanley Global Private Equity and its funds.

Morgan Stanley Global Private Equity is a business unit in Merchant Banking & Real Estate Investing which currently has one active fund, Morgan Stanley Capital Partners V (its four predecessor funds have either been fully realized or are in liquidation). This chart indicates its structure.

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Morgan Stanley

Question 6:
Expanded organizational chart,
showing both MSIP and Morgan
Stanley Global Private Equity
under MB & REI, and Wentworth
Holdings LLC and its
subsidiaries under the
Commodity Division.



Morgan Stanley

Question 7:
How MSIP, MS Global Private
Equity, and Wentworth interact
or overlap.

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RESPONSES TO QUESTIONS

Answer to Question 7

Interaction of MSIP, MS Global Private Equity, and Wentworth

- MSIP and MS Global Private Equity are part of the Morgan Stanley Investment Management Division; they do not share employees, but do have common senior leadership.
- There is no commercial interaction between the Morgan Stanley Investment Management Division (which includes MSIP and MS Global Private Equity) and the Commodities Division (which includes Wentworth).

Morgan Stanley

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MS-PSI-00000466

Question 8:
All investments under MSIP I
involving commodities other
than Southern Star, including
any power plants, natural gas
facilities, pipelines, storage
facilities, or commodity
transportation facilities.

RESPONSES TO QUESTIONS

Answer to Question 8

MSIP I Commodity Investments

- Asian Genco: Holding company for clean power and infrastructure development company in India.
- Continuum Wind Energy: Holding company for wind power developer and operator in India.
- Madritena Red de Gas: Holding company for natural gas distribution company operating in Madrid, Spain.
- Medical Area Total Energy Plant: Holding company for Boston area tri-generation facility providing heating, cooling, and electricity to area hospitals.
- Zhaoheng Hydropower Holdings Limited: Holding company for consolidator, developer, and operator of hydropower generation facilities in Southern China.

Morgan Stanley

Question 9:
Southern Star Board of
Directors members.

RESPONSES TO QUESTIONS

Answer to Question 9

Southern Star Board of Directors

- John Veech – a Managing Director and head of the Americas region for MSIP;
- John Watt – a Managing Director and Head of Asset Management for MSIP; and
- Thomas Gray – a Managing Director and a senior manager within MSI's Asset Management team.

Morgan Stanley

Question 10:
Southern Star Compliance
Officer.

RESPONSES TO QUESTIONS

Answer to Question 10

Chief Compliance Officer

- Southern Star has always dedicated employees to compliance, regulatory, and physical safety issues. In order to advance Southern Star's holistic and focused approach to these closely related areas, while continuing to improve systems and communications to support compliance efforts, these responsibilities were consolidated in a new Vice-President and Chief Compliance Officer position in late 2010 as part of an overall organizational realignment.
 - The Southern Star Vice-President and Chief Compliance Officer reports directly to the Southern Star President and Chief Executive Officer.
 - Although the major functions had previously existed elsewhere in the organization, the position's areas of responsibility and reporting structure are new. The position, which became effective in 2011, was created to focus solely on regulatory and physical system compliance.
- The following areas report to the Chief Compliance Officer:
 - Environmental, Health and Safety ("EHS"), which includes OSHA Safety, Environmental, and Land; Pipeline Safety, which includes Corrosion Services, Integrity Services, and Pipeline Compliance, the latter being the direct conduit to the Pipeline and Hazardous Materials Safety Administration ("PHMSA");
 - Regulatory Compliance, which includes commercial activities regulated by the Federal Energy Regulatory Commission ("FERC") as well as the activities related to the North American Energy Standards Board ("NAESB");
 - Legal, including the office of the General Counsel and Corporate Secretary which has oversight for the Insurance and Risk Management function, Regulatory Affairs at the Federal and State levels, as well as Records and Information Management ("RIM").
- The Internal Audit department reports directly to the Board of Directors with a dotted-line to the Chief Compliance Officer.

Morgan Stanley

Question 12:
Please describe and, if possible, quantify how capital requirements related to Morgan Stanley's investment in Southern Star have changed from Basel I to Basel III.

RESPONSES TO QUESTIONS

Answer to Question 12

- For investments in funds that have underlying holdings such as Southern Star, Morgan Stanley is subject to capital deductions as well as risk weighted assets, based on the investment criteria. However, the capital deductions and risk weighted assets are computed at the fund level and are not allocated to its individual holdings. Morgan Stanley's aggregate capital requirements have increased from Basel I to Basel III as a result of the change in regulatory capital rules under Basel III.

Morgan Stanley

Question 13:
Southern Star liability in
connection with 2006 pipeline
rupture incident.

RESPONSES TO QUESTIONS

Answer to Question 13

Southern Star Liability

- Southern Star was named as a Defendant in a wrongful death case filed against Double J Pipeline Construction (see *Oneta Foran vs. Double J Pipeline Construction, L.L.C., et al.*)
- The case was settled and dismissed as the result of a Settlement Agreement and Indemnifying Release executed on March 6, 2009.
- Southern Star incurred no direct financial liability. The incident was covered by Southern Star's insurance carrier, including both legal fees and the resulting settlement amount.

Morgan Stanley

Question 15:
Confirmation that Southern Star documents prepared for the Board of Directors are not shared outside of Infrastructure.

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RESPONSES TO QUESTIONS

Answer to Question 15

- Morgan Stanley has not identified any presentations or reports prepared by Southern Star for the Board of Directors that have been shared with any officer or employee of the Morgan Stanley Commodities division. Moreover, Morgan Stanley's policies bar the sharing of material, non-public information between the Infrastructure and Commodities divisions.

Morgan Stanley

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MS-PSU0000475

WILMERHALE

October 10, 2014

Reginald J. Brown

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Hon. Carl Levin, Chairman
 Hon. John McCain, Ranking Member
 Permanent Subcommittee on Investigations
 Committee on Homeland Security and Governmental Affairs
 United States Senate
 SR-199 Russell Senate Office Building
 Washington, DC 20510

Dear Chairman Levin and Ranking Member McCain:

We are writing on behalf of Morgan Stanley in response to questions e-mailed by staff on September 26, 2014. Morgan Stanley today is producing preliminary information in response to staff's questions. Morgan Stanley anticipates providing additional responses to staff's questions under separate cover. We have responded to staff's questions in good faith to the best of our ability based on readily accessible data and information. Given that some of staff's questions relate to events that occurred in the 1980s and 1990s, some responses are based solely on the general recollection of Morgan Stanley employees. Additionally, the responses focus on the activities of the Morgan Stanley Commodities business unit ("Morgan Stanley Commodities"). Should additional or revised data or information responsive to the questions come to light, we respectfully request an opportunity to supplement or amend our response as needed.

Below are responses to questions outlined in your staff's September 26, 2014 e-mail.

* * * *

2. *Please provide a brief history of Morgan Stanley's involvement with oil storage facilities in New York, New Jersey, and Connecticut since the 1980s. Please indicate whether Morgan Stanley helped finance the construction of oil storage facilities in New York in or around 1993, and briefly describe the extent to which Morgan Stanley has financed other oil storage facilities in New York, New Jersey and Connecticut since then.*

Morgan Stanley entered the physical oil business in the mid-1980s. In the late 1980s or early 1990s, Morgan Stanley entered its first storage agreement in the New York/New Jersey/Connecticut region with Wyatt, Inc. By 1994, Morgan Stanley had entered storage agreements with IMTT-Bayonne in New Jersey and GATX Terminal Corporation in Staten Island, New York. From time to time, Morgan Stanley also entered agreements with other storage facilities in the New York/New Jersey/Connecticut region.

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 Beijing Berlin Boston Brussels Frankfurt

Permanent Subcommittee on Investigations

EXHIBIT #49

Washington, DC 20006
 Palo Alto Waltham Washington
 PSI-MorganStanley-17-000001

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Hon. John McCain, Ranking Minority Member
October 10, 2014
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We have not been able to identify any instances in which Morgan Stanley Commodities has provided financing in the form of direct loans. However, Morgan Stanley Commodities has agreed to fee schedules that have supported leasehold improvements, including enhancement of oil storage facilities in New York/New Jersey/Connecticut.

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WILMERHALE

June 21, 2013

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Hon. Carl Levin, Chairman
 Hon. John McCain, Ranking Minority Member
 Permanent Subcommittee on Investigations
 Committee on Homeland Security and Governmental Affairs
 United States Senate
 SR-199 Russell Senate Office Building
 Washington, DC 20510

Dear Chairman Levin and Ranking Member McCain:

We submit this letter on behalf of Morgan Stanley in further response to your January 11, 2013 letter and questionnaire regarding the nature and scope of activities of U.S. banks in physical commodities. This letter supplements our February 11, March 4, April 12, and May 21, 2013 responses. Morgan Stanley conducts trading in physical commodities within the Morgan Stanley Commodities division. While there may be limited exposure to financial commodities elsewhere in the Firm, the overwhelming majority of business in physical commodities resides in Morgan Stanley Commodities, therefore, unless otherwise noted, answers to the Subcommittee's questions are drawn from that unit of the company. We will continue, on a rolling basis, to respond to the January 11, 2013 inquiry.

Responses to questions 12, 13, 17, 18, and 19 in the questionnaire follow...

* * * *

Question 12: For each entity identified in response to Question 11 which your company controls, or in which it directly or indirectly owns at least 20 percent, please also provide the following information.

- a) the date on which each such entity was formed, the jurisdiction where it was formed, and the location of its headquarters;*
- b) the nature and extent of your ownership interest in each such entity, when it was acquired, and the name and job title of the most senior executive in charge of each entity;*
- c) the nature of the storage facility (e.g., metals warehouse, storage tank, grain elevator) where each physical commodity was held and its approximate capacity;*
- d) the number of employees that your company employs, or contracts to employ, permanently or temporarily, at each such entity;*
- e) the nature of the services performed by each such entity, including whether it stores, processes, produces, buys, sells, delivers, trades, hedges, or transports the commodity; and*

Wilmer Cutler Pickering Hale
 Beijing Berlin Boston Brussels Frankfurt

Permanent Subcommittee on Investigations

EXHIBIT #50

Washington, DC 20006

Palo Alto Waltham Washington
 PSI-MorganStanley-06-000001

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 Hon. John McCain, Ranking Minority Member
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WILMERHALE

f) the approximate yearly revenues and profit or loss generated by each such facility for each fiscal year from 2008 to 2012.

The Firm has been sole owner of TransMontaigne, Inc. ("TransMontaigne"), a Denver, Colorado-based energy services company, since September 2006. In February 2005, TransMontaigne formed TransMontaigne Partners L.P. ("TLP"), a publicly traded Delaware limited partnership that provides integrated terminaling, storage, transportation, and related services for customers engaged in the distribution and marketing of light refined petroleum products (such as gasolines, diesel fuels, heating oil, and jet fuels), heavy refined petroleum products (such as residual fuel oils and asphalt), crude oil, chemicals, fertilizers, and other liquid products. TLP does not purchase or market products that it handles or transports. Morgan Stanley holds a minority interest in TLP. TransMontaigne GP L.L.C., a wholly owned subsidiary of TransMontaigne, is TLP's general partner and controls its operations.

TLP has no officers or employees; all of its management and operational activities are provided by officers and employees of TransMontaigne. TransMontaigne GP L.L.C.'s board of directors oversees TLP's operations. Charles L. Dunlap is its Chief Executive Officer. Morgan Stanley currently employs no one permanently or temporarily at TransMontaigne. One Morgan Stanley Commodities employee was based at TransMontaigne during some of the relevant time period and worked from the TransMontaigne offices during that time.

TLP's existing facilities are located in five geographic regions, which TLP refers to as its Gulf Coast, Midwest, River, Southeast, and Brownsville facilities:

- The Gulf Coast facilities consist of eight refined product terminals, all in Florida, which currently have approximately 6.9 million barrels of aggregate active storage capacity.
- The Midwest facilities include a 67-mile refined product pipeline between Missouri and Arkansas, three refined product terminals, and one crude oil terminal with approximately 1.6 million barrels of aggregate active storage capacity.
- The River facilities are composed of 12 refined product terminals located along the Mississippi and Ohio Rivers with approximately 2.8 million barrels of aggregate active storage capacity. The River facilities also include a pipeline-connected dock facility in Baton Rouge, Louisiana.
- The Southeast facilities are comprised of 22 refined product terminals located along pipelines in Alabama, Georgia, Mississippi, North Carolina, South Carolina, and Virginia with an aggregate active storage capacity of approximately 10 million barrels.
- The Brownsville facilities consist, in large part, of those related to an April 2011 joint venture with P.M.I. Services North America Inc. ("PMI"), an indirect subsidiary of a

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WILMERHALE

Mexican state-owned petroleum company, at TLP's Brownsville, Texas terminal. TLP contributed approximately 1.4 million barrels of light petroleum product storage capacity, as well as related ancillary facilities, to the joint venture, also known as Frontera Brownsville LLC ("Frontera"), in exchange for a cash payment and a 50% ownership interest. TLP continues to own and operate approximately 0.9 million barrels of additional tankage in Brownsville, independent of Frontera, including a liquefied petroleum gas ("LPG") terminaling facility with aggregate active storage capacity of approximately 33,000 barrels. TLP also owns and operates a LPG pipeline running from its Brownsville facilities to a terminal in Mexico, which has approximately 7,000 barrels of aggregate active LPG storage capacity. And TLP operates a bi-directional refined product pipeline for PMI for deliveries to and from Brownsville and terminals in Mexico.

For year-end book values associated with TransMontaigne from 2008 to 2012, please see our response to Question 6. TLP is a publicly traded company, listed on the New York Stock Exchange, and additional information concerning that entity is available in the company's public filings.

In addition to TLP, TransMontaigne wholly owns three additional storage facilities:

- Canterm Canadian Terminals Inc., which is wholly owned by TransMontaigne subsidiary TransMontaigne Canada Holdings Inc., operates storage terminals in Quebec, Canada with a storage capacity of approximately three million barrels. These terminals store gasoline, diesel, ethanol, heavy fuel oil, marine diesel oil, HCB oil, red dye, DCA gas additive, asphalt, jet, and bio diesel. Canterm Canadian was formed in December 1999 and acquired by TransMontaigne in December 2006. Charles L. Dunlap is its President.
- TransMontaigne Product Services Inc., based in Denver, owns a Baytown, Texas terminal with a storage capacity of approximately 127,000 barrels that holds environmental/oily water. Most of this facility was put out of service by Hurricane Ike in September 2008. The entity was formed in October 1998 by Houston Marine Services, Inc., which was owned by Heidmar Group Inc. and a third party. Morgan Stanley Capital Group Inc. acquired Heidmar in September 2006, and Houston Marine Services was acquired by TransMontaigne and merged into TransMontaigne Product Services in December 2008. Charles L. Dunlap is TransMontaigne Product Services' President and CEO.
- TransMontaigne Product Services also operates the Norfolk Drybulk Terminal in Chesapeake, Virginia. The terminal has a storage capacity of 50,000 short tons, and it stores granular fertilizer.

Hon. Carl Levin, Chairman
 Hon. John McCain, Ranking Minority Member
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 Page 4

WILMERHALE

Question 13: For each entity identified in response to Question 11 which your company does not control or own at least 20 percent, please also provide the following information:

- a) the nature, extent, and initial date of any investment in or contractual relationship with each such entity, including any "supply-and-offtake" arrangement, energy management or energy tolling agreement, lease agreement, or agreement functionally similar to a lease, pursuant to which your company or any affiliate or fund has access to or use of any facilities for production, processing, storage, transportation, or distribution of any physical commodity listed in Question 2;*
- b) the name and job title of the most senior executive at each entity that entered into such an investment or agreement;*
- c) the nature of the services performed by each such entity, including whether it stores, processes, produces, buys, sells, delivers, trades, hedges, or transports the commodity; and*
- d) if relevant, the approximate yearly revenues and profit or loss generated for your company by each such facility for each fiscal year from 2008 to 2012.*

As noted in response to Question 12, the Firm owns at least 20 percent of only one entity identified in response to Question 11: TransMontaigne. All remaining storage facilities listed in response to Question 11 are third-party facilities in which the Morgan Stanley Commodities division has no ownership interest. There are over 170 such entities included in our April 12, 2013 response. With no ownership interest in these facilities, Morgan Stanley's ability to obtain information concerning their operations and revenues is limited.

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 Permanent Subcommittee on Investigations

WILMERHALE

October 17, 2014

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Hon. Carl Levin, Chairman
 Hon. John McCain, Ranking Member
 Permanent Subcommittee on Investigations
 Committee on Homeland Security and Governmental Affairs
 United States Senate
 SR-199 Russell Senate Office Building
 Washington, DC 20510

Dear Chairman Levin and Ranking Member McCain:

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Below are responses to questions outlined in your staff's September 26, 2014 e-mail.

* * * *

1. *Exhibit 1 of an April 12, 2013 letter from Morgan Stanley to the Subcommittee identifies 20 oil storage facilities used by Morgan Stanley and its affiliates in New York, New Jersey, and Connecticut. For each year in the ten year period from 2003 through 2013, please provide the approximate maximum aggregate volume of oil storage capacity provided by the listed storage facilities to Morgan Stanley and its affiliates in New York, New Jersey, and Connecticut. Please indicate, during that same ten-year period, to what extent jet fuel was stored at those facilities.*

Morgan Stanley Commodities began tracking certain aspects of its storage agreements beginning in 2011. Based on these readily accessible but limited records, Morgan Stanley Commodities' approximate maximum aggregate volume of oil liquids storage capacity in New York, New Jersey, and Connecticut was as follows (amounts shown are shell storage capacity):

- 8.2 million barrels in 2011, of which 430,000 barrels were jet fuel shell storage capacity;

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 Hon. John McCain, Ranking Minority Member
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- 9.1 million barrels in 2012, of which 630,000 barrels were jet fuel shell storage capacity; and
- 7.7 million barrels in 2013, of which 877,000 barrels were jet fuel shell storage capacity.

While Morgan Stanley Commodities does not have readily accessible records reflecting the aggregate volume of oil storage capacity for 2003 through 2010, we believe that Morgan Stanley Commodities maintained similar storage agreements for refined products in New York, New Jersey, and Connecticut during much of that period. Two specific examples are: (1) agreements to store a maximum of approximately 3.5 million barrels of distillate and gasoline-related products in New Haven, Connecticut, from 2009 to present; and (2) agreements to store a maximum of approximately 2.5 million barrels of distillate and gasoline-related products in Bayonne, New Jersey, from 2009 to present.

3. *Please confirm that, by 2009, Morgan Stanley owned 100% of the stock of Olco Petroleum Group; from 2009 until 2012, Olco operated as a wholly-owned subsidiary of TransMontaigne; and in 2012, TransMontaigne caused Olco to merge with Canterm Canadian Terminals Inc. so that Olco lost its identity as an independent company and instead operated as part of Canterm. Please confirm that Morgan Stanley's involvement with Canterm Canadian Terminals Inc., which was wholly owned by TransMontaigne Canada Holdings, ended when TransMontaigne was sold in 2014. If any part of these statements is inaccurate, please provide the correct information.*

In December 2006, Morgan Stanley Capital Group Inc., through its wholly-owned subsidiary, TransMontaigne Inc. ("TransMontaigne"), acquired 60% of Olco Petroleum Group, Inc. ("Olco"). At approximately the same time, Olco acquired Canterm Canadian Terminals Inc. ("Canterm"). In September 2008, TransMontaigne acquired the remaining 40% of Olco. By September 2010, TransMontaigne had restructured its Canadian holdings and formed a new holding company, TransMontaigne Canada Holdings Inc. ("TCH"), which directly owned 100% of Canterm and TMG Canadian Holdings L.L.C. ("TMGCH"). TMGCH became the direct owner of 100% of Olco's successor entity, the newly reorganized Olco Petroleum Group ULC. In March 2014, TCH sold Canterm to Vopak Terminals QC Inc. In July 2014, Morgan Stanley Capital Group Inc. sold its interest in TransMontaigne to NGL Energy Partners LP but retained certain assets, including TransMontaigne's interest in TCH. Thus, Morgan Stanley's indirect ownership of Canterm ended approximately four months prior to the sale of TransMontaigne, although Morgan Stanley continues to maintain a storage agreement with Canterm.

Hon. Carl Levin, Chairman
 Hon. John McCain, Ranking Minority Member
 October 17, 2014
 Page 3

WILMERHALE

4. *Please confirm the accuracy of these revenue and profit figures for the oil liquids desk, which were provided by Morgan Stanley to the Federal Reserve, and add the comparable figures for 2013.*

Fiscal Year	Net revenues*	Profit before tax
2009	1,198	560
2010	822	298
2011	677	173
2012	676	168
2013	503	27

All figures are approximate.

All figures in USD millions.

*The figures in the "Net revenues" column were provided by Morgan Stanley in Table 3 of a July 16, 2013 letter to the Subcommittee.

** Profit before tax totals do not include compensation deferral impact as required under U.S. Generally Accepted Accounting Principles ("U.S. GAAP").

The revenue and profit figures in the chart above are accurate. Please note, however, that (1) relatively small amounts were reclassified as discontinued operations under U.S. GAAP and (2) multiple commodity interests (*i.e.*, not just oil liquids) were reallocated for internal management reporting purposes from the oil liquids business to other commodities businesses. Additionally, beginning in 2014, the oil liquids business, which previously was recorded as a single entry, was reorganized as the following three business segments: the global oil merchanting unit, Transmontaigne, and the oil liquids client facilitation business. As such, historical information may be presented differently going forward.

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 Permanent Subcommittee on Investigations

EXCERPT

Jet Fuel Supply Agreement

between

Morgan Stanley Capital Group Inc.

and

United Air Lines, Inc. and
United Aviation Fuels Corporation

This Jet Fuel Supply Agreement (this "Agreement") is entered into effective as of September, __, 2003, among Morgan Stanley Capital Group Inc. ("MSCG"), a Delaware corporation, United Air Lines, Inc. ("United Airlines"), a Delaware corporation, and United Aviation Fuels Corporation ("UAFC"), a Delaware corporation (United Airlines and UAFC referred to collectively as "United" and each of the foregoing referred to individually as a "Party" or collectively as "Parties").

WHEREAS, United desires to have MSCG supply Jet Fuel and maintain Minimum Inventory Levels for United at the Airports and provide other Services beginning on the Commencement Date and throughout the Term of this Agreement;

WHEREAS, United desires to sublease to MSCG certain United Infrastructure Agreements, including terminaling and throughput agreements for storage of Jet Fuel at the Airports, and to transfer to MSCG its historical capacity on common carrier pipelines by means of an agency agreement, and MSCG agrees to assume and accept the sublease of such agreements and transfer of pipeline capacity as specified herein;

WHEREAS, United desires to have MSCG engage in Third-Party Sales;

WHEREAS, [REDACTED]; and

WHEREAS, MSCG is willing to supply Jet Fuel and render the foregoing Services to United, pursuant to the terms and conditions contained herein;

NOW, THEREFORE, in consideration of the premises and the respective promises, conditions and agreements contained herein, and other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, the Parties hereby agree as follows:

ARTICLE 1

DEFINITIONS AND CONSTRUCTION1.1 Definitions.

For purposes of this Agreement, including the foregoing Recitals, the following terms shall have the meanings indicated below:

13101164.2 03175856

Permanent Subcommittee on Investigations

EXHIBIT #52

PSI-UnitedAirlines-01-000003

1.7 The Parties acknowledge that they and their counsel have reviewed and revised this Agreement and that no presumption of contract interpretation or construction shall apply to the advantage or disadvantage of the drafter of this Agreement.

ARTICLE 2

JET FUEL SALES AND SUPPLIES TO UNITED

2.1 Sales Generally and Sources of Supply. Subject to the terms and conditions contained herein, commencing on the Commencement Date as to the Airport Locations marked as Phase I Locations on Exhibit 1 and commencing on such later date that is mutually agreeable to the Parties for the Airport Locations marked as Phase II or Phase III on Exhibit 1, and in each case then continuing during the Term of this Agreement, MSCG shall sell and deliver to United to the Airport Locations all of United's (and, to the extent provided in Section 2.1(e), UAX's) actual Jet Fuel requirements and shall maintain the Minimum Inventory Levels at the applicable Airport Locations, and United (and UAX) shall purchase such Jet Fuel. At United's request, MSCG shall sell and invoice any quantity of Jet Fuel to UAFC for resale to United Airlines.

(a) MSCG shall sell the Jet Fuel to United on a daily or on an as-needed basis as it is withdrawn from tankage at the Airport Locations. Except as mutually agreed by the Parties, MSCG shall be responsible only for arranging transportation and delivery of the Jet Fuel into the storage facilities at the Airport Locations, and United shall bear sole responsibility for arranging for transport of the Jet Fuel from the Airport storage facility to the aircraft wing and for aircraft refueling.

(b) MSCG shall work with United to develop and maintain a long-term supply plan designed to minimize the cost of Jet Fuel to United (subject to and consistent with the terms and provisions of Article 5 and Article 7) and to optimize reliable and efficient supply of Jet Fuel to United over the Term of this Agreement.

(c) MSCG shall arrange for the Jet Fuel delivered to an Airport Location to be discharged into (i) tankage covered by a United Infrastructure Agreement or by agreements that MSCG may enter into relating to storage of Jet Fuel or (ii) commingled tankage operated by fuel consortia or an airport authority to which MSCG is granted open access rights.

(d) [REDACTED].

(e) If UAFC so elects in writing, MSCG shall supply Jet Fuel requirements to carriers that operate under the designation "United Express" ("UAX") at all Airport Locations. At any time after the date that is 60 days after the Commencement Date (or such earlier or later date as the Parties may mutually agree), on UAFC's written instruction, MSCG shall make sales at Bulk Supply Locations pursuant to this Section 2.1(e) directly to the applicable UAX carriers on the same terms and conditions as contained in this Agreement, and shall invoice and collect monies owed with respect to such sales directly from each applicable UAX carrier.

(f) [REDACTED].

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2.8 Title and Risk of Loss. Title and risk of loss to the Jet Fuel delivered to United at an Airport Location shall pass from MSCG to United when the Jet Fuel is removed from the storage facility at the Airport Location.

2.9 Warranty. MSCG hereby warrants that the Jet Fuel delivered pursuant to this Agreement shall, at the time of delivery to any storage facility located at an Airport Location Infrastructure Agreements, meet the Specifications. MSCG further warrants that it shall convey good title to all Jet Fuel sold hereunder and that such Jet Fuel shall be delivered to United free and clear of any Lien.

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Permanent Subcommittee on Investigations

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5.5 Spot Local Supply Agreements. MSCG shall negotiate and perform all Spot Local Supply Agreements as may be necessary to meet United's Operating Fuel Requirements at an Airport Location, taking into consideration the volume of Term Local Supply, if any, at such Airport Location.

5.6 Resale of Term Local Supply. Subject to United's consent, MSCG may sell any Jet Fuel that MSCG is required to purchase under a Term Local Supply Agreement in excess of United's Operating Fuel Requirements to a third party, on such terms and at a price within its sole discretion. Any such resale of Term Local Supply shall be considered to be a Trading Transaction subject to the provisions of Article 4. [REDACTED]

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6.2 Transfer of Historical Pipeline Capacity. Pursuant to Section 365 of the Bankruptcy Code, United shall transfer to MSCG, by means of agency agreements, its historical pipeline capacity on certain pipelines, as identified in Exhibit 18, and shall provide MSCG with evidence of each pipeline company's consent. Upon the termination of this Agreement, MSCG shall return to United, through a termination of the agency agreements, the pipeline capacity history on such pipelines that it received from United in the amount originally transferred, adjusted for (i) any actual increases in historical pipeline capacities on such pipelines since the Assumption Date that result from MSCG utilizing such pipelines to supply any increases in the United's Jet Fuel requirements or Minimum Inventory Levels served by such pipelines or the addition of Airport Locations under Section 2.3 and (ii) any decreases due to deletions of Airport Locations under Section 2.3 or decreases in United's Jet Fuel requirements at any Airport Location.

ARTICLE 7
[REDACTED]

- 7.1 [REDACTED].
- 7.2 [REDACTED].
- 7.3 [REDACTED].
- 7.4 [REDACTED].
- 7.5 [REDACTED].
- 7.6 [REDACTED].

ARTICLE 8
[REDACTED]

- 8.1 [REDACTED].
- 8.2 [REDACTED].
- 8.3 [REDACTED].

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Permanent Subcommittee on Investigations

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Permanent Subcommittee on Investigations

ARTICLE 10
TERM OF AGREEMENT

10.1 Initial Term. This Agreement shall become effective on the Effective Date and shall continue for three years from the Commencement Date ("**Initial Term**").

10.2 Renewal. Unless either Party provides notice to the other Party not later than six months prior to the expiration of the Initial Term of its intention to terminate this Agreement, the Agreement shall be automatically renewed at the end of the Initial Term for an indefinite term (the "**Renewal Term**"). At any time during the Renewal Term, either Party may terminate this Agreement by providing notice to the other Party, such termination to be effective on the date that is two years following receipt of notice thereof. Following any termination pursuant to this Section 10.2, the Parties shall perform their obligations relating to termination pursuant to Article 19. The Initial Term together with the Renewal Term shall be the "**Term**."

Redacted By
Permanent Subcommittee on Investigations

WILMERHALE

September 29, 2014

Reginald J. Brown

By E-Mail

+1 202 663 6430(t)
 +1 202 663 6363(f)
 reginald.brown@wilmerhale.com

Hon. Carl Levin, Chairman
 Hon. John McCain, Ranking Member
 Permanent Subcommittee on Investigations
 Committee on Homeland Security and Governmental Affairs
 United States Senate
 SR-199 Russell Senate Office Building
 Washington, DC 20510

Dear Chairman Levin and Ranking Member McCain:

We are writing on behalf of Morgan Stanley in response to questions e-mailed by staff on September 16, 2014 and September 23, 2014. Morgan Stanley anticipates providing additional responses to staff's questions under separate cover. We have responded to staff's questions in good faith to the best of our ability based on readily accessible data and information. Should additional or revised data or information responsive to the questions come to light, we respectfully request an opportunity to supplement or amend our response as needed.

Below are responses to questions outlined in your staff's September 16, 2014, and September 23, 2014 e-mails for which Morgan Stanley has relevant information.

For approximately the last 15 years, Morgan Stanley has served Emirates Group ("Emirates") by providing a range of banking services to assist in the operation of its successful global airline. One core service provided was financially-settled commodity hedges to provide security against disruptive price movements in the markets. Emirates is a sophisticated market participant that, over the course of its relationship with Morgan Stanley, has worked with the firm to design customized financial products to help it manage complex commodity market risks. Throughout this process, Morgan Stanley operated prudently to manage its risk and conform with all legal and regulatory obligations. After reviewing the available market participants to determine who could meet its needs, Emirates chose to work with Morgan Stanley to manage critical commodity risk exposure.

* * * *

- *Is it accurate that Morgan Stanley's commodities division participated in a series of crude oil hedges with the Emirates Airline from the United Arab Emirates (UAE), to manage the airline's jet fuel price risk?*

Yes.

Wilmer Cutler Pickering Hale & Allen
 Beijing Berlin Boston Brussels Frankfurt

Permanent Subcommittee on Investigations
EXHIBIT #53

Washington, DC 20006
 New York San Francisco
 Palo Alto Waltham Washington
 PSI-MorganStanley-15-000001

Hon. Carl Levin, Chairman
 Hon. John McCain, Ranking Minority Member
 September 29, 2014
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WILMERHALE

- *The hedges were designed and executed by Morgan Stanley's London energy options trading desk.*

Traders based in London and New York offered the product to meet Emirates' views that prices would move within a certain range.

- *The hedges were called "cap-swap double-down extendable" hedges. They involved put and call options as well as other financial instruments.*

The hedges consisted of put options, call options, contracts for differences, and a financial transaction sometimes called a "capped double-down swap" that upon exercise resulted in a combination of a swap and two option positions. Other terms may have been used informally.

- *The hedges were used by the airline for a number of years, from at least 2004 to 2008.*

Yes.

- *The hedges used a set of option contracts to set the expectation that crude oil would trade within a \$30 price range, with the exact prices varying from year to year based on crude oil market prices. If crude oil prices stayed within the specified dollar range, the airline achieved significant cost savings on crude.*

Morgan Stanley agreed on a range with Emirates in line with Emirates' view as to likely oil price movements.

- *At some point, another set of options contracts widened the price range to about \$50.*

The maximum option contract price range between December 2006 and January 2008 was \$39.20.

- *Can you provide a better description of the series of hedges and their component options and swaps?*

Following discussions between Morgan Stanley and Emirates regarding their view on the market and hedging requirements, the entities entered into a financial transaction called a "capped double-down swap." This is a combination of a swap and two option positions where Emirates would buy the swap and sell both a call option and a put option. The effect of selling the call option at a higher strike price would be that the swap protection would then be limited to the difference between the swap price and the call strike price, when prices move above the call strike. The strike price of the put option that is sold is set at the same level as the swap price. The effect of this is that Emirates would be paying out on double the volume hedged when market prices are below the swap price. The premiums generated from the sale of both the call and put options would be embedded into the swap to give a significantly lower swap price than would

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 Hon. John McCain, Ranking Minority Member
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WILMERHALE

otherwise be achieved. The swap price was further reduced in return for Morgan Stanley having the right to extend the structure for an additional one or two years.

- *Each year the hedge was rolled into the new year and reinstated with new price targets.*

No.

- *In 2008, crude oil prices suddenly increased and exceeded the \$120 upper price limit specified in the 2008 hedge.*

The highest price for financially-settled 2008 commodity hedges with Emirates was \$110.

- *Crude oil prices peaked in July 2008 at \$147 and then, over five months, plunged to less than \$70, the lower price limit specified in the 2008 hedge.*

The lowest price for financially-settled commodity hedges with Emirates was \$27.85 for trades initiated between 2004 and 2008 and priced in 2008.

- *At that point, in November 2008, under the hedge, the airline was obligated to buy crude oil from Morgan Stanley at \$70 per barrel, when it was selling in the market for about \$50 per barrel.*

The hedge contracts enabled Emirates to purchase jet fuel from any counterparty, at the prevailing market price. Emirates had an obligation to Morgan Stanley to make cash settlements when the market price of crude oil was below the fixed/strike prices in the various hedge contracts.

- *In early 2009, with crude oil prices in the \$40 range, John Mack and two Morgan Stanley employees flew to Dubai to meet with Emirates Airline management. They met with Sheikh Mohammed bin Rashid, the ruler of UAE, and his uncle Sheikh Ahmed bin Saeed Al Maktoum, head of the airlines. Who were the other two MS employees who flew to Dubai?*

A meeting took place in November 2008 between Sheikh Ahmed bin Saeed Al Maktoum, John Mack, George Makhoul, and Marc Moure.

- *The UAE ruler told the Morgan Stanley representatives that the state would provide financial assistance to the airlines if necessary.*

The Investment Company of Dubai provided a credit guarantee in January 2009.

- *The airline reported fuel-hedging losses of \$428 million in the latter half of 2008 and first half of 2009. Did the airline pay \$428 million to Morgan Stanley? What was the total it paid to Morgan Stanley under the 2008 hedge?*

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WILMERHALE

Emirates paid Morgan Stanley a net of approximately \$440 million for crude oil hedges settled between July 1, 2008, and June 30, 2009. Emirates paid Morgan Stanley a net of approximately \$330 million for the crude oil hedges priced between January 1, 2008 and December 31, 2008.

- *Did the airline stop using the hedge in 2009?*

Hedging activity was reduced in 2009, but some hedges involving financially-settled products continued until 2012.

- *Did Morgan Stanley ever supply the Emirates Airline with jet fuel? If so, please provide details.*

Since 2010, Morgan Stanley has supplied Emirates with physical jet fuel at some U.S. airports.

- *Does Morgan Stanley still enter into hedges with the Emirates Airline to reduce its price risk for jet fuel? If not, when did the relationship end?*

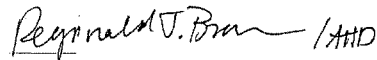
The last hedge trades involving financially-settled products were executed in September 2011, and the last pricing period was March 2012.

* * * *

Redacted By
Permanent Subcommittee on Investigations

Thank you for the opportunity to provide this response.

Sincerely,

 /HAD

Reginald J. Brown
 Alyssa DaCunha



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October 9, 2014

Via Email

The Honorable Carl Levin
Chairman
Permanent Subcommittee on Investigations
SR-199 Russell Senate Office Building
Washington, DC 20510

The Honorable John McCain
Ranking Member
Permanent Subcommittee on Investigations
SR-199 Russell Senate Office Building
Washington, DC 20510

Dear Chairman Levin and Ranking Member McCain:

On behalf of our client, Emirates, we are providing additional information as a follow up to our meeting with your staff on October 1, 2014 and in response to the additional questions we received after that meeting.

Given the breadth of the questions and the length of time they cover, our client is still in the process of collecting relevant information to provide to the Subcommittee. We set forth below answers to questions about jet fuel purchases. By early next week, we anticipate having more detailed information about our client's hedging operations.

Jet Fuel Purchases

As we confirmed for your staff in our meeting on October 1, jet fuel is the biggest single operational expense for the company. Emirates maintains flight operations at nine U.S. airports, including Washington Dulles (IAD), Los Angeles International (LAX), and San Francisco International (SFO). Last financial year, for example, the company purchased approximately \$US 8.53 billion of jet fuel around the world.

44 Offices in 21 Countries

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Permanent Subcommittee on Investigations

EXHIBIT #54

PSI-Emirates-01-000001

Squire Patton Boggs (US) LLP
October 9, 2014

In our meeting and through a series of emails, we were asked about the extent to which our client purchases jet fuel from Morgan Stanley and the nature of that relationship. We hope the following answers are helpful in putting the issue in context.

- How did Morgan Stanley get started supplying jet fuel to the airline? Did Morgan Stanley propose it?

Morgan Stanley participated in a competitive tender for the supply of jet fuel to Emirates at LAX in 2010 and was awarded the contract. Emirates approached Morgan Stanley to participate in that tender as Emirates was aware that Morgan Stanley already was a physical supplier of jet fuel at the airport.

- Of the ten or so US airports used by your airline, how many get jet fuel delivered by Morgan Stanley?

Morgan Stanley currently provides jet fuel to Emirates at LAX, SFO, and IAD. The supply contracts at all three airports are due to expire on October 31, 2014.

- Does the airline have other suppliers of jet fuel in the US?
 - If so, who?
 - If not, who were its key suppliers in the US before Morgan Stanley?

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- Does your airline have a long-term supply contract with Morgan Stanley?
 - If so, please describe its major features.
 - If not, please describe what contractual or other arrangements you use to obtain jet fuel from Morgan Stanley?

Emirates' current agreements with Morgan Stanley for the physical supply of jet fuel at each of the three airports are for two-year terms, all due to expire on October 31, 2014. The contracts cover specific terms as to location, duration, estimated volumes, and price. The contracts are based on a combination of the Morgan Stanley General Terms and Conditions and the Emirates General Terms and Conditions, which is standard practice in the industry.

Squire Patton Boggs (US) LLP
October 9, 2014

- Does Morgan Stanley deliver the jet fuel to particular airports for your airline?
 - If so, which airports?
 - If not, where does it deliver the jet fuel?

Yes, Morgan Stanley supplies jet fuel at the three airports referred to above: LAX, SFO, and IAD. Delivery of the jet fuel is undertaken from the airport storage tanks, through each airport's hydrant system, directly into the aircraft.

- Our understanding is that Morgan Stanley has been providing physical jet fuel to the Emirates Airline in the United States since 2010. Can you confirm?
 - To the extent you are able to provide written information on that issue, it will shorten the call.
 - About how much fuel per year from 2010 to 2013 did your airline obtain from Morgan Stanley?

Morgan Stanley has been supplying jet fuel to Emirates at LAX since 2010 and at SFO and IAD since 2012. Morgan Stanley supplies approximately 15 million gallons per annum at LAX, approximately 15 million gallons per annum at SFO, and approximately 12 million gallons per annum at IAD.

- What are the insurance arrangements for the jet fuel while in transport?

The point of purchase of jet fuel by Emirates is at the airport fuel facility. As a result, Emirates is not involved in any insurance arrangements that Morgan Stanley may have relating to transport of the jet fuel to the airport or elsewhere.

Fuel Hedging Operations

As we advised your staff in our October 1 meeting, Emirates no longer engages in fuel hedging operations. Our client is still in the process of gathering information responsive to your questions regarding its historic hedging operations. As noted above, we anticipate being able to provide that information early next week.

1409

Squire Patton Boggs (US) LLP

October 9, 2014

If you have any additional questions and are unable to reach me for any reason, please contact my partner, Mitchell R. Berger, whose phone number is 202-457-5601 and whose email address is mitchell.berger@squirepb.com.

Thank you again for the opportunity to provide this submission to assist you in your investigation.

Sincerely yours,

Squire Patton Boggs (US) LLP


Jeffrey L. Turner



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October 14, 2014

Via Email

The Honorable Carl Levin
Chairman
Permanent Subcommittee on Investigations
SR-199 Russell Senate Office Building
Washington, DC 20510

The Honorable John McCain
Ranking Member
Permanent Subcommittee on Investigations
SR-199 Russell Senate Office Building
Washington, DC 20510

Dear Chairman Levin and Ranking Member McCain:

On behalf of our client, Emirates, we are providing additional information as a follow up to our meeting with your staff on October 1, 2014 and in response to the additional questions we received after that meeting. This letter supplements our letter of October 9, 2014.

1. Is jet fuel the biggest single operational cost for Emirates Airlines? How big an expense is it on an annual basis?

As we confirmed for your staff in our meeting on October 1 and indicated in our letter of October 9, jet fuel is the biggest single operational expense for the company. For the financial year ended March 2014, the cost of jet fuel totaled US\$ 8.35 billion and represented 39% of Emirates' operating costs.

2. What are Emirates Airlines' hedging goals and about how much does Emirates Airlines typically have to hedge?

Since 2009, Emirates' strategy has been to remain unhedged. As disclosed in the company's latest annual report (page 52), this strategy reflects a view that the balance of risk is considered greater to the downside given historic high jet fuel price levels.

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Prior to 2009, Emirates was more active in its fuel hedging and utilized commodity futures and options to achieve a level of control over jet fuel costs, with the aim that profitability would not be adversely affected if prices rose, nor would the business be denied the benefits if prices fell.

3. How does Emirates Airlines typically hedge your expenses for jet fuel?

The following responses relate to the period prior to 2009, as Emirates is currently not engaged in any fuel hedging.

a. What products do Emirates Airlines use?

Emirates has used a variety of products over the years, including swaps, range swaps, put options, call options, three way options, backwardation swaps, contango swaps, cap double down, crack spread swap, gas oil swap, and range collar/swap.

b. Does Emirates Airlines trade OTC or in exchange listed and cleared products?

Emirates traded over-the-counter products.

c. What are the typical trade sizes for your hedges?

Emirates used a variety of volumes, but most commonly would trade in sizes of 100,000 to 200,000 barrels of West Texas Intermediate (WTI) per month.

d. What are the typical tenors?

The tenors varied, but most commonly were for 12 months.

e. Does Emirates Airlines record hedges in your P&L? If so, how?

Yes, hedges are recorded in the P&L. Emirates follows International Financial Reporting Standards and, in relation to fuel hedging, it applies International Accounting Standard 39. Gains or losses on transactions that qualify as cash flow hedges are recorded in the P&L when the hedged transaction occurs. If transactions do not qualify for cash flow hedging, then changes in the fair value are charged to the P&L immediately.

4. With whom does Emirates Airlines typically hedge your jet fuel expenses? Is it always a bank?

Squire Patton Boggs (US) LLP
October 14, 2014

Emirates typically hedged its jet fuel expenses with banks. Emirates has used a number of counterparties in the past, including Morgan Stanley, Barclays, JP Morgan, and Calyon.

5. Did Morgan Stanley ever provide Emirates with physical jet fuel or did it provide only financial hedges? Please explain.

As further described in our letter of October 9, Morgan Stanley currently supplies physical jet fuel to Emirates at three airports in the United States. This physical supply of jet fuel was subject to a public tender process and is unrelated to our client's previous fuel hedging transactions with Morgan Stanley.

6. How did Emirates Airlines contact with Morgan Stanley begin?

- a. Who initiated contact with whom?

Emirates has been transacting with Morgan Stanley for over a decade, so it is difficult for our client to ascertain exactly how contact was first initiated. Emirates was/is regularly approached by banks offering services, including fuel hedging, and Morgan Stanley was one of a few banks that was used for such services.

- b. Did Emirates Airlines discuss a similar arrangement with other banks? Are you aware of Morgan Stanley having a similar arrangement with any other airlines?

Emirates has used a number of other banks for fuel hedging arrangements, as mentioned above. Our client also is aware that Morgan Stanley was a counterparty with other airlines in fuel hedging transactions, but our client is not privy to any information regarding other airlines' fuel hedging arrangements.

7. Is it accurate to say that Morgan Stanley's commodities division participated in a series of crude oil hedges with Emirates Airlines to manage the airline's jet fuel price risk?

Morgan Stanley participated in many crude oil hedges with Emirates. These hedges were entered into over many years, for different time periods, using a variety of products, and so were not just one series of transactions.

- a. Please describe how the hedge functioned.

As mentioned above, Emirates had numerous transactions in place with Morgan Stanley at any one point in time, entered into in different years, covering different periods into the future. For example, in early 2009 our client had transactions entered into in 2006 to 2008 covering periods up to 2013.

Squire Patton Boggs (US) LLP

October 14, 2014

- i. What was the airline's role, if any, in devising and implementing the hedge?

The hedge products and pricing were devised by Morgan Stanley and presented to Emirates. Emirates decided which of these products best matched its needs, and for what timeframe, and so it was ultimately responsible for implementing the hedge.

- ii. How long was it in place?

As mentioned above, Emirates had multiple hedges in place at any one time, covering multiple future periods.

- iii. How many times was it extended?

Emirates had a number of deals with extension options. Some, but not all, of these options were exercised across different years. The extension options were typically exercisable at one point in time (usually the year-end) with the exercise of the extension dependent upon future prices at that point in time. These options were for periods from 2008 to 2012.

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Emirates used cap-swap double-down extendable hedges as a part of its fuel hedging strategy.

- vii. Did Emirates Airlines make money from the hedge in most years? How much?

Squire Patton Boggs (US) LLP
October 14, 2014

Emirates did make money from its fuel hedging in most years. For example, in the three years preceding the 2008/9 financial year, Emirates' fuel hedging program reduced the airline's fuel bill across that period by over \$600 million (as disclosed in the respective annual reports).

b. Is it correct that in 2008, Emirates Airlines suddenly had to pay money for the hedge to Morgan Stanley?

It is not correct to say that Emirates suddenly had to pay money for the hedges. The settlement of the fuel hedge trades took place on a monthly basis over the period for which the fuel was hedged. While the dramatic fall in prices in 2008 increased the amounts paid by Emirates across these hedges, there was no sudden payment required.

i. How did that happen?

ii. Is it correct that, in 2008, the airline ended up paying about \$428 million to Morgan Stanley under the hedge? [The Secret Club That Rules the World, at 83.]

In our client's 2008/9 financial year (April 1, 2008 to March 31, 2009), Emirates took a charge of \$428 million in its P&L for losses on its fuel risk management program. This charge represents the accounting value of losses, which will not exactly match the cash settlement amounts paid during the same period due to timing differences in settlement. The losses also included counterparties other than Morgan Stanley.

ii. Was this an unusual loss for Emirates Airlines?

Yes, it was unusual. It was the first year since the program had started in which a loss was recorded.

iii. Did this loss threaten the finances of Emirates Airlines?

No. The loss was large and had a material impact on Emirates' annual profit for that financial year, but it did not threaten the long-term financial viability of the airline.

8. Please describe the circumstances surrounding Morgan Stanley's margin call in November 2008.

Emirates' fuel hedging trades with Morgan Stanley were commercial arrangements entered into on industry standard terms, similar to arrangements Emirates used with other banks for fuel hedging transactions. Under these terms, Emirates was required to post collateral (also referred to as a margin call) to the extent that the mark to market value (MTM) of the program exceeded an agreed collateral-free threshold of US\$50 million. With the dramatic drop in fuel prices in

Squire Patton Boggs (US) LLP
October 14, 2014

2008, there was a need to provide collateral to Morgan Stanley in the form of letters of credit (LCs) from Emirates' bankers and/or cash deposits.

a. How much was the margin call reduced?

The margin call was never reduced; this was always based upon a calculation of the MTM value of the program, which was calculated on a weekly basis throughout the duration of the trades. The discussions that took place between Emirates and Morgan Stanley were around the composition of collateral for the margin call, which ordinarily would be met by LCs from banks. As a result of the global banking crisis, LCs from a number of banks used by Emirates, particularly Dubai banks, were no longer acceptable to Morgan Stanley from a credit perspective. Lengthy negotiations took place on finding an acceptable mix of local and international banks to provide LCs for collateral.

b. When was the lower amount put into effect?

As referred to above, there was no negotiation to reduce the margin call in 2008. However, over time as the price of oil stabilized, the MTM value of the program reduced and the overall amount of collateral required to be provided to Morgan Stanley was also reduced in line with these MTM values.

9. We understand that in early 2009, Morgan Stanley's CEO (John Mack) and two senior executives flew to Dubai to meet with airline management and the Sheikh Mohammed bin Rashid Al Maktoum. [The Secret Club That Rules the World, at 81.] Is this correct? Can you discuss the nature of these meetings? Is it true that Sheikh Mohammed bin Rashid Al Maktoum assured Morgan Stanley's executives that the state would provide financial assistance to the airlines if necessary?

Our client understands that such a meeting may have taken place, but Emirates' executives were not informed about the content of the meeting. Our client also believes that executives from other major international banks may also have visited Dubai during 2008/2009.

10. Did the airline stop using the hedge in 2009?

Emirates did not enter into any new fuel hedge trades after 2009. The existing trades with Morgan Stanley were settled as and when they became due.

11. How did it handle its jet fuel hedges after that? Still used MS?

After 2009, Emirates shifted its strategy to an unhedged position, so it has not been hedging with any counterparty.

Squire Patton Boggs (US) LLP

October 14, 2014

12. What is the current relationship between Morgan Stanley and Emirates Airlines?

Emirates is no longer hedging its fuel costs and so it is not trading with Morgan Stanley on the fuel side. Morgan Stanley continues to provide Emirates with information and updates about the oil market, as do other major financial institutions, but our client has no plans to begin hedging with Morgan Stanley at this time.

Emirates currently has no active transactions with Morgan Stanley, other than the supply of physical jet fuel referred to above.

13. Do you believe Emirates Airlines was treated fairly by Morgan Stanley? Why or why not?

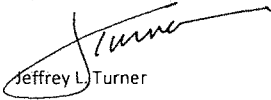
Emirates and Morgan Stanley had a commercial relationship and Emirates entered into transactions with Morgan Stanley based upon its own assessment of the risks. Emirates continued to speak to other banks throughout this period and benchmarked the products and services offered by Morgan Stanley against corresponding offers from other banks. Throughout the duration of the fuel hedging transactions, there were regular meetings between Emirates and Morgan Stanley where briefings were provided about the operation of the hedges and the impact of potential variations in the prices of oil on the program going forward.

If you have any additional questions and are unable to reach me for any reason, please contact my partner, Mitchell R. Berger, whose phone number is 202-457-5601 and whose email address is mitchell.berger@squirepb.com.

Thank you again for the opportunity to provide this submission to assist you in your investigation.

Sincerely yours,

Squire Patton Boggs (US) LLP


Jeffrey L. Turner

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NOTICE

to the

**BOARD OF GOVERNORS OF THE
FEDERAL RESERVE SYSTEM**

by

JPMORGAN CHASE & CO.

**Pursuant to Section 4(k)(1)(B) of the
Bank Holding Company Act of 1956,**

as amended, and

12 C.F.R. §225.89

Submitted

July 21, 2005

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**NOTICE
to the
BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM
(the “Board”)
by**

JPMORGAN CHASE & CO.

**Pursuant to Section 4(k)(1)(B) of the
Bank Holding Company Act of 1956,
as amended (the “BHCA”), and
Section 225.89 of the Board’s Regulation Y**

JPMorgan Chase & Co. (“JPM Chase”) respectfully gives notice to the Board, pursuant to Section 4(k)(1)(B) of the BHCA, that JPM Chase intends to expand its current trading activities in commodities derivatives contracts based on nonfinancial assets by entering into contracts that may require JPM Chase to make or take physical delivery of, or store, commodities, as further described in Section II.A.1. below. In order to expand its current trading activities in this manner, JPM Chase asks the Board to grant it the approval given by the Board to Barclays Bank PLC, UBS AG and Citigroup under Section 225.89 of the Board’s Regulation Y to purchase and sell commodities in the spot market and to make and take physical delivery of, or store, commodities to settle commodities derivatives contracts based on nonfinancial assets (the “*Complementary Activities*”) worldwide.¹ JPM Chase asserts that its exercise of the Complementary Activities would be complementary to a financial activity and would not pose a substantial risk to the safety or soundness of depository institutions or the financial system generally.

¹ Barclays Bank PLC, 90 Fed. Res. Bull. 511 (2004) (the “*Barclays Order*”); UBS AG, 90 Fed. Res. Bull. 215 (2004) (the “*UBS Order*”); Citigroup, 89 Fed. Res. Bull. 508 (2003) (the “*Citigroup Order*”).

Confidential Treatment Requested**I. Background**

JPM Chase is a financial holding company engaged primarily in banking, investment banking and asset management. Its lead bank subsidiary, JPMorgan Chase Bank, N.A. ("JPMCB"), is a national bank chartered by the Office of the Comptroller of the Currency ("OCC") offering a wide range of banking services to its customers, both domestically and internationally. JPMCB is one of the world's leading derivatives dealers, with a growing focus on commodities derivatives activities.

JPMCB engages in financially settled swaps, options, forwards and structured transactions involving the following commodities: oil and oil-based products, natural gas, base metals, precious metals, agricultural and soft commodities, and commodity indices. JPMCB currently has approximately 40 front office employees involved in commodities trading activities, and that number is expected to grow to 55 by year-end.

JPMCB engages in commodities derivatives activities pursuant to authority granted to its predecessor institutions, Morgan Guaranty Trust Company of New York, The Chase Manhattan Bank and Bank One, NA, by the New York State Banking Department and the OCC. As required by those approvals, JPMCB's commodity derivatives activities are customer-driven and are subject to comprehensive policies and procedures addressing all risks arising from the approved commodities derivatives activities. In addition, JPMCB's role is limited to acting as financial

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intermediary and it may not make or take of physical delivery of any commodity except as an incident to that role.

In the fall of 2003, the JPM Investment Bank Executive Committee decided to expand the energy business. The desire to expand is driven by developments in the market that introduce opportunities, and increase demand, for financial intermediation. Financial firms, such as JPM Chase, have a unique opportunity to enter the trading arena, as the collapse of many of the trading participants has resulted in significant demand for creditworthy firms capable of providing energy-linked trading products and risk management solutions to investment-grade clients. JPM Chase has existing relationships with many of these clients and can assist them with management of their energy and power risks.

In light of this, JPM Chase now proposes to expand its commodities derivatives activities to include physical transactions in the natural gas, crude oil and emissions allowance² markets in the United States and will use JPMorgan Ventures Energy Corporation ("JPMVEC") to facilitate the expansion of its physical energy trading business. Some of these transactions will require JPMVEC to make or take

² An emission allowance is an intangible right granted by the Environmental Protection Agency ("EPA") to release one ton of pollution during a given year (the "vintage year") or any year thereafter. An allowance can be bought, sold or exchanged by individuals, brokers, corporations or government entities. JPM Chase plans to provide derivative products linked to publicly available emission allowance price indices, such as NOX SIP call allowances and the EPA Acid Rain Program SO2 allowances, to enable its customers to manage more effectively the costs of emission allowances.

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physical delivery of, and in some instances store, natural gas, crude oil, or emissions allowances, as described in more detail below in Section II.A.1.³

II. Discussion

A. Identify and define the proposed complementary activity, specifically describing what the activity would involve and how the activity would be conducted. (Section 225.89(a)(1))

1. Description of the Complementary Activities

JPM Chase proposes to engage in the Complementary Activities as a complement to its current trading activities in commodities derivatives contracts based on nonfinancial assets (the “*Existing Business*”).⁴ The Complementary Activities will expand the Existing Business to include entering into contracts that may require JPM Chase to make or take physical delivery of, or store, commodities (the “*Expansion*”). Initially, JPM Chase intends only to make or take delivery of, or store, natural gas, crude oil and emissions allowances (each, a “*Physical Commodity*”, and collectively, the “*Physical Commodities*”), but may in the future expand into other physical commodities. The Expansion will consist of trading the Physical Commodities in the spot market, entering into physically settled commodities derivatives contracts and entering into

³ JPMCB has applied to the OCC for approval to enter into (i) cash-settled derivative transactions in natural gas, crude oil, power, coal and emissions; (ii) physically-settled transactions in the form of transitory title transfers in natural gas, crude oil, power, emissions and coal; and (iii) physical commodity transactions in natural gas, crude oil, coal and emissions as an incident to its commodities derivatives activities. A copy of JPMCB’s application to the OCC, including responses to questions asked by staff of the OCC, is included in Confidential Annex A.

⁴ The Existing Business conforms to the requirements of Section 225.28(b)(8)(ii)(B) of the Board’s Regulation Y.

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structured financing transactions to assist its customers in managing their commodities risk.

Trading Activities. JPM Chase intends to engage in trading of swap, option, forward, futures and similar contracts as principal with counterparties to buy and sell the Physical Commodities. Many of JPM Chase's contracts will close out on a financial basis without requiring delivery of the Physical Commodities, or JPM Chase will take title to the Physical Commodities as a participant in a delivery chain as legal title is transferred "instantaneously" from party to party. In other circumstances, to the extent applicable, JPM Chase will arrange to transport the Physical Commodities from one marketplace to another marketplace on an instantaneous transfer basis by entering into agreements with third-party pipeline operators to transport the Physical Commodities. Each of these transactions would be permissible under Regulation Y as cash-settled or instantaneous transfer transactions.

There may be periods of time, however, with respect to certain of the Physical Commodities, when JPM Chase's withdrawals from and deliveries to a pipeline at a specific delivery point are not balanced. Such imbalances may occur because a counterparty fails to deliver or receive a Physical Commodity sold to it by JPM Chase. The Complementary Activities may include managing such short-term imbalances by utilizing the imbalance management service (known generally as a "park and loan service") provided as part of pipeline tariffs to enable market participants to manage operational imbalances and avoid imbalance charges. When utilizing these services, JPM Chase will take title to the Physical Commodity for a relatively short period of time.

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Storage Transactions. The Complementary Activities also may include long-term park transactions whereby JPM Chase would deliver a Physical Commodity to a pipeline that would hold the Physical Commodity in a JPM Chase account for redelivery in some forward timeframe, *e.g.*, the following month. JPM Chase might choose to enter into such a transaction to hedge another of its positions, thereby capturing the “spread” between the current market price and that of a forward obligation.

JPM Chase also may elect to enter into a Physical Commodity storage arrangement with a pipeline or storage facility wherein JPM Chase would cause to be delivered a pre-determined quantity of a Physical Commodity pursuant to an “injection” schedule. That Physical Commodity would be held in the storage field (in the possession and control of the pipeline or storage operator) under a JPM Chase account for “withdrawal” on a predetermined schedule. This type of transaction would allow JPM Chase to inject the Physical Commodity into an account during a period when prices may be lower, which then could be sold into the market during periods of higher demand and, presumably, higher prices.

Structured Financing Transactions. JPM Chase also intends to participate as principal in structured financing transactions on behalf of its clients. Such transactions could require JPM Chase to hold title to Physical Commodities or to interests in physical reserves or inventories and would include storage monetization transactions, Volumetric Production Payment transactions (a “VPP”) and inventory financings.

Spot Emissions Allowances. JPM Chase intends to purchase and hold spot emissions allowances as hedges for emission derivative contracts or to generate revenue

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and improve its understanding of the emissions allowance market, enabling it to better serve its customers. In addition, JPM Chase intends to take physical delivery of emissions allowances in settlement of emissions derivative contracts. Emissions allowances are held in "book entry" form in an account at the EPA or other government agency and are transferred via allowance transfer forms. Additional information regarding the market and settlement procedures for emissions allowances may be found in the OCC Application included in Confidential Annex A.

2. Rationale for Expansion

The Expansion is a natural avenue for growth for the Existing Business. Increasingly, customers for commodities risk management services prefer to work with a single provider who can structure transactions for all of the major types of commodities using the full range of structures, including upon occasion structures that require the taking of physical delivery, or storage, of commodities. As in any competitive market, JPM Chase must be able to provide these services in a cost-effective and efficient manner that is consistent with existing market practice. In short, to be an effective competitor in the market for commodities risk management services, JPM Chase must have the capability and flexibility to engage in the Complementary Activities. A further discussion of the rationale behind the Expansion and the ways in which it will complement the Existing Business is provided below in Section II.B.

3. New Product Approval Process

The expansion into physically-settled commodities derivatives will go through a rigorous new product approval ("NPA") process. The NPA process will verify

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that the risks associated with the Complementary Activities are identified, analyzed, understood and documented with control processes in place prior to introduction. Responsibility and accountability will be defined at each step of the process with critical personnel and procedures in place prior to the launch of the Complementary Activities. NPA documentation for the Complementary Activities is in the process of being prepared. Concurrently, the front office is in the process of introducing the product and the key risks to staff areas, and this coupled with the NPA process will ensure that risk management and control issues are identified and addressed in a timely manner. The NPA documentation relating to JPMVEC's SO2 emissions allowance trading has been completed and a copy is included in Confidential Annex B. A copy of JPMCB's New Product Approval Policy is included in Confidential Annex C.

4. **Organization of Commodities Trading Activities**

A business organization chart showing the entities that will participate in the Complementary Activities is attached hereto as Confidential Annex D. The counterparty with respect to the Complementary Activities will be JPMVEC. On a counterparty by counterparty basis, JPM Chase may guarantee JPMVEC's obligations arising from the Complementary Activities.

JPMVEC front office employees will also be employees of JPMCB. Administrative and operational support for JPMVEC will be provided by JPMCB under a service agreement. Fees paid by JPMVEC pursuant to the service agreement will be equal to the actual costs incurred by JPMCB in providing those services plus a mark-up, which will be negotiated with JPMVEC. The fee arrangement and other terms and

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conditions of the JPMVEC service agreement will be at least as favorable to JPMCB as those in the service agreements with its other affiliates.⁵

JPMVEC also will have the authority to execute specified transactions with pre-approved counterparties on behalf of JPMCB and may engage in transactions with JPMCB to hedge JPMCB customer-driven transactions. The agency relationship between JPMVEC and JPMCB will be memorialized in a written agreement that will allow JPMVEC to negotiate with pre-approved third parties regarding the type, size and price of a commodity derivatives transaction for the account of JPMCB. In each case, JPMVEC will execute a transaction on behalf of JPMCB, subject to verification by JPMCB that the transaction conforms to agreed parameters and includes an approved counterparty. JPMCB will then enter into a perfectly matched transaction with JPMVEC to hedge JPMCB's market risk. The fee arrangement between JPMVEC and JPMCB will conform to Section 23B of the Federal Reserve Act and the Board's Regulation W.

B. Identify the financial activity for which the proposed activity would be complementary and provide detailed information sufficient to support a finding that the proposed activity should be considered complementary to the identified financial activity. (Section 225.89(a)(2))

1. Description of the Existing Business

JPM Chase is currently active in the global financial derivatives markets for a wide range of commodities. JPM Chase engages through JPMCB in customer-driven commodity-related transactions, including (i) cash-settled derivative transactions

⁵ The OCC is reviewing the proposed arrangements between JPMVEC and JPMCB in connection with JPMCB's application to engage in certain commodities-related activities. A detailed

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in energy (crude oil, refined oil products, natural gas and power), base metals, precious metals and certain agricultural and soft commodities, (ii) physically-settled derivative transactions involving taking title to and physical delivery of commodities in order to hedge exposure arising from other permissible banking activities (energy, base metals and precious metals), (iii) repurchase agreements involving energy, base metals and precious metals, (iv) perfectly matched physical spot and forward contracts on energy and base metals, and (v) prepaid forward contracts involving energy, base metals and precious metals.

JPMVEC currently engages in cash-settled or transitory title commodities derivatives transactions in the emissions allowance market and plans to expand those activities to include physical commodities transactions involving crude oil, natural gas and coal. All of JPMVEC's existing business is permissible under Section 225.28(b)(8)(ii)(B) of Regulation Y.

2. **Complementary Nature of the Complementary Activities**

JPM Chase submits that the Complementary Activities are "complementary" to a financial activity under Section 4(k)(1)(B) of the BHCA because there is a strong connection between the Existing Business, which is the financial activity of trading nonfinancial commodities contracts, and the making or taking of physical delivery, or storing, of the underlying commodity.⁶ The principal purpose of JPM

discussion of those arrangements may be found in the OCC Application included in Confidential Annex A.

⁶ The Complementary Activities have been found by the Board to be complementary to the financial activity of trading nonfinancial commodities derivatives contracts. See Barclays Order; UBS Order; Citigroup Order.

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Chase's involvement in physical markets is to service client demand and to complement existing financial trading activities.

To compete effectively in the Existing Business, JPM Chase must have the ability to enter into physically settled transactions and be prepared upon occasion to make or take physical delivery of, or store, the underlying commodity. Currently, JPM Chase sometimes has to decline to enter into physically-settled transactions except when such transactions fall under Regulation Y. The Complementary Activities will allow JPM Chase to fully participate in the commodities derivatives markets, conducting the Existing Business in a more cost efficient manner and offering more competitive prices to its clients.

In addition, JPM Chase will be able to structure transactions consistent with prevailing market practice, even if that market practice requires JPM Chase to make or take physical delivery of the underlying commodity. JPM Chase, and more importantly its clients, will no longer have to structure transactions to avoid physical delivery, thereby incurring additional costs. Furthermore, JPM Chase will be able to hedge its commodities derivatives positions more effectively and cheaply, generating cost savings that JPM Chase can pass on to its clients.

The Complementary Activities will allow JPM Chase to provide risk management services that more effectively meet clients' demands. Clients often seek to obtain cheap, efficient and naturally-hedged financing by securing their borrowing requirements with physical commodities. Market practice and client need dictate the structure of these financing transactions, and require that JPM Chase have the ability to

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hold title to physical commodities or to interests in physical reserves or inventories. Offering this service is fundamental to maintaining JPM Chase's on-going banking and lending relationships with its clients and its ability to serve as the one-stop financial services provider that its clients and the financial markets increasingly demand. This added flexibility to take title to, or store, the underlying commodity or interests in physical reserves or inventories will allow JPM Chase to structure transactions in a way that best serves customers' risk management needs and assists them in optimizing their energy assets without altering existing market practice.

The Complementary Activities will further complement the Existing Business by providing JPM Chase with important market information. The ability to make or take physical delivery of, or store, commodities will position JPM Chase in the supply end of the commodities markets, which in turn will provide access to information regarding the full array of actual producer and end-user activity in those markets. The information gathered through this increased market participation will help improve projections of forward and financial activity and supply vital price and risk management information that JPM Chase can use to improve its financial commodities derivative offerings.

C. Describe the scope and relative size of the proposed activity, as measured by the percentage of the projected financial holding company revenues expected to be derived from and assets associated with conducting the activity. (Section 225.89(a)(3))

JPM Chase estimates that it will generate approximately \$20 million in revenue from the Complementary Activities in 2006. It estimates that revenues from these activities will rise to approximately \$38 million in 2007 and \$50 million in 2008.

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These revenues are expected to constitute approximately 10% of the overall revenues for the Global Commodity Group in 2006, 14% in 2007 and 14.3% in 2008.

As discussed in Section III., JPM Chase would limit its holdings of physical commodities at any one time to 5% of Tier 1 Capital or \$3.472 billion; this would represent 0.3% of JPM Chase's total assets as of December 31, 2004.

Typically, JPM Chase would only own a specified quantity of a Physical Commodity as a result of entering into trading and structured financing transactions. The length of time such Physical Commodity is held depends on the transaction in question. On a day-to-day basis, JPM Chase estimates that the percentage of transactions involving physical delivery where JPM Chase would hold title to and store a Physical Commodity for more than one day will be a small percentage (less than 5%) of its total annual trading volume for the Physical Commodities.

D. Discuss the risks that conducting the activity may reasonably be expected to pose to the safety and soundness of the subsidiary depository institutions of the financial holding company and to the financial system generally. (Section 225.89(a)(4))

The major risks associated with the trading of physically-settled commodities contracts are broadly similar to those taken when trading cash-settled commodities contracts. These risks include market risk, credit risk, operational risk, liability risk and reputational risk. These risks will be managed by JPM Chase applying the policies, procedures and controls that govern the Existing Business, which include the conditions to these activities set out by the OCC in BC-277 and the OCC Derivatives Handbook. As noted above, operational and administrative support for the

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Complementary Activities will be provided by JPMCB to JPMVEC pursuant to a service agreement.

Market Risk. Exposure to adverse movements in the level or volatility of market prices is measured and controlled primarily through the use of a value-at-risk (“VaR”) approach. JPM Chase has established a daily VaR limit for the Global Commodity Group of JPM Chase of \$15 million, of which \$10 million has been allocated to JPMVEC. This limit is reviewed periodically. JPM Chase manages its market risk across the entire Global Commodity Group and does not set VaR limits for specific business lines within the Group. In fact, the activities in one business line, such as the Complementary Activities, may offset risk incurred in another line and lead to a decrease in the overall VaR of the Group. JPM Chase does establish position limits (delta, gamma and vega limits) for each underlying commodity that is part of its commodities trading business and that will apply to the Complementary Activities.

Credit Risk. JPM Chase’s credit process for commodity derivative transactions is the same as that for all over-the-counter derivative transactions it executes. Before a transaction can be executed with a counterparty, a credit line must be established for the counterparty. In almost all cases, the credit officer with responsibility for the counterparty establishes the credit line. When a derivative transaction is proposed with a counterparty, the derivative marketer calculates the derivative risk equivalent (“DRE”) of the transaction, which is the loan-equivalent credit exposure that the transaction is expected to generate. The DRE counts against the overall credit line to the counterparty. When a derivative transaction is executed with a counterparty, a credit

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valuation adjustment ("CVA") is calculated, and the line of business that executed the transaction then pays the CVA, either upfront or on a pay-as-you-go basis, to JPM Chase's Credit Portfolio Group ("CPG") as consideration for CPG providing default protection to the line of business should the counterparty default and owe a termination payment to the line of business. The CVA represents the counterparty credit charge to the line of business arising from the transaction with the counterparty.

Operational Risk. JPM Chase will be exposed to the risks associated with transporting and storing physical commodities.⁷ JPM Chase will insure that it manages in a safe and sound manner the particular risks that arise in owning physical commodities. For natural gas and crude oil, JPM Chase will use appropriate storage facilities and means of transportation that are owned and operated by unaffiliated entities selected on the basis of experience, reputation, safety record, adequate insurance and creditworthiness. JPM Chase will also use independent inspectors to inspect and determine the quantity, quality and other specifications of the natural gas and crude oil. For emissions, JPM Chase will establish a general account with the EPA through which physical transactions will settle.

Liability Risk. Another risk associated with transporting or storing physical commodities is the risk of a malfunction or an accident resulting in personal injury or property damage. In general, the terms of any contract with the third party

⁷ Emissions allowances are not transported and stored like physical commodities. Transfer of emissions allowances is done via allowance transfer forms filed with the EPA and other government agencies. As a result, trading of emissions allowances does not create the same operational and liability risks as trading of physical commodities.

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operator of the facility would allocate these liability risks associated with physical ownership to the operator. While at times JPM Chase will enter into transactions that involve the actual acceptance by JPM Chase of physical deliveries or storage, JPM Chase does not expect to own, control or operate entities in the United States that are involved in the production, distribution, storage or processing of physical commodities for the purposes of engaging in the underlying commercial activity.

Reputational Risk. JPM Chase has several policies in place to address the reputational risk of the Complementary Activities. JPM Chase has a policy entitled “Heightened Risk Transactions with Investment Bank Clients” (included in Confidential Annex E) that defines what constitutes a Heightened Risk Transaction, which is the term JPM Chase uses for a complex structured finance transaction, focuses on the reputational risk in these transactions and explains the importance to JPM Chase of properly reviewing these transactions. Heightened Risk Transactions are escalated for review to the regional Reputation Risk Committee (there are three, in the Americas, Europe and Asia). JPM Chase has a policy describing the roles, responsibilities and procedures of each Reputation Risk Committee (formerly known as the Policy Review Committee). JPM Chase also has a Know Your Customer Policy that further establishes procedures to safeguard JPM Chase’s reputation. In addition, the line of business responsible for marketing and executing transactions is subject to the Appropriateness Policy (included in Confidential Annex F). This policy provides a framework for approving and monitoring all transactions executed by the line of business, including Heightened Risk Transactions, based on customer sophistication and product complexity. JPM Chase has

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a New Product Approval Policy (included in Confidential Annex C), to which the Complementary Activities would be subject. This policy is designed to ensure that all the risks associated with new products are identified, analyzed, understood and documented with control processes prior to execution.

- E. Describe the potential adverse effects, including potential conflicts of interest, decreased or unfair competition, or other risks, that conducting the activity could raise, and explain the measures the financial holding company proposes to take to address those potential effects. (Section 225.89(a)(5))**

The potential adverse effects associated with the Complementary Activities should be minimal and can be mitigated by JPM Chase's existing control and risk management infrastructure.

Competition. JPM Chase intends to build on its existing commodities derivatives trading business for its proposed Expansion. A number of financial intermediaries already provide global commodities risk management services. In addition to investment banks such as Morgan Stanley and Goldman Sachs, both of whom are well-entrenched participants in the global commodities derivatives markets, a number of other bank and financial holding companies already participate in the commodities derivatives markets or are planning to do so, including Barclays Bank PLC, UBS, Bank of America and Citigroup. In fact, JPM Chase's proposed Expansion should increase competition by making JPM Chase a more efficient competitor that can offer cost-efficient and individually tailored risk management services that better meet the needs of its clients, while also supplying additional liquidity to the physical commodities markets.

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Additionally, competition in the market will increase because JPM Chase will be able to enter into transactions from which it is currently precluded.

Conflicts of Interest. Potential conflicts of interest could develop between different business groups within JPM Chase if, for example, JPM Chase is advising a client with a managed account regarding transactions in securities of a public utility while purchasing commodities from or storing commodities with the same public utility. The individual JPM Chase employees filling each of these roles and the interests of the customers that they serve, whether internal or external, will differ. To prevent these conflicts of interest from adversely impacting the market, JPM Chase has developed and refined through experience several procedures, including the institution of information barriers between the trading and advising divisions of its business. Furthermore, when acting as a fiduciary, JPM Chase is required to act in the best interests of the client and its actions as a fiduciary will be closely scrutinized by examiners.

Market Manipulation. JPM Chase does not currently intend to operate or control facilities in the United States that extract, transport, store or distribute physical commodities with the intent to engage in these activities on a commercial basis. In addition, currently JPM Chase does not itself process, refine, store or otherwise alter physical commodities and will not be an end-user of physical commodities in the United States.⁸ JPM Chase's limited role in the commodities markets will limit the

⁸ In the normal course of its business, JPM Chase holds securities of facilities that extract, transport, store, distribute, process, refine, store or otherwise alter commodities. However, in these instances, JPM Chase would not manage or control the business with the intent to engage in a commercial activity. See Application of JPMCB for Market-Based Rate Authority filed with the Federal Energy Regulatory Commission ("FERC"), and related Order, included in Public Annex A.

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opportunities, and more importantly the incentives, that JPM Chase might have to engage in any price manipulation, either directly or indirectly. As a financial holding company, JPM Chase must comply, and has a policy of full compliance, with the regulatory and supervisory regimes of several regulators, as discussed below, which further reduces the likelihood that JPM Chase or a JPM Chase employee would be able to engage in any form of market manipulation.

Regulation. The physical commodities markets are further protected from the adverse effects of unfair competition, conflicts of interest or market manipulation because financial institutions, such as JPM Chase, and the commodities markets are subject to extensive regulation. JPMCB is subject to regulation by the Office of the Comptroller of the Currency in the United States. JPM Chase's U.S. securities activities are subject to the regulatory oversight of the Securities and Exchange Commission, the New York Stock Exchange and the National Association of Securities Dealers. Its activities in U.S. commodities markets are additionally overseen by the Commodity Futures Trading Commission ("CFTC"), the National Futures Association and applicable futures exchanges, and its power marketing activities are overseen by FERC.

F. Describe the potential benefits to the public, such as greater convenience, increased competition, or gains in efficiency, that the proposal reasonably can be expected to produce. (Section 225.89(a)(6))

The Complementary Activities should provide significant benefits to the public by providing a greater variety of risk management tools that are more efficiently structured to meet customer needs, increasing competition and liquidity in the physical

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commodities markets and reducing JPM Chase's risk exposure associated with its commodities derivatives contracts.

Authorizing JPM Chase to take physical delivery of, or store, commodities as part of the Complementary Activities would allow JPM Chase to more efficiently provide a full-range of commodities-related services to its customers. JPM Chase would be able to tailor its products and services more closely to its customers' risk management needs without having to structure the transactions to prevent taking delivery of the underlying physical commodity. Also, the requested authority would allow JPM Chase to offer its customers financing opportunities that would help them to manage their liquidity needs.

The ability to engage in the Complementary Activities will help JPM Chase avoid the extra costs that are imposed on non-standard transactions. When standard market practices typically call for commodities derivative contracts to physically settle, JPM Chase would have to pay a premium or accept a discount in order to structure a transaction that would normally be a physically settled transaction as a cash-settled transaction. JPM Chase might be forced to cover and exit a transaction to avoid making or taking delivery of the underlying physical commodity, again incurring additional costs that provide no additional risk protection to its client.

The Complementary Activities would eliminate the disadvantage that JPM Chase currently faced in competing with other financial holding companies that have already received approval from the Board to make or take delivery of physical commodities, as well as other financial intermediaries that provide global commodities

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risk management services. As discussed above in Sections II. A. and B., as companies look for more sophisticated risk management tools and become more comfortable with participating in the commodities derivatives markets, they are looking for a single provider that can meet all of their trading needs, including on those occasions when those needs are best met by a physically settled transaction.

The addition of a new financially sound and well-capitalized counterparty such as JPM Chase will add needed liquidity to the commodities derivatives markets. With Tier 1 capital of \$69.435 billion and total assets of \$1.1 trillion as of December 31, 2004, JPM Chase has the resources to handle large and complex transactions that few other organizations can match.

Finally, the Complementary Activities would reduce JPM Chase's risk exposure associated with its commodities derivatives contracts. JPM Chase would have an alternative method of fulfilling its obligations under otherwise permissible commodities derivatives contracts, by making or taking physical delivery of, or storing, commodities underlying the contracts. It would, therefore, be able to manage its delivery and receipt obligations under commodities derivatives contracts more efficiently and hedge its commodities derivatives positions more effectively. By participating in the widest possible variety of commodities markets and transactions, JPM Chase will gain access to price and related market information and acquire more experience in the markets for physical commodities that it can use to better serve its customers, which will lead to increased revenues and lower costs, all of which will improve JPM Chase's profitability and enhance its soundness. Finally, as a more effective competitor, JPM

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Chase will be better able to win business from new clients, resulting in more diversified credit exposure for JPM Chase, both in terms of markets and customer base.

G. Provide any information about the financial and managerial resources of the financial holding company and any other information requested by the Board. (Section 225.89(a)(7))

A list of the key personnel involved in the Complementary Activities and a description of their background is included in this submission as Confidential Annex G. A copy of the 2004 Annual Report of JPM Chase is included as Public Annex B.

III. Commitments

A. Limit amount of commodities held to 5 % of consolidated Tier 1 Capital.

JPM Chase commits to the Board that it will limit the amount of physical commodities that it holds at any one time to 5% of its consolidated Tier 1 Capital. JPM Chase Tier 1 Capital as of December 31, 2004 is \$69.435 billion. Five percent of that number would be \$3.472 billion.

B. Assure proper risk management and controls.

JPM Chase commits to the Board that it will assure proper risk management and controls over the Complementary Activities.

C. Limit physical delivery or storage to commodities for which contracts have been authorized for trading on U.S. futures exchanges by the CFTC.

JPM Chase commits to the Board that it will make and take physical delivery of, or store, only commodities, such as natural gas, crude oil, and emissions allowances, that have been approved by the CFTC for trading on U.S. futures exchanges.

Confidential Treatment Requested

- D.** Will not acquire or operate facilities in the United States for the extraction, transportation, storage or distribution of commodities.

JPM Chase commits to the Board that it will not acquire or operate facilities in the United States for the extraction, transportation, storage or distribution of commodities. This is not intended to restrict JPM Chase's ability to acquire such facilities in satisfaction of debts previously contracted or in connection with a nonperforming loan or to invest in shares of companies or other entities that own or operate such facilities when such investment is otherwise permissible for a financial holding company. JPM Chase will not hold any such interest as a means to engage in the underlying commercial activity.

- E.** Will not process, refine, store or otherwise alter commodities in the United States.

JPM Chase will act solely as a financial intermediary in the physical commodities markets and will not use, process, refine, store or otherwise alter a physical commodity itself in the United States. It will contract with a third party for any services that it needs in connection with the handling of any commodity.

- F.** Will use appropriate storage and transportation facilities owned and operated by third parties in the United States.

JPM Chase will only use storage and transportation facilities owned and operated by third parties in the United States. It will enter into service agreements only with accredited, reputable independent third party facilities.

IV. Conclusion

For the reasons set forth above, we believe that the manner in which JPM Chase will conduct its physically settled transactions in the commodities derivatives markets, as described and subject to the exceptions listed herein, is fully consistent with a complementary activity and will not pose a risk to the safety and soundness of depository

Confidential Treatment Requested

institutions or the financial system in general. Therefore, we respectfully request that the Board exercise its discretionary authority to authorize JPM Chase to engage in the Complementary Activities as a complementary activity to its commodities derivatives activities based on nonfinancial commodities, subject to the commitments contained herein.

NOTICE
to the
BOARD OF GOVERNORS OF THE
FEDERAL RESERVE SYSTEM
by
JPMORGAN CHASE & CO.

Pursuant to Section 4(k)(1)(B) of the
Bank Holding Company Act of 1956,
as amended, and
12 C.F.R. §225.89

Submitted
November 25, 2008

1443

NOTICE
to the
BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM
(the “Board”)
by
JPMORGAN CHASE & CO.

Pursuant to Section 4(k)(1)(B) of the
Bank Holding Company Act of 1956,
as amended (the “BHCA”), and
Section 225.89 of the Board’s Regulation Y

JPMorgan Chase & Co. (“JPM Chase”) respectfully gives notice to the Board, pursuant to Section 4(k)(1)(B) of the BHCA, that its wholly owned non-banking subsidiary, J.P. Morgan Ventures Energy Corporation (“JPMVEC”), requests relief from a commitment JPMVEC has made in connection with the conduct of its current commodity trading activities to not process, refine or otherwise alter commodities. In order to grant such relief to JPMVEC, JPM Chase asks the Board to grant JPMVEC approval under Section 225.89 of the Board’s Regulation Y to contract with third parties to alter commodities on behalf of JPMVEC as described herein (the “*Complementary Activity*”). JPM Chase asserts that JPMVEC’s exercise of the Complementary Activity would be complementary to a financial activity and would not pose a substantial risk to the safety or soundness of depository institutions or the financial system generally.

I. Request and Background

JPM Chase is a financial holding company engaged primarily in banking, investment banking and asset management. As a part of JPM Chase's business, JPMVEC enters into commodity derivatives contracts based on non-financial commodities, and makes and takes physical delivery and/or stores the underlying commodities, as permitted by Section 225.28(b)(8)(ii)(B) of the Board's Regulation Y and as previously approved for JPM Chase under Section 225.89 of the Board's Regulation Y (collectively, the "*Existing Business*").¹

JPMVEC now proposes to expand its Existing Business to include the ability to engage a third party to blend, refine or otherwise alter a commodity on its behalf. Blending, in general terms, is the amalgamation of two or more different grades of a commodity, usually oil or coal, to derive a grade that conforms to specific standards of countries, regions or customers. For example, within the oil barrel there are a number of different grades/specifications in crude oil, heating oil, diesel, and gasoline. Some of the key differing characteristics in these grades are physical properties such as density, sulfur content, flash point, viscosity, distillation, cloud point and filter plugging point. Because of different environmental regulations, every country has its own version of diesel, gasoline, heating oil or fuel oil specification. Russian gasoil does not meet US heating oil standards and needs to be blended with kerosene to achieve US-approved

¹ JPMorgan Chase & Co., 91 Fed. Res. Bull. C57 (2006); C54 (2005);

quality. Similarly, US diesel does not meet European specifications. Hence, in order for JPMVEC to participate in the flow of refined product across different countries and regions and thus meet customer demand, it needs the ability to contract third parties to blend on its behalf.

In the context of oil products, the process of blending for JPMVEC can occur in one of three ways:

1. Blending in storage tanks (most common) – JPMVEC has customer interest in a product C that has certain physical characteristics. C can be produced by blending product from two storage tanks, A and B, each of which has product of differing grades and specifications. The contents of these tanks are individually tested by an independent inspection company who arrives at a theoretical model of what blend needs to be in order for $A+B = C$. Once tested accurately in a laboratory, which is near the storage terminal, JPMVEC instructs the storage terminal, which is an independent third party, to pump the modeled percentages of oil from A and B into a tank that will hold C, which is the blended quality we wish to achieve to meet the customer demand.

2. Inline Blending – Moving oil from storage tanks A and B and blending in pipeline such that the required specification is discharged directly onboard a vessel. The inspector would test the quality of the blend onboard the vessel. Again, all the activities would be performed by independent third parties. JPMVEC may occasionally participate in inline blending.

3. Blending onboard maritime vessels (least common practice) – JPMVEC likely will not participate in this form of blending.

A different example of altering a commodity occurs when an entity purchases dirt or rock metal nodes that contain a variety of metals. The purchaser ships the nodes to a smelter, a metal refinery, where, pursuant to a contract, they are refined by the smelter for the account of the purchaser into copper and into concentrate, which are then sold by the purchaser to third parties. JPMVEC seeks to contract third parties to alter commodities in this respect in order to meet customer demand.

II. Discussion

The Board has previously determined that the engaging a third party to blend, refine or otherwise alter (collectively, for purposes of this Notice, “alter”) a commodity is consistent with the Existing Business.² JPMVEC will conduct the Complementary Activity in the same manner as that approved in the RBS Order.

III. Commitments

In connection with its request for relief to conduct the Complementary Activity, JPMVEC makes the following commitments:

- A. JPMVEC will not alter a commodity itself;
- B. Both the commodity input and the resulting altered commodity will be permissible commodities under the Board’s decisions;
- C. JPMVEC will not have exclusive rights to use the alteration facility.

IV. Conclusion

For the reasons set forth above, we believe that the manner in which

² The Royal Bank of Scotland Group plc, 94 Federal Reserve Bulletin C60 (2008) (the “RBS Order”).

JPMVEC will engage third parties to alter commodities on its behalf, as described, is fully consistent with a complementary activity and will not pose a risk to the safety and soundness of depository institutions or the financial system in general. Therefore, we respectfully request that the Board exercise its discretionary authority to authorize JPM Chase, through JPMVEC, to engage in the Complementary Activity as a complementary activity to its physically-settled and financially-settled transactions in commodities derivatives on nonfinancial commodities, subject to the commitments contained herein.



BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

ADDRESS OFFICIAL CORRESPONDENCE
TO THE BOARD

April 20, 2009

Mark Lenczowski, Esq.
Managing Director
JPMorgan Chase & Co.
245 Park Avenue, 11th Floor
New York, New York 10167

Dear Mr. Lenczowski:

This is in response to your letter dated November 25, 2008, on behalf of JPMorgan Chase & Co. ("JPM"), New York, New York, requesting relief from certain commitments JPM made to the Board in connection with its notice to purchase and sell commodities in the spot market and to take and make delivery of physical commodities to settle commodity derivative transactions ("Physical Commodity Trading").¹ The commitment relief you request would allow JPM to engage a third party to alter or refine commodities after JPM takes delivery in connection with its Physical Commodity Trading, subject to the same conditions that the Board has imposed on other financial holding companies ("FHCs") that were granted similar authority.

The JPM Order permits JPM to engage in Physical Commodity Trading in (i) commodities for which derivative contracts have been authorized for trading on a U.S. futures exchange by the Commodity Futures Trading Commission and (ii) other commodities specifically approved by the Board (together, "Approved Commodities"). As part of the Board's approval of JPM's notice, JPM committed that it would not process, refine, or otherwise alter a commodity ("alter" or "altering" a commodity for short). You now request relief from that commitment so that JPM may engage a third party to alter commodities.

The Board previously has granted authority to FHCs to alter commodities, subject to certain commitments.² JPM has made the same

¹ See JPMorgan Chase & Co., 92 Federal Reserve Bulletin C57 (2006) ("JPM Order").

² See, e.g., The Royal Bank of Scotland Group plc, 94 Federal Reserve Bulletin C60 (2008); Board letter to John Shrewsbury, Wells Fargo & Company, April 10, 2008.

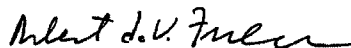
commitments that the Board has relied on from other FHCs. In particular, JPM has committed that it:

1. Will not process, refine, or otherwise alter a physical commodity itself;
2. Will not contract for the exclusive right to use a facility to alter commodities for any period of time; and
3. Will contract with third parties (i) to alter only an Approved Commodity and (ii) to alter the commodity only into another Approved Commodity.

Based on the foregoing and all the facts of record, the Director of the Division of Banking Supervision and Regulation, acting pursuant to authority delegated by the Board under section 265.7(a)(2) of the Board's Rules Regarding Delegation of Authority, and after consulting with the General Counsel, hereby grants relief from the commitment not to alter a commodity, as discussed above.

This determination is specifically conditioned on compliance by JPM with all the commitments and representations made in connection with this request. These commitments and representations are deemed to be conditions imposed in writing in connection with granting the relief and, as such, may be enforced in proceedings under applicable law. Any change in the facts could result in a different conclusion and should be reported immediately to Board staff. This determination should not be construed as granting relief from any other conditions or commitments to which JPM may be subject, nor does it authorize JPM to engage in any activities other than those approved in the JPM Order.

Sincerely yours,



Robert deV. Frierson
Deputy Secretary of the Board

cc: Ivan J. Hurwitz, Vice President
Federal Reserve Bank of New York

GLOBAL COMMODITIES - OPERATING RISK

April 2011

J.P.Morgan
FRB-PSI-623086

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Permanent Subcommittee on Investigations

EXHIBIT #58

STRICTLY PRIVATE AND CONFIDENTIAL

Overview of Global Commodities Group 1

- Overview of GCG Business
- Physical Portfolio

Risk Management and Operating Risk Controls

18

1Q Financial Performance – Net Economic Revenue

	Actual Total	Plan Total	%	Steady State*
Oil				
NA Power & Gas				
EMEA Power & Gas				
Coal				
Bullion				
Base Metals				
Investor Products				
Agricultural Commodities				
Principal Investments				
Management (incl Credit)				
Economic Revenues				
Expenses				
Earnings				
Overhead Ratio				
ROE				
Basel II				
Basel III				
Economic Capital				
Headcount				
(ex Henry Bath and Eco Sec.)				
* Base Case Scenario				

1Q Highlights
<ul style="list-style-type: none"> Significant market volatility resulted in strong client flows and trading results, particularly in Oil with \$53mm gain on a structured oil storage transaction Good momentum in Agricultural and Metals with \$25mm from a large agricultural hedging solution for Latin America client Investor demand continues to be robust Structural challenges in EMEA Power & Gas market with low client activity
2011 Priorities / Challenges
<ul style="list-style-type: none"> Sempra integration – Oil system migration challenges due to physical trading complexity, other merger work on track Athena (Target State Architecture) build out on schedule Key business initiatives on track <ul style="list-style-type: none"> Commodity Linked Finance / Project Finance Electronic Market Making China Wholly Foreign Owned Entity ("WFOE") Latin America client expansion EMEA Power & Gas restructuring in progress Regulatory reform uncertainty (i.e. position limits, market making rules)

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Permanent Subcommittee on Investigations

GLOBAL COMMODITIES - OPERATING RISK

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Our Commodities Franchise and Our Competitive Advantages

Why Commodities?

- Our clients require solutions to manage their commodity price risk
- Complete JPM IB's franchise offering across all asset classes
- Portfolio / diversification benefits with our Fixed Income and Equities businesses
- Strong global growth outlook, closely linked to non-US expansion

GCG Franchise and competitive advantages

- Extensive client franchise
 - Approximately 3,000 clients including corporate, investor, governments
 - Ability to further leverage client relationships in Investment Bank, Commercial Bank, Asset Management, T&SS
- Complete global product capability
 - Financial risk management solutions
 - Commodity-linked financing and capital market transactions
 - Physical hedging solutions, off-take and supply agreements
 - Transportation and storage assets
- Capital and balance sheet strength

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Diversified Global Platform Across Multiple Product Areas

- Complete product offering to address full spectrum of client needs
- Physical capabilities required to allow physical derivative solutions to clients to minimize basis risk

Energy	<ul style="list-style-type: none"> ■ Comprehensive offering (Oil, Power, Gas, Coal, Environmental Markets) ■ Strong global financial and physical presence
Metals	<ul style="list-style-type: none"> ■ Long standing franchise (precious and base) ■ Vault operations in London, NY and Singapore ■ Global base metal warehousing business
Agricultural	<ul style="list-style-type: none"> ■ Financial capabilities across major agricultural products (wheat, cocoa, sugar, etc.) ■ Limited physical activities within established guidelines and limits
Investor	<ul style="list-style-type: none"> ■ Customized products and investment vehicles, building Exchange Traded Fund capabilities ■ JPM commodity indexes (JPMCCI) and leading investment algorithms (C-IGAR, Optimax)
Asset Optimization	<ul style="list-style-type: none"> ■ Experienced team invests in energy assets to leverage the platform

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GLOBAL COMMODITIES - OPERATING RISK

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Continued Expansion Of Franchise Over Last 4 Years

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GLOBAL COMMODITIES - OPERATING RISKS

2005	2007	2008	2009	2010	2011/Steady State
<ul style="list-style-type: none"> Unacceptable P&L volatility (emissions losses offset by Amaranth gains of approx. \$600mm) Poor infrastructure, risk management and control Unbalanced business model 	<ul style="list-style-type: none"> New management team Build Sales & Trading team, rebuild capability Invest in infrastructure 	<ul style="list-style-type: none"> Strong financial performance Acquisition of Bear Energy, UBS Commodities, ClimateCare) Expand product capabilities and physical presence 	<ul style="list-style-type: none"> Delivering on Investments Continuing build out of physical oil, Agricultural commodities Expand client franchise Exploit synergies between physical & financial Define Target State Technology Architecture EcoSecurities 	<ul style="list-style-type: none"> Acquired RBS Sempra Global Oil, Global Metals and EMEA P&G businesses Focus on large structured transactions, Commodity linked financing Enhancements and buildout of operating risk framework to support physical business 	<ul style="list-style-type: none"> 2011 ROE will be impacted by costs related to RBS Sempra merger Steady state projection represents base case based on bottom-up analysis by individual business

* Excludes EcoSecurities and Henry Bath headcount
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2010 Competitor Revenue Analysis

- Major financial institution competitors are Goldman Sachs, Morgan Stanley and Barclays Capital
- Significant competition from many other companies (Oil and energy companies)
- Combined JPM and Sempia platform makes us a Top 3 player in Steady State

GLOBAL COMMODITIES - OPERATING RISK

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Overview of J.P. Morgan Physical Portfolio

JPM leases and does not own physical assets used in its market making business. Assets are owned and operated by third parties.

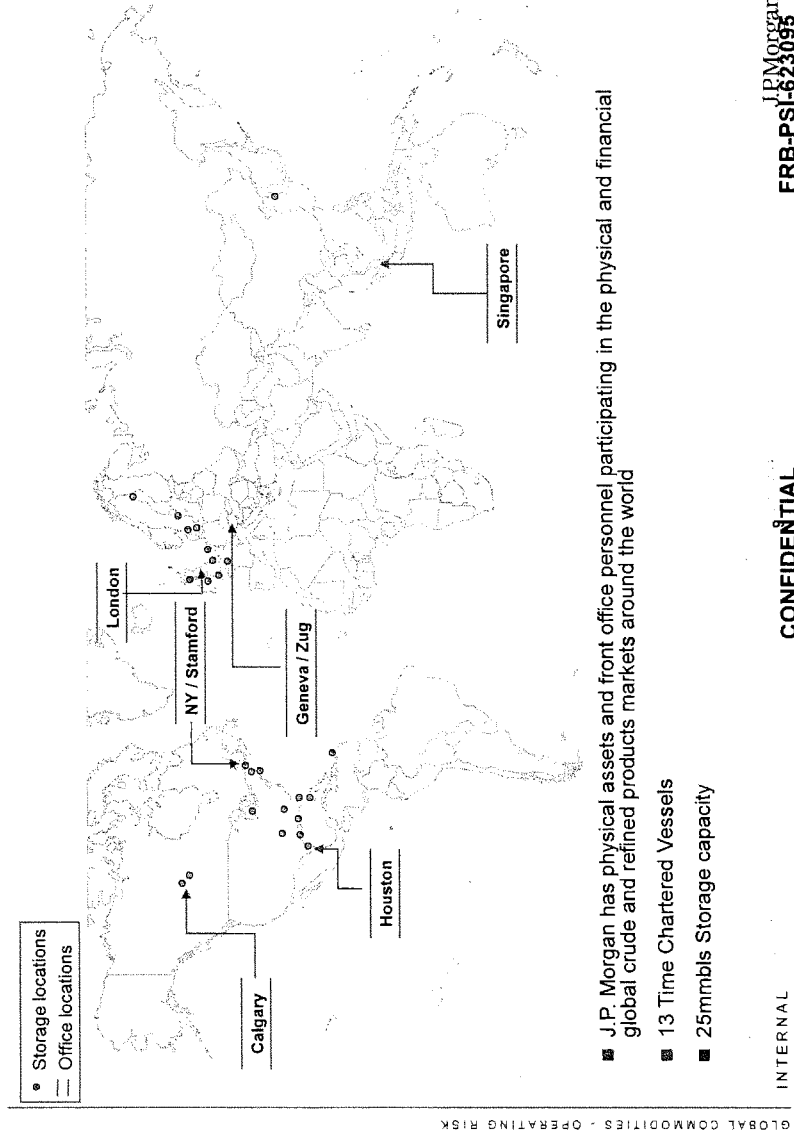
- Tolling agreements on power plants - right to supply fuel to power plant and receive power output. Power output is used to meet JPM's obligations to supply power to consumers and counterparties. Tolling capacity in the U.S. is over 8,000 Megawatts, less than 1% of the overall power capacity in the U.S. Our capacity in Southern California represents 6.6% of the market.
- Load serving agreements - obligations to supply power to energy cooperatives or other consumers. To meet these obligations, JPM uses power from tolling agreements or purchases from the market.
- Natural Gas transportation and storage - JPM leases both storage and pipeline capacity in order to facilitate purchases of gas from producers and sales to consumers. JPM has storage capacity in the U.S. of 78bcf (billion cubic feet) and pipeline capacity of 1.8 bcf/day, both less than 1% of overall U.S. capacity. Smaller amounts are leased in Europe.
- Oil transportation and storage - JPM leases storage, pipeline capacity and vessels in order to facilitate purchases of oil from producers and sales to consumers. JPM has storage capacity of 25 million barrels, which is less than 1% of the estimated global capacity of between 7 - 8 billion barrels. JPM also leases vessels and currently has 13 vessels available to charter.
- Coal transportation and dry freight trading - JPM trades physical coal, and charters dry freight vessels for the transportation of coal and other bulk freight. JPM currently has 2 operating ships under charter, with 1 new build due to come into service.
- Base metals warehousing - JPM owns Henry Bath & Son, Ltd., a global warehousing business licensed by the London Metal Exchange and others for aluminum, copper, zinc, lead, nickel, tin, aluminum alloy, steel, cocoa and coffee. In 19 warehouses across 12 countries, Henry Bath stores 627K metric tonnes of metal (10% market share) and 55K metric tons cocoa and coffee stock (10% market share). In 2010, JPM traded ~1 million metric tons of metal with a value of \$4bn.
- Precious metals vaulting - JPM is one of the largest custodians and clearers of precious metals globally, trading gold, silver, platinum, and palladium. Provide custody services for global clients including ETFs and ETNs via three vaulting facilities in London, New York and Singapore (>\$60bn stored and daily average turnover of \$8-10bn).
- Agricultural Physical Trading and Financing - JPM offers risk management solutions to producers, consumers and merchants primarily in coffee, cocoa, palm oil. Existing Henry Bath Warehousing capacity and vessels are used to store commodity for future delivery and transport to clients. JPM operates within strictly agreed inventory limits, is not involved in the supply chain and all business is client driven. JPM's volumes represent a small fraction of the overall market.

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J.P. Morgan's Global Oil Physical Assets Locations



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Crude Oil, Refined Products & Coal

Crude Oil, Distillates, Fuel Oil, and Light Products

- JPM trades all principal grades of crude oil and refined products worldwide from desks in New York, Stamford, Houston, Calgary, London, Zug, Geneva and Singapore
- Leasing of storage facilities, pipeline capacity and vessels in order to facilitate purchases of oil from producers and sales to consumers
- JPM has storage capacity of 25 million barrels, which is less than 1% of the estimated global capacity of between 7 - 8 billion barrels
- JPM charters crude and refined products-carrying vessels, on a spot-charter and time-chartered basis
- Oil traffic groups in Stamford, Houston, Geneva, London, Calgary, New York and Singapore manage all aspects of physical movement

Coal and Dry Freight

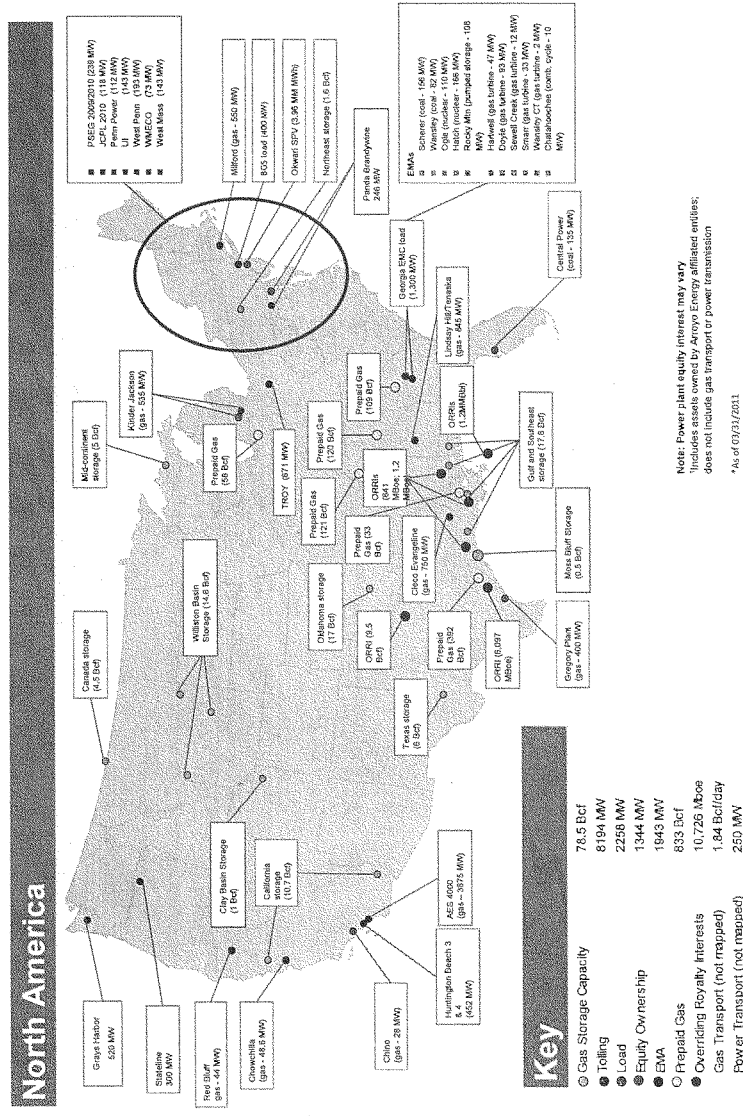
- JPM transacts in global physical coal and dry bulk freight markets from offices in London and Geneva
- JPM provides Producers, Consumers, and global fleet owners with physical and financial hedging strategies
- JPM has sub-chartered vessels for a wide range of client cargoes including metals, coal and agricultural products
- Currently have chartered 2 operating vessels and 1 new build.

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Overview of North America Gas, Power and PI Assets¹



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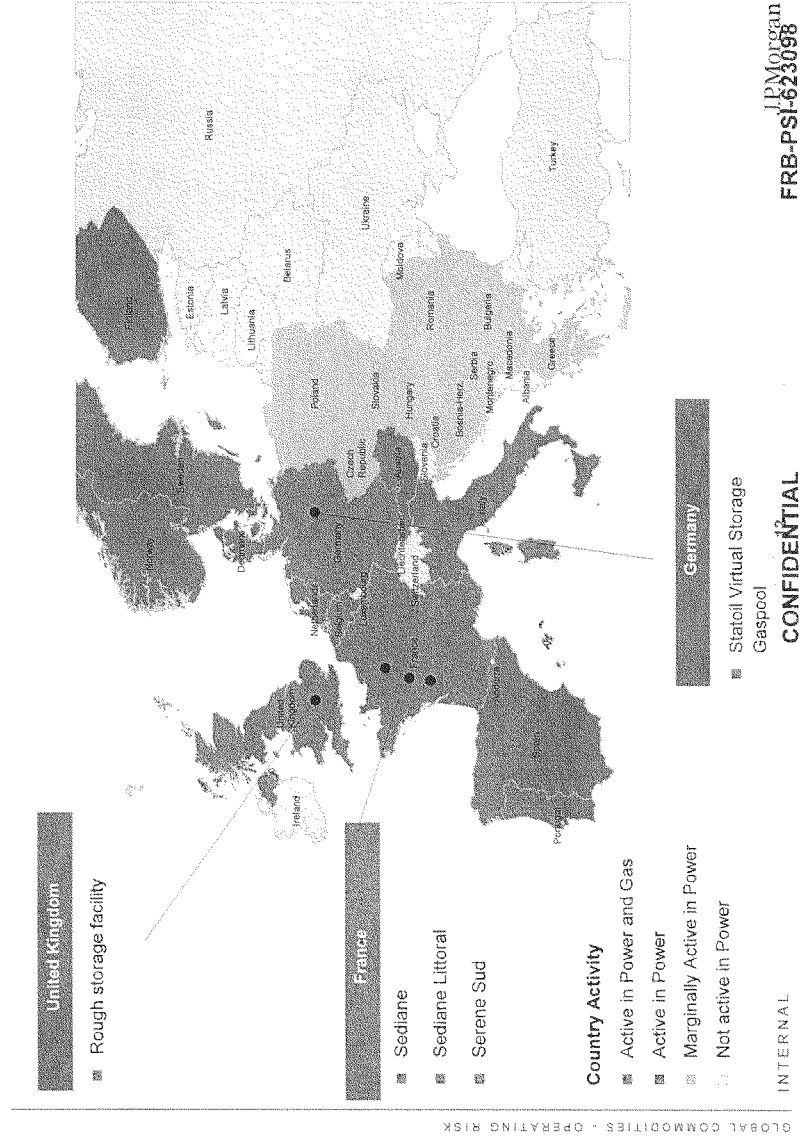
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Note: Power plant equity interest may vary
Includes assets owned by Arroyo Energy affiliated entities;
does not include gas transport or power transmission

*As of 01/31/2011

J.P. Morgan's European Power & Gas Activity and Storage Capacity



Power & Natural Gas

Power Trading and Tolling

- JPM's tolling agreements provide the right to supply fuel to a power plant and receive power output. Power is used to meet JPM's obligations to supply power to consumers and clients. JPM's tolling capacity in the U.S. is over 8,000 Megawatts, less than 1% of total installed generation.
 - Capacity in Southern California is 4,325 Megawatts, which represents approximately 6.6% of the local market.
- JPM has entered into "load-serving agreements", obligations to supply power to energy cooperatives or other aggregations of consumer demand, or "load". To meet these obligations, JPM uses power from tolling agreements or purchases from the forward and spot markets.
- JPM is a member of almost every organized power pool (also called ISO or RTO) in North America and Europe, participating in many of their physical power and associated product markets.

Natural Gas Trading, Transportation and Storage

- JPM leases natural gas storage and pipeline capacity to facilitate purchases of gas from producers and sales to consumers. JPM has storage capacity in the U.S. of about 78bcf (billion cubic feet) and pipeline capacity of 1.8 bcf/day, less than 1% of overall U.S. capacity, with smaller amounts leased in Europe.

Power Plant Investments

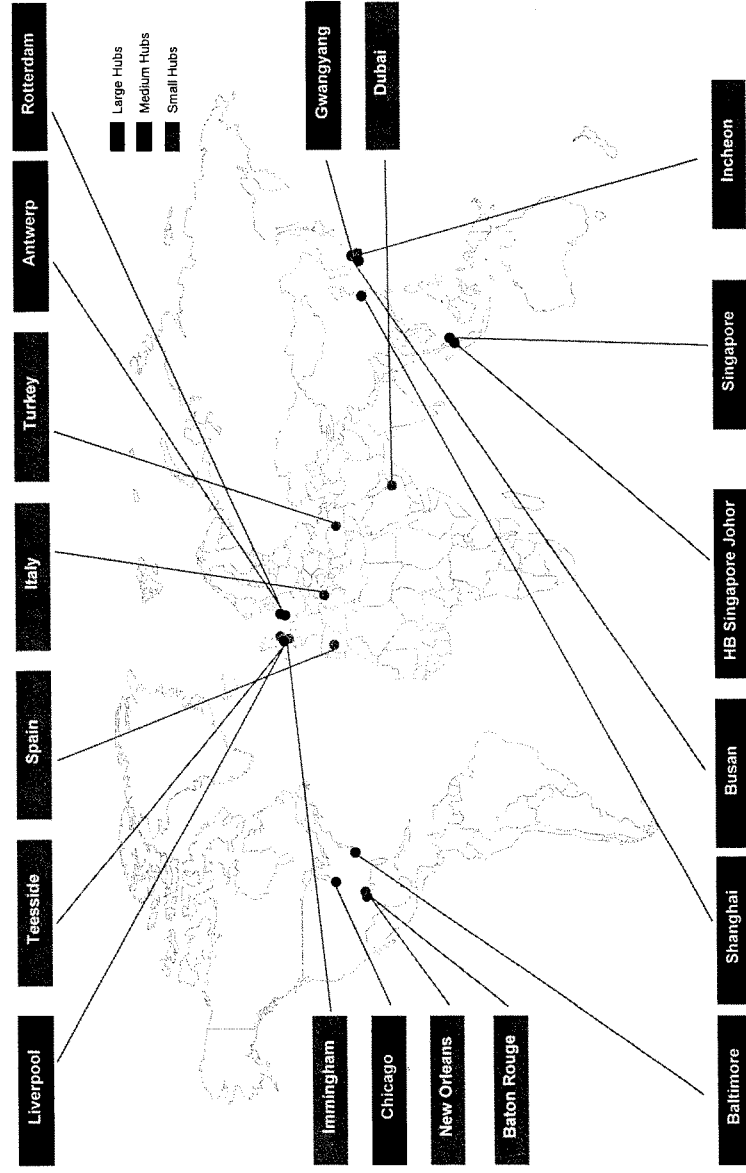
- Through the Principal Investments group, JPM has varying levels of equity ownership in U.S. generating stations of over 1,300 Megawatts. Total book value is \$423mm in five power plants.
- Power plants are managed by third parties, with coordination provided by the JPM Asset Optimization group in Houston.

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19 Henry Bath Warehouse Locations Worldwide



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Base Metals Trading and Warehousing

Base Metals Trading

- Client-focused trading of aluminium, copper, zinc, lead, nickel and tin in Asia, Europe and the Americas
- ~1 million metric tonnes of metal transacted in 2010 with value of \$4b
- Currently hold 1.2 million metric tonnes of inventory in various global locations with a value of \$4.2bn
- Material is bought and sold principally in bonded warehouses with some movement of material between locations
- Main competitors are merchant traders (Glencore, Trafigura, Noble); increasing competition from Goldman Sachs, Deutsche Bank

Henry Bath Warehouses

- Global warehousing business licensed by the London Metal Exchange (LME), NYSE Euronext Liffe (Liffe) and the Intercontinental Exchange (ICE) to store and issue Exchange-traded Warrants (bearer documents of title) for commodities including aluminium, copper, zinc, lead, nickel, tin, aluminium alloy, steel billets, cocoa, and coffee.
- Warehouse operations in 19 port area locations across 12 countries; UK, Netherlands, Belgium, Italy, Spain, Turkey, USA, Singapore, Malaysia, South Korea, China, United Arab Emirates.
- Revenues are warehouse storage fees (rent), charged per metric tonne per day to the owner of the stored commodity, and a published warehouse exit fee, charged per tonne and collected upon delivery for onward transportation.
- Business is run "asset light" to maintain a variable cost base that can be flexed up and down to match cyclical volumes of inventory; thus, all warehouses are leased and warehouse labour is hired as required using local logistics and handling.
- Total market size of LME metal stock is 6.4 million metric tonnes, of which HB stores 627k metric tonnes (10% market share). Total market size of Liffe cocoa and coffee stock is 530k metric tonnes, of which HB stores 55k metric tonnes (10% market share).
- Largest competitors are Metro International (owned by Goldman Sachs), Pacorini Metals (Glencore), Steinweg (Independent), NEMS (Trafigura) and The Delivery Network (Noble Resources).
- The business is governed by the written rules and regulations of the Exchanges that license the business. Physical inspections and 100% inventory checks are conducted by the Exchanges annually.

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Precious Metals Trading and Vaulting

Bullion Trading & Vaulting Operations

- Client-focused trading of Gold, Silver, Platinum and Palladium in Asia, Europe and the Americas
- JPM is one of the largest custodians and clearers of precious metals globally, offering vaulting facilities in 3 locations (London, New York, Singapore) with a daily average turnover value of \$8-10 billion
- In excess of \$60 billion precious metal assets in London, New York and Singapore vaults
- Bullion custody services for global clients including Exchange Traded Fund and Exchange Traded Note providers
- Bonded warehouse status for UK vaults with direct technology links to UK Revenue & Customs (HMRC)
- London Precious Metals Clearing Limited member, providing bullion clearing services for external clients in the over-the-counter London and Zurich markets
- Refining and recasting activities to include quality and location swaps
- Wholesale supplier of physical metal from refiner to consumer
- Scheduling and logistics undertaken and overseen by UK-based operations
- Principal competitors are HSBC and UBS

Agricultural Commodities

Coffee and Cocoa Warehousing

- JPM stores physical coffee and cocoa in its LIFFE registered warehouses (Rotterdam, Antwerp, Trieste & Liverpool) to take advantage of spare HB warehouse capacity. The inventory is ultimately sold to customers or to market, rental income stays with Henry Bath
- Although coffee and cocoa are part of the food supply chain they are considered luxury items and JPM's holding is less than 0.5% of annual production

Palm Oil (currently in pipeline)

- JPM will provide cash and physically settled OTC price risk management in Palm Oil against crude and refined products. Palm oil trades mostly on short term physical terms and access to physical market is required to provide any longer dated hedging solutions and offset client risk.
- JPM will use existing vessels to ship Palm Oil from origin to destination. We secure physical off take from plantations and/or refineries as part of financing transactions or tolling agreements. Inventory financing is being explored

Agricultural Linked Financing (currently in pipeline)

- Exchange Trade Repo Financing – exchange certified quality, no shipping, no balance sheet usage
- Trade Financing – working capital during inventory shipping, inventory on JPM balance sheet during voyage
- Non-exchange traded financing using 3rd party warehouses – e.g. Australian wheat

Key Rules Governing All Agricultural Physical Activities

- All business is conducted within agreed inventory limits
- All business is client driven and JPM will not be involved in the food supply chain
- All customers are either producers, consumers or merchants and these products will facilitate their businesses
- JPM does not offer physical market access on any of these products to investors nor will it have any principal investment

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FRB-PSI-623103

Overview of Global Commodities Group

1

Risk Management and Operating Risk Controls

18

- Risk Management
- Pre-Operations
- Operations
- Post-Operations

Risk Management Organization

RESPONSIBILITIES:

- The Risk Management Organization under John Hogan independently monitors and advises the business on Market, Credit and Operating Risk. Its key responsibilities include:
 - Setting limits, monitoring and reporting usage against limits.
 - Approving new transactions that are material in size or risk (credit, liquidity, operating, market, etc), or represent new initiatives.
 - Advising business on hedging strategies, money management strategies, credit structuring, macro hedges, and methods to diversify risk with the objective to maximize risk/reward.
 - Ensuring appropriate due diligence around all operating risk including procedures around vetting ships, on-boarding of third party operating vendors, monitoring of escalation processes and crisis management responses.

ORGANIZATION:

- Risk Management support for GCG is organized into 3 primary groups:
 - **Market Risk Management** - headed by John Anderson supported by 17 people located in Houston, Stamford, NY, London and Singapore.
 - **Credit Risk Management** - dedicated commodities credit team headed by Jim Ballentine supported by 46 people in Houston, Stamford, NY, London and Singapore. (GCG is also supported by the rest of the JPM credit organization as applicable).
 - **Risk Reporting** - headed by Mick Waring which supports both Market Risk and Credit Risk and coordinates closely with both teams.
- In addition, two important ancillary teams support the business:
 - **Operating Risk** - headed by Bob Trejo who reports into Dan Hines, John Anderson and Jim Ballentine
 - **FVP** - headed by Manish Das who has a dotted line into John Anderson and Dan Hines.

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Risk Management Organization: Market and Credit Risk Governance

- Blythe Masters ensures her business works closely with the risk teams by insisting that the appropriate teams are involved in transactions from an early stage, and in all stages of approval whether it regards individual deals or overall risk profile. John Anderson and Jim Ballentine are members of the GCG management team in order to facilitate this oversight and deep involvement with the business.
- Market Risk:
 - Twice a week risk meetings with Blythe Masters, business heads, and desk heads chaired by John Anderson.
 - Daily risk meetings within Market Risk team to identify and agree top risks incorporating feedback from business and desk heads.
 - Weekly management meeting of Market Risk senior team with FVP head and Risk Reporting head to discuss projects and general risk topics.
 - Weekly meeting of Market Risk team and Blythe Masters to discuss current risk topics, key risks and deal pipeline.
 - Weekly deal pipeline meetings.
 - 2 Weekly meetings with Ashley Bacon directs to discuss 1) specific top risks and exposures and 2) IB risk topics and market views
- Credit Risk:
 - Weekly regional deal pipeline meetings.
 - Weekly global call to discuss major deals, trends and issues and ensure consistency.
 - Counterparty credit reviews and risk grading in accordance with policy.
 - Quarterly commodities credit risk review – review of top exposures, changes in exposure and trends. (Commodities exposures are also included in relevant industry and regional credit portfolio reviews).
 - Quarterly business review with John Hogan and senior regional credit executives to discuss strategy and resource needs.

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Risk Management Organization: Operating Risk Governance

- **Operating Risk Manager**
 - New role established mid-2010 to establish a coordinated GCG Operating Risk program
 - Evaluates adequacy of Operating Risk controls in GCG physical operations
 - Reviews and sets policies and monitors compliance; escalates issues to the GCG Operating Risk Committee as required
 - Coordinates implementation of Vendor Framework
 - Verifies adequate insurance coverage and compliance with GCG Insurance Policy
- **GCG Operating Risk Committee**
 - Charter:
 - Understand physical operating risks and ensure appropriate mitigants are established and maintained
 - Review, set conditions, and approve new activities that have physical operating risk components
 - Review and approve policies and procedures related to the trading and handling of physical commodities
 - Ensure significant events are reviewed and actions taken to prevent recurrence
 - Members:
 - Dan Hines – GCG CFO, Chairman
 - Bob Trejo – Operating Risk Manager, Secretary
 - Blythe Masters – Head of GCG
 - Paul Posoli – Power and Gas
 - Jeff Frase – Oil
 - Peter Sellars – Metals; EMEA
 - Ray Eyles – Asia
 - Audit (Charlie Wright), Credit Risk (Jim Ballentine), Market Risk (John Anderson), Legal (Mark Lenczowski), Compliance (Ari Nakkab), Environmental Affairs (Odin Knudsen), Global Security (Tim McNulty)
- **Operating Risk Assessment**
 - Engaged operating risk consultants Det Norske Veritas (DNV) to independently assess our risk framework. Engagement to be completed 2Q 2011, no major issues have been raised to date.

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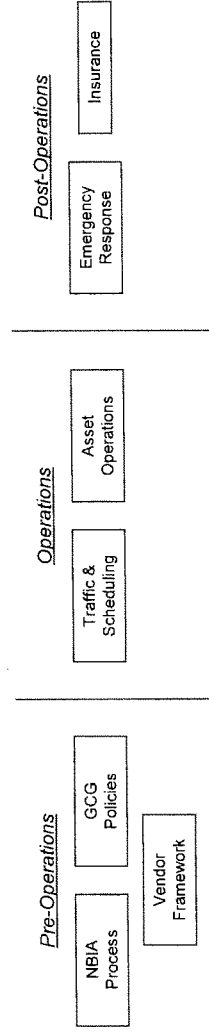
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Controls in Physical Commodities

Life-cycle approach

Controls are in place for physical commodities activities at JPM at three distinct points in the "life cycle" of the activity:

- **Pre-Operations controls** consider attendant risks and establish appropriate mitigants and controls *prior to* engaging in any prospective physical commodity activity
- **Operations controls** are established to ensure day-to-day physical commodities operations are conducted with due care and logistical support, plus independent oversight
- **Post-operations controls** are instituted to reduce the ramifications of an operating incident



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Controls in Physical Commodities: Pre-Operations

New Business Initiative Approval (NBIA) Process

- Firm-wide and IB-specific policies instituted to create a control framework for all new initiatives
- Ensures consistent standards applied to risk review of new initiatives across multiple risk "stripes"
- Detailed policy steps, formal documentation, conditions of approval and record-keeping
- Physical Operating Risk of a new business is addressed in the process
- Overseen by IB NBIA Governance Council, IB Risk Committee and Individual Business Control Committees

Examples:

- Physical Oil Trading (2007)
- Physical Coal & Dry Bulk Freight (2008)
- New Physical Oil Jurisdictions (2009)
- European Gas Transmission (2009)
- European Gas Storage (2010)
- Global Physical LNG (2010)

Commodities Policies

- Specific policies are set forth in applicable NBIA documents - Example: only double-hulled ships to transport oil and oil products
- We are consolidating these discrete policies into stand-alone policy documents

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Controls in Physical Commodities: Pre-Operations

Vendor Framework

- GCG relies on numerous third-party vendors for physical commodity-related services
- "Commodities Enhanced Third Party Vendor Framework" created in mid-2010 to promote consistent oversight, detailed risk-ranking and due-diligence, and ongoing management of vendor relationships
- A vendor may be ranked as high-risk based on various factors, such as the reputational risk to JPM for vendor non-performance or accidents, country of operations, risk of regulatory non-compliance, vendor concentration, vendor replacement risk and JPM revenue at risk
- The GCG Vendor Risk Committee owns this process; members are representatives from each business line plus Legal, Audit and Compliance; the Vendor Risk Committee reports to the GCG Operating Risk Committee
- There are currently 888 vendors, 82 of which are ranked high-risk. Vendors are reviewed on a set frequency (high-risk: 6 months, low-risk: annual)
- Sample vendors ranked in high-risk category:



- Vessel vetting

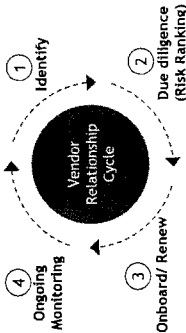


- Power plant operator



North America's LNG Gateway

- Operates LNG terminal



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Controls in Physical Commodities: Operations

Specialized Scheduling and Logistics Teams

- Experienced scheduling and logistics teams (sometimes called "traffic"), and asset optimization teams, work closely with traders to ensure safe and successful commodity movement and asset operations
 - Oil – 19 traffic staff in Stamford, Houston, Calgary, London, Geneva, and Singapore
 - North American Power – 24 schedulers (including two 24/7 real-time scheduling desks) in Houston
 - North American Gas – 13 schedulers in Houston and Calgary
 - Europe Power & Gas – 12 schedulers in London
 - Coal and Bulk Freight – 3 schedulers in London and Geneva
 - Metals – numerous logistical personnel worldwide
 - Independent and dedicated market risk, credit risk, operating risk and legal & compliance support
 - Technology, operations and finance personnel with strong product knowledge and experience

Sample Process: Chartering a Vessel

When Trading requests a vessel, traffic group searches for suitable class, tonnage, age, and cost for given timeframe

1. Candidate vessel is "put on subs" (contingent offer)
2. Request ship vetting company evaluation: ship, shipyard, crew and owner history; Ship Inspection Report (SIRE); vessel chartering questionnaire (Q88); terminal approvals (recipient and supplier)
3. Carry out Office of Foreign Assets Control (US Treasury) checks
4. Credit check
5. Review of contractual terms

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Controls in Physical Commodities: Operations

Example Incident: Potential Violation of the Jones Act Averted

- GCG's oil traffic group in Stamford conducts numerous checks throughout the life of a physical oil movement, including reviews of all documentation related to ship voyages to ensure all requirements and regulations are complied with. This review includes the Bill of Lading and Certificate of Origin for any cargo bound for the US.
- The United States' Jones Act (part of the Merchant Marine Act of 1920) requires that all goods transported by water between US ports be carried exclusively on US-flag ships, built in the US, owned by US citizens and crewed by US citizens.
- In October 2010, during the routine review of an import of #6 fuel oil, a JPM scheduler observed that a non-US flag vessel was scheduled to deliver the cargo to a US port, and the origin was another US port.
- The scheduler notified the head of oil traffic, who subsequently convened meetings and discussions with additional personnel and GCG support groups, including Legal, Credit, Senior Management of GCG and outside counsel.
- Despite initial pushback from the trading counterparty who had sourced the shipment, JPM insisted it could not legally accept delivery of the cargo.
- The ship ultimately sailed to a non-US port, thereby implicitly conceding the validity of JPM's position.

Controls in Physical Commodities: Post-Operations

Emergency Response Procedure

- Developed specifically for our unique position as "non-owner, non-operator"
- In place for oil and oil products, LNG, and dry freight
- Specifies an on-call Duty Officer, with prompt notification of appropriate JPMorgan personnel, including Legal, Corporate Communications, Investor Relations, Insurance, Environmental Affairs, plus applicable external support groups

Power-Related Emergency Response Procedures

- Individual plans are in place at generating facilities

Piracy Events

- Despite recent notoriety, the probability of a piracy event is still very low, and owners/crews are highly incented to have procedures to reduce the chances of a successful occurrence
- Shipping industry is being very proactive: Best Management Practices, convoys, deterrents
- Primary responsibility is with ship owner; in fact, it's doubtful a cargo could be identified as belonging to JPM
- Cargo insurance responsive for cargo value; charterer's insurance for other liabilities, including pollution
- Any request for ransom has to be addressed very carefully; sovereign laws and US/EU Orders apply
- Our Emergency Response Procedure is already well-suited for this type of event
- It is advised to not have a written policy on Piracy, as it can be corrupted/exploited

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Controls in Physical Commodities: Insurance

- Through its ownership and transportation of physical commodities and its investments in assets, GCG is exposed to a variety of insurable risks. These include:
 - Third Party Liability & Pollution/Environmental (on the sea and on land)
 - Physical Loss, Destruction or Damage (in storage and transit)
 - Terrorism (in storage and in transit)
 - Warehouse Keeper's Legal Liability (Henry Bath) and Specie Policy (Precious Metals)
 - Director and Officer Run-off (relating to RBS Semptra transaction)
 - Contingent Business Interruption (AES 4000 re-toll)
- GCG's insurance policy mandates the following:

GLOBAL COMMODITIES - OPERATING RISK

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Risk Engagement with DNV



MANAGING RISK

■ Objective

- Secure a qualified, independent assessment of the risks associated with our activities in physical commodities

■ Qualifications of DNV

- Det Norske Veritas (DNV) is a global provider of services for managing risk, with 9,000 employees in 300 offices in 100 countries
- Independent, autonomous foundation with focus on maritime and energy sectors
- Internationally recognized provider of technical and managerial consultancy services and one of the world's leading ship-classification societies; very deep product knowledge in energy and risk

■ Scope of Engagement

- Identify operating risks for current portfolio of JPM Commodities activities and assets
- Assess effectiveness of existing risk mitigants, including internal policies, procedures, and processes
- Provide recommendations for improvements to existing risk mitigants and propose new mitigants based on industry best practices
- Provide a framework for ongoing monitoring of current and future physical commodity operating risk, including leading and lagging indicators
- DNV Technical Leads completed Initial Risk Screening and Desktop Reviews, wrapping up Site Visits
- Engagement to be completed in Q2 2011. No major issues have been raised to date

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Regulatory / Compliance Risks Update

Due to the physical nature of the business GCG is subject to regulatory oversight in addition to banking regulation

- Energy Tolling/Management Activities: In June 2010, JPM received permanent approval to engage in these activities from the federal Reserve
- 5% Tier 1 Physical Inventory Limit: GCG is subject to holding limit 5% of JPMC's tier 1 capital (4% reporting trigger). See page 38 for monthly report to the Federal Reserve
- Energy transmission/transport: GCG must comply with Federal Energy Regulatory Commission (FERC), other certain government energy authorities, and is subject to excise and fuels taxing authorities

Financial Reform Update

- Dodd-Frank CFTC position limits and hedging exemptions: Significant uncertainty remains regarding scale of opportunity cost pending final rules
- Volcker Rule: GCG has closed down its Proprietary Trading business. In dialog with regulators on drafting of market-making rules
- Derivative Push-Out: GCG already has a large portion of its activity in non-bank entities and majority of Metals business expected to remain in the bank. GCG will need to migrate its financial OTC derivatives activity out of JPMCB NY Branch to JPMorgan Ventures Energy Corporation

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Regulatory / Compliance Risks Update (Continued)

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FERC MISO:

In early November the FERC began a non-public investigation into JPM's offers of power from the Jackson, Michigan power plant into the Midwest Independent System Operator's ("MISO") market during the last week of October 2010.

One JPM employee deposed - FERC seems to be focused on JPM's offer structures and the related receipt of Revenue Sufficiency Guarantee "RSG" payments.

JPM has no material market presence or pricing power. JPM did not realize any profit from this plant as a result of the strategies questioned by FERC, which were intended to optimize an otherwise unprofitable asset. JPM does not believe that it violated FERC's policies and regulations regarding market manipulation.

CAISO DMM:

This item relates to our much more significant position in AES related tolls in Southern California.

The California Independent System Operator's ("CAISO") market monitor has raised concerns regarding JPM's offer structures into the CAISO market and the related Bid Cost Recovery ("BCR") uplift payments.

CAISO agrees that the activity does not violate the current CAISO tariff, but has submitted a request for tariff revisions to FERC to "remedy the observed exploitation of the existing bid cost recovery tariff rules, causing an unexpected market outcome".

JPM believes that it has not violated any regulation but given the vague standards around FERC rules we may be at risk of a FERC enforcement action alleging market manipulation.

Weekly meetings held with commercial, risk, compliance and business management groups to review JPM's offer structures.

LME Copper:

During Nov 2010, JPM held a large position in LME Copper inventory to meet forward delivery obligations. The warrant position reached approx 52% of the published LME stock and the desk was subject to LME lending guidance in accordance with the exchange rules. The position was reduced to below 20% on Dec 15 when the warrants were delivered.

Press reports that JPM was dominant holder of warrants in anticipation of the Copper ETF were false.

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Rifles (Risk Identification For Large Exposures) Related To Physical Assets

- Potential losses from extreme events which may not be captured within VaR or Stress limits
- RIFLEs are reviewed regularly by senior management and are part of ongoing risk review process
- RIFLEs with exposure greater than \$50mm are the following:

Exposure	Scenario	Estimated Loss (\$ million)
AES 4000 power plant tolls in Southern California	Cumulative 1 year outage over 3 years or complete property loss from a natural disaster	\$100 – \$140
Oil storage lease rates	Market lease rates fall significantly below our contracted lease rates	\$180
Europe Natural Gas pipeline transportation	Significant increase in pipeline capacity reduces valuation	\$70
Physical Power Plants & Tolls	Significant decline in residual value of owned power plants	\$55
	Significant increase in non-fossil fuel power generation in Germany results in decline in value from our toll positions	\$50

Commodities Audit Coverage

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Reputation Risk

GCG manages reputation risks consistent with the IB's overall reputation risk framework (Appropriateness Policy, Heightened Risk Policy and Non-Standard Transactions) and has developed policies and procedures specific to certain GCG activities

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Physical Inventory Limit Monitoring

- JPM is subject to a limit on physical inventory as well as value of tolling agreements that is held outside the Bank entities.
- The maximum allowed amount is 5% of the bank's Tier 1 capital, or \$7.1bn
- GCG management provided guidance to individual desks as to the amount of inventory they need to manage to.
- Actual usage is reviewed weekly and corrective action is taken as necessary

Business	As of 3/28	25% Stress on 3/28 Inv	Notes
Canadian Oil	586	732	Inventory in pipelines and storage facilities
EMEA Oil	949	1,186	Inventory in pipelines and storage facilities
AP Oil	78	97	Inventory in pipelines and storage facilities
US Oil	1,224	1,530	Inventory in pipelines and storage facilities
Freight	2	2	Margin on sub-lease of time chartered vessels
NA Gas & Emissions	197	246	Gas and Emissions inventory
NA Tolls	2,372	2,374	Present value of future demand payments
EMEA Gas & Emissions	286	358	Gas and Emissions inventory
Global Coal	8	10	Coal inventory at plant
Softs	17	22	
Metals	7	9	
Plastics	28	35	
Concentrates	210	262	Inventory in warehouse and in transit
Total Physical Inventory	5,969	6,871	Inventory in warehouse and in transit

Tier 1 Capital	142,845	142,845
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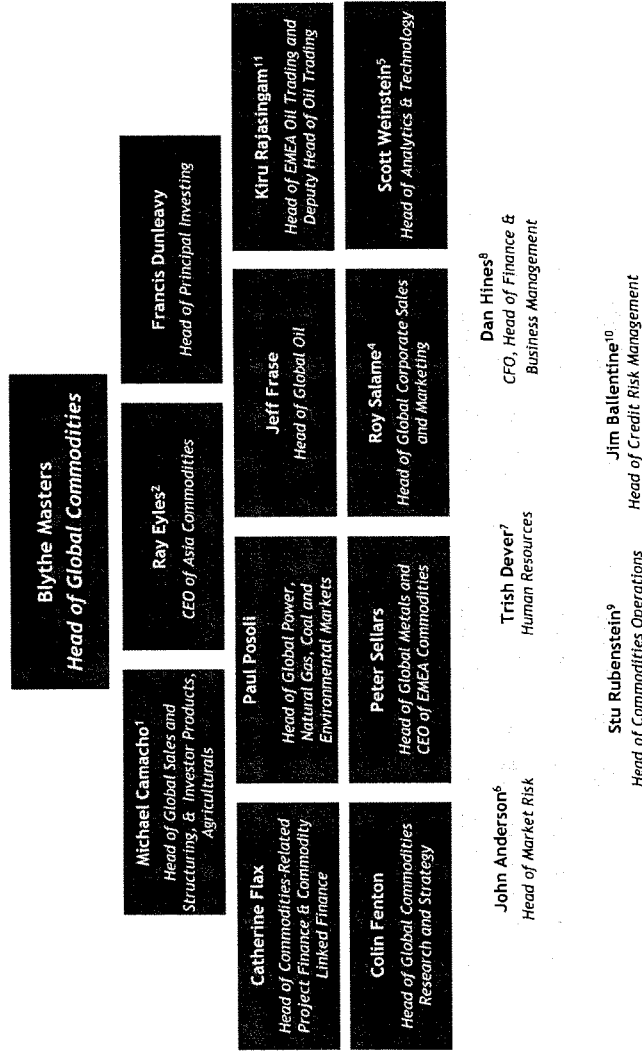
4% Reporting Requirement	5,714	5,714
5% Limit	7,142	7,142

Under/(over) Reporting Requirement	(256)	(1,157)
Under/(over) Limit	1,173	272

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Global Commodities Management Committee



1) Mike Camacho also heads Business Development, which includes initiatives such as: leveraging JPM's Global Corporate Bank, electronic trading, client clearing, 2) Ray Eyles also reports to Gabry Abdelnour, 4) Roy Salame – reports to Mike Camacho, 5) Scott Weinstein – also reports to Peter Cherazila, 6) John Anderson - reports to Ashley Bacon, 7) Trish Dever – reports to Nancy Gill, 8) Dan Hines – reports to Tushar Morzaria, 9) Stu Rubenstein reports to Mary Ambrecht, 10) Jim Ballentine – reports to Steve Eichenberger, 11) Kiru Rajasingam reports to Jeff Frase

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Global Commodities Management Team – Front Office

Blythe Masters	Head of Global Commodities	20 years experience at JPM across a variety of roles in sales and trading across fixed income and commodities markets, risk and finance.
Michael Camacho	Head of Sales & Structuring, Investor Products, Ags	20 years experience at JPM that included: Rates Exotics Trading business (which included developing pricing models and risk management systems); Global Head of the U.S. Dollar Rate Exotics Trading desks, Americas Structured Investments team.
Jeff Frase	Head of Global Oil Trading	20 years experience in Oil industry including 17 years at Goldman Sachs where he had most recently been head of Global Crude Oil and Derivatives trading. After Goldman, spent one year at Lehman Brothers, running Global Oil Trading. Joined JPM in October of 2008.
Roy Salame	Head of Global Corporate Sales and Marketing	Over 20 years experience in Commodities, with JPM since November 2008. Previously led various commodities franchises at Goldman Sachs and Lehman Brothers.
Kiru Rajasingam	Head of EMEA Oil Trading and Deputy Head of Oil Trading	Deputy head of Global Oil. Has over 15 years experience in the Oil business, including both physical and financial products. Has held key risk positions at both BP and Goldman Sachs.
Paul Posoli	Head of Global Power, Nat gas, Coal and Envir. Mkts	Over 25 years in commodities, prior to JPMorgan president of Bear Energy, the Bear Stearns energy trading and marketing business. Prior to Bear President of Calpine Energy Services, several years at Enron Capital and Trade.
Peter Sellars	Head of Global Metals and CEO of EMEA Commodities	27 years of experience in Metals industry including 9 years as head of metals for Semptra, 9 years as head of Commodities for BarCap and 8 years with Englehard. Prior board member of the London Metal Exchange (LME) and various chairman and committee roles on industry trade groups.
Francis Dunleavy	Head of Principal Investments	30 yrs of experience in the commodity industry including Partner at Bear, Stearns & Co., Senior Managing Director at Bear, Stearns & Co. Inc. and Bear Energy, member of the board of various Bear Stearns subsidiaries and Chairman of the Board of Doman Industries.
Ray Eyles	Head of Asia Commodities	22 years with JPM between the Sydney, Singapore and London offices. Previously CEO European Commodities, Global head of metals and Agricultural commodities.
Catherine Flax	Head of Commodities-Related Project Finance & Commodity Linked Finance	Former head of GCG Corporate Market and Structuring business, as well as the Environmental Market sales, trading, and origination business. Before JPM: Managing Director for North American Power Origination at Morgan Stanley; research and structurer for Williams Companies' oil, gas and power businesses.

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Global Commodities Management Team – Support Functions

John Anderson	Head of Market Risk	19 years with JPM with positions in Fixed Income, Currencies and Commodities including market making interest rate swaps and options, Global Head of Fixed Income Derivatives and FX Trading, Global Head of FX, Metals and Proprietary Trading.
Colin Fenton	Head of Research	20 years experience in commodities research and analysis, including nearly 8 years at Goldman Sachs. Former managing director and head of commodities and cyclical industries at Duquesne Capital Management (a multi-billion dollar hedge fund). Former research assistant to Ambassador Chester A. Crocker, assistant secretary of state for African Affairs.
Dan Hines	Business CFO	22 years of experience with JPMorgan, the last 4 as CFO of Commodities. Has held various senior Finance roles including head of Strategic Planning & Analysis for the Investment Bank and CFO and Controller positions across various Investment Banking businesses.
Scott Weinstein	Head of Analytics and Technology	Over 20 years with GS - 16 yrs in commodities as lead energy strategist; primary software architect of Goldman's proprietary risk management software (known as Secdb) and Energy quantitative models, involved in creation of Constellation commodities business. 4 years as co-head of Goldman's NA power business. With JPM since 2009.
Stu Rubenstein	Head of Global Operations	Over 25 years experience in commodities. 15 years with Goldman Sachs (MD in 1999), ran J.Aron energy operations for 4 years, helped start Constellation Energy commodities group while with Goldman. 10 years with Constellation Energy (Chief Operating Officer from 2001).
Trish Dever	Human Resources	18 years in banking including 12 years in Human Resources. Has been supporting Global Commodities businesses for the past 4 years.
Jim Ballentine	Head of Credit Risk Management	31 years in banking including the last 10 years in credit. Prior experience includes leveraged finance and investment banking coverage.

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Response to Question 2

J.P. Morgan's Global Commodities Group conducts a customer-driven commodity derivatives and commodities financial intermediation business, providing its clients with risk management and financing solutions for their commodity exposures. Customers include governments, producers, consumers, intermediaries, refiners, and investors. J.P. Morgan's physical commodity inventory is related to these customer businesses, and J.P. Morgan does not engage in proprietary trading in any physical commodities and is not a user of or investor in physical commodities. To illustrate this, J.P. Morgan has supplemented the requested data about its physical inventory positions with the corresponding committed forward physical sales and/or financial sales ("hedged") that neutralize J.P. Morgan's directional interest in the price performance of its inventory positions. J.P. Morgan has shown its resulting net directional positions, which are held for very short periods of time. To provide further context, J.P. Morgan enters into physical commodity transactions in connection with the orderly establishment or unwinding of hedging positions for its customer-driven commodity businesses. J.P. Morgan does not take a position in physical commodities for the purpose of profiting from price changes, but rather as part of a portfolio hedge. Physical inventory held by J.P. Morgan is either hedged with or is a hedge for the sale of a comparable financial derivative or forward sale. Physical inventory is associated with hedges to protect the firm against commodity prices rising or falling. J.P. Morgan assesses its physical commodities at an aggregated portfolio level to measure the total risk associated with the hedged portfolio. This is shown by the fact that the USD notional value of the hedged portfolio is both well in relation to the notional value of the inventory alone, and the total notional value of the portfolios are small in relation to the general buying and selling activities of consumers/producers/speculators in the market as a whole, as well as supply and demand for the products in question.

Commodity	Approximate Dollar Value (in Millions USD at Spot Value)											
	Inventory at the end of each fiscal year**						Lowest inventory during each fiscal year**					
	2008	2009	2010	2011	2012	2013	2008	2009	2010	2011	2012	2013
Agriculture												
Cocoa	0	0	4.0	0	0	0	0	0	11.8	5.1	0	0
Coffee	0	0	3.3	19.6	16.1	0	0	0	3.3	25.8	19.1	0
Cotton	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Corn	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grain	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Lumber	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Rice	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Soybeans	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sugar	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Wheat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Metals												
Aluminum	349.5	483.5	300.2	427.7	407.1	565.6	349.5	483.5	300.2	427.7	407.1	565.6
Copper	148.6	393.7	659.9	1244.9	946.4	241.5	148.6	393.7	659.9	1244.9	946.4	241.5
Gold	3144.5	3660.0	8932.6	10763.8	4954.8	5200.0	3144.5	3660.0	8932.6	10763.8	4954.8	5200.0
Iron Ore	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Lead	0	239.4	348.0	197.3	138.9	66.0	0	239.4	348.0	197.3	138.9	66.0
Nickel	253.8	214.7	2170.1	928.7	1393.0	248.4	253.8	214.7	2170.1	928.7	1393.0	248.4
Palladium	105.6	408.1	554.3	611.3	578.5	312.9	105.6	408.1	554.3	611.3	578.5	312.9
Platinum	57.5	554.3	875.2	1088.6	727.5	307.4	554.3	875.2	1088.6	727.5	307.4	875.2
Silver	121.2	1102.5	172.1	157.6	1264.0	1165.6	121.2	1102.5	172.1	157.6	1264.0	1165.6
Tin	4.8	4.7	215.3	184.7	80.2	17.5	4.8	4.7	215.3	184.7	80.2	17.5
Zinc	174.1	197.4	1076.2	1313.0	1047.4	762.1	174.1	197.4	1076.2	1313.0	1047.4	762.1
Coal	2.2	2.6	9.4	7.2	2.1	2.2	2.2	2.6	9.4	7.2	2.1	2.2
Crude Oil (all benchmarks)	0	8.4	560.4	597.0	260.9	0	0	8.4	560.4	597.0	260.9	0
Electricity ¹⁰	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Heating Oil	0	178.6	418.3	445.0	326.4	0	0	178.6	418.3	445.0	326.4	0
Gasoline (RBOB)	0	0	28.5	94.0	74.2	0	0	0	28.5	94.0	74.2	0
Jet Kerosene	0	134.7	495.2	455.5	390.0	0	0	134.7	495.2	455.5	390.0	0
Natural Gas ¹¹	91.0	162.8	315.1	196.2	199.0	N/A	91.0	162.8	315.1	196.2	199.0	N/A

** Includes only the first and second quarters of 2012.

¹⁰ Based upon monthly inventory values.

¹¹ As electricity cannot be stored, inventory volumes are zero.

¹² Monthly inventory values for January 2008 - November 2009 are currently not available and as such, highest and lowest inventory during 2008 is not applicable.

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EXHIBIT #59

Response to Question 2

J.P. Morgan's Global Commodities Group conducts a customer-driven commodity derivatives and commodities financial intermediation business, providing its clients with risk management and financing solutions for their commodity exposures. Customers include governments, producers, consumer, intermediaries, refiners, and investors. J.P. Morgan's physical commodity inventory is related to these customer businesses, and J.P. Morgan does not engage in proprietary trading in any physical commodities and is not a user of or investor in physical commodities. To illustrate this, J.P. Morgan has supplemented the requested data about its physical inventory positions with the corresponding committed forward physical sales and/or financial sales (hedged) that neutralize J.P. Morgan's directional interest in the price performance of its inventory positions. J.P. Morgan has shown its resulting net directional positions, which are held for very short periods of time, to provide further context. J.P. Morgan enters into physical commodity transactions in connection with the orderly establishment or unwinding of hedging positions for its customer-driven commodities business. J.P. Morgan does not take a position in physical commodity derivatives for the purpose of profiting from price changes, but rather as part of a portfolio hedge. Physical inventory held by J.P. Morgan is either hedged with or is a hedge for the sale of a comparable financial derivative or forward sale. Physical inventory is associated with hedges to protect the firm against commodity price rising or falling. J.P. Morgan assesses its physical commodities at an aggregated portfolio level to measure the total risk associated with the hedged portfolio. This is shown by the fact that the USD notional value of the hedged portfolio is both small in relation to the notional value of the inventory alone, and the total notional value of the portfolios are small in relation to the general buying and selling activities of consumers/producers/speculators in the market as a whole, as well as supply and demand for the products in question.

Commodity	Unit	Approximate Aggregate Inventory (in Million Units)											
		Inventory at the end of each fiscal year**						Highest inventory during each fiscal year**					
		2008	2009	2010	2011	2012		2008	2009	2010	2011	2012	
Agriculture	Cocoa	0	0	0	0	0		0	0	0	0	0	
	Coffee	0	0	0	0	0		0	0	0	0	0	
	Calon	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	
	Corn	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	
	Lumber	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	
	Rice	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	
	Soybeans	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	
	Sugar	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	
	Wheat	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	
	Aluminum	0.2	0.3	1.2	3.3	2.2		0.2	0.7	2.2	3.3	2.2	
Industrial and Precious Metals	Copper	0.1	0.1	0.1	0.1	0.1		0.1	0.1	0.1	0.1	0.1	
	Gold	3.8	5.2	6.3	7.0	3.1		5.8	5.3	9.8	9.4	3.9	
	Iron Ore	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	
	Lead	0	0	0	0	0		0	0	0	0	0	
	Nickel	0.1	0.1	0.1	0.1	0.1		0.1	0.1	0.1	0.1	0.1	
	Palladium	0.6	1.0	0.7	0.7	0.7		0.7	1.0	0.8	1.1	1.1	
	Platinum	0.1	0.4	0.5	0.8	0.5		0.7	0.4	0.5	0.8	0.7	
	Silver	10.9	69.2	72.2	3.9	45.9		39.4	18.8	46.3	39.9	45.9	
	Tin	0.1	0.1	0.1	0.1	0.1		0.1	0.1	0.1	0.1	0.1	
	Zinc	0.1	0.1	0.1	0.1	0.1		0.1	0.1	0.1	0.1	0.1	
Energy	Crude Oil (all benchmarks)	0	0	0	0	0		0	0	0	0	0	
	Electricity ¹⁰	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	
	Heating Oil	0	2.1	3.9	3.6	2.8		0	2.1	3.9	3.6	2.8	
	Gasoline (RBOB)	0	0	0	0	0		0	0	0	0	0	
	Jet Kerosene ¹⁰	0	1.6	4.6	3.4	3.1		0	1.9	4.8	4.4	3.1	
	Natural Gas ¹⁰	17.1	28.5	67.8	51.9	50.7		N/A	37.5	67.8	52.2	30.7	
	Bitumen	0	0	0	0	0		0	0	0	0	0	
	Coal	0	0	0	0	0		0	0	0	0	0	
	Uranium	0	0	0	0	0		0	0	0	0	0	
	Oilseeds	0	0	0	0	0		0	0	0	0	0	

* Includes only the first and second quarters of 2012.

** Based upon monthly inventory values.

¹⁰ As electricity cannot be stored, inventory volumes are zero.

¹¹ Monthly inventory units for January 2008 - November 2008 are currently not available and as such, highest and lowest inventory units during 2008 are not applicable.

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JPM-COMM-PSI-000016

CONFIDENTIAL TREATMENT REQUESTED

Merchant Banking Investment in Henry Bath

JPMorgan Chase & Co. ("JPMC") plans to hold its investment in Henry Bath & Son Limited ("Henry Bath") under the merchant banking authority in Section 4(k)(4)(H) of the Bank Holding Company Act of 1956 (the "BHC Act"). JPMC acquired all of the equity interests of Henry Bath on July 1, 2010 as part of its acquisition of certain businesses from RBS Semptra Commodities. JPMC currently holds Henry Bath in reliance on Section 225.85(a)(3) of Regulation Y, which allows a financial holding company to acquire a company engaged in limited nonfinancial activities if the financial holding company conforms, terminates, or divests the nonfinancial activities within two years of the date of acquisition. JPMC will conform its investment in Henry Bath to a permissible merchant banking investment before the end of the two-year conformance period required under Section 225.85.

Bona Fide Merchant Banking Investment

JPMC acquired Henry Bath based on its belief that it was an attractive investment and will hold Henry Bath with the intent of profiting from its earnings and realizing any appreciation in its value upon ultimate resale or disposition. Section 4(k)(4)(H) and Regulation Y permit a bank holding company to hold shares of a company engaged in nonfinancial activities as part of a bona fide merchant banking activity, including where the shares are held for the purpose of appreciation and ultimate resale or disposition of the investment. JPMC was attracted to the opportunity to own Henry Bath because it is a well-run and profitable company with a long history and a solid reputation in its industry, the warehousing of commodities, predominantly metals traded on the London Metal Exchange ("LME"). Its value is supported in part by the fact that it is not easy for competitors to get into the business of operating warehouses licensed by the LME—the application process is rigorous and warehousing companies need a good track record to attract customers. JPMC believes that LME warehousing is a business with excellent growth potential because there has been a substantial increase in demand for metals, particularly in the emerging markets, which has increased storage demands. In short, JPMC believes that this is a business that can generate a good return on investment.

Under the BHC Act and the merchant banking regulations, JPMC may own an interest in a company, including a 100% or other controlling interest in a company, that engages in nonfinancial activities provided it complies with the requirements relating to merchant banking investments.¹ As noted, JPMC owns 100% of Henry Bath and therefore controls it, but JPMC will do so as a bona fide merchant banking investment. The requirement in Regulation Y that a merchant banking investment be "bona fide" is meant to prevent a financial holding company from holding investments in nonfinancial companies for the purpose of engaging in the activities of the nonfinancial company, *i.e.* integrating the portfolio company into the strategy and operations of the financial holding company. Consistent with this, Henry Bath is very much a separate company from JPMC. Importantly, Henry Bath has independent management² and there are no officer or employee interlocks between JPMC and Henry Bath. In addition, it is

¹ See 12 C.F.R. § 225.170.

² Henry Bath currently does not have a chief executive officer. The board of directors of Henry Bath is expected to appoint a chief executive officer prior to June 1, 2012.

CONFIDENTIAL TREATMENT REQUESTED

operationally independent from JPMC and its subsidiaries, in part because of the requirements imposed on it under LME rules.

All LME warehouse operators, including Henry Bath, are subject to strict regulations imposed by the LME that are designed to ensure that conflicts of interest do not arise when LME warehouse companies are affiliated with companies engaged in commodity trading activities. LME warehousing companies are required to operate as separate companies and are subject to strict confidentiality rules regarding price-sensitive information, including information related to stock levels and flows of commodities in or out of the warehouses. These structural requirements and information barriers prevent any operational integration of Henry Bath into JPMC's trading or other financial operations, in addition to preventing JPMC's commodities business personnel from accessing or taking advantage of nonpublic information known to Henry Bath. Moreover, LME regulations require that LME warehouse companies treat all customers wanting to deposit commodities at, or remove commodities from, an LME warehouse fairly, in time order, and with a common level of service to avoid even the appearance of favoritism. That is, Henry Bath cannot favor JPMC or its customers when accepting metal for storage or releasing it.

The fact that a large portion of stocks held at Henry Bath warehouses currently belongs to JPMC or its customers does not prevent JPMC from holding this investment consistent with the merchant banking regulations. JPMC, when given a choice, directs its business to Henry Bath because Henry Bath is a reputable LME warehouse operator and JPMC owns 100% of Henry Bath. Henry Bath does not provide JPMC with preferential terms. JPMC does not believe that Henry Bath is in any way dependent on business from JPMC, and being a customer of Henry Bath does not give JPMC any rights or ability to influence operational decisions made by Henry Bath's management. As noted, JPMC has owned Henry Bath only since July 2010, and in general demand is high across the industry for LME storage. Moreover, with limited exceptions,³ business relationships between a portfolio company and a financial holding company are not prohibited and, in fact, are not unusual in connection with merchant banking investments.

Holding the Henry Bath investment under the authority of Section 225.85 and then transitioning it to merchant banking authority should not prevent JPMC from holding it as a bona fide merchant banking investment. In fact, Regulation Y specifically contemplates that a financial holding company may hold shares, assets or ownership interests under one authority and later hold them under merchant banking authority.⁴ The ability to change the authority under which a

³ Section 225.176 of Regulation Y imposes limits on cross marketing and on certain transactions between a depository institution subsidiary of a financial holding company and a merchant banking portfolio company.

⁴ Under the tacking provisions of the merchant banking rules, a financial holding company that previously held shares, assets or ownership interests under an authority that imposes a limited holding period must tack on the time such interests were held under that authority when calculating compliance with the merchant banking holding period. See 12 C.F.R. § 225.172(b)(3). The preamble to the final merchant banking rule states that this requirement is appropriate because it prevents a financial holding company from evading the holding periods applicable to the merchant banking regulations and provisions of other federal banking laws with similar requirements. See 66 FR 8465, 8475 (2001).

CONFIDENTIAL TREATMENT REQUESTED

financial holding company holds shares, assets or ownership interests therefore should not undermine its ability to hold such interests as a bona fide merchant banking investment. Indeed, the preamble to the final merchant banking rule recognizes that, although interests held by a financial holding company may not have been acquired originally as a merchant banking investment, the financial holding company may later determine that it wishes to hold such interests for investment purposes consistent with the requirements of the merchant banking rules.⁵

Permitting JPMC to hold Henry Bath under merchant banking authority thus is consistent with the bona fide investment requirement. JPMC will not be engaging in the activities of Henry Bath, which will maintain, separate, independent executive management that will manage its routine operations. JPMC and its personnel will not engage or participate in the day-to-day management of Henry Bath except when and to the extent permitted under the limited exceptions set forth in Regulation Y.

Routine Management

As explained, JPMC does not, and will not, routinely manage or operate Henry Bath. The merchant banking regulations prohibit a financial holding company from routinely managing or operating a portfolio company, except under limited circumstances.⁶ JPMC does not have and will not maintain any officer or employee interlocks with Henry Bath that would trigger a presumption of routine management or operation under Regulation Y. Moreover, JPMC does not and will not have in place any covenants or other contractual agreements with Henry Bath that would restrict Henry Bath's ability to make routine business decisions. JPMC will ensure that any actions taken in its ownership of Henry Bath to date that may not be consistent with merchant banking, such as bringing Henry Bath employees under JPMC benefits policies, are reversed prior to the end of the two-year conformance period.

As noted above, the LME places restrictions on Henry Bath as an LME warehouse operator. These restrictions will help ensure that JPMC remains in compliance with the prohibition on routine management by a financial holding company of a portfolio company.

Holding Period

JPMC recognizes that there is a ten-year holding period applicable to merchant banking investments (subject to extension) and that the holding period begins from the date that Henry Bath was acquired in reliance on Section 225.85 of Regulation Y.⁷ JPMC will comply with this requirement as well as the other requirements under the merchant banking rules.

⁵ The preamble cites to the authority under the BHC Act to acquire shares, assets or ownership interests in satisfaction of a debt previously contracted in good faith as an example. See 12 C.F.R. § 225.171.

⁶ See 12 C.F.R. § 225.171.

⁷ See 12 C.F.R. § 225.172.

EXCERPT

JPMorgan
FRB-PSI-301379

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COMMODITIES PHYSICAL OPERATING RISK

Update to CIBRC

24 Jan 2013

Permanent Subcommittee on Investigations

EXHIBIT #61

STRICTLY PRIVATE AND CONFIDENTIAL

Physical Operating Risk Review of Project Liberty

Transaction Summary	Transaction-Specific Review and Approval
<ul style="list-style-type: none">■ Supply and Offtake agreement between JPMVEC and Philadelphia Energy Solutions Refining and Marketing (PESRM), a joint venture between the Carlyle Group and Sunoco■ JPM supplies 100% of crude oil and feedstocks and purchases the majority of the refined products■ JPM sells around half of refinery products back to Sunoco for its retail distribution network; remainder is sold to third parties■ JPM leases storage for crude and refined products on and near the refinery premises■ Crude oil and feedstocks arrive via ship and rail■ Refined products and blends taken away by pipeline and barge■ 5 year contract term; option to cancel at end of years 3 or 4	<ul style="list-style-type: none">■ Physical Oil products and related policies/processes verified to be business-as-usual for GCG■ All vessels to be used in transaction vetted and approved by GCG's Vessel Vetting Specialist■ Chemical tank barge "Ponciana" - 11 years; Policy specifies 40 year limit■ Barges accepted per Policy's exception process: detailed on-site inspection of ship, crew and record; ongoing schedule of inspections established; frequent review of exception■ Under the Physical Commodity Vendor Management Policy, all vendors assigned a relationship manager, evaluated, and found acceptable. Onboarding of all vendors carried out, including KYV.■ All storage tanks and ship-handling infrastructure inspected by Oil Inspections, Inc. Some remediation items identified and addressed.■ Some logistical (scheduling) expertise retained from PESRM and provided to JPM under a negotiated Consulting Services Agreement■ Training provided on vessel vetting, Avoidance of Operational Control, and incident reporting■ Certain crude shipments from Strict Liability Jurisdictions evaluated by ORC and IBRC and approved with conditions (for countries that are not signatories to CLC 92, take only delivered cargoes; GCG to purchase additional marine liability insurance, \$450mm acquired)■ Project Liberty reviewed and approved by IB Environmental Risk Group, RRC, and GCG Operating Risk Committee
Physical Operating Risk Framework	
<ul style="list-style-type: none">■ The physical components of the transaction are already contemplated and routinely undertaken by GCG■ All physical commodity handling is by third parties (vendors)■ Activities are bounded and controlled via:<ul style="list-style-type: none">■ NBIA for Global Physical Oil■ GCG 2.01 – Vessel Chartering and Vetting Policy Wet Freight■ GCG 1.05 – Physical Commodity Vendor Management■ GCG 1.04 – Incident Reporting■ GCG 1.03 – Insurance Coverage■ GCG 1.02 – Avoidance/Operational Control of Third Party Service Providers■ GCG Emergency Response Plan	

PHYSICAL OPERATING RISK

INTERNAL FR

June 30, 2014

RSSDID: 1039502

FR Y-12
OMB Number 7100-0300
Approval expires December 31, 2015
Page 1 of 4

Board of Governors of the Federal Reserve System



Consolidated Holding Company Report of Equity Investments in Nonfinancial Companies—FR Y-12

Report at the close of business as of the last calendar day of the reporting period.

This report is required by law: Section 5(c) of the Bank Holding Company Act (12 U.S.C. § 1844(c)) and Section 10 of the Home Owners Loan Act (12 U.S.C. § 1467a(b)).

The Consolidated Holding Company Report of Equity Investments in Nonfinancial Companies is to be prepared in accordance with

the instructions provided by the Federal Reserve System. The Federal Reserve may not conduct or sponsor and an organization (or a person) is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

NOTE: The Consolidated Holding Company Report of Equity Investments in Nonfinancial Companies must be signed and attested by an Executive Officer of the reporting holding company.

Date of Report: June 30, 2014
Month / Day / Year (BHEI 9099)

I, the undersigned Executive Officer of the named holding company, attest that the Consolidated Holding Company Report of Equity Investments in Nonfinancial Companies for this report date has been prepared in conformance with the instructions issued by the Federal Reserve System and is true and correct to the best of my knowledge and belief.

Marianne Lake

Printed Name of Executive Officer at Holding Company (BHEI C480)

Executive Vice President

Title of Executive Officer of Holding Company (BHEI C481)

Signature of Executive Officer of Holding Company

06/30/2014

Date of Signature (MM/DD/YYYY) (BHEI J196)

JPMORGAN CHASE & CO

Legal Name of Holding Company (TEXT 9010)

270 PARK AVENUE

(Mailing Address of Holding Company) Street / P.O. Box (TEXT 9110)

NEW YORK

City (TEXT 9130)

NY

State (TEXT 9200)

10017

Zip Code (TEXT 9220)

Person to whom questions about this report should be directed:

Name / Title (TEXT 8901)

Area Code / Phone Number (TEXT 8902)

Area Code / FAX Number (TEXT 9118)

E-mail Address (TEXT 4086)

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RSSD ID

C.I.

S.F.

Public reporting burden for this information collection is estimated to average 16.5 hours per response, including time to gather and maintain data in the required form and to review instructions and complete the information collection. Comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing the burden, may be sent to Secretary, Board of Governors of the Federal Reserve System, 30th and C Streets, NW, Washington, DC 20503, and to the Office of Management and Budget, Paperwork Reduction Project (7100-0300), Washington, DC 20503.

Permanent Subcommittee on Investigations
EXHIBIT #62

FRB-PSI-800005 03/2013
PSI-FRB-12-000008

INTERNAL FR	June 30, 2014	RSSDID: 1039502
JPMORGAN CHASE & CO		
Legal Name of Holding Company		For Federal Reserve Bank Use Only
June 30, 2014		RSSD ID
As-of Date		C.I.

FR Y-12
Page 2 of 4**Schedule A: Type of Investments**

(If no activity or if the following section does not apply, please enter zero "0".)

	(Column A) Acquisition Cost			(Column B) Net Unrealized Holding Gains Not Recognized as Income			(Column C) Carrying Value			(Column D) Publicly Quoted Value			
	BHEI	BI	MI	BHEI	BI	MI	BHEI	BI	MI	BHEI	BI	MI	
Dollar Amounts in Millions													
1. Direct investments in public entities	C088		582	C089		0	C090		872	C091		562	1.
2. Direct investments in nonpublic entities	C093	10	206	C094		0	C095	8	205				2.
3. All indirect investments	C097		776	C098		0	C099		628				3.
4. Total portfolio (sum of items 1, 2, and 3)	C101	11	564	C102		0	C103	9	705				4.

Memoranda

	Number of Companies					
	BHEI	1-10	11-25	26-100	100+	
1. Total portfolio	C100			100		M.1.

	(Column A) Acquisition Cost			(Column B) Net Unrealized Holding Gains Not Recognized as Income			(Column C) Carrying Value			
	BHEI	BI	MI	BHEI	BI	MI	BHEI	BI	MI	
Dollar Amounts in Millions										
Financial holding companies only										
2. Investments held under Merchant Banking (GLBA) authority	C104	10	267	C105		0	C106	8	784	M.2.

	Income Amount			
	BHEI	BI	MI	
Dollar Amounts in Millions				
Only for holding companies filing FR Y-9C				
3. Pre-tax impact on net income from items 1, 2, and 3 above	B498		419	M.3.

	Off-Balance-Sheet Amount			
	BHEI	BI	MI	
Dollar Amounts in Millions				
For all holding companies				
4. Investments managed for others	C716	1	045	M.4.

	Income Amount			
	BHEI	BI	MI	
Dollar Amounts in Millions				
Only for holding companies filing FR Y-9C				
5. Pre-tax impact of management fee income (from item M4 above)	J443		0	M.5.

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PSI-FRB-12-000009

1500

INTERNAL FR	June 30, 2014	RSSDID: 1039502	FR Y-12 Page 3 of 4
JPMORGAN CHASE & CO			
Legal Name of Holding Company			
June 30, 2014			
As-of Date			

Schedule B: Type of Security

	(Column A) Acquisition Cost			(Column B) Carrying Value			
	BHEI	BI	MI	BHEI	BI	MI	
Dollar Amounts in Millions							
1. Common stock	C107	3	624	C108	3	757	1.
2. Convertible debt and convertible preferred stock	C109		475	C110		327	2.
3. Other equity instruments	C111	7	465	C112	5	621	3.
4. Total portfolio (sum of items 1, 2, and 3)	C113	11	564	C114	9	705	4.

	(Column A) Acquisition Cost			(Column B) Carrying Value			
	BHEI	BI	MI	BHEI	BI	MI	
Dollar Amounts in Millions							
Off-Balance-Sheet Amount							
1. Unused equity commitments	C115		638				M.1.
2. Does the holding company hold any warrants or similar instruments received in connection with equity investment activity? (Enter "1" for yes; enter "0" for no.)	0=No	BHEI		1=Yes	C117	1	M.2.

Schedule C: Type of Entity within the Banking Organization

	(Column A) Acquisition Cost			(Column B) Net Unrealized Holding Gains Not Recognized as Income			(Column C) Carrying Value			
	BHEI	BI	MI	BHEI	BI	MI	BHEI	BI	MI	
Dollar Amounts in Millions										
1. Depository institutions:										
a. SBICs	C117		0	C718		0	C118		0	1.a.
b. Edge and agreement corporations	C121		48	C719		0	C122		30	1.b.
c. All other	C128		22	C720		0	C127		47	1.c.
2. Parent holding and other nonbank subsidiaries:										
a. SBICs	C136		13	C721		0	C137		12	2.a.
b. Edge and agreement corporations	C722		12	C723		0	C724		9	2.b.
c. Broker/Dealers	C131		42	C725		0	C132		24	2.c.
d. Private equity subsidiaries	C726	10	076	C727		0	C728	8	580	2.d.
e. All other	C145	1	351	C729		0	C146	1	003	2.e.
3. Total portfolio (sum of items 1.a through 2.e)	C150	11	564	C730		0	C151	9	705	3.
Memoranda										
1. Domestic investments	C155	7	426	C749		0	C156	5	150	M.1.
2. Foreign investments	C157	4	138	C750		0	C158	4	555	M.2.

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FRB-PSI-800007 8/2013
PSI-FRB-12-000010

INTERNAL FR

JPMORGAN CHASE & CO

June 30, 2014

As of Date

June 30, 2014

RSS01D: 039502

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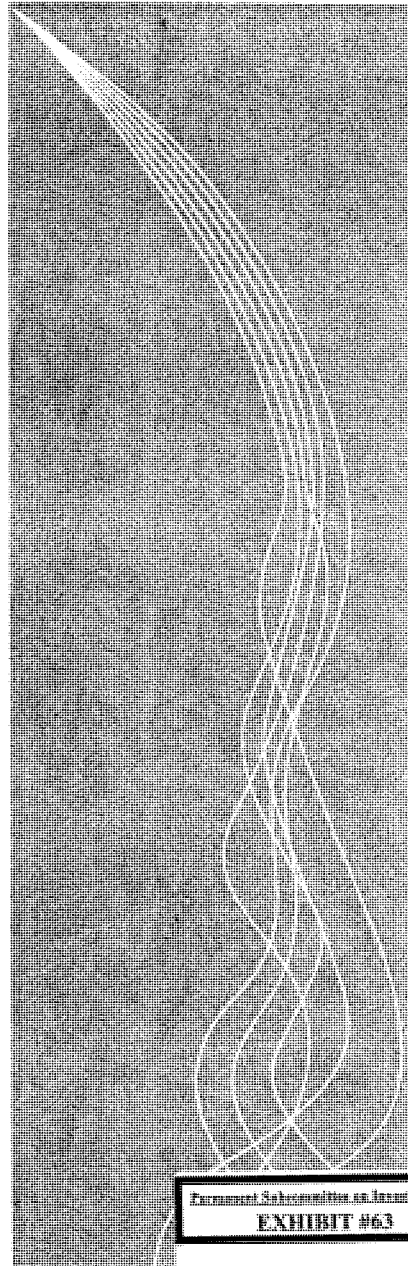
Schedule D: Nonfinancial Investment Transactions During Reporting Period

Type of Transaction	Direct Public Investments						Direct Nonpublic Investments						Indirect (Fund) Investments					
	(Column A) Acquisition Cost	(Column B) Carrying Value	(Column C) Acquisition Cost	(Column D) Carrying Value	(Column E) Acquisition Cost	(Column F) Carrying Value	(Column G) Acquisition Cost	(Column H) Carrying Value	(Column I) Acquisition Cost	(Column J) Carrying Value	(Column K) Acquisition Cost	(Column L) Carrying Value	(Column M) Acquisition Cost	(Column N) Carrying Value	(Column O) Acquisition Cost	(Column P) Carrying Value	(Column Q) Acquisition Cost	(Column R) Carrying Value
Dollar Amounts in Millions																		
Type of Transaction																		
1. Purchases	C731	10 C732	10 J434	96 J435	95 C733	0 C734	0	0	0	0	0	0	0	0	0	0	0	0
2. Less: return of capital	C735	248 C736	248 J436	103 J437	75 C737	345 C738	343	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.
3. Net valuation changes	C741	C739	-369	J438	14	C740	8	3.	3.	3.	3.	3.	3.	3.	3.	3.	3.	3.
4. Other	C745	99 C742	119 J439	-147 J440	-194 C743	-49 C744	-48	4.	4.	4.	4.	4.	4.	4.	4.	4.	4.	4.
5. Total transactions (sum of items 1 through 4)		-139 C746	-508 J441	-154 J442	-160 C747	-394 C748	-383	5.	5.	5.	5.	5.	5.	5.	5.	5.	5.	5.

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FRB-PSI-800008
PSI-FRB-12-000011

03/2/13



Global & Regional Investment Bank League Tables -- 1H2014

September 2014

EXCERPT

COALITION
ANALYTICS | INTELLIGENCE
PSI-Coalition-01-000019

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Coalition Global Investment Bank League Table

Global (1414, USD Billion)	JP Morgan	Goldman Sachs	Deutsche Bank	Bank of America Merrill Lynch	CTI	Morgan Stanley	Credit Suisse	Barclays	UBS	BNP Paribas
Investment Bank	11.5 bn	1	-2	-4	-4	1	7	8	9	10
Fixed Income Commodities & Currencies	9.9 bn	1	1	1	1	1	1	1	1	1
GLO Rates	1	1	1	1	1	1	1	1	1	1
GLO Credit	1	1	1	1	1	1	1	1	1	1
GLO Foreign Exchange	1	1	1	1	1	1	1	1	1	1
Securitization	1	1	1	1	1	1	1	1	1	1
Emerging Markets	1	1	1	1	1	1	1	1	1	1
Commodities	1	1	1	1	1	1	1	1	1	1
Municipal Finance	1	1	1	1	1	1	1	1	1	1
Equities	1	1	1	1	1	1	1	1	1	1
Cash Equities	1	1	1	1	1	1	1	1	1	1
Equity Derivatives & Convertibles	1	1	1	1	1	1	1	1	1	1
Prime Services	1	1	1	1	1	1	1	1	1	1
Futures & Options	1	1	1	1	1	1	1	1	1	1
IBD	1	1	1	1	1	1	1	1	1	1
Mergers & Acquisitions	1	1	1	1	1	1	1	1	1	1
Equity Capital Markets	1	1	1	1	1	1	1	1	1	1
Debt Capital Markets	1	1	1	1	1	1	1	1	1	1

Two Strongest Performers J114 vs. J113
 Coalition's League Table applies the following tiering convention:
 Rank 1-3: Rank 4-6: Rank 7-10: Exited business
 When more than one bank is included within an equal rank, all banks' performances are within 5% of the largest bank in that rank
 Where banks are ranked equally, they are ordered on the League Table according to the number of 1-3 rank positions at the business level (e.g. Cash Equities, Securitization)
 Source: Coalition Proprietary Competitor Analytics

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Coalition Regional Investment Bank League Tables

Two Strongest Performers 2014 vs. 2013										
Assets (USD, USD Billion)	JP Morgan	Bank of America	Wells Fargo	Citi	Morgan Stanley	Deutsche Bank	Barclays	Goldman Sachs	JP Morgan	Bank of America
Investment Bank	1	2	3	4	5	6	7	8	9	10
Fixed Income	1	2	3	4	5	6	7	8	9	10
Equities	1	2	3	4	5	6	7	8	9	10
IBD	1	2	3	4	5	6	7	8	9	10
EMEA (LHM, USD Billion)										
Assets (LHM, USD Billion)	JP Morgan	Bank of America	Wells Fargo	Citi	Morgan Stanley	Deutsche Bank	Barclays	Goldman Sachs	JP Morgan	Bank of America
Investment Bank	1	2	3	4	5	6	7	8	9	10
Fixed Income	1	2	3	4	5	6	7	8	9	10
Equities	1	2	3	4	5	6	7	8	9	10
IBD	1	2	3	4	5	6	7	8	9	10
Asia-Pacific (USD Billion)										
Assets (USD, USD Billion)	JP Morgan	Bank of America	Wells Fargo	Citi	Morgan Stanley	Deutsche Bank	Barclays	Goldman Sachs	JP Morgan	Bank of America
Investment Bank	1	2	3	4	5	6	7	8	9	10
Fixed Income	1	2	3	4	5	6	7	8	9	10
Equities	1	2	3	4	5	6	7	8	9	10
IBD	1	2	3	4	5	6	7	8	9	10

Coalition's Regional League Table analysis includes Leading Regional Top 10 Investment Banks at Investment Bank level and applies the following tiering convention: Rank 1-3 Rank 4-6 Rank 7-10

When more than one bank is included within an equal rank, all bank performances are within 2% of the largest bank in that rank

Where banks are ranked equally, they are ordered on the League Table according to the number of 1-3 rank positions at the Divisional level (e.g. Equities)

Source: Coalition Proprietary Competitor Analytics

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June 5, 2014

VIA HAND DELIVERY

The Honorable Carl Levin
Chairman
Permanent Subcommittee on Investigations
Committee on Homeland Security & Government Affairs
United States Senate
Russell Senate Office Building, SR-199
Washington, DC 20510

Re: JPMorgan Chase & Co's April 23, 2014 Briefing Follow-Up

Dear Chairman Levin:

On behalf of JPMorgan Chase & Co ("J.P.Morgan"), I write in connection with your questionnaire dated January 11, 2013 regarding physical commodities. As you know, on April 23, 2014, J.P.Morgan provided a briefing to Subcommittee staff, during which your staff posed a number of additional questions. This submission includes certain information responsive to these questions, and J.P.Morgan is working to provide your staff with the balance of the follow-up information requested. Responses to certain of the specific follow-up questions are as follows:

Question: Your staff asked for the name of the individual in charge of J.P. Morgan Ventures Energy Corporation ("JPMVEC").

Response: John Anderson is the Chief Executive Officer of JPMVEC.

Question: Your staff asked about J.P.Morgan's ownership interest in the London Metal Exchange ("LME").

Response: J.P.Morgan previously held an approximately 11% stake in the LME through JPMorgan Metals Limited. This stake was sold to the HK Exchange when it bought the LME in June of 2012. J.P.Morgan currently has no investment in the LME.

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June 5, 2014
Page 2

Question: Your staff asked for a copy of J.P.Morgan's policy regarding information barriers between J.P.Morgan and Henry Bath.

Response: Please refer to the enclosed copy of the current policy marked as JPM-COMM-PSI-000026 – JPM-COMM-PSI-000042.

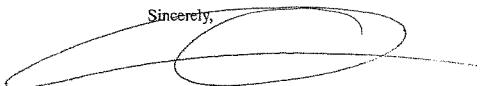
Question: Your staff asked whether One Equity Partners ("OEP"), J.P.Morgan's private investment arm, took outside investor money related to its investments.

Response: Third party investors have not invested in OEP. As discussed with Subcommittee staff, certain J.P.Morgan employees have at times co-invested in the fund.

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Permanent Subcommittee on Investigations

Please let me know if you have any questions.

Sincerely,



Steven R. Ross
Counsel for JPMorgan Chase & Co

Enclosure

cc: The Honorable John McCain, Ranking Member

Akin Gump

STRAUSS HAUER & FELD LLP

STEVEN R. ROSS
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October 6, 2014

VIA HAND DELIVERY

The Honorable Carl Levin
Chairman
Permanent Subcommittee on Investigations
Committee on Homeland Security & Government Affairs
United States Senate
Russell Senate Office Building, SR-199
Washington, DC 20510

Re: JPMorgan Chase & Co's Responses to Follow-Up Questions

Dear Chairman Levin:

On behalf of JPMorgan Chase & Co ("J.P.Morgan"), I write in connection with your questionnaire dated January 11, 2013 regarding physical commodities. This submission includes further information responsive to additional questions posed by your staff on September 12, 2014. As discussed with your staff, J.P.Morgan is working to provide the balance of the follow-up information requested. Please note that J.P.Morgan is in the process of collecting documents responsive to certain of the Subcommittee's questions below. Responses to the specific questions are as follows:

Question 18: Please provide a description and brief history of Project Liberty and its current status.

Response: On September 8, 2012, J.P. Morgan Ventures Energy Corporation ("JPMVEC") closed a crude oil and refined product intermediation transaction, referred to as Project Liberty. The project involved a Refinery located in Philadelphia, Pennsylvania that was wholly owned by Sunoco Inc. ("Sunoco"). The Refinery, which processed 330,000 barrels per day of crude oil, was about to be closed, with 800 workers about to lose their jobs. Project Liberty was a coordinated effort to save the Refinery and the jobs of the Refinery workers, an effort that received a tremendous amount of support at the state and local levels (*see, e.g.,* Mark Maremont, "White House Worked with Buyout Firm to Save Plant," WALL STREET JOURNAL, Aug. 21, 2012). Instead of closing, the Refinery was acquired by Philadelphia Energy Solutions Refining and Marketing ("PESRM"), a joint venture formed by the Carlyle Group ("Carlyle") and

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Sunoco. PESRM was able to take advantage of various incentives offered by local, state and federal governments to enhance the economics of operating the Refinery, and it committed to make various upgrades. Government officials highlighted this transaction as a win for both labor and energy efficiency, in saving jobs and reducing energy costs.

The particulars of the PESRM arrangement are as follows:

- in return for a 67% majority interest in the joint venture, Carlyle contributed \$175 million of equity to fund future capital projects, facility upgrades and enhance the Refinery's working capital;
- Sunoco contributed its Philadelphia Refinery assets to the joint venture in exchange for a non-operating minority interest;
- as the majority shareholder, Carlyle oversees day-to-day operations, and it has retained a controlling position and hired an experienced management team for the Refinery;
- key personnel at the Refinery were retained to maintain the required knowledge base and continuity of operations.

J.P.Morgan helped facilitate the acquisition by providing PESRM with intermediation in the form of a Supply and Offtake Agreement, pursuant to which JPMVEC became the exclusive supplier to PESRM of 100% of the Refinery's crude oil and non-crude feedstock requirements on a "just-in time" basis, and the purchaser of the majority of the refined products on an "as-they-are-produced" basis. The agreement had a term of five years, cancellable by either party on notice at the end of year three or four. Under the arrangement, JPMVEC purchases the crude oil from third parties, and sells the refined products to third parties (see additional information in response to Question 24 below), in each case at the direction of PESRM, subject to JPMVEC's legal, credit and country risk concerns. Initially, approximately 50% of the refined products produced were to be sold by JPMVEC to Sunoco to supply its retail network.

In connection with the intermediation, JPMVEC has leased and/or subleased approximately 14.5 million barrels of storage capacity for crude oil and refined products on and around the Refinery premises (from PESRM, Sunoco and certain other facility owners), and has contracted for access to inter- and intra-refinery pipelines, docks, time-chartered vessels, and other related infrastructure.

Under the arrangement, JPMVEC has received: through-put fees charged to PESRM based upon the volume of crude oil purchased for sale to PESRM and refined products bought from PESRM; and a working capital fee calculated upon the usage of the balance sheet (the inventory net of third party payables) on crude oil and refined products. Additionally, there is a

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cover transaction fee charged on the sale of crude to third parties or the purchase of refined products from third parties at PESRM's request.

JPMVEC is indemnified by PESRM for all appropriate expenses incurred in connection with the intermediation (e.g., transportation costs, demurrage costs, letters of credit costs, volumetric gains and losses, etc.).

J.P.Morgan is currently in the process of selling the Supply and Offtake Agreement.

Question 19: Please provide a list of the entities related to Project Liberty, a brief description of their roles, and JPMorgan's ownership interests in each such entity.

Response: There are two J.P.Morgan entities related to Project Liberty. As set forth in more detail above in response to Question 18, JPMVEC provides the intermediation. Separately, JPMorgan Chase Bank, N.A. provided PESRM with a bilateral liquidity facility in the form of a \$100 million asset-based lending revolver for working capital and other purposes, secured against certain inventory not intermediated by JPMVEC (i.e., intermediates).

Question 20: Please describe the internal review and approval process for Project Liberty, including the roles of "IB Environmental Risk Group, RRC, and GCG Operating Risk Committee." Please provide copies of the key documents related to Project Liberty's review and approval process, including the document describing and approving the project.

Response: J.P.Morgan undertook a robust internal review of Project Liberty. As with any project of this size and complexity, that review included specific consideration by, and approvals and input from, senior management and multiple control functions. Specifically, Project Liberty was evaluated and approved by the North America ("N.A.") Reputation Risk Committee, the IB Environmental Risk Group (through its participation in the N.A. Reputation Risk Committee process), and the Global Commodities Group ("GCG") Operating Risk Committee. In addition, the various control functions (including Credit, Market Risk, Operations, Accounting/Finance, Compliance, Legal, Trading Assistants, Logistics, Technology, Tax, and Insurance) were involved in the approval process and worked with the deal team for months leading up to the transaction's approval and closing. The deal was also reviewed extensively by GCG senior management, who was actively involved in the consideration and negotiation of the deal.

Within GCG, new business opportunities involving physical commodities undergo formal diligence and review to specifically consider physical risk (the "New Business Initiative Approval" or "NBIA" process). In the case of Project Liberty, the physical components of the transaction had already been contemplated, approved, and routinely undertaken by GCG, and

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thus did not necessitate the NBIA process. Nonetheless, all new transactions are evaluated when they include any physical commodity components pursuant to GCG's standard diligence and risk assessment practices. In the case of Project Liberty, J.P.Morgan evaluated the various areas of potential risk (including credit, reputation, operating, and environmental risks), determined that the physical oil products and related policies/processes involved fell within the scope of GCG's existing business operations (referred to as "business-as-usual"), and approved the transaction.

The following key approvals/assessments were made in connection with the transaction's closing in September 2012:

- **Credit Approval:** A credit approval package was prepared in August 2012 approving a crude intermediation facility and a five-year asset-based lending facility.
- **Large Structured Deal Template:** As is common for large structured transactions, the control functions and the deal team contributed to an August 2012 Large Structured Deal Template, which was reviewed and approved by the senior management of GCG.
- **N.A. Reputation Risk Committee Approval:** The N.A. Reputational Risk Committee reviews imminent, existing, or prospective transactions, activities and client relationships of or undertaken by the Corporate & Investment Bank as agent or principal, which, in the opinion of the relevant business head, have the potential for reputation risk. On September 5, 2012, the N.A. Reputation Risk Committee (including a representative from the IB Environmental Risk Group, which has a standing seat on the N.A. Reputation Risk Committee) was briefed on Project Liberty and considered several reputation issues related to the project. The N.A. Reputation Risk Committee approved the transaction with several conditions, including enhanced due diligence for crude oil suppliers, country risk process controls and limits, client accounting approval, and internal senior management approval for a consultancy agreement with PESRM in connection with scheduling and operational services.
- **GCG Operating Risk Committee Approval:** The GCG Operating Risk Committee provides senior business oversight and reviews new activities that have operating risk, sets physical risk policies, and approves insurance coverage. On September 6, 2012, the GCG Operating Risk Committee was briefed on Project Liberty and considered several issues related to the project. These considerations included: that the physical oil products and activities contemplated under the deal were "business-as-usual" under existing J.P.Morgan policies and processes; that any vessels in use by Sunoco and to be used by J.P.Morgan had been vetted and approved (*see* response to Question 27, below);

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that the tanks and infrastructure had been inspected and found to be suitable for use (*see* response to Question 27, below); that scheduling expertise would be provided by PESRM; that certain crude oil shipments from “strict liability” jurisdictions had been evaluated (*see* response to Question 25, below); and that the project had been reviewed and approved by the IB Environmental Risk Group and the N.A. Reputation Risk Committee (as described above). The GCG Operating Risk Committee determined that the elements of the transaction were generally “business-as-usual,” and it approved moving forward with the transaction.

In several additional meetings, the GCG Operating Risk Committee also discussed the sourcing of crude oil from “strict liability” jurisdictions (an issue discussed below in response to Question 25) and considerations related to the Ponciana barge (as discussed below in response to Question 27).

- **Close-Out Analysis:** A close-out analysis was prepared by the GCG Structured Transactions team and the credit risk team as part of the transaction’s overall diligence and analysis of the risk that was done, including an analysis to estimate the cost of removing the tank heel volumes at the Refinery in the event of a total shutdown.

Question 21: Please provide a list of assets within Project Liberty, including any management agreements, physical inventories, supply or offtake contracts, and other assets.

Response: With respect to PESRM’s physical inventory, please refer to the enclosed list of products as of June 30, 2014, marked as JPM-COMM-PSI-000043 to JPM-COMM-PSI-000044.

The primary agreements that established the intermediation arrangement were:

- the Supply and Offtake Agreement with JPMVEC discussed above in response to Question 18 (and any related amendments, side letters, or waivers);
- UCC-1 Financing Statements;
- Guarantee (and any related amendments);
- Inventory Sales Agreement;
- Sunoco R&M Master Confirmations (for in-transit and not-in-transit transactions);
- SIL Master Confirmation (not in-transit transactions);
- Intercreditor Agreement (and any related amendments);
- Terminating, Transportation and Storage Services Agreement;
- Consulting Agreement (and any related amendments); and
- PES Intercreditor Agreement.

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Question 22: Please indicate what legal authority is being relied upon by JPM for engaging in Project Liberty, including whether it is merchant banking authority or some other basis.

Response: Project Liberty is not a merchant banking investment. Rather, JPMVEC provides intermediation to PESRM pursuant to complementary authority granted to JPMVEC by the Board of Governors of the Federal Reserve System under Federal Reserve Regulation Y.

Question 23: Please confirm that JPMorgan is obligated to provide 100% of the crude oil needed for Project Liberty, describe how JPMorgan obtains that oil, the approximate volume of crude oil provided on a monthly basis, and the top three sources of the crude oil obtained by JPMorgan over the last year.

Response: Pursuant to the terms of the Supply and Offtake Agreement, JPMVEC is obligated to provide 100% of the crude oil needed by the Refinery. Under the arrangement, and as discussed above in response to Question 18, JPMVEC sources crude oil at the direction of PESRM, subject to J.P.Morgan's legal, credit and country risk concerns. On average, approximately eight million barrels of crude oil were sold by JPMVEC to the Refinery per month over the last year. The top three sources of the crude oil obtained over the last year are: Merrill Lynch Commodities, Statoil Marketing & Trading (US) Inc., and Socar Trading SA.

Question 24: Please explain what products are produced by the refinery associated with Project Liberty and the extent to which JPMorgan or unrelated third parties have purchased each of those products for each month of the project's existence through June 30, 2014.

Response: JPMVEC purchases virtually all of the products produced by the Refinery. JPMVEC then, in turn, sells the products to PESRM and Sunoco (which is an affiliate of PESRM), as well as other third parties. Please refer to the enclosed lists of (a) products and (b) third-party purchasers, from the commencement of Project Liberty through June 30, 2014, marked as JPM-COMM-PSI-000045 to JPM-COMM-PSI-000047.

Question 25: Please describe all insurance coverage JPM has regarding Project Liberty, including any deductions, caps, or exclusions.

- a. What are "strict liability jurisdictions," and how did they affect Project Liberty?
- b. Did JPM acquire additional insurance for those jurisdictions? If so, please provide details.

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Question 26: Please provide descriptions of, and documents related to, any risk assessments made by JPMorgan related to the storage, transportation, or production of crude oil and refined products related to Project Liberty.

Response: Please see the above response to Question 20.

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Question 27: Please describe the use of a barge named “Ponciana” in Project Liberty and any concerns about its operations and insurance coverage.

Response: The Ponciana is the exclusive tank barge used to move liquefied gas (butanes) from the Refinery to a storage facility in Marcus Hook, Pennsylvania, and back to the Refinery. Since September 2012, on average, the Ponciana has been used approximately twice per month for these voyages. The Ponciana is chartered by TTMI Sarl, a subsidiary of JPMVEC through which J.P.Morgan entities charter vessels to move crude oil and other products, on a Contract of Affreightment basis. Fees for usage of the barge are invoiced by PESRM to TTMI Sarl, and in turn by TTMI Sarl to JPMVEC. These fees are subsequently reimbursed by PESRM to JPMVEC, along with other reimbursable fees described above in response to Question 18.

In 2012, the vetting specialist Atlantic Technical Management determined the Ponciana to be in very good condition and also determined that the Ponciana had demonstrated capable and stable operations and crewing. In September 2012, the Ponciana received an exception from GCG’s Vessel Chartering and Vetting Policy for Wet Freight (discussed below in response to Question 28), given that the vessel’s age was one year beyond the age specified by the policy for barges carrying liquid cargoes. The Operating Risk Committee, via a process specifically contemplated by the Vetting Policy, approved this exception on September 6, 2012, initially for 30 days and subsequently for six consecutive six month periods. As a condition to this exception, the Ponciana must undergo and pass an inspection every six months. The vessel was satisfactorily inspected by Atlantic Technical Management in September 2012, December 2012, June 2013, December 2013, and June 2014.

Question 28: Please describe the process used to “vet” or perform due diligence regarding the risks related to Project Liberty.

Response: As set forth above in response to Question 20, Project Liberty was reviewed and approved through an extensive, months’-long process that involved GCG’s senior management, numerous control functions, and multiple risk committees. Alongside this approval process for the transaction, GCG has additional procedures in place to ensure further vetting when necessary, including policies that govern vessel chartering and vendor management. For example, and as discussed above in response to Question 27, GCG’s Vessel Chartering and Vetting Policy for Wet Freight was used to evaluate the Ponciana barge chartered in connection with Project Liberty. Of note, when this policy was independently reviewed, it was determined to be a best-in-class policy in the industry. In addition, GCG maintains a Physical Vendor Management Policy, which governs the suitability and inspection of storage tanks. In accordance with that policy, on-site

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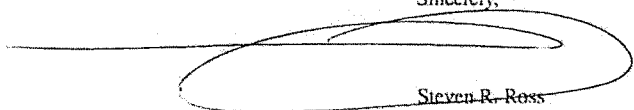
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tank inspections were conducted by Oil Inspections, Inc. in 2012, and all tanks and infrastructure were found to be suitable for use.

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Please let me know if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Steven R. Ross", with a long horizontal line extending to the left.

Steven R. Ross
Counsel for JPMorgan Chase & Co

cc: The Honorable John McCain, Ranking Member

Akin Gump
STRAUSS HAUER & FELD LLP

STEVEN R. ROSS
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October 21, 2014

VIA HAND DELIVERY

The Honorable Carl Levin
Chairman
Permanent Subcommittee on Investigations
Committee on Homeland Security & Government Affairs
United States Senate
Russell Senate Office Building, SR-199
Washington, DC 20510

Re: JPMorgan Chase & Co's Responses to Follow-Up Questions

Dear Chairman Levin:

On behalf of JPMorgan Chase & Co ("J.P.Morgan"), I write in connection with your questionnaire dated January 11, 2013 regarding physical commodities. This submission includes information and documents responsive to additional questions posed by your staff on October 13, 2014. As discussed with your staff, J.P.Morgan is working to provide the balance of the follow-up information requested. Responses to the specific questions are as follows:

Question 1: Please provide the total dollar value of the consolidated physical commodities holdings of JPMorgan (including those held in the bank) as of 9/30/2014. This should include both (i) total physical inventory of JPMVEC and (ii) base metals held in the bank. Please provide the consolidated tier 1 capital as of the same date.

Response: Please refer to the enclosed chart, marked as JPM-COMM-PSI-000048.

Question 2: Please provide the total dollar amount of each of platinum, palladium, and copper held by the bank as of 9/28/2012 and 9/30/2014.

Response: Please refer to the enclosed chart, marked as JPM-COMM-PSI-000049.

Question 4: Please confirm that JPMorgan started providing the Federal Reserve staff with "regular reporting of its compliance with the 5% limit" in 2011. Please provide the date of the

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first such regular report, the frequency of such reporting, and describe how and by whom the report is prepared.

Response: J.P.Morgan's inventory value data related to the Federal Reserve's limit is compiled by the relevant product controllers for each line of business, and then provided weekly by the product controllers to the External Reporting Group within the Global Commodities Group ("GCG"). This group compiles and reviews all data before providing the month's data to the Federal Reserve in the middle of each month. In the past, this report had been provided to individuals at the Federal Reserve by email. Currently, and since May 2014, reports are uploaded to a SharePoint site to which the Federal Reserve has access.

J.P.Morgan is working to confirm the date of its first report to the Federal Reserve. However, we note that the monthly data report (supplied to the Federal Reserve since at least 2011) contains, in addition to the new month's data, historical data dating back to January 2011.

Question 5: Please indicate whether JPM had long term fuel supply contracts with any of the power plants it owned or controlled, which power plants were involved, and the tenor of those contracts.

Response: In addition to any tolling agreements reflected in the chart provided by J.P.Morgan marked as JPM-COMM-PSI-000022 to JPM-COMM-PSI-000025 and referenced below in Question 13 (which are essentially agreements to supply gas and buy the power), J.P.Morgan has a two-year capacity purchase contract to fulfill a Southern Maryland Electric Cooperative capacity sale in connection with the Panda Brandywine tolling agreement. Separately, with respect to three power plants J.P.Morgan acquired from Bear Stearns in 2008 and subsequently sold (OLS Camarillo, OLS Chino, and Carson Cogeneration), J.P.Morgan had fuel supply contracts for these plants.

Question 6: Please confirm that Global Commodities Principal Investments is a unit within the JPMorgan Global Commodities Group, and it holds the ownership interests in the Panda, Kinder and Central Power plants. Please indicate whether GCPI is using JPMVEC or another entity, such as J.P. Morgan Asset Management Holdings, Inc., to hold those interests.

Response: Principal Investments is a line of business within GCG. The investments in the Kinder Jackson power plant, Panda Brandywine toll, and Central Power & Lime biomass facility have been (and currently are) held by subsidiaries of JPMVEC.

Question 8: Please confirm that, during the two-year grace period that JPMorgan held the power plants it acquired from Bear Stearns, 2008-2010, it did not include them when calculating

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the holding company's compliance with the Federal Reserve's 5% complementary authority limit.

Response: That is correct. As specified by the Federal Reserve Bank of New York on March 16, 2008, assets or activities acquired from Bear Stearns that J.P.Morgan was not then permitted to own or engage in were treated as permissible assets or activities for a period of two years.

Question 9: Please indicate what JPMorgan entity, such as JPMVEC, owns Virginia Port Partners LLC, which made the \$3 billion bid on the contract to operate the container terminal at Hampton Roads shipping port in Virginia.¹

Response: Neither JPMVEC nor any J.P.Morgan entity owns or owned Virginia Port Partners LLC. Virginia Port Partners LLC was a consortium comprised of (1) JPMorgan IIF Acquisitions LLC, and (2) RREEF, a division of Deutsche Bank AG. In 2012, the consortium made a \$3 billion bid on the contract to operate the port of Virginia, which would have included working with the Commonwealth of Virginia and the Virginia Port Authority to establish a partnership in order to assist the Commonwealth in its long-term goals of creating the leading container port in the Mid-Atlantic, promoting job growth, and fueling economic development.

JPMorgan IIF Acquisitions LLC refers to a special purpose vehicle related to the Infrastructure Investments Fund ("IIF"). As discussed below in response to Question 10, the IIF is a fund advised by JPMorgan Investment Management Inc.; J.P.Morgan, including JPMVEC, does not hold any investment in the IIF, and its general partners are controlled by unaffiliated third parties. In other words, there was no J.P.Morgan capital invested in Virginia Port Partners LLC.

Question 10: Please confirm that JPMorgan has an infrastructure investment fund and, please provide the name of the fund, where it is in the corporate structure, the dollars raised, and any commodity-related investment projects.²

Response: Within J.P.Morgan's Asset Management arm, the Global Real Assets ("GRA") unit houses the Infrastructure Investments Group (the "IIF Group"). The IIF Group does not invest money directly on behalf of J.P.Morgan, nor is it a separate entity that owns assets. Rather, it is a collection of individuals who raise capital, form funds and, through the Infrastructure Investments Fund (the "IIF" or the "Fund"), deploys capital on behalf of third party investors.

¹ And additional related information requested by email by Elise Bean on October 15, 2014.

² And additional related information requested by email by Elise Bean on October 15, 2014.

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J.P.Morgan does not invest in the Fund, and the Fund's general partners are controlled by third parties unaffiliated with J.P.Morgan.

J.P.Morgan Investment Management, Inc. (one of the vehicles through which GRA operates within J.P.Morgan Asset Management) provides investment advice to the Fund.

With regard to the IIF's investments, since it launched in 2006, the Fund has offered investors a moderate-risk approach to infrastructure investing that is diversified both geographically and by sub-sector. IIF seeks to invest in a broad range of infrastructure and infrastructure-related assets located primarily in the United States, Canada, Western Europe and Australia, and secondarily in other Organisation for Economic Co-operation and Development ("OECD") countries. These assets may include:

- Toll roads, parking garages, bridges and tunnels
- Oil and gas pipelines
- Electricity transmission and distribution assets
- Contracted power generation assets
- Communications assets
- Water distribution and wastewater collection and processing assets
- Railway lines and rapid rail links
- Seaports
- Airports

There is not a separate OECD infrastructure investment group under the GRA unit. Rather, this reflects that most investments made by the IIF are targeted toward OECD countries. In addition, GRA has a separate platform that seeks to invest capital in infrastructure-related investments in Asia.

Question 12: Please provide, for the period 2008 through 2013, a description of the insurance coverage (including exclusions, deductibles, and caps) for (i) JPMorgan's interests in power plants, and (ii) JPMorgan's consolidated physical commodity holdings.

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Question 13: Please let us know if the attached chart regarding power plants contains any errors, and if so, please correct them and return.

Response: Please refer to the enclosed chart, marked as JPM-COMM-PSI-000061 to JPM-COMM-PSI-000063.

Question 16: Please confirm that JPMorgan Chase Bank does not net its commodity derivatives for the purpose of calculating compliance with the OCC's 5 percent regulatory limit.

Response: Confirmed. It is important, though, to provide the context and background to this limit. In June 1993, the OCC issued Interpretive Letter 632 which stated that it is permissible for a national bank to supplement its hedging activity, subject to certain conditions, by making or taking physical delivery of commodities, transfer or receive documents of title, and engage in other related activities. The letter provided that, *inter alia*, physical activities could only be a "nominal" percentage of a bank's hedging activity. In August 1995, the OCC issued Interpretive Letter 684, in which it defined "nominal" as no more than five percent of total transactions involving eligible commodities. The limit is designed to ensure that only a small amount of the national bank's overall activity is in the physical markets.

J.P.Morgan calculates its compliance with the OCC's activity limit daily. This calculation looks at, within the national bank, the total amount of LME metals and off warrant metals versus

October 21, 2014

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the total amount of its overall metals activity (derivatives, LME metals, off warrant metals, and futures). The physical component of these activities is limited to five percent, and is calculated in terms of volumes (measured in metric tonnes). Accordingly, and given the activity limit itself and the way in which J.P.Morgan calculates its compliance with the activity limit, commodities derivatives are not netted for purposes of the OCC limit. The numerator is the gross amount of base metals held in inventory plus the gross amount of metal that moves through the bank that day in instantaneous title transfer transactions, and the denominator is the gross notional of all metals activity, both physical and outstanding derivatives and futures referencing base metals.

Finally, while the OCC's quantity of activity limit is not a risk limit, even if these activities were to be included in a risk limit, the incremental market risk is minimal as the physical commodities activities in question are a hedge within a customer-driven derivatives business.

Question 17: Please confirm that JPMorgan Chase Bank calculates its compliance with the OCC 5 percent regulatory limit on a units basis, and not on a dollar amount basis.

Response: As discussed above in response to Question 16, that is correct.

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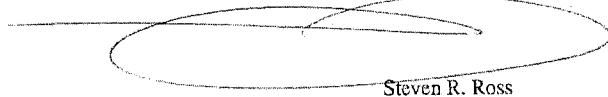
Please let me know if you have any questions.

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Akin Gump
STRAUSS HAUER & FELD LLP

October 21, 2014
Page 8

Sincerely,

A handwritten signature in black ink, consisting of a series of loops and a horizontal line extending to the left.

Steven R. Ross
Counsel for JPMorgan Chase & Co

cc: The Honorable John McCain, Ranking Member

Power Plants Owned or Controlled via Tolling Agreements
2008 to present

Previously-Acquired Power Plants/Tolling Agreements That Have Since Been Terminated Or Sold

Power Plant	Location	Market	Capacity in MW ⁽¹⁾	Owned or Titled by JPMorgan	Percentage of JPMorgan Ownership	Date JPMorgan Assumed Control	Information re Re-Toll ⁽¹⁾	Date of Termination or Sale	Other Information
OCS Camarillo	Camarillo, California	CAISO	29	Owned	30%	5/19/2008 (Bear Stearns Acquisition)		10/1/2010	Sold to Cal State University - Channel Islands
ELS China	China, California	CAISO	29	Owned	30%	5/30/2008 (Bear Stearns Acquisition)		8/23/2013	Sold to Silverwood Energy
Carson Cogeneration	Carson, California	CAISO	49	Owned	33%	5/30/2008 (Bear Stearns Acquisition)		7/20/2010	Sold to EDC
Huntington Beach 3	Huntington Beach, California	CAISO	225	Titled	N/A	1/1/2010		9/30/2011	Plant taken offline
Huntington Beach 4	Huntington Beach, California	CAISO	217	Titled	N/A	12/1/2010		9/30/2011	Plant taken offline
Gray Harbor	Sittkop, Washington	BPA/WECC	480 (Summer) 520 (Winter)	Titled	11%	(485/Scorpa Acquisition) 5/30/2008		12/31/2013	
Greeley Cogas	Greeley, Colorado	Colorado	37	Owned	100%	5/30/2008 (Bear Stearns Acquisition)		10/1/2008	Sold to Stark Investments
Thermo Cogas	91 Lupton, Colorado	Colorado	272	Owned	100%	5/30/2008 (Bear Stearns Acquisition)		6/22/2006	Sold to Starwood Capital
Brush Cogeneration	Brush, Colorado	Colorado	70	Owned	50%	5/30/2008 (Bear Stearns Acquisition)		9/30/2008	Sold to Fort Energy
Gregory Power Partners	Gregory, Texas	ERCOT	345	Owned	14%	5/30/2008 (Bear Stearns Acquisition)		6/18/2011	Sold to Rockland Capital
Evangeline (Clircs)	Evangeline, Louisiana	Clircs BAA (Louisiana)	735	Titled	N/A	5/30/2008 (Bear Stearns Acquisition)		12/31/2011	
Ironwood	South Lebanon, Pennsylvania	PAI	664	Titled	N/A	5/30/2008 (Bear Stearns Acquisition)		6/30/2008	
Red Oak	Sarasville, New Jersey	PAI	764	Titled	N/A	5/30/2008 (Bear Stearns Acquisition)		12/31/2008	
Rumford Cogas	Rumford, Maine	NEISO	85	Owned	1%	5/30/2008 (Bear Stearns Acquisition)		12/30/2010	Sold to New Page

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JPM-COMM-PSI-000022

Permanent Subcommittee on Investigations

EXHIBIT #67

Previously-Acquired Lease of Power Plant That Has Since Been Terminated

Power Plant	Location	Market	Capacity in MW ⁽¹⁾	Owned or Tolled by JPMorgan	Percentage of JPMorgan Ownership	Date JPMorgan Assumed Control	Information re Re-Tails ⁽¹⁾	Date of Termination or Sale	Other Information
Mojave Cogeneration	Baron, California	CAISO	55	Leased	100%	5/30/2008 (Bank Secrecy Acquisition)		6/30/2010	Lease not renewed

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Previously-Acquired Tolling Agreements for Which JPMorgan Currently Serves as a Credit Intermediary

Power Plant	Location	Market	Capacity in MW ⁽¹⁾	Owned or Tolloed by JPMorgan	Percentage of JPMorgan Ownership	Date JPMorgan Assumed Control	Information re Re-Toll ⁽²⁾	Date of Anticipated Termination or Sale	Other Information
Alamitos 1	Long Beach, California	CAISO	184	Tolled	N/A	5/30/2008 (Bear Stearns Acquisition)	Re-tolled for CY 2008 through 2011; 10/1/2013 through end of tolling agreement	12/31/2018	
Alamitos 2	Long Beach, California	CAISO	184	Tolled	N/A	5/30/2008 (Bear Stearns Acquisition)	Re-tolled for CY 2008 through 2011; 10/1/2013 through end of tolling agreement	12/31/2018	
Alamitos 3	Long Beach, California	CAISO	336	Tolled	N/A	5/30/2008 (Bear Stearns Acquisition)	Re-tolled for CY 2008 through 2010; 10/1/2013 through end of tolling agreement	12/31/2018	
Alamitos 4	Long Beach, California	CAISO	336	Tolled	N/A	5/30/2008 (Bear Stearns Acquisition)	Re-tolled for CY 2008 through 2010; 10/1/2013 through end of tolling agreement	12/31/2018	
Alamitos 5	Long Beach, California	CAISO	504	Tolled	N/A	5/30/2008 (Bear Stearns Acquisition)	Re-tolled for entirety of the JPMorgan's ownership of the tolling agreement	12/31/2018	
Alamitos 6	Long Beach, California	CAISO	504	Tolled	N/A	5/30/2008 (Bear Stearns Acquisition)	Re-tolled for CY 2008 through 2011; 10/1/2013 through end of tolling agreement	12/31/2018	
Huntington Beach 1	Huntington Beach, California	CAISO	222.8	Tolled	N/A	5/30/2008 (Bear Stearns Acquisition)	Re-tolled for entirety of JPM's ownership of the tolling agreement	12/31/2018	
Huntington Beach 2	Huntington Beach, California	CAISO	225.8	Tolled	N/A	5/30/2008 (Bear Stearns Acquisition)	Re-tolled for CY 2008 through 2011; 10/1/2013 through end of tolling agreement	12/31/2018	
Redondo Beach 5	Redondo Beach, California	CAISO	183.8	Tolled	N/A	5/30/2008 (Bear Stearns Acquisition)	Re-tolled for CY 2008 through 2011; 10/1/2013 through end of tolling agreement	12/31/2018	
Redondo Beach 6	Redondo Beach, California	CAISO	183.8	Tolled	N/A	5/30/2008 (Bear Stearns Acquisition)	Re-tolled for CY 2008 through 2010; 10/1/2013 through end of tolling agreement	12/31/2018	
Redondo Beach 7	Redondo Beach, California	CAISO	504	Tolled	N/A	5/30/2008 (Bear Stearns Acquisition)	Re-tolled for CY 2008 through 2011; 10/1/2013 through end of tolling agreement	12/31/2018	
Redondo Beach 8	Redondo Beach, California	CAISO	504	Tolled	N/A	5/30/2008 (Bear Stearns Acquisition)	Re-tolled for CY 2008 through 2011; 10/1/2013 through end of tolling agreement	12/31/2018	

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JPM-COMM-PSI-000024

Previously-Acquired Power Plants/Tolling Agreements Under Contract for Sale

Power Plant	Location	Market	Capacity in MW ⁽¹⁾	Owned or Tolloed by JPMorgan	Percentage of JPMorgan Ownership	Date JPMorgan Assumed Control	Information re Re-Tolls ⁽²⁾	Date of Anticipated Termination or Sale	Other Information
Lindsay Hill (Tennessee)	Billingley, Alabama	Southern Company	844	Tolled Tolled Through 2/28/2015 Owned 2/28/2015 to present	N/A	5/10/2008 (Bea Stearns Acquisition)		Third quarter of 2014	Toll is being sold to Mercoria
Kinder Jackson	Jackson, Michigan	MISO	545		100%	5/30/2008 (Bea Stearns Acquisition)		1/7/2016	Sale of the plant is expected to close in the first quarter of 2016

Previously-Acquired Power Plants/Tolling Agreements Currently Held by JPMorgan and Operated by Third Parties

Power Plant	Location	Market	Capacity in MW ⁽¹⁾	Owned or Tolloed by JPMorgan	Percentage of JPMorgan Ownership	Date JPMorgan Assumed Control	Information re Re-Tolls ⁽²⁾	Date of Anticipated Termination or Sale	Other Information
Panda Brandlyne	Brandlyne, Maryland	PM	330	Tolled Through 5/11/2014 Owned on 6/1/2014	100%	12/17/2010 (PDS/Smpra Acquisition)			The toll and lease terminate on May 31, 2014, and assets will be returned to JPMorgan subsidiary KMC Thermo LLC
Central Power & Line	Brooksville, Florida	Florida	139	Owned	100%	5/30/2008 (Bea Stearns Acquisition)			Plant has been converted to a 663MW biomass facility

⁽¹⁾ Operational factors may cause the capacity of the power plant to vary from time to time.

⁽²⁾ Where JPMorgan has "re-tolled" a power plant, it has sold its contractual rights to a third party.

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JPM-COMM-PSI-000025

FEDERAL RESERVE BANK OF NEW YORK

33 LIBERTY STREET
NEW YORK, N.Y. 10045-0001
TELEPHONE 212 720-6180
FACSIMILE 212 720-8691

TIMOTHY F. GEITHNER
President and CEO

March 16, 2008

Mr. James Dimon
Chairman and Chief Executive Officer
JP Morgan Chase
270 Park Avenue
New York, NY 10017

Dear Mr. Dimon:

This will record the agreement between JP Morgan Chase & Co. ("JPMorgan") and the Federal Reserve Bank of New York ("FRBNY") dated March 16, 2008. JPMorgan and FRBNY agree to the following material terms in connection with a proposed acquisition by JPMorgan of The Bear Stearns Companies Inc. ("Bear Stearns"):

1. JP Morgan Chase Bank ("JPMCB") currently has access to the Discount Window for eligible assets (as listed on FRBNY website as of 3/16/08). JPMCB shall continue to have access to this facility.
2. FRBNY will provide as an additional non-recourse Advance to JPMCB, in an amount of \$30 billion, at the primary credit rate in effect at the FRBNY. Any hedges associated with eligible collateral run with the pool of assets pledged and are in addition to the \$30 billion limit. The Advance will be paid down at the maturity of the Advance, and as eligible collateral is sold or matures.
 - a. Eligible collateral will be listed on Schedule A attached hereto.
 - b. The agreed price of the collateral will be the value of the collateral on the books of Bear Stearns as of the date hereof, irrespective of any markdowns in price subsequent thereto and irrespective of when the collateral is actually pledged to secure the Advance. No margin will be payable in respect of any Advance.
 - c. When the collateral is sold to satisfy the Advance, any excess, after the Advance is fully paid, shall be paid by JPMCB to the FRBNY.

Permanent Subcommittee on Investigations

EXHIBIT #68

FRB-PSI-900001

PSI-FRB-17-000003

3. The Board of Governors of the Federal Reserve System has agreed to grant an exemption from Federal Reserve Act Sections 23A and Regulation W for any funding transaction or guarantee, between JPMCB and Bear Stearns, and any affiliate of JPMCB that occurs as a result of, or in connection with, the acquisition of Bear Stearns, for a period of 18 months, in an amount equal to an aggregate of no more than fifty percent of the capital of JPMCB, with the guarantee of JPMorgan, and fully collateralized, this amount to be revisited thereafter.
4. Risk-weighted assets in the amount of \$150 billion acquired directly from Bear Stearns or through a novation of a Bear Stearns transaction (or included in risk-weighted assets of JPMorgan by virtue of its guaranty of the obligations of Bear Stearns) shall be excluded by the FRBNY in calculating the Risk Based Capital Ratio for JPMorgan under Regulation Y for a period of 18 months. Balance sheet assets in the amount of \$400 Billion acquired from Bear Stearns shall be excluded by FRBNY in calculating the Leverage Ratio for JPMorgan under Federal Reserve Regulation Y for a period of 18 months. The amount of such assets excluded from the capital calculation shall be reduced from time to time as JPMorgan disposes of the original assets acquired from Bear Stearns.
5. Any assets or activities acquired from Bear Stearns that JPMorgan is not currently permitted to own or engage in shall be treated as permissible assets or activities for a period of two years. After that period, JPMorgan may apply to FRBNY for a series of three one-year extensions to maintain the ownership of such activities or continuation of such activities.
6. The FRBNY will assist JPMorgan in obtaining other regulatory actions as follows:
 - a. from Securities and Exchange Commission ("SEC") and FINRA to permit control of Bears Stearns broker-dealers and investment advisors prior to closing of transaction; and to approve changes in control of broker-dealers and investment advisors;
 - b. from OCC to grant relief from the legal lending limit and from risk-based capital and leverage ratios for JPMCB;
 - c. from foreign regulators for expedited approvals of the transaction.

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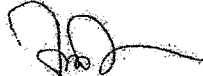
FRB-PSI-900002
PSI-FRB-17-000004

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FEDERAL RESERVE BANK OF NEW YORK 3

Mr. James Dinon
March 16, 2008

Very truly yours,



Timothy F. Geithner

cc: Mr. Ben Bernanke

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FRB-PSI-900003
PSI-FRB-17-000005

EXCERPT

J.P.Morgan
FRB-PSI-200634

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GLOBAL COMMODITIES DEEP DIVING REVIEW

October 2009

STRICTLY PRIVATE AND CONFIDENTIAL

Permanent Subcommittee on Investigations

EXHIBIT #69

Executive Summary

Key Takeaways and Conclusions

New and Different Risks

■ **Physical Assets:** In addition to credit and market risks found in other IB businesses, the Commodities business involves different risks associated with the ownership, movement and storage of physical assets

■ **Idiosyncratic Risks:** Many commodities transactions have unique and specific risks and characteristics. Risk management is hands on and labor intensive often requiring trade-by-trade review

■ **Product Variability:** Basis risks and quality differentials add to complexity of managing risk (e.g. 3,000 curves feed into GCG VaR, compared with ~200 in Rates and ~1000 in FX)

Rapidly Growing Business

■ **Expertise:** JPM still building out expertise across disciplines and support areas

■ **Resources:** Significant demands on risk, ops, finance, etc. Five recent acquisitions/integrations; several other due diligence exercises

■ **Technology:** Demand are high. Platform for pricing, risk management and credit is still in developmental stage. Several system migrations

■ **Risk Capture and Reporting:** Mitigating processes in place; filling gaps as quickly as possible

■ **Infrastructure:** New risks don't easily fit within our existing infrastructure. Improved systems required

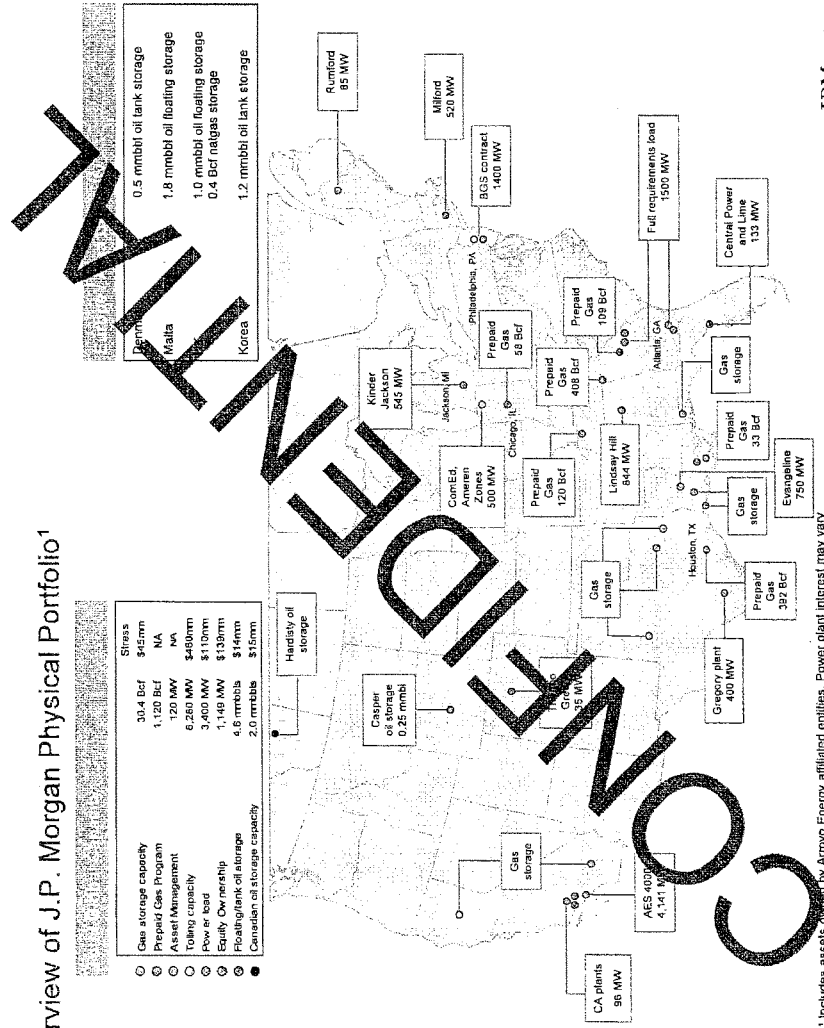
■ **Methodologies:** Certain risks require additional methodology development

Executive Summary

Some specific risks and issues which make commodities risk management different from other asset classes

- Physical and operational risks converting to market risks - volumetric risks, unit contingency
- Basis risks - seasonality and weather, contango vs backwardation, physical vs financial, regional
- Extended settlement terms – Receivable terms of more than 90 days for certain products
- Property and casualty
- Gap Risk/Volatility risk – greater than other asset classes (basis power volatility can be 200-300% annualized)
- Capturing physical value (e.g. real options extrinsic) in a derivatives framework
- Liquidity risks
- Contract and legal risk
- Right way risk
- Regulatory -
- Reputational
- Environmental and other liability
- Accounting Mismatches

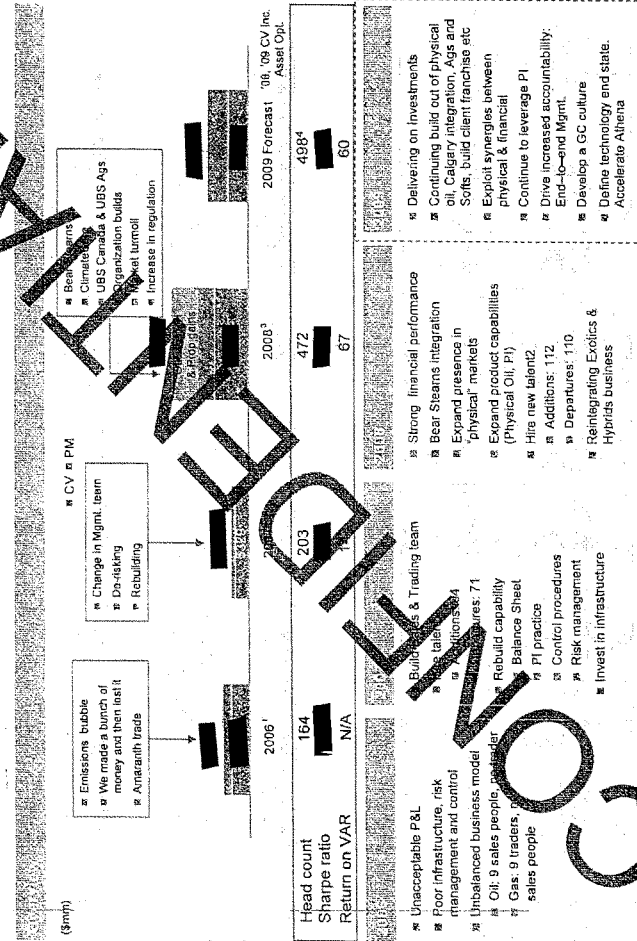
Overview of J.P. Morgan Physical Portfolio¹



¹ Includes assets owned by Arroyo Energy affiliated entities. Power plant interest may vary

— = Redacted by the Permanent Subcommittee on Investigations

Business Overview: A look back at the evolution of our commodities franchise...



¹ 2006 Revenue includes Emissions Gross-ups from Bullion Shipping
² 2007 Revenue includes Emissions Gross-ups from Bullion Shipping & EMEA Power Interconnect Fees
³ 2008 Revenue includes Emissions Gross-ups from NA Gas, EMEA Power Interconnect, Bullion Shipping and PI Minority Interest
⁴ 2009 YTD. Does not include HC from Morgan, Acquisitions & functional franchises

IPMorgan
FRB-PSI-200838

Risk Summary – Top Risks

- Principal Investments – Disinvestments risks (stress loss)**
- Exposed to impairment in the value of Arroyo portfolio, Tolls and Load portfolio. The stress loss is estimated by assuming severe unfavorable market moves e.g. power prices dropping by 40%, impairment of capacity, severe economic recession and significant contraction of spark spreads.
- Basis risks/Term structures risks - OCG basis risks include physical vs financial, regional, term spread etc. The majority of these risks are captured in VaR, Stress or Riles**
- Nat Gas Summer/Winter spreads – net long 12x lots (stress \$45mm, net of \$15mm reserve release)
 - Volumetric/migration risks – short convexity in Load contracts \$43mm reserves
 - Long storage vega in Nat Gas – short \$3mm Call13-15 vs back
 - Physical vs Financial: \$15mm loss if there is physical oversupply at oil storage capacity
- Outright Risks**
- HR – long power, short gas. Stress loss \$42mm (10 std contraction in HR)
- Regulatory risks**
- Emissions/CO₂ – We are exposed to regulatory changes which could result in our existing credits becoming worthless, and losses realized on contracts sold forward. Stress loss \$20mm
 - CFTC – worse case scenario if investor exchange limits are 0.5% unwind cost and -\$157mm for lost investor business
- Liquidity risk/Crowded trades**
- Long index, short futures at exchange. Long contracts from fund (e.g. GS&P): \$3bn total (\$15mm for 0.5% unwind cost)
 - Gold forwards vs short futures – we own 200mmex futuresOI (\$8.6bn). Assuming 0.5% cost to exit loss of \$46mm
- Frequency of risk turnover**
- Physical assets trade like long dated options, where we look to realize extrinsic value over the life of the lease. So hedges have a shorter life span, given lower volatility at the back end of the curves. Our main PM risk length should be traded by our algo book which has a very high risk turnover given dynamic/liquid trading strategy

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Global Commodities Principal Investments Portfolio

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GLOBAL COMMODITIES DEEP DIVE RISK REVIEW

By the Masters
Paul Hennessy
Francis Dunleavy
John Anderson
Andrew Sunderman

- Drawdown: Total YTD realized plus modeled loss vs. Book value.
- Stress: Defined as the severe stress scenario assuming divestment at distressed levels. Arroyo portfolio - \$41mm, Generation Assets - \$465mm, Georgia Load - \$95mm.
- Exposure - Indirect: Notional value of parent guarantees and letters of credit across all tenors.
- Investment Capacity: Additional capital commitments during the current budget year either directly through equity, debt, or other prior capital investment or indirectly through contractual commitments. YTD usage is for the purchase of Cleco Energeline, LLC bonds as part of our overall strategy to exit that toll.
- Modeled Value Drawdown: YTD peak to trough loss in the modeled value across only the liquid tenors. In the case of a sale, modeled value is replaced by actual sale value.
- Earnings VAR: Computed quarterly to capture mismatch between MTM hedges and underlying positions on accrual accounting.
- Aggregate Book Value: Includes tolls, load, Arroyo, Carbon Investing (\$10MM) and \$98MM in Cleco bonds

* Trading/hedging commodities Market Risk: Within liquid window, risk management of GCG Principal Investments is governed by the same policies as applies to all GCG trading activity and, specifically, is covered by GCG VaR and Stress Market Risk limits

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Global Commodities Principal Investments Portfolio

Asset	Type	Location & Gas Supply	Size	Term	Original Value	GAAP Book Value	Severely Stressed Value	Parent Guarantees
Okwant UCF	Restructured PPA	Eagle Point, N.J.	1,666MW MWh	thru 2016	100%			
Okwant CB I	Restructured PPA	Newark Bay, N.J.	895,775 MWh	thru 2014	100%			
Okwant CB II	Restructured PPA	22% Bayonne, N.J. 78% Camden, N.J.	1,447MW MWh	thru 2014	100%			
Misc Projects	Land	Colorado			100%			
Central Power	Power Project Equity	Brooksville, F.L.	135 MW	Merchant	100%			
Della Power	Equity - Project w/PPA	various	400 MW	thru 2013	various			
Gregory	Equity - Project w/PPA	Gregory, TX	85 MW	thru 2020	14.50%			
Runford	Equity - Project w/PPA	Runford, ME	N/A	thru 2019	1%			
Vineyard	Restructured PPA	Vineyard, N.I.	20 MW	thru 2018	5%			
Camarillo	Equity - Project w/PPA	Camarillo, CA	28 MW	thru 2018	30%			
Chino	Equity - Project w/PPA	Chino, CA	56 MW	thru 2010	100%			
Mojave	Equity - Project w/PPA	Mojave, CA	42 MW	thru 2020	35.30%			
Carson	Equity - Project w/PPA	Carson, CA						
TOTAL ARROYO					\$	\$	\$	\$

Note - Assets only and does not include any hedges or related hedge value

JP Morgan
FRB-PSI-200644

Global Commodities Principal Investments Portfolio

Asset	Type	Location & Gas Supply	Size	Term	Ownership	GAAP Book Value	Mid-Office Value	Change	Severely Stressed Value	Parent Guarantees
AES 4000	Tolls + Re-tolls	SP-15 EZ Gen Hub	3,875 MW	5/2018	100%					
Kindred Jackson	Toll	MISO Cienega	635 MW	12/2018	100%					
Cleco Evangeline	Toll	Energy CGT Mainline	760 MW	12/2020	100%					
Tenaska Lindsey Hill	Toll	SOCO	845 MW	4/2027	100%					
Georgia EMCs	Load	Transco	220 MW	12/2025	100%					
TOTAL ALLSILOAD						\$				

Revenue Attribution % by Asset	Canada	Energy
AES 4000		
Kindred Jackson		
Cleco Evangeline		
Tenaska Lindsey Hill		

Note - Assets only are does not include any hedges or related hedge value

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Commodity Risks and Topics

Risk	Description	Comments
Volumetric uncertainty	As part of the GCG business we enter into transactions for which the volumetric profile is unknown at the time of transaction. Examples include: Volumetric Production Payments, Emission Reduction projects, and Load Following/Full Requirements Power transactions.	These risks are inherent to the products. Mitigants include: true-up mechanisms (VPPs capped on the size of the business that we conduct), Emission Reduction project exposure; reserves (\$43million of day one reserves on Load risk). Otherwise we rebalance hedges of day one reserves on Load risk. Otherwise we rebalance hedges of day one reserves on Load risk. Otherwise we rebalance hedges of day one reserves on Load risk. Otherwise we rebalance hedges of day one reserves on Load risk.
Unit Contingent Risk	In certain transactions we bear the risk of non-availability of an operating unit for non-force majeure reasons, to the extent that we've hedged with an LD transaction, we are otherwise relying on performance to realize pnt, we are exposed to the risk of non-performance. An example of this risk occurred in June 09 when we experienced a loss of \$2.8mm due to the affecting unit (part of California AES 4000 assets).	For AES re-toil, we maintain contingent business interruption insurance covering catastrophic events (not simple machinery breakdown). Coverage is capped at \$180mm with a \$20mm per occurrence deductible. For other unit contingent trades we will, in some cases, require minimum availability with penalties/liquidated damages for non-availability to bound the risk. We will also calibrate the hedging strategy, an example is to run a light hedge position for the natgas transport for the summer months with a view to minimize losses in event of hurricane. Otherwise, we manage the volumetric risk as above
Physical settlement	In the trading of physical commodities, physical convention requires extended settlement periods. This can range from as short as 2-5 days for refined products to as long as 35 days or more for Unrefined products.	In some markets and with some contracts this risk is aggregated with mark to market exposure and is collateralized under collateral annexes to trading agreements. When not otherwise collateralized, we seek contract provisions which allow us to call for letter of credit or prepayment if settlement exposures exceed internal limits. System constraints currently challenge our ability to tactically manage this risk for natural gas and power when transactions are not otherwise covered by a collateral annex. Manual workarounds are in place for crude transactions.
Risk of Loss or Damage to owned property	Physical Assets, whether PI Investments in power plants or inventory owned as part of a trading strategy, are subject to risk of physical loss or damage due to catastrophic events (windstorm, flood, machinery breakdown, etc) or act of terrorism.	We maintain commercial property insurance on the Arroyo Delta Assets capped at \$450mm per occurrence and \$180mm of all-risk cargo insurance for inventory. This latter policy covers physical oil, coal and natural gas while in transit or stored in approved locations and is supplemental to any insurance maintained by the storage or transport company. Sub-limits apply to both policies.

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FRB-PSI-200649

Commodity Risks and Topics

Risk	Description	Comments
Liability Risk	Through our ownership of assets, including potentially environmentally hazardous assets, we are exposed to liability to pollution incidents and to bodily injury, death, or third party property damage.	For the trading business, this is primarily mitigated through Charterer's & Cargo owner's Liability insurance in the amount of \$750million which covers legal liability to outside parties for Bodily Injury and/or Property Damage, and other liabilities (including Pollution) incurred as vessel owner and cargo owner during the course of Ocean Marine transit. For Arroyo Delta Assets we maintain insurance for Commercial General Liability (including legal liability to injured 3rd parties due to operations of plants) in a maximum amount of \$50million per occurrence and in the annual aggregate. We also purchase Pollution Liability insurance in an amount of \$3million per occurrence and in the annual aggregate. Otherwise, we perform due diligence on third party operators, seek contractual limitations to exposure, and require double hulled vessels when transporting environmentally sensitive materials
Contract Risk	In our primary role as a transportation manager, we are subject to the risk of non-performing contracts. This tends to be most acute when trading physical products where disruption events can lead to both more frequent (whether due to weather events, operating issues, or changes in market design) and more idiosyncratic. Mismanagement in Force Majeure provisions, Market Disruption Events, and other provisions or provisions dealing with Market design risk exposes us to risk.	In general, we seek to achieve consistency as much as is possible and not to stray too far from market convention with respect to these provisions
Other Legal Risks	While we trade in several physically traded products are often less robust than an ISDA and may require expanded confirmation provisions and/or reliance on general terms and conditions. When collateral is provided, there is generally a greater reliance on letter of credit and/or non-cash collateral	Contract terms, or lack thereof, are considered at the time of approval and incorporated in the approved limit

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FRB-PSI-200650

Commodity Risks and Topics

Risk	Description	Comments
Modeling risk	Risks derived from modeling limitations to fully represent the contractual features, example representation of physical constraints of a tolling agreement, impact of economic activity or weather in load forecast	Model Risk Group reviews all pricing models, recommending improvements and reserves to address the limitations.
Regulatory environment	<p>CFTC exchange limit restrictions and loss of exemptions could limit our OTC investor business</p> <p>Fed granted JPM enhanced legal powers post Fed acquisition to own certain physical assets incl. 100% to expire in March 2010.</p> <p>The economics of many of the markets in which we transact could be significantly impacted by changing regulations. Examples include CO2 Emissions regulation, Kyoto, lifting AZ restrictions on power, transitioning to California affecting capacity curves, and the power capacity markets in general.</p> <p>As a registered power marketer, JPM is technically a licensed utility. As such, all power contracts are subject to FERC regulation and Federal Power Act. Market based rate setting challenges some protection against subsequent challenges to contract prices. However, some are not on this point indicates that there is</p> <p>PI investing face additional regulatory risks such as FERC/CFTC regulation, carbon legislation, etc.</p>	<p>Our losses would be around \$200mm, including unwinding cost of lost business. Details on slide 24.</p> <p>We intend to apply to renew our application – if rejected we will comply to limits of sell assets.</p> <p>We impose tenor limits which restrict the amount of CO2 emissions credits exposure beyond Kyoto. We require legal review of contractual provisions prohibiting counterparties to walk-away from SO2 obligators. Otherwise, we continue to monitor capacity fundamentals in California and elsewhere</p> <p>Legal contracts include the strongest language possible to preserve and protect contract terms</p> <p>Bank Holding Company physical exemptions</p> <p>The range of possible outcomes, while unknown at this time, range from providing an increase in asset to, in the most extreme case, a loss of capacity values that are not offset by market pricing in energy. Our absolute risk is bounded by the NPV of our demand payments, currently \$1.9B</p>

1 In the worst case scenario, our losses would be limited to the NPV of our toll demand payments in California region of \$342mm (All tolls demand payment is \$1.9bn)

Activity	Risk	Description	Comments
Trading		<p>Difference occurs due to US GAAP accounting vs economic pnl. Inventory e.g. Nat Gas storage, Oil subject to LOCOM, and Tolling deals subject to accrual accounting.</p> <p>Current Economic P&L \$718mm add expenses -\$172mm less TRAs \$207mm = \$563mm Financial P&L</p>	<p>PI - Sensitivity to gas As can be significant for tolls e.g. for a quarter or \$1bn extra in the tail event if gas prices doubled. We have a threshold limit of \$250MM for earnings Var R. The overall management of FAS 133 because the derivative is a hedge against the price of gas. The hedge is a hedge of economic risk. The hedge is a hedge of economic risk. The hedge is a hedge of economic risk.</p>
	Reputation Risk	<p>Reputation Risk can arise as a result of environmental liability risk inherent in asset ownership through the products we trade (e.g. coal), and through investments in Emission Reduction projects.</p> <p>In the latter case, although EPRM does not have a reputation risk, there is potential for reputational risk related to environmental impacts, pollution, biodiversity, relocation, indigenous populations.</p>	<p>Current BM LOCOM accounting adjustment is about \$5mm but was over \$400mm at one time. New initiatives and large trades which present potential for reputational risk. Submitted for approval to the Reputation Risk Committee.</p>
	Commodity financing	<p>The transactions undertaken by commodities include: warehouse financing, forward financing, Examples include: warehouse financing, forward financing, purchases of commodity markets and/or flat priced sales in backward and commodity buy/sell transactions.</p>	<p>GCG established a risk policy to govern commodities trading public entities. The policy determines the levels of prudence diligence depending on the risk of the transaction. At a market level, traders are required to ensure the transaction approved product by the Public Entity (Legal maintains control). The level of risk is aligned to the client sophistication/risk (GCG maintains a list of Commodities Experienced Public). Approval from Risk Committee is required for high risk trading (e.g. volumes are large to the natural position of the public). unwillingness to pay concerns, atypical/exotic transactions. Such financings are understood at the time of approval and considered in the credit risk appetite.</p>

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Commodity Risks and Topics

Risk	Description	Comments
Counterparty willingness to pay	As with other lines of business, JPM is subject to the risk of a counterparty's ability, but lack of willingness to pay settlement payments as and when they come due. This was recently demonstrated by an Asian airline's threats of non-payment. In addition, the history in the US Power Markets has indicated a willingness by some participants to assert that the "just and reasonable" standard under the Power Act has been breached in an effort to alter contract prices.	We see contract provisions that seek to minimize our exposure to this risk, however, it remains a risk.
Storage Risk	Although often a fee for service business with little counterparty credit risk, certain jurisdictions outside the US expose us to the credit risk of the storage company for the full value of the stored material.	The risk is valued by JPM Legal, so understood at the time of approval and considered in the credit risk appetite.

GLOBAL COMMODITIES DEEP DIVE RISK REVIEW

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FRB-PSI-200653

Risk Infrastructure Challenges

- The fast business expansion and on-boarding of new products resulted in several technical solutions being implemented to support the market and credit risk reporting requirements. Some of the risks are not captured by the current methodologies and/or do not easily fit within our existing risk infrastructure.

The main gaps include:

- Settlement risk reporting
- Position risk reporting, including Greeks, by counterparty for all products
- Off-line credit
- Exotics VaR and stress proxy
- Fragmented reporting of interest rate and credit risk
- Limited reporting of volumetric risk

- Mitigating processes are generally in place to address the above gaps, by means of for example manual adjustment to reports or delta-quanta VaR approximation.

- The strategic solution will require substantial efforts. The systems migration to Endur/Athena and the Commander project is expected to close several gaps in 2010. In parallel it will be necessary to develop new methodologies to appropriately capture and report the risk related to load variability and settlement risk of physical trades.

- Target State Architecture budget: Full implementation 2010/2011.

- Support of Business Growth 2010 budget (including Coal, Global Oil, Exotics and Ops).

*Numbers in the planning stage and not final

— = Redacted by the Permanent Subcommittee on Investigations

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Desk Risk Overview

— = Redacted by the Permanent Subcommittee on Investigations

- YTD revenues**
- Key strengths: intermediary to clients managing power physical and financial risk, product expertise all regions from East to West coast and Canada, extensive and complex portfolio of physical assets (active management, front end of assets and load)
 - Growth area: expand existing business, asset ownership (midstream assets, wind), improve Congestion trading capabilities, further develop option desk
- Market risk**
- VaR: Limit \$7.0mm, current \$2.6mm, YTD average \$0.0mm
 - Drawdown: [REDACTED]
 - Main Positions as of Sep/23/09 [REDACTED]
- Credit risk**
- Physical gas presents unique challenges in respect of documentation, and monitoring
 - Sensitive CP positions include those with NGX, Noble, Nexterra, AES Energy Partners, Shell Energy North America, and Encana
- YTD revenues**
- Key strengths: intermediary to clients managing power physical and financial risk, product expertise all regions from East to West coast and Canada, extensive and complex portfolio of physical assets (active management, front end of assets and load)
 - Growth area: expand existing business, asset ownership (midstream assets, wind), improve Congestion trading capabilities, further develop option desk
- Market risk**
- VaR: Limit \$9.0mm, current \$2.6mm, YTD average \$5.0mm
 - Drawdown: [REDACTED]
 - Main Positions as of Sep/23/09 [REDACTED]
- Credit risk**
- Power poses unique systems, documentation and monitoring challenges
 - A number of illiquid products which challenge our ability to margin accurately
 - Notable CP positions include those with Barclays, British Energy, E.ON, Mirant Midatlantic, and Shell Energy North America

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FRB-PSI-200655

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NOTICE

to the

BOARD OF GOVERNORS OF THE

FEDERAL RESERVE SYSTEM

by

JPMORGAN CHASE & CO.

Pursuant to Section 4(k)(1)(B) of the

Bank Holding Company Act of 1956,

as amended, and

12 C.F.R. §225.89

Submitted

December 30, 2009

Permanent Subcommittee on Investigations

EXHIBIT #70a

PSI-FederalReserve-01-000561

1549

NOTICE
to the
BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM
(the "*Board*")
by
JPMORGAN CHASE & CO.

Pursuant to Section 4(k)(1)(B) of the
Bank Holding Company Act of 1956,
as amended (the "*BHC Act*"), and
Section 225.89 of the Board's Regulation Y

JPMorgan Chase & Co. ("JPM Chase") respectfully gives notice to the Board, pursuant to Section 4(k)(1)(B) of the BHC Act, that it, through its wholly owned non-banking subsidiary J.P. Morgan Ventures Energy Corporation ("JPMVEC") or other non-banking affiliates or subsidiaries, intends to expand the current commodity trading activities it conducts by providing energy management services ("Energy Management Services") to owners of power generation services under energy management agreements ("EMAs"). JPM Chase asserts that JPMVEC's provision of Energy Management Services would be complementary to its business of entering into derivative contracts that are based on non-financial commodities ("Commodity Derivatives Activities") and to its business of providing information, statistical forecasting, and advice with respect to transactions in foreign exchange, swaps, and similar transactions; commodities; and any forward contract, option, future, option on a future, and similar instruments ("Derivatives Advisory Services"), both of which businesses are financial activities, and would not pose a substantial risk to the safety or soundness of depository institutions or the financial system generally.

I. Background

JPM Chase is a financial holding company engaged primarily in banking, investment banking and asset management. As a part of JPM Chase's business, JPMVFC enters into commodity derivatives contracts based on non-financial commodities, and makes and takes physical delivery and/or stores the underlying commodities, as permitted by Section 225.28(b)(8)(ii)(B) of the Board's Regulation Y and, as previously approved for JPM Chase under Section 225.89 of the Board's Regulation Y (collectively, the "*Existing Business*").¹

JPM Chase established a commodity derivatives business in the mid-1980s and established JPMVFC in 1994. In 2005, JPM Chase decided to expand its energy business in response to significant demand from clients for products meeting their risk management needs. JPMVFC currently engages as principal in commodity derivatives transactions and offers a full range of derivatives to its clients across the spectrum of crude oil, coal, electricity and natural gas-related risks. In addition, JPMVFC enters into physical transactions in the natural gas, crude oil, coal, and electricity markets and makes and takes delivery of these commodities.² Client response to these products has been significant, and the business has experienced continued

¹ 12 C.F.R. § 225.28(b)(8)(ii)(B) (JPMorgan Chase & Co. 92 Fed. Res. Bull. C-87) (2006).

² In addition to these activities, JPMVFC and its subsidiaries are parties to EMTAs that were acquired (among other activities) from Bear Energy LP and that are permitted for JPMVFC to conduct pursuant to the Letter from Timothy J. Geithner, Federal Reserve Bank of New York, to James O'Neil, JPMorgan Chase & Co. (dated March 16, 2008).

growth.

JPMVECO now proposes to expand the Existing Business to include providing Energy Management Services under EMAS. Under an EMA, energy traders, schedulers, and related support personnel provide asset optimization services and accounting services to a power plant owner. The energy trader will provide market information and recommend hedging strategies, including capacity and transmission management services and advice regarding switching between fuel inputs. Energy traders and schedulers assist the plant owner with the acquisition and delivery of fuel inputs to the plant. In addition, the energy trader will provide interface services for the power plant owner with independent system operators ("ISOs"), regional transmission organizations ("RTOs"), and will schedule plant output to ISOs/RTOs and other power purchasers based on energy prices in the open market. An ISO's/RTO's auction process determines whether a power plant's electric output will be accepted for delivery during those hours and whether the prices that the ISO/RTO will pay for that energy will be the plant's bid price or a price higher or lower than the bid price. If a power plant's bid is not accepted by the ISO/RTO, or is accepted at a price that does not adequately compensate the plant for the cost to produce energy, the plant may not run. Accordingly, neither the energy trader nor the power plant owner have complete discretion to determine if a plant will run or not run during any given hour of a day.

An energy trader may also provide credit intermediation services to the power plant owner with respect to the owner's counterparties. For example, in connection with such credit services, the energy trader might post collateral to an ISO or

RTO on behalf of a plant owner as part of a credit arrangement to ensure delivery, since dealing directly with the ISO or RTO would be too costly for the plant owner. The energy trader, in turn, will collect money from the ISO or RTO and those funds will be available to the energy trader as a part of the plant owner's collateral arrangement with the energy trader.

Thus, the energy trader either acts as agent, on a disclosed basis, of the power plant owner, or acts as principal to the market for the benefit of the power plant owner. Without the ability to enter into EMAs and provide Energy Management Services, JPMVEC is at a significant disadvantage to its competitors in significant parts of the energy market, and owner/operators are deprived of meaningful hedging and financing opportunities.

II. Discussion

The Board has previously approved Energy Management Services as activities that are complementary to financial activities.¹ JPMVEC will provide Energy Management Services in the same manner as described in the RBS Order and the Fortis Order.

¹ 90 Fed. Res. Bull. 100 (2004).

² The Royal Bank of Scotland Group plc, 91 Federal Reserve Bulletin 160 (2006) (the "RBS Order"); Fortis S.A., S.A., 93 Federal Reserve Bulletin 120 (2008) (the "Fortis Order").

III. Commitments

In connection with its provision of Energy Management Services, JPMVEU makes the following commitments:

- A. Revenues attributable to JPMVEU's Energy Management Services will not exceed 5 percent of JPM Chase's total consolidated operating revenues;
- B. JPMVEU will only act as energy manager in the United States if the energy management agreement under which it performs its Energy Management Services provides that:
 - 1. The owner of the facility retains the right to market and sell power directly to third parties, which may be subject to the energy manager's right of first refusal;
 - 2. The owner of the facility retains the right to determine the level at which the facility will operate (e.g., to dictate the power output of the facility at any given time);
 - 3. Neither the energy manager nor its affiliates guarantee the financial performance of the facility; and
 - 4. Neither the energy manager nor its affiliates bear any risk of loss if the facility is not profitable.

IV. Conclusion

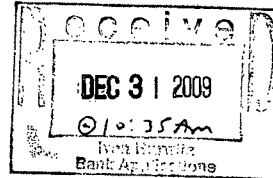
For the reasons set forth above, we believe that the manner in which JPMVFC will provide Energy Management Services, as described, is fully consistent with a complementary activity and will not pose a risk to the safety and soundness of depository institutions or the financial system in general. Therefore, we respectfully request that the Board exercise its discretionary authority to authorize JPM Chase, through JPMVFC, to provide Energy Management Services as a complementary activity to its Commodity Derivatives Activities and its Derivatives Advisory Services, subject to the commitments contained herein.

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NOTICE

to the



BOARD OF GOVERNORS OF THE
FEDERAL RESERVE SYSTEM

by

JPMORGAN CHASE & CO.

Pursuant to Section 4(k)(1)(B) of the

Bank Holding Company Act of 1956,

as amended, and

12 C.F.R. §225.89

Submitted

December 30, 2009

Permanent Subcommittee on Investigations

EXHIBIT #70b

PSI-FederalReserve-02-000012

1556

NOTICE
to the
BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM
(the “Board”)
by
JPMORGAN CHASE & CO.

Pursuant to Section 4(k)(1)(B) of the
Bank Holding Company Act of 1956,
as amended (the “BHCA”), and
Section 225.89 of the Board’s Regulation Y

JPMorgan Chase & Co. (“JPM Chase”) respectfully gives notice to the Board, pursuant to Section 4(k)(1)(B) of the BHCA, that it, through its wholly owned non-banking subsidiary J.P. Morgan Ventures Energy Corporation (“JPMVEC”) or other non-banking affiliates or subsidiaries, intends to expand the current commodity trading activities it conducts by entering into “energy tolling agreements”. In order to expand JPMVEC’s activities in this manner, JPM Chase asks the Board to grant it approval under Section 225.89 of the Board’s Regulation Y to enter into tolling agreements, which, as further described in Section II.A. below, may involve, among other things, purchasing fuel used to produce electricity, entering into agreements for the transportation of fuel, entering into options to purchase electricity, taking title to electricity and entering into agreements for the transmission and sale of electricity (the “*Complementary Activities*”). JPM Chase asserts that JPMVEC’s exercise of the Complementary Activities would be complementary to a financial activity and would not pose a substantial risk to the safety or soundness of depository institutions or the financial system generally.

I. Background

JPM Chase is a financial holding company engaged primarily in banking, investment banking and asset management. As a part of JPM Chase's business, JPMVEC enters into commodity derivatives contracts based on non-financial commodities, and makes and takes physical delivery and/or stores the underlying commodities, as permitted by Section 225.28(b)(8)(ii)(B) of the Board's Regulation Y and as previously approved for JPM Chase under Section 225.89 of the Board's Regulation Y (collectively, the "*Existing Business*").¹

JPM Chase established a commodity derivatives business in the mid-1980s and established JPMVEC in 1994. In 2005, JPM Chase decided to expand its energy business in response to significant demand from clients for products meeting their risk management needs. JPMVEC currently engages as principal in commodity derivatives transactions and offers a full range of derivatives to its clients across the spectrum of crude oil, coal, electricity and natural gas-related risks. In addition, JPMVEC enters into physical transactions in the natural gas, crude oil, coal and electricity markets and makes and takes delivery of these commodities.² Client response

¹ JPMorgan Chase & Co., 92 Fed. Res. Bull. C57 (2006)

² In addition to these activities, JPMVEC and/or its subsidiaries are parties to energy tolling agreements that were acquired, among other activities, from Bear Energy LP (the "Bear Activity") and that are permissible for JPMVEC to conduct pursuant to the Letter from Timothy F. Geithner, Federal Reserve Bank of New York, to James Dimon, JPMorgan Chase & Co., dated March 16, 2008.

to these products has been significant, and the business has experienced continued growth.

JPMVEC now proposes to expand the Existing Business to include entering into energy tolling agreements, as described in more detail below in Section II.A. In general terms, the individual components of tolling agreements involve the purchase and sale of energy commodities that JPMVEC has existing authority to trade and hold under the Board's Regulation Y and complementary authority granted by the Board.

Tolling agreements are an integral part of the energy market and one of several types of agreements the energy market demands in order to, among other things, provide sources of electricity supply to buyers of electricity such as utilities and financial risk management products to owner/operators. Without the ability to enter into tolling agreements, JPMVEC is at a significant disadvantage to its competitors in significant parts of the energy market, and owner/operators are deprived of meaningful hedging and financing opportunities.

II. Discussion

A. Identify and define the proposed complementary activity, specifically describing what the activity would involve and how the activity would be conducted. (Section 225.89(a)(1))

JPMVEC proposes to engage in the Complementary Activities as a complement to the Existing Business. The Complementary Activities will expand the Existing Business to include tolling agreements pursuant to which an owner/operator of

an electric generating facility, agrees, for a negotiated fee, to give the other party (the buyer) an option to purchase electricity (and in certain cases other products related to electricity) generated by the facility. In connection with the Complementary Activities, JPMVEC proposes to act as buyer in the capacities described below.

Under a tolling agreement, the buyer will (i) purchase and take title to (and in certain cases, store) fuel used to produce electricity, (ii) enter into agreements for the transportation of fuel, (iii) enter into options to purchase electricity, (iv) take title to electricity and (v) enter into agreements for the transmission and sale of electricity.

A tolling agreement is a power purchase agreement pursuant to which the buyer makes a fixed payment (also referred to as a “capacity payment” or “demand payment”) to the owner/operator of the facility for the right to exercise an option to purchase electricity generated by the facility at a predetermined ratio of fuel input to electricity output, which predetermined ratio is referred to in the industry as the “heat rate.” In essence, a tolling agreement is simply a call option on electricity tailored to the characteristics of a particular facility. Regardless of whether the buyer actually exercises its option to purchase electricity, the buyer still pays the owner/operator a fixed capacity payment.

A typical tolling agreement is structured in one of two ways, so that when the buyer elects to exercise its option to purchase electricity, it can either (1) provide the fuel directly to the facility or (2) compensate the owner/operator of the facility for fuel the owner/operator has acquired based on the predetermined heat rate. By structuring the transaction in either of these ways, the owner/operator still procures the fuel but does not

take fuel price risk, as the buyer is reimbursing the owner/operator for the fuel at the spot market price.

In addition, assuming the buyer exercises the call option on electricity, the buyer typically pays the owner/operator a relatively small variable payment to cover some non-fuel variable operating costs incurred in the production of electricity. These charges are known as variable operation and maintenance (“VOM”) payments and start charges, and are in addition to the capacity payment. The buyer typically takes physical delivery of the electricity produced at the facility’s outgoing electricity meter, although sometimes delivery is required to be made at the nearest liquid market hub.³ If the buyer is providing the fuel, it is responsible for arranging to provide the fuel to the facility’s fuel meter and for paying for any fuel transportation charges incurred to deliver the fuel to the facility. Finally, the buyer may also acquire other related electricity products that are available from a facility.⁴ The costs for these products, if sold to the buyer, are typically embedded in the capacity payment. However, these products are sometimes sold directly by the owner to a third party.

Energy tolling agreements are varied in form and manner of

³ Many tolls are structured such that the owner/operator may utilize any physical or contractual resources at its disposal in order to satisfy its contractual obligations. For example, if the owner/operator prefers not to generate electricity itself when buyer exercises its option, and instead desires to provide replacement power to buyer according to the same terms that are in the tolling agreement, it can usually do so.

⁴ These ancillary products include a collection of secondary products typically sold to transmission system operators to help maintain the reliability and proper functioning of the grid. For example, transmission system operators are required to have some amount of non-operating generation capacity standing by in case an operating generator goes offline. This is called a “reserve” service.

documentation. Historically, tolling agreements were documented on a one-off basis, not under a master agreement, and were subject to extensive individual negotiations. More recently, tolling agreements are being documented under an Edison Electric Institute (EEI) Master Agreement and/or a one-off agreement similar in form to the EEI or an International Swaps and Derivatives Association, Inc. Master Agreement with a Power Annex. For reference, a draft sample form of confirmation for a proposed tolling transaction under an EEI Agreement is attached hereto as Annex A. In addition, a summary of provisions commonly found in a tolling agreement is attached hereto as Annex B.

A summary of the way in which the Complementary Activities generally will be accounted for is provided in Annex C.

**B. Identify the financial activity for which the proposed activity would be complementary and provide detailed information sufficient to support a finding that the proposed activity should be considered complementary to the identified financial activity.
(Section 225.89(a)(2))**

1. Description of the Existing Business

JPMVEC is currently active in the global financial derivatives markets for a wide range of commodities. JPMVEC currently engages in trading in commodities derivatives based on physical commodities, including cash-settled or instantaneous transfer transactions permissible under the Board's Regulation Y and delivery or storage of physical commodities permissible as a complementary activity pursuant to Board Order. JPMVEC's current activities include, among other things, forward and options

contracts on electricity, agreements relating to transportation and storage and taking title to fuel and electricity.

2. Complementary Nature of the Complementary Activities

The Board has previously determined that energy tolling is an activity that is complementary to financial activities.⁵ JPMVEC will conduct the Complementary Activity in the same manner as that approved in the RBS Order.

Market practice and client needs require that JPMVEC have the ability to enter into tolling agreements with respect to the commodities that are the subject of its ongoing derivatives business. Offering this service is fundamental to maintaining JPM Chase's ongoing banking relationships with its energy generating clients and its ability to serve as the one-stop financial services provider that those clients and the financial markets increasingly demand. Furthermore, this service will allow JPMVEC to structure transactions in a way that best serves customers' risk management needs, while assisting them in optimizing their energy assets without altering existing market practice.

The Complementary Activities will further complement the Existing Business by providing JPMVEC with important market information. The ability to be involved in the supply end of the commodities markets through tolling agreements provides access to information regarding the full array of actual producer and end-user activity in those markets. The information gathered through this increased market

⁵ The Royal Bank of Scotland Group plc, 94 Federal Reserve Bulletin C60 (2008) (the "RBS Order").

participation will help improve JPMVEC's understanding of market conditions and trends while supplying vital price and risk management information that JPMVEC can use to improve its financial commodities derivative offerings.

C. Describe the scope and relative size of the proposed activity, as measured by the percentage of the projected financial holding company revenues expected to be derived from and assets associated with conducting the activity. (Section 225.89(a)(3))

JPM Chase estimates that JPMVEC will generate approximately \$30 million in revenue from the Complementary Activities in 2010. It estimates that revenues from these activities will rise to approximately \$35 million in 2011 and \$40 million in 2012 (all these estimates exclude revenue generated from the corresponding Bear Activity). These revenues are expected to constitute approximately 2% of the overall revenues for the Global Commodities Group, and less than 0.05% of the overall revenues of JPM Chase, in each of those years.

D. Discuss the risks that conducting the activity may reasonably be expected to pose to the safety and soundness of the subsidiary depository institutions of the financial holding company and to the financial system generally. (Section 225.89(a)(4))

The major risks associated with tolling agreements are broadly similar to those taken when trading financially-settled commodities contracts and are identical to those taken when trading physically-settled commodities contracts.

1. Overview of Risks

The primary risks associated with the Complementary Activities are (1) the financial and economic risks associated with an option on electricity that may

prove uneconomic at such time as JPMVEC, as buyer, elects to exercise its option to purchase electricity (but the maximum financial exposure to this risk is the amount of the capacity payment and if JPMVEC never exercises its option to purchase electricity, the only payment it makes to the owner is the capacity payment) and (2) “unit contingent risk”, which is the risk that JPMVEC sells the electricity it anticipates receiving from the owner upon exercise of its option but the owner is excused from delivering the electricity under the contract (e.g., an unplanned outage has occurred at the facility) and thus JPMVEC does not receive the anticipated electricity from the owner. If this occurs, the owner in the toll typically does not pay market damages to JPMVEC, and JPMVEC will need to replace electricity via spot market purchases at a potentially higher price (it could also be lower). If a tolling agreement is structured such that JPMVEC provides the fuel, JPMVEC will also assume the risk that the facility will not be able to produce electricity because JPMVEC cannot deliver fuel to the facility (whether due to unavailability of fuel or transportation curtailments such that fuel cannot be delivered to the facility). As described below, these risks are exactly the types of risks that are already managed in JPMVEC’s everyday business by energy commodity traders.

2. Managing Risks

Each party to a tolling agreement must make an independent evaluation of the risks and rewards of a given business situation and consider the appropriate contract terms, under those specific circumstances, that it is willing to accept. Again, however, it is important to recognize that JPMVEC is viewing its exposure under any one particular tolling agreement as limited by the amount of the premium it is required to pay under the

tolling agreement and by other contractual provisions. For example, “unit contingent” risk can be mitigated in a number of ways: First, tolling agreements may provide for a reduction in the capacity payments to the owner for non-performance. Second, unit-contingent risk may be mitigated by including “make whole” provisions in the contract such that the “make whole” amount the owner/operator must pay is the difference between JPMVEC’s purchase price for electricity under the tolling agreement and the price JPMVEC was required to pay for replacement electricity. Third, in certain circumstances, unit outage insurance or other financial products are available to provide a hedge.

That having been said, and as mentioned above, tolling agreements are essentially a combination and integration of several different transactions in which energy traders routinely engage (i.e., fuel sales transactions and electricity purchase transactions with embedded optionality). Furthermore, the risks associated with tolling agreements (i.e., commodity price risks, counterparty credit risks, force majeure risks) are managed in the same manner as are the risks associated with all other similar energy commodity transactions. Accordingly, as described in more detail below, JPMVEC brings to bear on tolling agreements all of the risk management controls and practices that it uses in the conduct of its energy commodity trading businesses generally.

3. **JPM Chase’s Risk Management Controls**

Market Risk. Exposure to adverse movements in the level or volatility of market prices of commodities is measured and controlled primarily through the use of a value-at-risk (“VaR”) approach. JPM Chase has established a daily VaR limit for the

Global Commodities Group, the business unit within which JPMVEC operates, which currently is \$30 million. This limit is reviewed periodically. JPM Chase manages its market risk across the entire Global Commodities Group and does not set VaR limits for specific business lines within the Group. In fact, the activities in one business line, such as the Complementary Activities, may offset risk incurred in another line and lead to a decrease in the overall VaR of the Group. JPM Chase does establish position limits (delta, gamma and vega limits) for each underlying commodity that is part of its commodities trading business and that will apply to the Complementary Activities.

Credit Risk. JPM Chase's credit process for the Complementary Activities will fall within its process for commodity derivative transactions generally, which process is the same as that for all over-the-counter derivative transactions it executes. Before a transaction can be executed with a counterparty, which in the case of the Complementary Activities will be the owner/operator, a credit line must be established for the counterparty. In almost all cases, the credit officer with responsibility for the counterparty establishes the credit line. When a derivative transaction is proposed with a counterparty, the derivative marketer calculates the derivative risk equivalent (DRE) of the transaction, which is the loan-equivalent credit exposure that the transaction is expected to generate. The DRE counts against the overall credit line to the counterparty. When a derivative transaction is executed with a counterparty, a credit valuation adjustment (CVA) is calculated, and the line of business that executed the transaction then pays the CVA, either upfront or on a pay-as-you-go basis, to JPM Chase's Credit Portfolio Group (CPG) as consideration for CPG providing default

protection to the line of business should the counterparty default and owe a termination payment to the line of business. The CVA represents the counterparty credit charge to the line of business arising from the transaction with the counterparty.

Operational Risk. To the extent JPMVEC stores and transports fuel as part of a tolling agreement, JPMVEC will be exposed to the risks associated with transporting and storing physical commodities, e.g. spillage, contamination, despoliation. JPMVEC will insure that it manages in a safe and sound manner the particular risks that arise in owning physical commodities. For natural gas, coal and oil (the main fuel sources for generating units), JPMVEC will use appropriate storage facilities and means of transportation that are owned and operated by unaffiliated entities selected on the basis of experience, reputation, safety record, adequate insurance and creditworthiness. JPMVEC will also use independent inspectors to inspect and determine the quantity, quality and other specifications of the natural gas, coal and oil. For electricity transportation (electricity cannot be stored), JPMVEC will secure transmission services from FERC-regulated transmission providers, under the FERC-filed tariffs then in effect.⁶

Liability Risk. Another risk associated with transporting or storing physical commodities is the risk of a malfunction or an accident resulting in personal injury or property damage. In general, the terms of any contract with the third party operator of the storage or transportation facility would allocate these liability risks

⁶ Within the Electric Reliability Council of Texas, transmission providers and their related tariffs are regulated by the Public Utility Commission of Texas as opposed to FERC.

associated with physical ownership to the operator since the underlying commodity is in such operator's "care, custody and control." While at times JPMVEC will enter into transactions that involve the actual acceptance by JPMVEC of physical deliveries or storage of fuel for the unit, JPMVEC does not expect to own or operate entities in the United States that are involved in the storage or transportation of physical commodities.

Reputational Risk. JPM Chase has several policies in place to address the reputational risk of the Complementary Activities. JPM Chase has a policy entitled "Heightened Risk Transactions with Investment Bank Clients" that defines what constitutes a Heightened Risk Transaction, which is the term JPM Chase uses for a complex structured finance transaction. This policy focuses on the reputational risk in these types of transactions and explains the importance to JPM Chase of properly reviewing these transactions. Heightened Risk Transactions are escalated for review to the regional Reputation Risk Committee (there are three, in the Americas, Europe and Asia). JPM Chase has a policy describing the roles, responsibilities and procedures of each Reputation Risk Committee (now known as Policy Review Committees). JPM Chase also has a Know Your Customer Policy that further establishes procedures to safeguard JPM Chase's reputation. In addition, the line of business responsible for marketing and executing transactions is subject to the Appropriateness Policy. This policy provides a framework for approving and monitoring all transactions executed by the line of business, including Heightened Risk Transactions, based on customer sophistication and product complexity.

E. Describe the potential adverse effects, including potential conflicts of

interest, decreased or unfair competition, or other risks, that conducting the activity could raise, and explain the measures the financial holding company proposes to take to address those potential effects. (Section 225.89(a)(5))

The potential adverse effects associated with the Complementary Activities should be minimal and can be mitigated by JPM Chase's existing control and risk management infrastructure.

Competition. JPM Chase intends to build on its existing commodities trading business. JPMVEC's entrance into the buy-side markets for tolling agreements should increase competition in the market because JPMVEC will be able to enter into transactions from which it is currently precluded. JPMVEC will be able to offer a full array of services that other energy traders currently offer, allowing JPMVEC to compete with other energy traders. In addition, JPMVEC will become a more efficient competitor that can offer cost-efficient and individually tailored risk management services that better meet the needs of its clients, while also supplying additional liquidity to the commodities markets.

It should be noted that the Federal Energy Regulatory Commission's ("FERC's") rules with respect to the competitive wholesale energy markets are designed and intended to create conditions under which the wholesale energy markets can function with fairness and transparency. To that end, FERC carefully vets to whom it grants "market-based rate authority" ("*MBR Authority*").⁷ JPMVEC has already been granted

⁷ MBR Authority is the authority to sell power at negotiated rates rather than at rates based on cost

MBR Authority upon a finding by FERC that JPMVEC does not exercise “market power” and cannot erect other barriers to entry for competitors. FERC’s role in supporting competitive markets is discussed in more detail in Annex D.

Conflicts of Interest. If permitted to engage in the Complementary Activities, JPM Chase would evaluate the commercial, legal and regulatory implications of providing to its customers any combination of financing and other financial services, including tolling agreements, both generally and with respect to any given transaction. JPM Chase has policies and procedures in place to ensure compliance with the anti-tying provisions in Section 106 of the Bank Holding Company Act Amendments of 1970. As in the case of other credit transactions, JPM Chase would apply those procedures to any tolling agreement entered into by JPMVEC with an independent power producer when the affiliated bank, JPMorgan Chase Bank, National Association (“JPMCB”), also maintained lending relationships. If the lending bank, as part of its credit determination, required the borrower to hedge its exposure with an appropriate party, it would do so in compliance with Section 106. If JPMVEC and JPMCB provided both services, they would do so on terms complying with Section 23B of the Federal Reserve Act, as applicable. JPM Chase already considers all of these issues in connection with the various combinations of risk management and financial intermediation services and other financial and advisory services that it and its affiliates already provide to the energy industry.

of service. See Annex D.

In addition, FERC has broad authority, partially in response to historical abuses in the wholesale electricity markets, to regulate entities involved in the wholesale energy markets. FERC routinely reviews the transactions of all entities with MBR Authority and has the ability to penalize those who engage in unfair and manipulative practices that are detrimental to the proper functioning of the competitive market. Under authority granted by the Energy Policy Act of 2005, FERC has substantially expanded and emphasized its regulatory and enforcement activities in order to ensure the efficiency and integrity of the wholesale electricity markets and their participants. Any fact commonly understood as a “conflict of interest” that results in JPMVEC having “market power” or being on both sides of a transaction where there is a possible impact on wholesale energy rates would factor into FERC’s review of JPMVEC’s activities and could result in the imposition of civil and possibly criminal penalties, the imposition of other restrictions and conditions on JPMVEC’s ability to participate in the power markets, or the revocation of JPMVEC’s MBR Authority. As noted above, a discussion of FERC’s authority and its jurisdictional responsibilities in, among other things, preventing conflicts of interest that could lead to market abuses is contained in Annex D.

Market Manipulation. Under the terms of tolling agreements, JPMVEC will not operate or control facilities in the United States that extract, transport, store or distribute physical commodities. The owner/operator of the facility has ownership of and clearly exercises control over the generating facility.⁸ Moreover, the rights that JPMVEC

⁸ JPMVEC notes that its relationship with the owner/operator and the facility in a tolling transaction

would have under the tolling agreement (i.e., the right to deliver fuel and the right to receive electricity) all are clearly entailed by the permissible commodities contracts entered into with the owner/operator and do not exceed the rights contemplated by permissible commodities trading activities. JPM Chase's limited role in the commodities markets will limit the opportunities, and more importantly the incentives, that JPM Chase might have to engage in any price manipulation, either directly or indirectly. As a financial holding company, JPM Chase must comply, and has a policy of full compliance, with the regulatory and supervisory regimes of several regulators, as discussed below. Such compliance further reduces the likelihood that JPM Chase or JPM Chase's employees would be able to engage in any form of market manipulation.

Regulation. As discussed above and in more detail in Annex D, FERC extensively regulates the wholesale energy markets. In addition to FERC regulation, certain aspects of energy trading are also generally subject to regulation by the Commodity Futures Trading Commission (the "CFTC") under the Commodity Exchange Act as the CFTC is charged with preventing fraud, manipulation and abuse in commodities markets generally.

The physical commodities markets are further protected from the adverse effects of unfair competition, conflicts of interest and market manipulation because financial institutions, such as JPM Chase, are subject to extensive regulation. JPM Chase

falls squarely within presumptions of non-control in the Board's regulations and it possesses none of the indicia of control identified by the Board in prior interpretations.

and its subsidiaries are subject to regulation by the Board, the Office of the Comptroller of the Currency, the Securities and Exchange Commission and the Financial Industry Regulatory Authority in the United States.

**F. Describe the potential benefits to the public, such as greater convenience, increased competition, or gains in efficiency, that the proposal reasonably can be expected to produce.
(Section 225.89(a)(6))**

The Complementary Activities should provide significant benefits to the public by providing a greater variety of risk management tools that are more efficiently structured to meet customer needs, increase competition and liquidity in the commodities markets and reduce JPMVEC's risk exposure associated with its commodities derivatives contracts.

Authorizing JPMVEC to engage in the Complementary Activities would allow JPMVEC to provide a full-range of commodities-related services to its customers more efficiently. Tolling agreements have had, and will continue to have, an important role in enabling generation unit owner/operators to secure financing for the construction of new generating units or the acquisition of existing facilities. As a condition to borrowing, the lenders providing the financing will typically require that projected cash flows from the facility, once it commences operations, are sufficient to make interest payments for a period of time or to ultimately repay the loan. While a lender's comfort with the energy market or the size of the loan and the otherwise available collateral pool will influence a lender's need for assurances as to the potential cash flows available from the facility, it is not uncommon for lenders to require that most, if not all, of the facility's

fuel requirements and electricity output be hedged for a period of time to ensure a certain level of cash flow and to make the valuation of the facility less susceptible to daily price fluctuations in the fuel and electricity markets. Conversely, owner/operators, even apart from lender requirements, may have a similar interest in locking in a certain revenue stream in order to guarantee themselves a certain rate of return and level of profitability. The Complementary Activities will allow JPMVEC to add the services described above to the potential hedge products JPMVEC can offer in order to fully participate in the commodities markets, conducting the Existing Business in a more cost-efficient manner and offering more competitive prices to its clients.

As discussed above in Sections II.A. and II.B., as companies look for more sophisticated risk management tools and become more comfortable with participating in the commodities derivatives markets, they are often looking for a single provider that can meet all of their trading needs. It should also be noted that while JPMVEC is interested in providing this combination of services, the marketplace also is seeking out this combination of services, and generators are becoming increasingly sophisticated in their abilities to structure, evaluate and negotiate packages of risk management and financing products from different combinations of providers that are in their economic best interests.

The addition of a new financially sound and well-capitalized counterparty such as JPM Chase will add needed liquidity to the commodities derivatives markets. Tier 1 common equity capital of \$101 billion and a Tier 1 capital ratio of 10.2% as of September 30, 2009, JPM Chase has the resources to handle large and complex transactions that few other organizations can match.

Finally, by participating in the widest possible variety of commodities markets and transactions, JPMVEC will gain access to price and related market information and acquire more experience in the markets for physical commodities that it can use to better serve its customers and manage its own risk, which will lead to increased revenues and lower costs, all of which will improve JPMVEC's and JPM Chase's profits and enhance their soundness. As a more effective competitor, JPMVEC will be better able to win business from new clients, resulting in more diversified credit exposure for JPMVEC, both in terms of markets and customer base.

G. Provide any information about the financial and managerial resources of the financial holding company and any other information requested by the Board. (Section 225.89(a)(7))

JPM Chase's financial information is available on its website, www.jporganchase.com.

III. Commitments

A. Include Complementary Activities in the limit on physical commodities ownership of 5 % of consolidated Tier 1 Capital.

The Board has previously determined that the amount to be included in this limit in connection with energy tolling agreements is the present value

of all capacity payments to be made under the energy tolling agreements. JPM Chase commits to the Board that it will follow this methodology and include the Complementary Activities in calculating its compliance with the limit of 5% of consolidated Tier 1 capital on the aggregate market value of the physical commodities that it and any of its subsidiaries hold at any one time as a result of physical commodities trading.⁹

IV. Conclusion

For the reasons set forth above, we believe that the manner in which JPMVEC will enter into tolling agreements, as described, is fully consistent with a complementary activity and will not pose a risk to the safety and soundness of depository institutions or the financial system in general. Therefore, we respectfully request that the Board exercise its discretionary authority to authorize JPM Chase, through JPMVEC, to engage in the Complementary Activities as a complementary activity to its physically-settled and financially-settled transactions in commodities derivatives on nonfinancial commodities, subject to the commitments contained herein.

⁹ As the Board stated in the RBS Order, an energy tolling agreement is similar to a call option on the power produced by the plant with a strike price linked to fuel and power prices. An alternate way of calculating the value of a tolling agreement for purposes of limiting the risk to the toller that the plant proves uneconomical to operate, and thus for purposes of the 5% limit, is to determine the mark-to-market ("MtM") of the option, the tolling agreement, and to include the aggregate out-of-the-money MtM values for all tolling agreements, with no netting against in-the-money values, in the 5% limit. Until such time as the Board allows this method of valuing tolling agreements for purposes of the 5% limit, JPM Chase commits to the methodology set forth in the RBS order.

J.P.Morgan

February 5, 2010

Board of Governors of the Federal Reserve System
20th Street and Constitution Avenue, N.W.
Washington, D.C. 20551

Attention: Mr. Scott Alvarez

Dear Mr. Alvarez:

Prior to JPMorgan Chase & Co. ("JPMC") acquiring The Bear Stearns Companies Inc. (the "Bear Stearns Acquisition"), the Bear Stearns energy business engaged in the following activities which are not currently authorized for JPMC as a financial holding company (an "FHC"): energy tolling, energy management, and the purchase and financial restructuring of power plants. In its letter dated March 16, 2008 (the "Letter") relating to the Bear Stearns Acquisition, the Board of Governors of the Federal Reserve (the "Board") provided a two year grace period for JPMC with respect to such activities (herein referred to as the "grandfathered activities"). JPMC has relied on the authorization in the Letter to continue to conduct the grandfathered activities; however such authorization will expire on March 16, 2009 unless extended. JPMC is submitting this letter to request from the Board an extension of the grandfathering period for one year with respect to these three activities for the reasons outlined below.

Energy Tolling and Energy Management:

Conducting energy tolling and energy management activities acquired in connection with the Bear Stearns Acquisition as grandfathered activities has provided the following flexibility for JPMC: (i) ability to conduct business in the same manner as the heritage Bear Stearns business thus preserving its value, (ii) ability to conduct such business without impairing the already existing JPMC energy business (see below with respect to JPMC's Commodities Trading Limit as hereinafter defined) and (iii) ability to remain competitive with other market participants (which may include new FHCs) which are not subject to limitations in their energy tolling and energy management activities. On December 30, 2009, JPMC filed notices for prior approval of the Board to conduct

¹ Specifically, the Letter states that: "Any assets or activities acquired from Bear Stearns that JPMorgan is not currently permitted to own or engage in shall be treated as permissible assets or activities for a period of two years. After that period, JPMorgan may apply to the FRBNY for a series of three one-year extensions to maintain the ownership of such activities or continuation of such activities."

Permanent Subcommittee on Investigations

EXHIBIT #71

FRB-PSI-300286

energy tolling and energy management activities (the "Notices"). As of the date of this letter, the Board has not acted on the Notices.

Currently the physical commodity trading business of historical FHCs, such as JPMC, is subject to a requirement that physical commodities held by the FHC may not exceed 5% of Tier 1 capital (the "Commodities Trading Limit"). In approving tolling as a complementary to a financial in nature activity, the Board has included a requirement that the FHC commit to include the present value of capacity payments under its tolling agreements when calculating compliance with the FHC's Commodities Trading Limit. In the event that grandfathering were not granted and JPMC were required to include existing and future tolling arrangements in its Commodities Trading Limit, JPMC may be required to curtail not only its tolling activities but also its other physical trading activities going forward.

Extension of grandfathering for these activities is warranted because, as recognized by the Board, engaging in energy tolling complements commodities derivative and trading. The Board has indicated that it has in the past subjected the tolling activities of FHCs to the Commodities Trading Limit because tolling contracts expose the seller to the risk that the plant proves to be uneconomical to operate, which can occur when the cost of producing power is greater than the power's market price. However, given the competitive disadvantages that JPMC would suffer from having to manage its entire physical commodity and tolling activity under the Commodities Trading Limit, JPMC respectfully submits that the risks involved in tolling can be managed pursuant to robust risk management processes subject to regulatory examination. This would address legitimate safety and soundness concerns but still provide JPMC flexibility to preserve and grow the energy business branches acquired in the Bear Stearns Acquisition as well as compete with other market participants on an equal footing.

Similar concerns also exist with respect to continuation of JPMC's energy management activity. The Board has previously determined that a FHC may engage in energy management services as a complementary activity. As part of this activity, the Bear Stearns energy business (and currently JPMC) enters into energy management agreements with power plants pursuant to which JPMC provides transactional and advisory services to power plant owners. The transactional services consist primarily of JPMC acting as a financial adviser to power plants and the transactional services consist primarily of JPMC acting as a financial intermediary substituting JPMC's credit and liquidity for those of the owner to facilitate the owner's purchase of fuel and sale of power. In approving energy management as an activity complementary to a financial in nature activity, the Board, as in the tolling case, has also imposed certain limitations. Specifically, the Board has required that an FHC commit that revenues attributable to energy management services in the United States will not exceed 5% of its total consolidated operating revenues. JPMC respectfully submits that such limitations are not necessary from a safety and soundness perspective since the main components of this activity involve activities similar to those already conducted by JPMC. JPMC currently provides financial advice (similar to the advice given to plant managers in this case) to

third parties. In addition, JPMC's credit and risk management policies apply when JPMC engages in transactions as part of the transactional services component of energy management activity. The Board has also required that each energy management agreement under which a FHC performs energy management services must provide that (i) the owner of the facility retains the right to market and sell power directly to third parties, which may be subject to the energy manager's right of first refusal; (ii) the owner of the facility retains the right to define the level at which the facility will operate (i.e. dictate the power output of the facility at any given time); (iii) neither the energy manager nor its affiliate guarantee the financial performance of the facility; and (iv) neither the energy manager nor its affiliates bear any risk of loss if the facility is not profitable. These limitations were not applicable to the Bear Stearns business and JPMC respectfully requests that JPMC not be forced to restructure energy management relationships conform to these restrictions and be permitted to continue to offer energy management services to third parties absent the foregoing restrictions so long as the overall risks involved are subject to robust risk management processes subject to supervisory review. To the extent that the foregoing restrictions were imposed to ensure that an FHC would not engage in commercial activities, JPMC respectfully submits that all aspects of the generation and sale of power and other commodities are more appropriately viewed as financial in nature or complementary thereto when conducted by a company engaged in trading commodities. This analysis also applies to the last activity for which JPMC requests grandfathering approval as outlined below.

Financial Restructuring of Power Plants:

Prior to the Bear Stearns Acquisition, the Bear Stearns energy business also engaged in the activity of purchasing equity interests in power plants and subsequently restructuring and renegotiating the power plants' commodity purchase agreements and energy sale agreements with a view to making the plants more efficient. Often, this involved Bear Stearns becoming the party to the restructured contracts.

To date this restructuring activity has not been determined to be a financial activity or complementary thereto. However, this activity is similar in many ways to activities currently permissible for FHCs. As a result, the risk management of this activity draws upon existing risk management. In addition, this activity involves investing for a financial return in a way that allows JPMC to gain valuable insight into the power market which can enhance JPMC's overall commodities business.

First, this activity is a natural outgrowth of the energy management activities conducted by the Bear Stearns energy business. The expertise used to provide energy management services to third party managers is the same expertise at play in this activity which also focuses on restructuring the input and output contracts entered into by power plants. Often, existing plant managers of unprofitable (or suboptimal from an economic standpoint) plants prefer to turn over ownership of the plant to a sophisticated market participant which has expertise in fuel procurement and power marketing. In such cases, the Bear Stearns energy business has purchased, and seeks ability to continue to be able to purchase, the plant and use its expertise to restructure the relevant contracts while the

plant is operated by an independent plant manager. The business then sells the now potentially profitable plant for a financial return. Prior to market downturn, plants held as part of this portfolio were usually sold within one to two years. This activity is focused on (i) providing a solution for clients who prefer to exit ownership of unprofitable power plants and (ii) obtaining a financial return by renegotiating and/or replacing existing supply and delivery contracts with the view to making the plant more profitable. In addition, this activity complements JPMC's permitted physical trading and customer commodities business by providing JPMC during the period of ownership with a potential purchaser of fuel and provider of power. During the process of restructuring the plant's contracts, JPMC also gains enhanced knowledge of market pricing which enables JPMC to provide best pricing and execution in the marketplace to its customers. JPMC conducts this activity as a component of its overall commodities trading and client business. JPMC's goal is to augment its financial trading and not run the operations of the plant as a commercial venture in a vacuum. As such, JPMC views this activity as complementary to JPMC's core commodities business. However, until approved as such by the Board, JPMC respectfully requests a continuation of grandfathered status.

In the event that JPMC cannot continue to hold and add to this portfolio as a grandfathered activity, JPMC would be required to divest itself of the portfolio during a time of continuing market strain. In addition, JPMC would not be able to provide its expertise in fuel procurement and power output structuring to a set of potential clients in need of solutions (i.e. plant managers who desire to sell their interests in the plant to an entity capable of restructuring the various plant contracts with a view to making the plant financially viable.) JPMC would therefore be unable to compete with other commodities trading firms not subject to restrictions on this activity. JPMC's risk management policies and requirements apply to this activity so that they are conducted in a safe and sound manner. As mentioned above, JPMC believes that the restructuring and ownership of power plants for a financial return enhances JPMC's core commodities capabilities. Subjecting this activity to merchant banking restrictions may not be feasible unless broad authority to renegotiate and act as counterparty to contracts with the plant is determined not to constitute day to day management of the plant. Arbitrary restrictions on the interaction of the plant with the commodities business could severely impede the efficiency and competitiveness of the business in restructuring the plant as a profitable entity in a timely manner.

JPMC requests confidential treatment of the JPMC specific business information set forth above as well as of the fact that JPMC has made this request pursuant to the Freedom of Information Act, 5 U.S.C. 552 (b) (4) (the Act) and the regulations promulgated by the Board thereunder. Information contained herein is not publicly available and concerns proprietary JPMC data, i.e. the importance of these activities to JPMC's commodities business. Disclosure could cause substantial injury to the competitive position of JPMC and its affiliates meeting the substantial competitive harm tests set down in judicial interpretations of the Act.

We appreciate your attention to this grandfathering request and are available to answer any questions you have as you consider this request. Concurrent with this proposal, we

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have provided detailed information to Board staff as to our current commodities businesses which will hope will aid in your assessing this request. Please direct questions relating to this request to Diane Genova at (212) 648-0268, Kathryn McCulloch at (212) 270-5922 or me at (212) 648-0285.

Very truly yours,

Mahdencioni

cc, Barbara Yelcich
Ivan Hurwitz

CONFIDENTIAL

FRB-PSI-300290



BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

ADDRESS OFFICIAL CORRESPONDENCE
TO THE BOARD

June 30, 2010

Kathryn V. McCulloch, Esq.
Senior Vice President
and Associate General Counsel
JPMorgan Chase & Co.
270 Park Avenue, 38th Floor
New York, New York 10017

Dear Ms. McCulloch:

This letter concerns the notices filed December 31, 2009, under section 4 of the Bank Holding Company Act ("BHC Act")¹ by JPMorgan Chase & Co., New York, New York ("JPMC"), to (1) enter into physically settled tolling agreements with power plant owners ("Energy Tolling") and (2) provide energy management services to owners of power generation facilities under energy management agreements ("Energy Management Services"). The Board previously has determined pursuant to Regulation Y that Energy Tolling and Energy Management Services complement the financial activity of engaging in Commodity Derivatives Activities and Derivatives Advisory Services (discussed below).²

JPMC is a financial holding company for purposes of the BHC Act. JPMC currently engages in commodity derivatives activities that are permissible for bank holding companies under the BHC Act ("Commodity Derivatives Activities") and also provides financial and investment advisory services for derivatives transactions ("Derivatives Advisory Services") that are permissible

¹ 12 U.S.C. § 1843.

² See The Royal Bank of Scotland Group PLC, 94 Federal Reserve Bulletin C60 (2008) ("RBS Order") and Fortis S.A./N.V., 94 Federal Reserve Bulletin C20 (2008).

³ See 12 U.S.C. § 1843(k)(4)(F).

for bank holding companies under the BHC Act. The Board previously authorized JPMC to engage in Physical Commodity Trading as an activity that is complementary to Commodity Derivatives Activities.⁴ JPMC conducts Physical Commodity Trading primarily through a nonbank subsidiary, J.P. Morgan Ventures Energy Corporation, New York, New York. JPMC has requested:

1. authority to engage in Energy Tolling, on a limited basis, as an activity that is complementary to Commodity Derivatives Activities;
2. authority to engage in Energy Management Services, on a limited basis, as an activity that is complementary to both Commodity Derivatives Activities and Derivatives Advisory Services; and
3. confirmation that JPMC's proposed long-term electricity supply contracts are consistent with its Physical Commodity Trading authority.

Energy Tolling

JPMC has requested approval to expand its current activities to include Energy Tolling. Under the energy tolling agreements to which JPMC would be a party, JPMC would make periodic fixed payments to the owner of a power generation facility ("capacity payments") in exchange for the right to all or part of the plant's power output. JPMC would also generally supply fuel and make payments to cover the owner's variable costs plus a profit margin. The plant owner, however, would retain control over the day-to-day operations of the plant and physical plant assets at all times.

JPMC has committed to conduct Energy Tolling activities in accordance with the restrictions, definitions, and conditions previously imposed by the Board on the conduct of those activities. In connection with the Board's approval of JPMC's Physical Commodity Trading activities, JPMC committed to the Board that it will limit the aggregate market value of physical commodities that it and any of its subsidiaries hold at any one time to 5 percent

⁴ JPMorgan Chase & Co., 92 Federal Reserve Bulletin C57 (2006).

of JPMC's tier 1 capital. JPMC also has committed that it will include the present value of capacity payments associated with Energy Tolling contracts in that 5 percent limit. As a result, JPMC's potential exposure to commodity price risk will not increase by engaging in Energy Tolling activities.

Energy Management Services

JPMC has also requested approval to provide Energy Management Services pursuant to an energy management agreement with a power plant owner as an activity that is complementary to its Commodity Derivatives Activities and Derivatives Advisory Services. As an energy manager, JPMC proposes to provide transactional and advisory services to power plant owners. The transactional services would consist primarily of acting as a financial intermediary, substituting its credit and liquidity for those of the owner to facilitate the owner's purchase of fuel and sale of power. JPMC's advisory services would include providing market information to assist the owner in developing and refining a risk-management plan for the plant and providing a variety of administrative services to support these transactions.

JPMC has committed to provide Energy Management Services in accordance with the restrictions, definitions, and conditions previously imposed by the Board on the conduct of those activities. JPMC has made all the commitments that were required in connection with the Board's previous approvals of Energy Management Services. Those commitments generally limit the scope of the activities that JPMC may perform as energy manager to ensure that JPMC incurs only those risks that are consistent with the agency nature of Energy Management Services and limit the revenues attributable to JPMC's Energy Management Services to 5 percent of JPMC's total consolidated operating revenues.⁵ The authority to act as energy manager should not expand JPMC's ability to engage in physical commodity trading beyond what it is currently allowed to do under its Physical Commodity Trading authority.

JPMC has committed to conduct Energy Tolling and provide Energy Management Services in accordance with the restrictions, definitions,

⁵ "Total operating revenues" is defined as net interest income and all non-interest revenue, including net securities gains but excluding extraordinary items.

and conditions previously relied on by the Board in authorizing those activities. JPMC also has established and maintained policies and systems for monitoring and controlling the risks associated with Energy Tolling and Energy Management Services and is expected to continue to maintain effective risk-management policies and systems for each of those activities. Approval of the request to engage in Energy Tolling and Energy Management Services likely would benefit JPMC's customers by enhancing JPMC's ability to provide efficiently a full range of commodity-related services consistent with existing market practice. Approval also would enable JPMC to improve its understanding of the physical commodity and commodity derivatives markets and its ability to serve as an effective competitor in those markets.

Long-Term Electricity Supply Contracts

As part of its energy trading business, JPMC proposes to enter into long-term electricity supply contracts with large commercial and industrial end-users. JPMC's current Physical Commodity Trading authority permits it to take a position in a commodity and does not limit the duration of, or counterparties to, its contracts. Most commodities that JPMC is permitted to trade under the Physical Commodity Trading authority, however, tend by their nature to be limited to the wholesale market. Electricity, on the other hand, has a greater potential to be sold not only to end-users generally but also to small retail customers who are unlikely to be participants in the market for energy-related derivatives products. JPMC requests confirmation that entering into long-term electricity supply contracts with large commercial and industrial end-users is consistent with its Physical Commodity Trading authority.

To ensure that JPMC's activities remain complementary to the activities permitted under the Physical Commodity Trading authority, and consistent with previous approvals,⁶ JPMC has committed that it will enter into long-term electricity supply contracts only with commercial and industrial customers that consume electricity at a rate of at least (1) 800 megawatt-hours per year or (2) the minimum consumption level for commercial and industrial customers under applicable state law, whichever is greater. Requiring that JPMC contract only with customers that consume electricity at these high levels should help ensure that JPMC transacts with financially sophisticated purchasers

⁶ See RBS Order.

(and not with retail purchasers) and, thus, remains essentially a wholesale intermediary.

Based on the record, the Board has determined that (1) the proposed Energy Tolling is complementary to JPMC's Commodity Derivatives Activities and (2) the proposed Energy Management Services are complementary to JPMC's Commodity Derivatives Activities and Derivatives Advisory Services. In approving the proposed Energy Tolling and Energy Management Services, the Board also has determined that the proposed activities do not pose a substantial risk to the safety or soundness of JPMC, its depository institutions, or the financial system generally and can reasonably be expected to produce benefits to the public that outweigh any potential adverse effects. The Board also confirms that JPMC's proposal to enter into long-term electricity supply contracts is consistent with its Physical Commodity Trading authority.

In making these determinations, the Board relied on all the information, representations, and commitments provided by JPMC to the Board in connection with the notices.⁷ These commitments and conditions are critical to the determination that Physical Commodity Trading, Energy Tolling, and Energy Management Services would not pose a substantial risk to the safety and soundness of JPMC, other financial institutions, or the financial system generally. These determinations also are subject to all the conditions set forth in Regulation Y, including those in section 225.7,⁸ and to the conditions contained in the Board's previous decisions noted above. These commitments and conditions shall be deemed to be conditions imposed in writing in connection with the notices and their approval and, as such, may be enforced in proceedings under applicable law.

These determinations should not be construed as granting relief from any other conditions or commitments to which JPMC may be subject. In addition, these determinations are subject to the Board's authority to require modification or termination of the activities of a bank holding company or any

⁷ See appendix for a complete list of the commitments JPMC has made in connection with these proposals.

⁸ 12 CFR 225.7.

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- 6 -

of its subsidiaries as the Board finds necessary to ensure compliance with, or to prevent evasion of, the provisions and purposes of the BHC Act and the Board's regulations and orders issued thereunder.

As you are aware, legislation is pending that would impose constraints on the ability of banking institutions to engage in proprietary trading and derivatives activities. You have represented that most, if not all, of the activities to be conducted under the Energy Tolling and Energy Management Services authority that JPMC has requested would be permissible under the proposed legislation. To the extent that any activity becomes impermissible, the Board expects that JPMC would conform such activities to the requirements of the law within the required time periods.

Sincerely yours,



Robert deV. Pierson
Deputy Secretary of the Board

cc: Ivan J. Hurwitz, Vice President
Federal Reserve Bank of New York

FRB-PSI-302576

Appendix

JPMC, together with its subsidiaries, including those attributable to JPMC's acquisition of The Bear Stearns Companies, Inc. (collectively, "JPMC"), commits with respect to the notices ("Notices") it has filed with the Board to engage in Energy Tolling and Energy Management Services that:

Physical Commodity Trading Activities

1. JPMC will include in the 5 percent aggregate market value limit for physical commodities that it holds at any one time as a result of Physical Commodity Trading the market value of any physical commodities it holds as a result of a failure of reasonable efforts to avoid taking delivery in commodities transactions conducted pursuant to section 225.28(b)(8)(ii)(B) of Regulation Y. In addition, JPMC agrees to notify the Federal Reserve Bank of New York if the aggregate market value of commodities held under this approval exceeds 4 percent of JPMC's tier 1 capital.
2. JPMC will take and make physical delivery only of physical commodities for which derivative contracts have been authorized for trading on a U.S. futures exchange by the Commodity Futures Trading Commission or physical commodities of which the Board has specifically authorized JPMC to take and make physical delivery (collectively, "Approved Commodities").
3. JPMC will enter into long-term electricity supply contracts only with large commercial and industrial end-users that consume electricity at a rate of at least (i) 100 megawatt-hours/year or (ii) the minimum consumption level for large commercial and industrial customers under applicable state law, whichever is greater.
4. JPMC will conform to the requirements of the BHC Act, including by discontinue if necessary, the activities of (i) owning, investing in, or operating storage facilities for commodities that it is not permitted to hold or store under the BHC Act and (ii) making and taking physical delivery of commodities that are not Approved Commodities, including metal concentrates, acquired in connection with the transactions contemplated

by the Notices within two years of consummation of the transactions, or such longer period as the Federal Reserve in its discretion may grant.

5. After consummation of the transactions contemplated by the Notices, JPMC will not expand its direct or indirect activities or investments in the activities of (i) owning, investing in, or operating storage facilities for commodities that it is not permitted to hold or store under the BHC Act, and (ii) making and taking physical delivery of commodities that are not Approved Commodities, including metal concentrates. JPMC will not expand these activities or investments beyond those engaged in by RBS Sempra Commodities LLP immediately prior to the date of the consummation of the proposed transaction by directly or indirectly (1) acquiring direct control of a company engaged in any activity, or acquiring any assets or business lines of another company that engages in impermissible activities, (2) increasing the types of investments, products, or services to be engaged in or provided by JPMC, or (3) any similar transactions that would result in an expansion of these activities.

Energy Tolling

6. JPMC will include the present value of all capacity payments to be made by JPMC in connection with energy tolling agreements in calculating its compliance with the limit of 5 percent of tier 1 capital on the aggregate market value of the physical commodities that it and any of its subsidiaries hold at any one time as a result of Physical Commodity Trading.

Volumetric Production Payment Transactions

7. JPMC will include any commodities that JPMC receives under a volumetric production payment transaction and does not immediately sell to a third party in calculating its compliance with the limit of 5 percent of tier 1 capital on the aggregate market value of the physical commodities that it and any of its subsidiaries hold at any one time as a result of Physical Commodity Trading.

Energy Management Services

8. Revenues attributable to JPMC's Energy Management Services will not exceed 5 percent of its total consolidated operating revenues.⁹
9. JPMC will only act as energy manager if the energy management agreement under which it performs its Energy Management Services provides that:
 - a. The owner of the facility retains the right to market and sell power directly to third parties, which may be subject to the energy manager's right of first refusal;
 - b. The owner of the facility retains the right to determine the level at which the facility will operate (i.e., to dictate the power output of the facility at any given time);
 - c. Neither the energy manager nor its affiliates guarantee the financial performance of the facility; and
 - d. Neither the energy manager nor its affiliates bear any risk of loss if the facility is not profitable.

JPMC agrees that the foregoing commitments are deemed to be conditions imposed in writing by the Board in connection with its findings and decision on the notices filed by JPMC to engage in Energy Tolling and Energy Management Services under section 236.89 of Regulation Y and, as such, may be enforced in proceedings under applicable law.

⁹ Total operating revenues are defined as net interest income and all non-interest revenue, including net securities gains but excluding extraordinary items.

U:\Waldron\UPMC.Tolling-Management.Letter.final.docx

MWW:mww

bcc: Pat Robinson
Michael Waldron
Chris Paridon
David Alexander
Lisa DeFerrari
Michael Sexton
Robert Brooks
Kathy Everhart
BS&R Clearing Unit
Board Records
Legal Records

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FRB-PSI-302580

J.P.Morgan

Redacted by the Permanent Subcommittee on Investigations

MEMORANDUM

TO: CPI Investment Committee
 FROM: CPI Team
 RE: KJ Toll Disposition Plan
 DATE: August 13, 2010

TRANSACTION OVERVIEW

Kinder Morgan Power Company ("KMPC"):

We have negotiated an agreement to purchase 100% of the equity interests of KMPC from Kinder Morgan Inc. ("KMI"), for \$21.8 million net cash and a contingent funding obligation, which is expected to be \$0 but could be as much as \$45.6 million. Under the Operating Case, this investment is expected to yield a pre-tax IRR and generate [REDACTED] million in net cash flow thru 2042 with a PV10 value of [REDACTED] million.

AlphaGen and Triton Common Interests:

We have negotiated an agreement to purchase 100% of the equity interests of AlphaGen, which owns the 545 MW gas fired facility in Jackson, MI ("Facility") and 10% of the common equity of Triton from The CIT Group for [REDACTED] million. Under the Operating Case, this investment is expected to have a pre-tax cash-on-cash yield of [REDACTED] and generate [REDACTED] million in net cash flow thru 2042. (after-tax yield of [REDACTED] and cash flow and tax benefits of [REDACTED] million). Finally, PI has negotiated an agreement to purchase 90% of the common equity of Triton Power for \$1.5 million from IMH Holdings LLC.

Consolidation of KMPC, Alphagen, Triton Common and JPM's tolling obligations:

Acquiring KMPC, Alphagen, Triton Common, the AlphaGen debt and canceling the existing J.P. Morgan toll results in JP Morgan owning the Kinder Jackson Facility (the "Facility") for an all in cost of \$143.2 million or \$264/kW (see Table 1 below). We believe the replacement value of the Facility is \$1,500/kW and the market value is between \$350 - 475/kW.

Table 1: Consolidation and Sale Economics

Kinder Jackson Facility Cost		\$MM	\$/kW	Comments
A	JPM Toll on Facility (through 2018)	\$	\$	Current Book Value
B	AlphaGen Debt	\$	\$	JPM has \$104MM (All-in @ 118 % par)
C	Alpha Gen (Equity)	\$	\$	
D	Kinder Morgan Power Company	\$	\$	
E	Preferred Option Premium	\$	\$	Current JPM Book Value
F	Triton Power Working Capital	\$	\$	Per Financials
G	Triton Power (Equity - CIT)	\$	\$	
H	Triton Power (Equity - IMH)	\$	\$	
I	Gas Supply Contract Basis	\$	\$	Embridge contract
J	Common Option Premium	\$	\$	Current JPM Book Value
Total Cost For Facility		\$ 143.2	\$ 264	

Kinder Jackson Facility Sale		\$MM	\$/kW	Comments
A	Facility Sales Proceeds (2010)	\$	\$	Market value \$350 - 475 / kW
B	Less Facility Cost (using Toll MTM)	\$	\$	
Pre Tax P&L		\$	\$	

IRR (assuming a sale 6 months after close) 147.5%

Permanent Subcommittee on Investigations

EXHIBIT #73

FRB-PSI-300066

Bear Stearns historically engaged in the activity of restructuring the capital structure and financial and commodity contracts of power plants ("Power Plant Restructuring"). JPMC has continued to engage in Power Plant Restructuring as a grandfathered activity. Power Plant Restructuring is an activity which involves the purchase of equity in a particular company that owns a power plant coupled with the exercise by the investor of an active role in restructuring the input and output contracts entered into by the company with a view to making the overall plant performance profitable. This activity then enables the investor to sell its equity interest in the company and obtain a positive and enhanced financial return on its investment because the plant is now potentially more profitable based on the renegotiated and replaced supply and delivery contracts.

As discussed in our recent call, JPMC has ceased engaging in Power Plant Restructuring. It will no longer actively engage in restructuring and renegotiating the input and output contracts of power plants in which it holds an equity investment as previously was the case. In the case of its investments in the Chino and Gregory power plant companies, JPMC expects to dispose of its equity interests shortly. In the case of its investment in the Central Power & Lime power plant company, JPMC is taking steps to conform its holding of the investment to the requirements of merchant banking investing authority. Please note that due to financing arrangements, third party creditor approval may be required to take some of the steps that are planned below. Also note that in the event that JPMC is unable to consummate the sale of the Chino and Gregory investments prior to the end of May 2011, JPMC will commence similar steps to conform such investments to merchant banking requirements. In addition, all future power plant company investments made by JPMC will conform to merchant banking requirements as contemplated below.

JPMC will conform to the requirements of merchant banking as follows:

- 1) JPMC employees will step down from being officers of the power plant company. They will constitute some or all of the board of directors of the company (the "Board") as permitted under the merchant banking rules and negotiated with the other owners, if any, of the company.
- 2) The power plant company will employ an operational plant manager independent of JPMC. The operational manager will be responsible for the day to day operation of the plant, including the running of the plant infrastructure, maintenance of plant equipment, payment of local property taxes and employees. The operational manager will have signing authority up to a specified dollar threshold. Amounts in excess of such thresholds would be reviewed by the asset manager identified in clause 3 below. Currently all Power Plant investments are already compliant with this step in the process.
- 3) The power plant company will also employ one or more asset managers independent of JPMC. The asset manager will have overall technical expertise, will manage the negotiation, execution and ongoing operation of input and output contracts, will coordinate the accounting and tax books of the company and will have authority to enter into all contracts in connection with the foregoing subject to overall supervision by the Board as permitted under the merchant banking rules. The asset manager may be separate from the accounting manager depending on the project. There

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EXHIBIT #74

FRB-PSI-300352

may be a requirement for Board review of contracts binding the company over specified amounts. If the independent asset manager decides in its sole discretion to request bids on contracts that are permissible for JPMC to engage in pursuant to its complementary powers (e.g. tolling agreements, energy management agreements, power purchase agreements, etc.), JPMC may bid on such contracts in a process and manner that will conform to merchant banking rules. Currently, Central Power & Lime is the only facility that does not have an independent asset manager.

- 4) JPMC understands it must dispose of the investment within the merchant banking co-tenure period which includes the prior grandfathering period.

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COMMODITIES OPERATIONAL RISK - CAPITAL

May 18, 2011

STRICTLY PRIVATE AND CONFIDENTIAL

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FRB-PSI-300727

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EXHIBIT #75

Summary

- Operational Risk Capital is established for Global Commodities by combining two components:
 - Capital needed to support operational risks, which is measured using a historical loss data approach.
 - This is the Investment Bank's standard operational risk model which covers all operational risk including actual loss experience from all of GCG's operating activities. Historical loss data includes operating activities from heritage RBS Sempra.
 - An additional capital allocation related to the Extreme event risk given that actual loss experience in the standard model may not adequately represent GCG's operating risk exposure. The additional capital allocation is calculated by determining a boundary case (worst-case loss), postulated to be an oil tanker spill, and then estimating the magnitude of the loss using an exposure based model.
- The result is a \$1.2B GCG diversified operational risk capital allocation. On a fully diversified basis across the Investment Bank, the operational risk capital allocation is \$201MM
- It should be noted that in most instances, JPM is not the owner or operator of physical assets and as such does not have primary direct liability. However, for purposes of scenario analyses we consider the likelihood that JPM would be brought into litigation/liability matters

GCG Operational Risk Capital (\$mm)					
Risk Type	Risks Covered	Mitigants	ORC Components	GCG Diversified ORC	IB Diversified Commodities ORC
Execution/errors	Processing/trading booking errors	Policies and procedures	\$545	\$697	\$151
Fraud / Theft	Employee fraud	Policies and procedures	\$693		
	Losses from misstatements and trading	Insurance			
Business Practice / Litigation	Commercial litigation/arbitration	Insurance	\$327		
Employee Disputes	Discrimination	Policies and procedures	\$32	\$297	\$50
		Insurance			
Extreme event risk (using oil shipments as proxy)	Loss of physical commodities Liability from accidents or spills Oil, power & gas, LNG, coal, metals, ags)	Dedicated, experienced staff Operating policies & procedures Insurance	\$497		
			\$2,094	\$1,194	\$201

COMMODITIES OPERATIONAL RISK CAPITAL

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Operational risk stress loss scenarios

□ The modeled boundary case event, a **tanker spill**, is the highest postulated loss case for all GCG physical commodities activities

Scenario	JPM Assets / Liability	Loss Scenario	Loss Component (Estimated)	Net Loss
Tanker Spills	250-400 waterborne cargoes annually	<ul style="list-style-type: none"> Tanker with 50,000MT capacities 52% of shipments are less than this volume 30% of the product is spilled 90% of spills are between 0 and 20% JPM doesn't own or operate tankers, however, we assume JPM would be sued 	<ul style="list-style-type: none"> Loss of product (\$500,000) Clean-up costs (estimated at \$4,000,000) Other components of loss (calculated based on Exxon Valdez) Fines and penalties (50% of clean up costs; not covered by insurance) Compensatory damages (20% of clean up costs; not covered by insurance) Punitive damages (20% of clean up costs; not covered by insurance) Legal fees (10% of clean up costs) Insurance coverage (\$540) 	<ul style="list-style-type: none"> \$12 \$578 \$288 \$115 \$115 \$58 (\$540) \$516
Power plant explosion	JPM has equity interest in 4 power plants in the U.S.; the largest is CP&L	<ul style="list-style-type: none"> Explosion at the largest plant with 51 employees on site; total loss of plant and future profits 20% of the plant employees die in the explosion While plants are operated by third parties, assumption is JPM is sued 	<ul style="list-style-type: none"> Write-off of power plant Loss of future profits Liability (10 deaths @ \$5mm each) Insurance coverage (\$175) Net loss 	<ul style="list-style-type: none"> \$85 \$40 \$50 (\$175) \$0
Tolls on Power Plants	JPM currently has tolls on 8 power plants; the largest is AES	<ul style="list-style-type: none"> Explosion results in complete loss of AES facilities, with 70 employees on site and total loss of plant and future profits JPM is not a party to the loss, however, we assume JPM would be sued 	<ul style="list-style-type: none"> Write-off of power plant Loss of future profits Insurance coverage (\$200) Net loss 	<ul style="list-style-type: none"> \$328 \$65 (\$200) \$193
Gas pipeline or storage explosion	80 bcf storage / 1.8 bcf/d transport; largest is NSS storage facility	<ul style="list-style-type: none"> Explosion at NSS storage facility with total loss of equipment, inventory and future profits Loss is based on 5-year average (as established by the DOT for gas pipeline & storage incidents from 2001-2010) While not a case of storage / pipeline, but assume JPM would be sued 	<ul style="list-style-type: none"> Write-off of storage carrying value Write-off of gas in ground inventory Loss of future profits Liability (3 deaths @ \$5mm each) Insurance coverage (\$100) Net loss 	<ul style="list-style-type: none"> \$79 \$85 \$10 \$15 (\$100) \$89
Oil Storage accident	25MM bbls (across multiple locations); largest tank capacity is 2,000,000bbls	<ul style="list-style-type: none"> 10% of the oil is spilled from the largest tank JPM is not owner of storage, but assume JPM would be sued 	<ul style="list-style-type: none"> Loss of product (@\$100/bbl) Clean-up costs (estimated at \$3,000,000) Other components of loss (assuming same factor as waterborne spill) Fines and penalties (50% of clean up costs; not covered by insurance) Compensatory damages (20% of clean up costs; not covered by insurance) Punitive damages (20% of clean up costs; not covered by insurance) Legal fees (10% of clean up costs) Insurance coverage (\$170) Net loss 	<ul style="list-style-type: none"> \$5 \$150 \$75 \$30 \$30 \$15 (\$170) \$135

— = Redacted by the Permanent
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Operational risk stress loss scenarios - continued

Process	JPM's Assessment of Vulnerability	Losses Scenario	Loss Estimation (Potential / Actual)
Precious metals theft	JPM operates 3 vaults in NY, London & Singapore with [REDACTED] current market value of precious metals. In addition to vault personnel, the vault is constantly monitored by Group security, including [REDACTED] in the vault and at all entrances and exits.	<ul style="list-style-type: none"> Thief during transportation or an inside theft While clients are required to insure their own gold, we assume JPM is sued in event of theft or the theft is JPM's own metal Brinks Matt is the largest bullion theft reported, where 3 tonnes of gold were stolen; at today's valuation this would be approximately \$135mm 	<p>Armored trucks can hold 6 tonnes of gold - (trucks typically hold 3 tonnes of gold or less)</p> <p>Insurance coverage (if relative coverage insurance cover is \$1B)</p> <p>Net Loss: (\$270) 0</p> <p>Note: An inside theft would require the collusion of numerous vault personnel, global security personnel and third-party logistic personnel. We believe given our high security and control standards, the location of the vaults, and the difficulty in liquidating the stolen material, this possibility is highly remote.</p>
Base metals theft	Henry Bath has warehouse operations in 19 locations. Largest warehouse is in Singapore, which has approximately 220,000 tonnes of base metal valued at [REDACTED]	<ul style="list-style-type: none"> large scale inside theft involving all of the warehouse personnel 	<ul style="list-style-type: none"> It would take approximately 150 working days (and 14,000 truck loads) to steal all the material given the operational capacity of the warehouse Henry Bath has independent audits (including both JPM and the LME) and the normal client requests to withdraw metal, such a large scale theft could not go undetected for that length of time The full value of the metal is insured so after insurance there would be no net loss other than the deductible.

Tanker ORC Model Summary

- Additional physical operating risk capital is model based, leveraging an approach similar to an Exposure / Probability of Default / Loss Given Default credit model.

Key Model Attributes

Results

- **Oil Shipments ('Exposure')**
 - The number of shipments and the volume of product carried by each (247 shipment)
- **Probability of Spill ('PD')**
 - The likelihood that a shipment will have a spill (0.007%)
- **Loss Given Spill ('LGD')**
 - The cost of a spill is a function of three components: spill size, clean up costs and other costs, such as fines and penalties, compensatory damages, punitive damages and legal fees
- **Correlation**
 - Assume spills occur independent of one another
- Note that historical industry loss data includes accidents related to single hull vessels. JPM only uses double hull vessels for wet freight, which is not the industry standard.
 - The loss experience between single and double hull vessels is significantly different as a result our model calculations are very conservative

- **Standalone operational risk capital estimates for the Tanker operations as of Mar 2011**
 - Economic (99.99% Confidence interval): \$497mm
 - Regulatory (99.9% confidence interval): \$297mm

amounts in millions

Component of Capital	Regulatory	Economic
Clean Up Cost	147	384
Loss of Product	3	8
Other Components of Cost		
Fines and Penalties	74	192
Compensatory Damages	29	77
Punitive Damages	29	77
Legal Fees	15	38
Insurance	na	(279)
Total Standalone Capital	297	497
Marginal Capital Impact to the IB	27	50

- Insurance benefit recouped for economic, but not yet approved for regulatory

Diversification benefit factor

COMMODITIES OPERATIONAL RISK CAPITAL

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Appendix: Tanner ORC Model

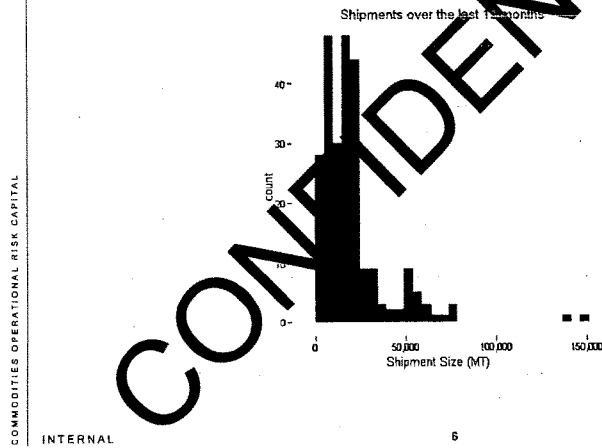
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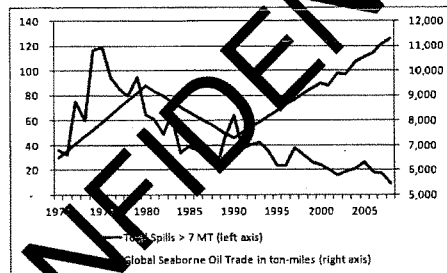
Appendix – Tanker ORC Model: Oil Shipments ('Exposure')

- Exposure is represented by the number of shipments and the volume of product each carries.
- The capital model estimates potential losses over the next 12 months; we use the shipments that occurred over the prior 12 months as a proxy for the shipment that will occur over the next 12 months.



Appendix – Tanker ORC Model: Probability of Spill ('PD')

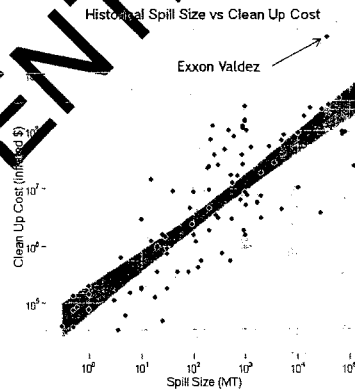
- What is the likelihood of a spill?
- The number of spills globally continues to decline, while the amount of oil shipped globally continues to increase.
 - Many technological advances contribute to the decline in spills: electronic navigation, GPS, double hull design, etc



- We have estimated the probability of a spill for any given shipment as **0.007%**
- At the current rate of business, we estimate that a spill will occur every 50 years

Appendix – Tanker ORC Model: Loss Given Spill ('LGD')

- Should a spill occur, how much will it cost?
- Loss Given Spill is broken into three components:
 - What percentage of product will be spilled?
 - What will the cost be to clean up the spill?
 - What other costs would occur?
- Expert judgment used to calibrate the spill %
 - Most spills will be between 0% to 20% loss of product, with a small chance of a total tanker loss
- Historical data is used to estimate the regression of clean up cost on spill size. (see chart on right)
- Other components of cost estimated as a % of the clean up costs, calibrated using Exxon Valdez as a case study
 - Loss of Product
 - Fines and Penalties
 - Compensatory Damages
 - Punitive Damages
 - Legal Fees



COMMODITIES OPERATIONAL RISK CAPITAL

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Appendix – Tanker ORC Model: Insurance

- Insurance plays a significant role in the commodities business due to the presence of physical products
- We have applied some conservative insurance offsets for economic capital using the current insurance coverage, but we would need regulatory approval to offset regulatory capital with insurance.
- We have modeled the following aspects of insurance:
 - Mapping of coverage
 - Insurer ability to pay
 - Insurer willingness to pay
 - Timeliness of payment
 - Coverage reinstatement

Current Insurance Coverage

Component of Cost	Insured?	Program	Coverage	Deductible
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COMMODITIES OPERATIONAL RISK CAPITAL

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FOIA CONFIDENTIAL TREATMENT REQUESTED: CONTAINS PRIVILEGED INFORMATION -
DO NOT RELEASE PURSUANT TO 5 U.S.C. § 552, 18 C.F.R. §§ 1b.9, 1b.20 AND 388.1112

From: Francis Dunleavy <Francis.Dunleavy@jpmorgan.com>
Sent: Thursday, April 29, 2010 7:47 PM
To: Rob Cauthen <Rob.Cauthen@jpmorgan.com>
Subject: Re: Resume for Power

Please get him in ASAP.

From: Rob Cauthen
To: Francis Dunleavy
Sent: Thu Apr 29 18:32:40 2010
Subject: Fw: Resume for Power

Fran,

I just got this. We should talk to him. Do you want me to set something up? He might be useful.

Sent from my BlackBerry Wireless Device

From: Chris Robertson
To: Rob Cauthen; Sean O'neal; Thorvin Anderson; Paul Tramonte
Sent: Thu Apr 29 17:26:18 2010
Subject: Resume for Power

This resume just came through in response to our "Specialized Settlements" position in Ops. He is clearly over qualified for that position, but his experience/ background was such that I wanted to forward to you, in case you are interested.

I am not personally familiar with this person. He just posted for the job.

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John Howard Bartholomew

Experience

Southern California Edison, Power Procurement, June 2008 - Present

Bid Strategy

- Identified a flaw in the market mechanism Bid Cost Recovery that is causing the CAISO to misallocate millions of dollars

- Increased profits by creating a strategy to hedge against the volatility between prompt month and daily gas prices

- Showed how units in reliability areas can increase profits by 400%

- Used Ventyx software to develop day-ahead positions for power and gas traders

- Developed Ventyx model to daily identify errors in the MRTU market optimization

Power Contracts

- 2009 All Source Request For Offers - assisted in negotiation and valuation of

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EXHIBIT #76

PSI-FERC-02-000009

JPM-106765

FOIA CONFIDENTIAL TREATMENT REQUESTED CONTAINS PRIVILEGED INFORMATION -
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tolling, resource adequacy, and heat-rate option contracts

Remodeled gas units to utilize a new market initiative that captures all of a unit's characteristics including transition costs

FERC, Office of Enforcement, May - December 2007

Intern

Investigated Energy Transfer Partners and the hedge fund Amaranth for market manipulation under the NGA and EPCA 2005. Investigations resulted in show cause orders seeking approximately \$450 million in penalties and disgorgements

Established the basis for taking enforcement action against entities that engage in flipping transactions on natural gas pipelines

U.S. Department of Energy, Policy Office, January - April 2007

Intern

Drafted position papers on issues including:

- o Definitions of renewable/replacement/alternative fuels

- o California's challenge of the standard of review used for consumer appliance exemption petitions

- o Comments to the DOE's denial of the Consolidated Residential Furnace Agreement

Education

George Washington University, J.D., May 2008

Writing credit - "The California Energy Crisis and Mobile-Sierra"

Lewis & Clark College, B.A. in Economics and Minor in Math, May 2005

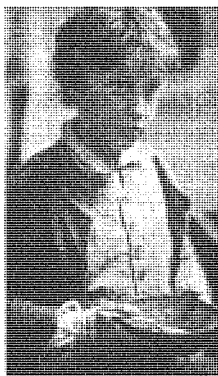
Economics Merit Scholarship

Lacrosse: Captain 2004 and Division Champions 2003

Chris Robertson | Executive Director | North America Commodity Operations | LP, Morgan Vectors Energy Corporation
700 Louisiana St, Suite 1000, Houston, TX 77002 | Telephone: (713) 236-3034 | Facsimile: (973) 463-5472
Email: chris.robertson@jpmorgan.com | Instant Messaging: chrisrobertson@mcjpmorgan.com

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DO NOT RELEASE PURSUANT TO 5 U.S.C. § 552, 18 C.F.R. §§ 1b.9, 1b.20 AND 388.1112

From: Luis Davila <Luis.Davila@jpmorgan.com>
Sent: Friday, October 22, 2010 5:55 PM
To: John Rasmussen <John.Rasmussen@jpmorgan.com>; Ryan M Martin
<ryan.m.martin@jpmorgan.com>
Subject: Please sir! mor BCR!!!!



Luis Davila | Investment Bank T&O | Energy | ISO Associate | **J.P. Morgan**
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Permanent Subcommittee on Investigations

EXHIBIT #77

PSI-FERC-02-000042

JPM-069383

FOIA CONFIDENTIAL TREATMENT REQUESTED CONTAINS PRIVILEGED INFORMATION -
DO NOT RELEASE PURSUANT TO 5 U.S.C. § 552, 18 C.F.R. §§ 1b.9, 1b.20 AND 388.1112

From: Dunleavy, Francis <Francis.Dunleavy@jpmorgan.com>
Sent: Monday, March 14, 2011 1:59 PM
To: Masters, Blythe <blythe.masters@jpmorgan.com>
Subject: RE: Privileged and Confidential - CAISO update

I will handle it but it may not be pretty.

-----Original Message-----
From: Masters, Blythe
Sent: Monday, March 14, 2011 12:54 PM
To: Dunleavy, Francis
Subject: Re: Privileged and Confidential - CAISO update

I'm in a meeting in london with Jes.

-----Original Message-----
From: Dunleavy, Francis
To: Masters, Blythe
Sent: Mon Mar 14 13:50:17 2011
Subject: RE: Privileged and Confidential - CAISO update

We should speak

-----Original Message-----
From: Masters, Blythe
Sent: Monday, March 14, 2011 12:49 PM
To: Dunleavy, Francis
Subject: Re: Privileged and Confidential - CAISO update

So in your opinion we are better off with me trying to decide this without your help??

-----Original Message-----
From: Dunleavy, Francis
To: Masters, Blythe
Sent: Mon Mar 14 12:38:48 2011
Subject: Re: Privileged and Confidential - CAISO update

Redacted

-----Original Message-----
From: Masters, Blythe
To: Dunleavy, Francis
Sent: Mon Mar 14 12:36:10 2011
Subject: Re: Privileged and Confidential - CAISO update

That's ridiculous.

-----Original Message-----
From: Dunleavy, Francis
To: Masters, Blythe
Sent: Mon Mar 14 12:34:30 2011
Subject: Re: Privileged and Confidential - CAISO update

Redacted

Permanent Subcommittee on Investigations
EXHIBIT #78

PSI-FERC-02-000067

IPM-172588

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J.P.M. COMMODITY CAPABILITIES

January 2012

J.P.Morgan

FRB-PSI-200832

Permanent Subcommittee on Investigations

EXHIBIT #79

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JPM CONMODITY CAPABILITIES

FRB-PSI-200833

JPMorgan

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JP Morgan Commodity Capabilities	
Hedging and Financing Structures	13
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JP Morgan has built a world class client-focused commodities business

Why Commodities at J.P. Morgan?

- Our clients require solutions to manage their commodity price risk

The Franchise

- Over 2,000 clients including corporate, investor, governments
- Deep expertise across all commodity types (600 employees in 20+ locations worldwide)
- Expansive financial and physical platform

Key Elements of our Strategy

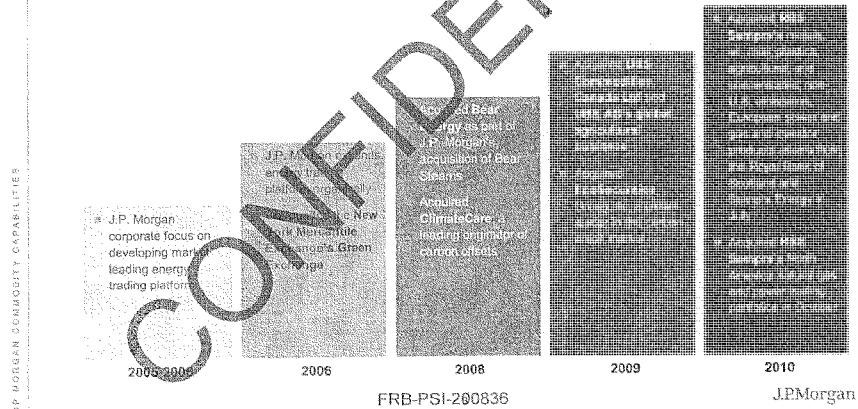
- Client focus: Their needs and interests come first
- Innovation: We must be able to respond to a rapidly changing environment
- Risk taking: We are willing to take risks that support our clients' needs
- Balance Sheet & Capital strength: Using our size and scale effectively
- Global footprint: Complete relevance across all key geographies
- Physical & Financial presence: Have ability to meet client needs and manage risk in all markets

Our growth has been consistent and dramatic, with organic investments and acquisitions across products and geographies

Investing in our platform

- ▣ J.P. Morgan has made significant investments in building out and diversifying our Global Commodities platform and capabilities - organically and through strategic acquisitions, such as RBS Securities
- ▣ J.P. Morgan's Global Commodities Group offers clients a comprehensive set of market making, structuring, risk management, financing and warehousing capabilities across the full spectrum of commodity asset classes

Key transactions accelerate J.P. Morgan's growth



J.P. Morgan Commodity Capabilities

JP MORGAN COMMODITY CAPABILITIES

Research		Global Commodities		Futures & Options	
Energy and Power		OTC Energy, Metals, and Ags		Listed Futures and Options	
Metals, Bulk Commodities		Warehousing Risk		Specialist Trading Desks	
Grains and Agricultural		Structured Products		Global Clearing Solutions	
Technical Analysis		Long Dated Contracts		Electronic Trading	

Energy and Power	Environmental Markets	Base Metals	Precious Metals	Agricultural	Weather	Plastics
Crude Oil	Carbon allowances and offsets (e.g., RGGI, EUAs, CERS, VESRs)	Steel	Gold	Cattle	Temperature	Ethylene
Refined Products		Nickel	Silver	Dairy	Precipitation	Polyethylene
NGLs		Zinc	Platinum	Grains	Wind	Polypropylene
Natural Gas	Sulphur Dioxide	Copper	Palladium	Soybeans	Hurricanes	
Electricity	Nitrogen Oxides	Aluminium		Wheat	Sunshine	
Coal	Renewable Energy Credits	Lead		Corn	Crop Yields	
Transportation		Aluminium Alloy		Softs		
Freight		NASAAAC		Coffee		
				Sugar		
				Cotton		

FRB-PSI-200837

JPMorgan

J.P. Morgan's Global Metals Group

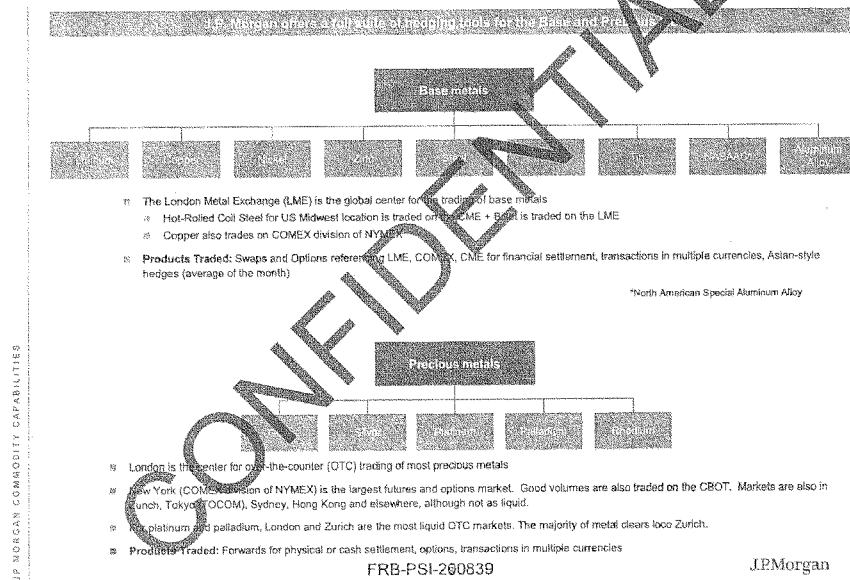
JP MORGAN COMMODITY CAPABILITIES

- A core component of the Global Commodities Group
- Our primary aim is
 - to facilitate price risk management for clients with exposure to
 - Precious metals – gold, silver
 - PGMs – platinum, palladium, rhodium
 - Base metals – copper, aluminium, zinc, lead, nickel, niobium, aluminium alloy, tin, cobalt and molybdenum
 - Ferrous metals – iron-ore, steel
 - by providing risk management and ideas that are both appropriate and meaningful
- As a group we have been involved in significant transactions and provided consistent service to our clients over the past 30 years. We have a global reputation as a strong, reliable and committed house to these sometimes turbulent markets
- We remain at the forefront of market trends and product development as we expand the breadth and depth of the metal risk management offering
- Our client franchise is diverse, encompassing all sectors of the industry
- Our business is based on cash settled metal OTC derivatives and listed contracts and we also trade in physical metals
- JPMorgan has the largest private bullion vault in London and has recently opened vaults in New York and Singapore
- Henry Bath is a world leading logistics provider specialising in the storage and shipping of exchange based metals around the globe

FRB-PSI-290838

JPMorgan

Base and Precious Metals Presence and Services

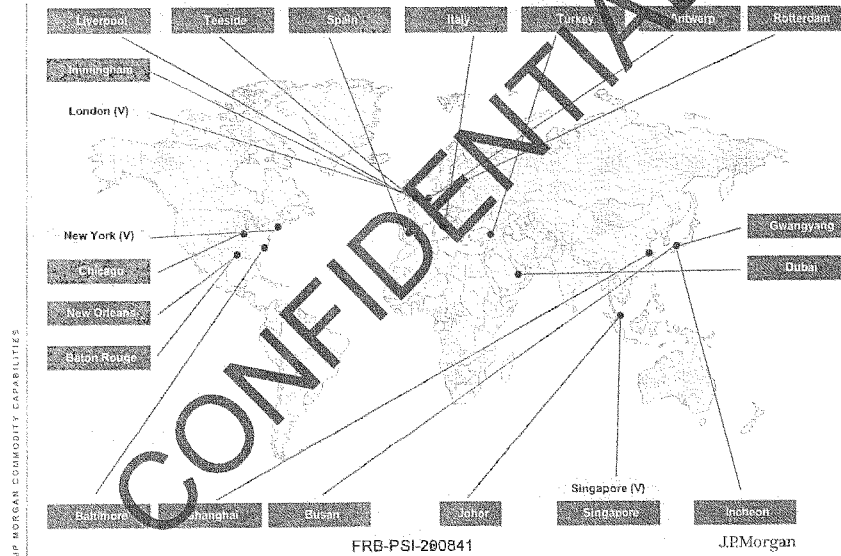


J.P. Morgan's Metals Trading Business

J.P. Morgan Base and Precious Metals Trading Business

- **Exchange Memberships:** JPMorgan is a member of all the world's leading metals exchanges including a Ring Dealing Member of **The London Metal Exchange** which is the global centre for the trading of base metals. JPMorgan is also a Market Making Member of **The London Bullion Market Association** and a clearing for major OTC and exchange traded metals contracts
- **Risk taking capability:** We trade metal forwards and options including non-delivered contracts. JPMorgan's balance sheet and history in the metals market enables participation in larger transactions
- **On-line Trading:** We offer metals products to our clients through our online trading platforms, JPMorgan Metals and MORCOM
- **Physical Trading:** JPMorgan is a leading trader in physical metals specialising in the origination and delivery of metals
- **Market reach:** We trade with major consumers, producers, refiners and processors and investors. The breadth of our franchise provides us access to superior market intelligence, pricing, and liquidity
- **Partnership:** We work closely with our customers in providing optimal service and appropriate idea and strategy generation
- **Confidentiality:** We pride ourselves on confidentiality, trust, and long-term commitment. This is especially relevant when dealing in more illiquid markets and executing large volumes. We have significant experience in out-sized transactions and significant hedging programmes

Physical Metals - 19 Henry Bath Warehouse Locations & 3 JP Morgan Bullion
Vaults Worldwide

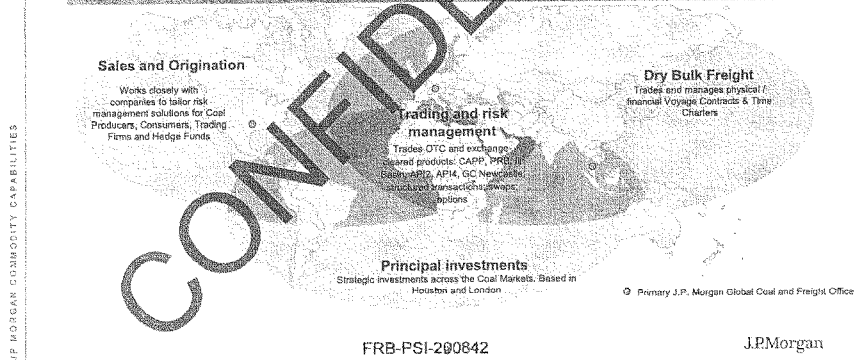


J.P. Morgan's Global Coal and Dry Bulk Freight Platform

Business Overview

- Worldwide Coal – J.P. Morgan is a major participant in the international physical/financial coal and dry bulk freight markets. The J.P. Morgan coal franchise offers physical/financial trading products and risk-management solutions to its extensive customer network.
- Through the acquisitions of Bear Stearns in 2008 (completed April 8, 2008) and the more recent acquisition of the coal/US operations of RBS Sampra Commodities (completed July 1, 2010), J.P. Morgan has further enhanced its position as the preeminent full-service Global Commodities Firm and is now fully capable to service its international coal and freight client base throughout the supply chain.
- J.P. Morgan is now comprised of 10 professionals with a development presence on three continents and extensive expertise and experience in all aspects of the global coal and dry bulk freight markets.

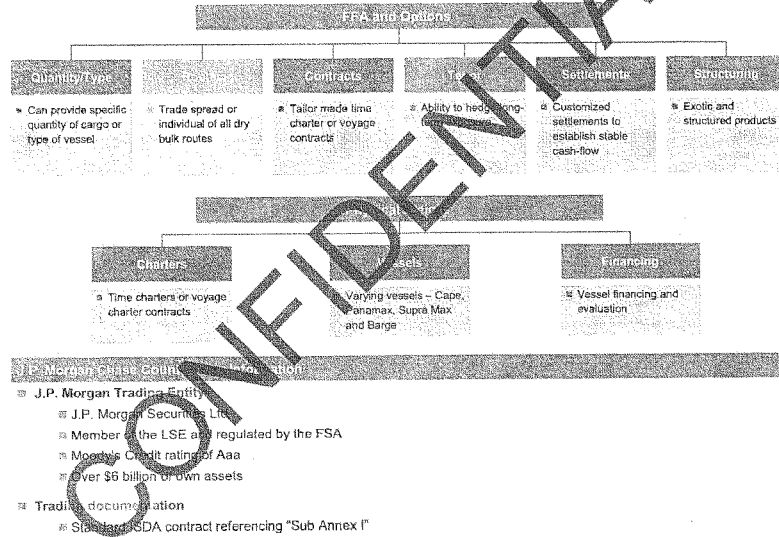
Global platform with products and capabilities



FRB-PSI-200842

J.P.Morgan

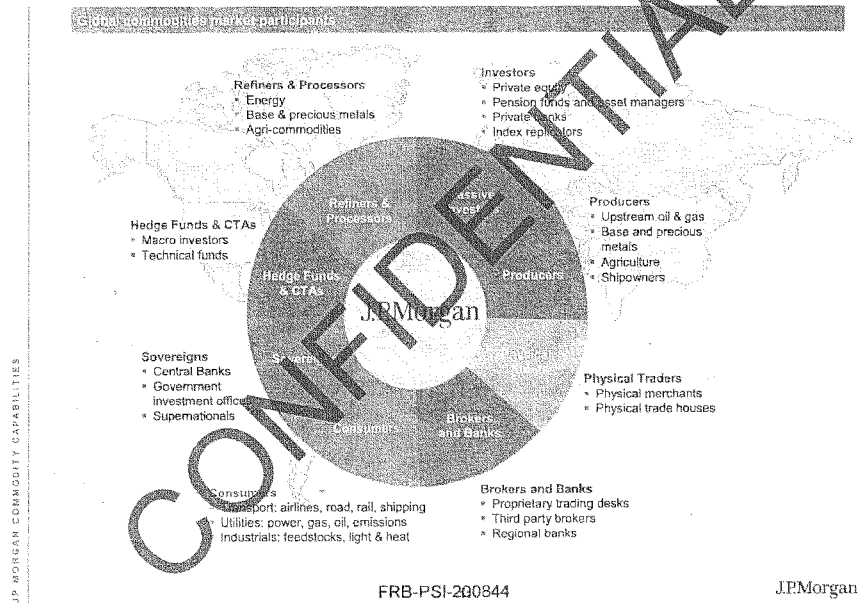
Freight Capabilities



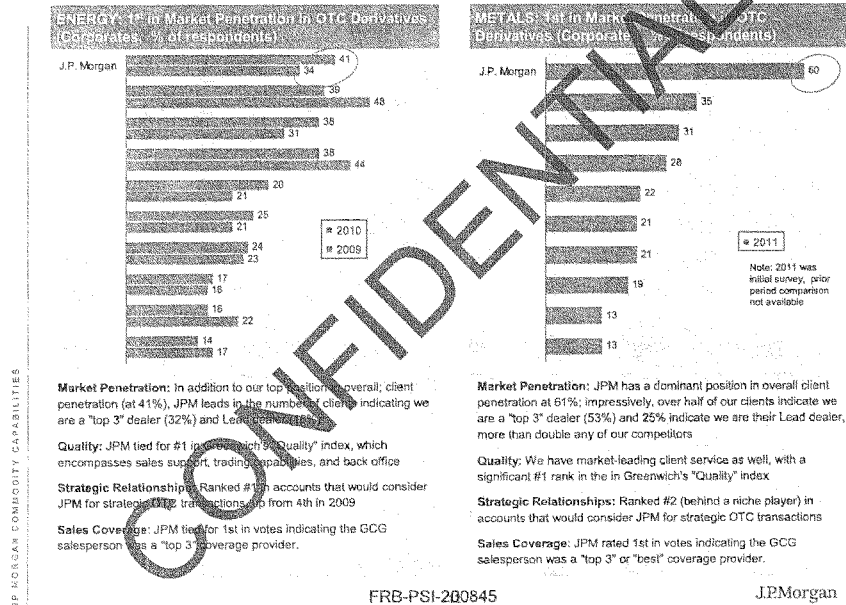
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JPMorgan

Our client franchise spans the corporate and financial spectrum – from commodities producers and consumers to diversified asset managers



Our focus on building a client franchise was recognized in Greenwich Associates' most recent Energy & Metals Corporate Derivative Surveys



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J.P. Morgan's Physical Metal Capabilities

J.P. Morgan Metal Vaulting and Warehousing Business

- ❑ **Precious Metals:** Established in 1980, JPM has one of the world's leading commercial vaults for precious metal storage at two underground locations in London.
 - ❑ Globally the most active Precious Metals clearing business, Loco London gold, silver, platinum and palladium clearing
 - ❑ Loco Zurich gold, platinum and palladium clearing
 - ❑ Bullion Custody, services performed for wide ranging client base including sovereign clients, central banks, hedge funds and high net worth private bank clients
 - ❑ ETF custodian, JP Morgan is the appointed custodian for numerous ETFs including SLV, PALL, PPLT, SGOL
 - ❑ Vaults in New York and Singapore opened in September 2000
- ❑ **Base Metals:** Henry Bath is a world leading logistics provider specialising in the storage and shipping of exchange based metals around the globe
 - ❑ We operate in key port locations across the USA, Europe, Asia and the Middle East
 - ❑ We provide our customers with a global platform for exchange approved storage depositories for holding, making and taking delivery of base and ferrous metals, soft commodities (coffee and cocoa) and plastics

Physical Off-take (Precious Metals)

- ❑ Index linked or with embedded price protection
- ❑ Delivery at mine sites possible (subject to jurisdiction and terms)
- ❑ Delivery to a refinery
- ❑ Non-good deliverable forms may be possible depending on trade specifics (e.g. grain or dore)
- ❑ We would consider term off-take agreements

* Contract specifics such as jurisdiction, quality, term etc will be subject to compliance and credit approval

The Gold Market

Gold is the most liquid of all the precious metals

■ Tenors:

- 1-4 year - the most liquid time buckets
- 5-7 years - liquidity is more constrained due to infrequent activity
- 8-10+ years liquidity is more constrained again
- Given the contraction in the global Gold hedge book over the last 12 years, activity in the Gold forward market from the Producer sector on the sell side has decreased (ex project finance related trades). However, JP Morgan as a market leading participant in the Gold market has an active and mature Gold derivatives portfolio that affords us the ability to effectively execute and manage large-scale hedge programs.

■ Volumes:

- The Gold Spot Market is very liquid
 - We estimate approximately 2.5mio oz goes through the OTC Gold spot market each day
 - Approximately 1.4-1.6mio oz goes through COMEX
 - We estimate that you could execute up to 1mio oz over 1 day on a active trading day; 5mio oz over approximately 1 week
- The forward component is where liquidity can become an issue on the sell side given historical low interest rates
 - E.g. 1mio oz per year out 5 yrs (5mio oz total) would take approximately 2-3 weeks to execute due to the forward component of the risk

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JPMorgan

The Copper Market

Remove the next two paragraphs and the following table

☒ Tenors:

- ☒ Cash to 18mths - the most liquid time buckets
- ☒ 18mths to 4 years - liquidity is more constrained due to infrequent activity
- ☒ 4-7 years liquidity is more constrained again
- ☒ JP Morgan has considerable experience with respect to hedge execution in the base metals market, having executed some of the largest hedge programs in recent years.

☒ Volumes:

- ☒ Most of the volume goes through the 3M
- ☒ On a normal volume day we would expect around 300-500K metric tonnes to go through the 3M
- ☒ On a high volume day we would expect around 750K-1mio metric tonnes to go through the 3M
- ☒ The Forward component is where liquidity can become an issue
- ☒ E.g. 100K metric tonnes 4 years out 3 years would take approximately 1 week to execute

Execution

The Right Counterparty is Key

- More than ever before, the careful selection of the right counterparty (with sufficient financial strength, ability to warehouse risk, experience in handling large commodity transactions, and global reach to source liquidity) and the appropriate method of execution are the most important factors in the success of large commodity hedging programs
- Important considerations in the selection of the hedging counterparty
 - The recent financial crisis has significantly affected the capitalization of a number of players in the industry, reducing their ability to warehouse commodity market risk and raising concerns of counterparty credit risk for clients
 - A number of traditional pure investment banking players have also seen their funding sources dry-up, which has increased their funding costs significantly (higher funding costs ultimately translate in less competitive prices on hedges)
 - There are few participants that have experience in executing large commodity hedging programs (an inexperienced player can handle the execution poorly leading to undesirable results)
 - There are few houses with sufficient in-house trading flows and global reach (to source interest on the other side of the trade with clients) to create significant liquidity outside the exchanges

Method of execution

- Choosing the wrong method of execution can prove very costly and can yield undesirable results such as
 - Allowing experienced players in the market to recognize that there is a large program being executed, who can try to "front-run" the program moving the price unfavourably for the client
 - Locking-in poor prices on the hedge, due to unnecessary "slippage"
 - Not being able to execute the full targeted volumes
 - Increasing volatility unnecessarily due to lack of speed - the slower the program is executed the greater the probability that external factors can affect the market levels unfavourably
 - Working with an institution without the ability to warehouse risk internally, i.e. not a REAL market-maker in Gold. This "back-to-backing" of trades demonstrates lack on in-house capabilities and can result in increased costs, higher visibility to the market (a 3rd party will need to take the risk) and lead to inefficient execution

J.P. Morgan can offer unique strengths under all key selection considerations

Counterparty Considerations	
Financial strength	<ul style="list-style-type: none"> J.P. Morgan's strong capitalization and funding structure relative to competition, reduces its credit risk as a counterparty for clients
Ability to warehouse risk	<ul style="list-style-type: none"> J.P. Morgan's strong capitalization allows it to warehouse more market price risk than most competitors
Experience in handling large commodity transactions	<ul style="list-style-type: none"> There are few participants that have experience in executing large commodity hedging programs (an inexperienced player can handle the execution poorly leading to undesirable results) J.P. Morgan has facilitated a number of large, complex strategic programs for volumes that far exceeded the then prevailing liquidity on the exchanges. Its ability to do so successfully is predicated on its global reach of clients as one of the largest commodity franchises in the industry
Global reach to source liquidity	<ul style="list-style-type: none"> There are few players with sufficient in-house trading flows and global reach (to source interest on the other side of the trade with clients) to create significant liquidity outside the exchanges
Partnership	<ul style="list-style-type: none"> J.P. Morgan actively looks to support clients beyond just the execution. We actively work with clients to provide training, market colour, advise on operational issues, and ongoing valuations

FRB-PSI-200851

JPMorgan

Metals Industry Solutions

HEDGING AND FINANCING STRUCTURES

		Financing Funding Relief	Optimize Assets	Hedging
Financing Solutions	Prepaid offtakes	✓	✓	✓
	Reserve Based Lending	✓	✓	✓
	Project Finance	✓	✓	✓
	Earn Outs	✓	✓	✓
Price Risk Management	Operational Hedge Programs		✓	✓
	Strategic: Capital Projects; Sovereign	✓	✓	✓
	Illiquid Underlyings: Regional & Quality Differential	✓	✓	✓
	M&A-Related (e.g. deal contingents, hedgebank monetisation/restructuring etc.)	✓	✓	✓
Physical Off-take	Indexed-price offtake		✓	✓
	Contract Monetisation; Upfront Flexibility Payments	✓	✓	✓
	Physical offtake with embedded price risk management	✓	✓	✓

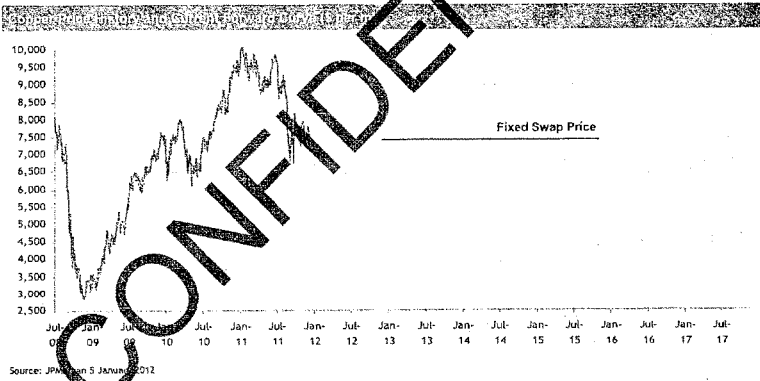
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Copper Swaps

Buyer	J.P. Morgan
Settlement	Cash settled monthly against the official LME cash average
Periods	Cal 13 – Cal 15
Indicative Fixed Price	\$7410 per mt

*Basis: Copper 3M price reference of \$7500 per mt, and assuming a market parcel size.



HEDGING AND FINANCING STRUCTURES

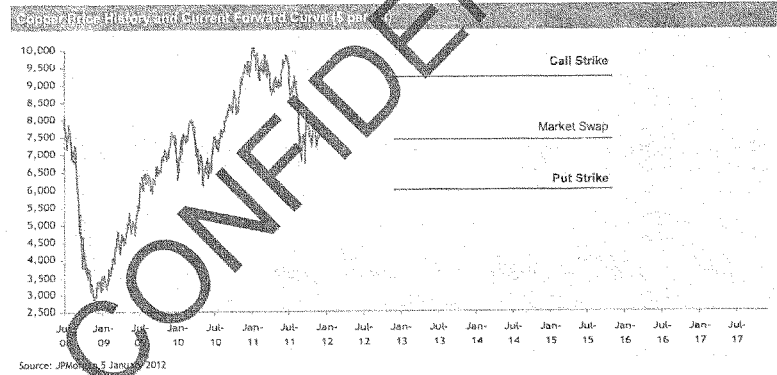
FRB-PSI-220857

J.P.Morgan

Copper Zero Cost Collars

Buyer	J.P. Morgan
Expiry	Cash settled monthly against the official LME cash average
Periods	Cal 13 – Cal 15
Bought Put Strike	\$6000 per mt
Sold Call Strike	\$9225 per mt

*Basis Copper 3M price reference of \$7500 per mt, and assuming a market parcel size



HEDGING AND FINANCING STRUCTURES

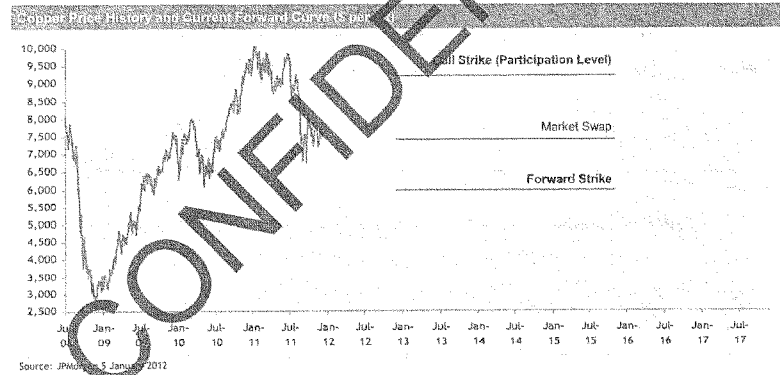
FRB-PSI-200858

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Copper Participator

Buyer	J.P. Morgan
Expiry	Cash settled monthly against the official LME cash average
Periods	Cal 13 – Cal 15
Forward Strike	\$6600 per mt
Bought Call Strike	\$10000 per mt

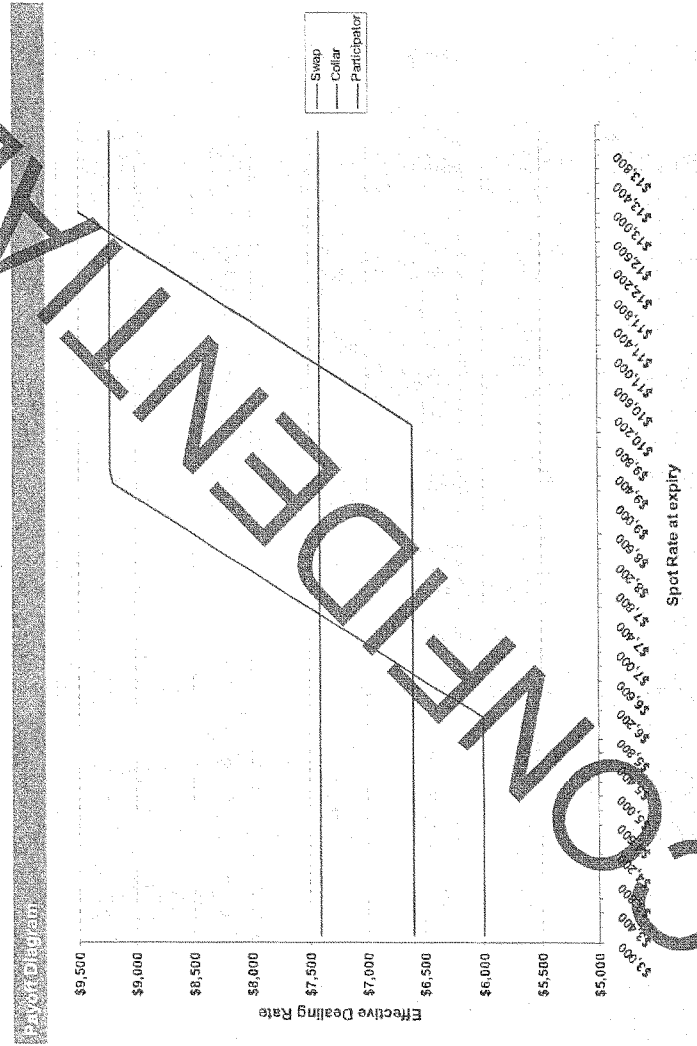
*Basis Copper 3M price reference of \$7500 per mt, and assuming a market parcel size



FRB-PSI-200859

JPMorgan

Copper Hedge Strategy Comparison



JPMorgan

FRB-PSI-200860

Financing Solutions

J.P. Morgan has experience in tailoring business solutions to clients' specific needs	
Commodity	Producer commits to deliver to J.P. Morgan a fixed amount of its production on a monthly basis. In exchange, producer receives upfront payment for the production committed, based on the present value of the monthly forward prices.
Reserve-Based Lending	J.P. Morgan advances funds based on a probability-weighted assessment of client's existing reserves. Allows for additional financial flexibility in the case of non-producing assets or assets in the development stage.
Off-Take Finance	Loan payments are backed by a pledge of future commodity production volumes. Hedge structure can reduce volumes pledged, thereby increasing debt capacity. J.P. Morgan acting as offtake counterparty creates a credit enhancement for the producer.
Project Finance	J.P. Morgan advances funds ahead of project completion in exchange for subsequent payments linked to underlying commodity. Structure can be used for brownfield and greenfield projects.
Earn-Outs (M&A Related)	Reduces the cash component of bid price in asset acquisition finance or M&A deals by making additional payments contingent upon upward market movements in the commodity underlying. Bidder potentially avoids over-paying for asset if market subsequently falls.

HEDGING AND FINANCING STRUCTURES

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JP Morgan Commodity Group Contacts

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JP MORGAN COMMODITY GROUP CONTACTS

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EXCERPT

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FRB-PSI-30143

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FED / OCC QUARTERLY MEETING

February 12, 2013

Permanent Subcommittee on Investigations

EXHIBIT #80

STRICTLY PRIVATE AND CONFIDENTIAL

Physical Inventory Limits from FED & OCC

JPMVEC & Non Bank subs Physical Inventory (\$'000)				
Business	As of 6/29	As of 9/28	As of 12/31	
Oil	1,560,144	3,230,254	3,131,901	
Freight	121,145	91,590	99,359	
Tolls	2,078,409	2,006,367	1,927,429	
Gas, Emissions & Coal	510,375	531,138	52,353	
Base Metals & Other	638,632	759,786	167,738	
Total Physical Inventory JPMVEC & Non Bank subs	4,906,705	6,628,135	5,839,813	
Physical Inventory as % of Tier 1 Capital				
Tier 1 Capital	155,811,000	147,425,000	154,697,000	
4% Reporting Requirement	6,232,440	5,897,000	6,187,880	
5% Limit	7,725,550	7,371,250	7,734,850	
Under/(over) Reporting Requirement	325,742	31,135	29,065	
Under/(over) Limit	2,842,845	793,115	1,576,035	
Base Metals held in Bank	6,305,101	8,157,397	6,484,193	
Total Consolidated Inventory Positions	121,180,631	147,785,531	152,643,008	
Bank Inventory subject to OCC 4% limit				
Base Metals held in Bank	6,305,101	8,157,397	6,484,193	
Trading Notional (MT)	73,228.61	76,022.313	76,022.737	
Warrant Notional (MT)	2,857,485	2,983,825	2,356,879	
Daily Ratio	3.63%	3.92%	3.16%	

Inventory is closely monitored and approval for a material physical inventory transaction is required for JPMVEC & Non Bank subs

Temporarily triggered the 4% reporting threshold in Q3 as a result of Project Liberty. This increase was fully anticipated

Tolls, which represent 25% usage of the limit, are long-dated, highly illiquid transactions which receive no netting benefit for re-tolls. Expected to amortize down materially by 2018

Physical volume (Warrant Notional) is monitored against our financial trading notional and reported daily to the OCC

From: Jennifer Gallagher [mailto:jennifer.c.gallagher@frb.gov]
Sent: Tuesday, October 28, 2014 1:12 PM
To: Bean, Elise (HSGAC)
Subject: RE: Outstanding requests

With respect to the copper question, the Federal Reserve is not bound by the OCC's definition of "bullion" for purposes of the National Bank Act, but section 225.28(b)(8)(iii) of the Federal Reserve's Regulation Y allows BHCs to buy, sell, and store gold, silver, palladium, platinum, and copper as activities closely related to banking. Under the Federal Reserve's regulations copper is treated similarly to gold in the hands of bank holding companies. Since copper can be held under this separate authority, rather than complementary authority or section 4(o) authority, holdings of copper would not need to be counted by a financial holding company towards the 5% complementary limit or the section 4(o) limit on grandfathered activities.

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EXHIBIT #81

PSI-FRB-16-000001

From: Ross, Steven [<mailto:sross@AKINGUMP.COM>]
Sent: Thursday, October 23, 2014 5:29 PM
To: Bean, Elise (HSGAC)
Cc: Prober, Raphael; Greer, Megan
Subject: Response to your question from earlier today

In response to your earlier email seeking clarification regarding legal entities. JPMorgan conducts the majority of its base metal trading through the Bank and also through a UK sub of the Bank, J.P.Morgan Securities plc., which is a Category 1 ring dealer on the LME. There is also a small amount of activity through JPMorgan Ventures Energy Corp.

- The Bank engages in OTC derivatives with clients and holds warrants as hedges;
- J.P.Morgan Securities plc. as a ring-dealing member, is a market-maker on the LME.

The metals desk employees are employed by the Bank or by J.P.Morgan Securities plc. They are empowered to act for other legal entities within the JPM group through service agreements that are in place between entities and through "dual-hatting" arrangements, whereby individuals can be officers of more than one legal entity in the group.

Steve Ross
Akin Gump

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Permanent Subcommittee on Investigations

EXHIBIT #82

PSI-JPMorgan-16-000001

Akin Gump
STRAUSS HAUER & FELD LLP

STEVEN R. ROSS
202.887.4343/fax: 202.887.4288
sross@akingump.com

October 31, 2014

VIA HAND DELIVERY

The Honorable Carl Levin
Chairman
Permanent Subcommittee on Investigations
Committee on Homeland Security & Government Affairs
United States Senate
Russell Senate Office Building, SR-199
Washington, DC 20510

Re: JPMorgan Chase & Co's Responses to Follow-Up Questions

Dear Chairman Levin:

On behalf of JPMorgan Chase & Co ("J.P.Morgan"), I write in connection with your questionnaire dated January 11, 2013 regarding physical commodities. This submission includes further information and documents responsive to the additional questions posed by your staff on October 13, 2014. As discussed with your staff, J.P.Morgan is working to provide the balance of the follow-up information requested. In addition, J.P.Morgan is compiling the relevant trade records referenced below and will submit those to the Subcommittee next week. J.P.Morgan's response to the specific question below is as follows:

Question 15: Please confirm that JPMorgan purchased approximately \$1.5 billion of physical copper in late 2010. If so, please provide details regarding the position, including the purpose and the tonnes involved.¹

Response: J.P.Morgan's positions generally (with respect to copper and other metals as well) are driven by its customer business, which includes, amongst others, commodity trading advisors ("CTAs"), investor clients, and producers/consumers of metal. With respect to J.P.Morgan's metals positions in 2010, a large portion of these positions were attributable to the fact that its clients (particularly CTAs and investor clients) generally had long positions, did not want to take physical delivery of the metal as those positions became due, and so were looking to roll those

¹ And additional related information requested by Subcommittee staff in subsequent conversations.

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positions forward. As a result, clients lent (i.e. sold and then entered into forward contracts to repurchase) their metal to J.P.Morgan, which left J.P.Morgan long inventory and short forwards. J.P.Morgan could, in turn, either lend the metal to the market or take it up and pay warehouse rent for the metal. This is consistent with J.P.Morgan's role as market-maker, liquidity provider, and financial intermediary.

We believe that J.P.Morgan's copper warrant positions in December 2010 are consistent with this general framework. While these trades were several years ago and the J.P.Morgan traders thus do not have specific recollections of the individual trades, J.P.Morgan has reviewed the contemporaneous trade data to determine the following: in late 2010, J.P.Morgan's copper warrant position on the LME reflected its ongoing and sustained trading activity, including trades involving more than 50 different J.P.Morgan clients. The trade data does not appear to support the theory that J.P.Morgan's copper warrant position was the result of a single large trade.

As detailed in the charts below,² in early December 2010, J.P.Morgan's copper inventory (meaning all copper inventory owned by J.P.Morgan, most of which was on warrant) ranged from approximately 198,000 metric tonnes to 213,000 metric tonnes. At this time, official LME copper warrants were approximately 350,000 metric tonnes.³ Thus, J.P.Morgan's total copper book included cash/warrants of approximately 57% to 61% of LME copper warrants.⁴ Of course, LME copper is but one portion of the global copper market.⁵

² J.P.Morgan has included data beyond that of December 2010 in order to present a fuller view of its total copper inventory during this time period. In addition, the daily values of J.P.Morgan's copper inventory, as determined at the close of business in New York, are included in the enclosed chart, which has been marked as JPM-COMM-PSI-000064 to JPM-COMM-PSI-000066. It is also important to note, regarding this daily data, that LME trading activity frequently clusters around the third Wednesday of the month (the "monthly prompt date"). These dates, such as November 17, 2010 and December 15, 2010, generally are amalgamations of hundreds or more client-driven trades on the LME.

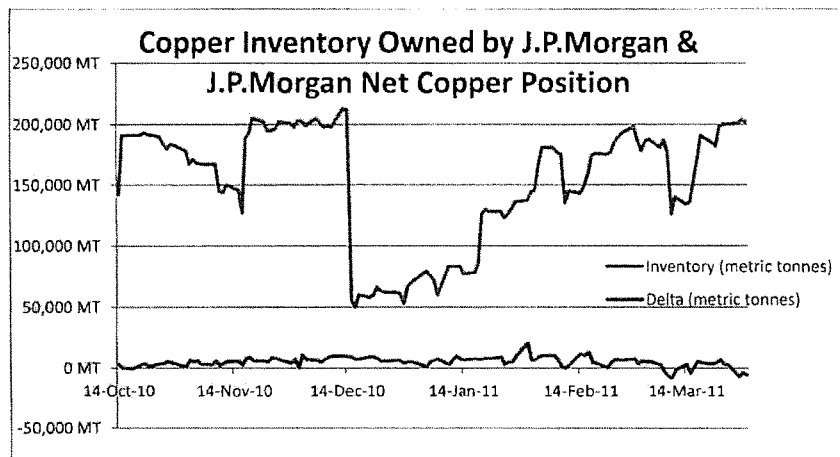
³ Just like LME members' positions change from day-to-day, the total inventory of LME copper frequently fluctuates. For instance, according to public reports, the amount of LME copper had decreased from approximately 550,000 metric tonnes in February 2010 to approximately 350,000 metric tonnes ten months later. See Carolyn Cui & Dan Fitzpatrick, "Big Bank Sitting On A Big Pile Of Copper," WALL STREET JOURNAL, Dec. 7, 2010.

⁴ Exact figures would of course depend on the precise amount of LME copper warrants on a given day.

⁵ Around the end of 2010, refined copper global production was reportedly approximately 18 million metric tonnes per annum and global stocks were 2.5 million metric tonnes. Thus, J.P.Morgan

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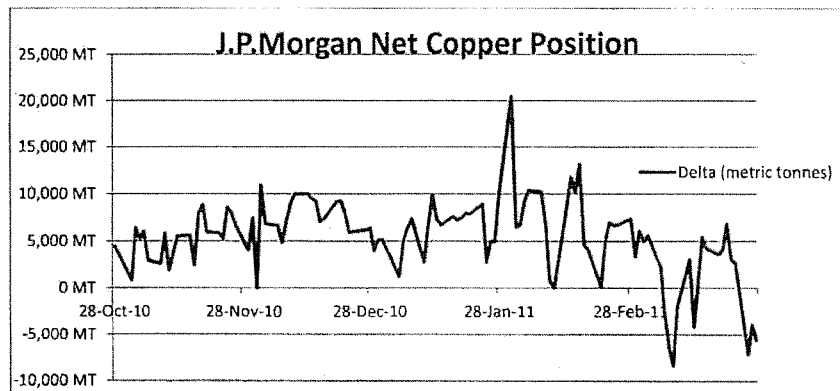
In the first chart, we have provided J.P.Morgan's total copper inventory, by day, in addition to its net copper position, which represents the delta between J.P.Morgan's long inventory and short forwards.



The second chart details more fully the blue line above, showing J.P.Morgan's net copper position. As you can see, during the December 2010 timeframe the Subcommittee Staff has asked about, J.P.Morgan's net copper position ranged from short 50 metric tonnes to long 10,875 metric tonnes.

holding even 61% of LME copper warrants on a particular day would have been equivalent to approximately 9% of global copper stocks and approximately 1% of refined copper global production.

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It is not unusual for entities to hold large positions of LME metals as part of their overall portfolios, and the LME has rules addressing concentrated holdings to ensure that these holdings are made available to the market at mandated borrowing rates, thereby avoiding any possibility of a supply squeeze. In 2010, there were more than 600 instances of this so-called “Lending Guidance,” which occurs when a member or client holds 50% or more of the warrants and/or cash in relation to stocks.⁶ In accordance with these guidelines, because J.P.Morgan’s warrant position in late 2010 was slightly greater than 50% of LME copper warrants, it quickly made plans to sell a portion of this metal back to the market. This was accomplished on December 15, 2010, when J.P.Morgan delivered copper back to the market and J.P.Morgan’s inventory

⁶ The LME also confirmed in early December 2010 that the recent copper market activity was “not unusual.” At that time, LME head of compliance Diarmuid O’Hegarty was quoted as saying, “The LME has noted recent comments about the current circumstances in the copper market. Such circumstances are not unusual and the exchange is exercising its well established procedures for maintaining an orderly market.” See Louise Armitstead & Rowena Mason, “JP Morgan revealed as mystery trader that bought £1bn-worth of copper on LME,” THE TELEGRAPH, Dec. 4, 2010. According to that same article, Mr. O’Hegarty “added that large trades were not a cause for concern because the market’s rules dictate that holders have to lend out a proportion of their stock to ensure a smooth supply of the metal.” See *id.*

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Page 5

decreased to 56,000 metric tonnes. Accordingly, J.P.Morgan's total copper inventory reduced to roughly 16% of LME copper warrants at that time.⁷

Finally, we note that J.P.Morgan's copper holdings during this timeframe, and at all other times, were related to its customer business and not to the then-proposed JPM XISM Physical Copper Trust (the "Copper ETF"). As discussed with Subcommittee staff, J.P.Morgan looks forward to providing a telephone briefing on this subject next week.

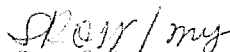
As we have also discussed with Subcommittee staff, J.P.Morgan currently has no plans to launch the Copper ETF in the foreseeable future. However, even if the Copper ETF were to launch, it would have nothing to do with J.P.Morgan's trading books related to its customer business.

* * *

Redacted By
Permanent Subcommittee on Investigations

Please let me know if you have any questions.

Sincerely,


Steven R. Ross
Counsel for JPMorgan Chase & Co

cc: The Honorable John McCain, Ranking Member

⁷ Again, this is measured against an approximate 350,000 metric tonnes of LME copper stock.

**Daily Copper Inventory Owned by J.P.Morgan
& J.P.Morgan Net Copper Position**

Date	Inventory (metric tonnes)	Delta (metric tonnes)
14-Oct-10	142,350	3,000
15-Oct-10	191,000	(300)
18-Oct-10	191,075	(600)
20-Oct-10	191,150	2,450
21-Oct-10	193,275	3,425
22-Oct-10	191,574	1,200
25-Oct-10	190,000	3,400
26-Oct-10	184,000	3,425
27-Oct-10	179,475	5,200
28-Oct-10	184,000	4,400
1-Nov-10	178,000	800
2-Nov-10	167,000	6,375
3-Nov-10	171,000	5,200
4-Nov-10	168,000	5,975
5-Nov-10	167,000	2,925
8-Nov-10	167,000	2,575
9-Nov-10	167,000	5,825
10-Nov-10	145,000	1,875
11-Nov-10	144,000	3,700
12-Nov-10	150,000	5,500
15-Nov-10	146,000	5,600
16-Nov-10	127,000	2,400
17-Nov-10	189,000	7,900
18-Nov-10	193,000	8,800
19-Nov-10	205,000	5,950
22-Nov-10	202,000	5,825
23-Nov-10	195,000	5,275
24-Nov-10	195,000	8,575
25-Nov-10	196,000	8,025
26-Nov-10	202,000	6,725
29-Nov-10	201,000	4,000
30-Nov-10	198,000	7,425
1-Dec-10	203,000	(50)
2-Dec-10	203,000	10,875
3-Dec-10	199,000	6,825
6-Dec-10	205,000	6,625
7-Dec-10	201,000	4,825
8-Dec-10	198,000	7,025
9-Dec-10	199,000	9,000
10-Dec-10	198,000	9,950
13-Dec-10	213,000	10,000
14-Dec-10	212,000	9,500
15-Dec-10	56,000	9,250
16-Dec-10	50,000	7,050
17-Dec-10	60,000	7,375
20-Dec-10	58,000	9,150

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PSI-JPMorgan-18-000006
JPM-COMM-PSI-000064

Date	Inventory (metric tonnes)	Delta (metric tonnes)
21-Dec-10	60,000	9,225
22-Dec-10	66,000	7,825
23-Dec-10	63,000	5,900
24-Dec-10	62,000	6,000
27-Dec-10	62,000	6,150
28-Dec-10	61,000	6,375
29-Dec-10	53,000	4,000
30-Dec-10	66,000	5,125
31-Dec-10	70,000	5,125
4-Jan-11	79,000	1,200
5-Jan-11	76,000	5,000
6-Jan-11	72,000	6,300
7-Jan-11	60,000	7,375
10-Jan-11	83,000	2,750
11-Jan-11	83,000	6,900
12-Jan-11	83,000	9,900
13-Jan-11	83,000	7,300
14-Jan-11	77,000	6,700
17-Jan-11	78,000	7,600
18-Jan-11	85,000	7,200
19-Jan-11	126,000	7,450
20-Jan-11	130,000	7,950
21-Jan-11	128,000	7,850
24-Jan-11	128,000	8,900
25-Jan-11	123,000	2,750
26-Jan-11	126,000	4,975
27-Jan-11	131,000	4,900
28-Jan-11	136,000	9,950
31-Jan-11	137,000	20,450
1-Feb-11	144,000	6,400
2-Feb-11	146,000	6,750
3-Feb-11	166,000	9,225
4-Feb-11	181,000	10,350
7-Feb-11	181,000	10,225
8-Feb-11	177,000	6,875
9-Feb-11	175,000	750
10-Feb-11	135,000	-
11-Feb-11	145,000	2,675
14-Feb-11	143,000	11,750
15-Feb-11	149,000	10,100
16-Feb-11	159,000	13,125
17-Feb-11	174,000	4,625
18-Feb-11	176,000	4,000
21-Feb-11	175,000	100
22-Feb-11	176,700	4,925
23-Feb-11	185,000	6,950
24-Feb-11	189,000	6,625
25-Feb-11	193,000	6,725
28-Feb-11	198,000	7,350

CONFIDENTIAL & PROPRIETARY

PSI-JPMorgan-18-000007
JPM-COMM-PSI-000065

Date	Inventory (metric tonnes)	Delta (metric tonnes)
1-Mar-11	186,000	3,325
2-Mar-11	178,000	6,025
3-Mar-11	186,000	4,925
4-Mar-11	188,000	5,550
7-Mar-11	181,000	2,175
8-Mar-11	187,000	(2,950)
9-Mar-11	177,000	(6,600)
10-Mar-11	126,000	(8,400)
11-Mar-11	140,000	(2,092)
14-Mar-11	134,000	3,025
15-Mar-11	136,000	(4,175)
17-Mar-11	171,000	5,400
18-Mar-11	191,000	4,250
21-Mar-11	185,000	3,575
22-Mar-11	182,000	4,125
23-Mar-11	198,000	6,825
24-Mar-11	200,000	3,025
25-Mar-11	200,000	2,650
28-Mar-11	201,000	(7,150)
29-Mar-11	204,000	(3,925)
30-Mar-11	202,000	(5,650)



Comptroller of the Currency
Administrator of National Banks

Washington, D.C. 20219
May 2, 1991

Interpretive Letter No. 553
May 1991

Mr. Frank J. Murphy, Jr.
Vice President and Associate Legal Counsel
NCNB Corporation
Charlotte, NC 28255

Dear Mr. Murphy:

This responds to your operating subsidiary notice indicating that NCNB National Bank of North Carolina wishes, through an operating subsidiary, to engage in brokerage of gold, silver, and platinum coins and bullion. For the reasons given below, we have determined that this activity is permissible.

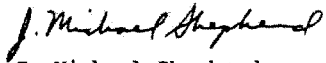
National banks have express authority to buy and sell "coin and bullion". 12 U.S.C. § 24(7). In the past, the OCC has permitted national banks to buy and sell, as agent for customers and for the bank's own account, gold, silver, and platinum coins, and gold and silver bullion. We have not permitted national banks to buy and sell platinum in bullion form because platinum was not widely used in making legal-tender coins and so was not generally regarded as "bullion". Recently, however, several countries have introduced platinum coins. Although most dictionary definitions of "bullion" continue to mention gold and silver only, the term "bullion" is frequently used in financial reporting to describe platinum coins and bars. Nearly all courts called upon to define "bullion" have defined it as "gold or silver intended to be coined". However, none of these cases directly addressed the possibility that other precious metals could also be bullion. Further, numerous state statutes refer to platinum bullion, and at least one explicitly defines "bullion" to include platinum. Statutory definitions of "precious metals" generally include platinum as well as gold and silver.

These authorities indicate that the scope of the term "bullion" has expanded, and that it should now be read to include platinum

¹See, e.g., Wall St. J., November 17, 1988, at C16; N.Y. Times, September 11, 1988, at 66; Wall St. J., August 22, 1988, at 23; N.Y. Times, May 19, 1987, at D14.

as well as gold and silver. Trading in platinum bullion is therefore within banks' express power to buy and sell bullion. Alternatively, trading in platinum bullion can be viewed as functionally equivalent to trading in platinum coins (since both forms of platinum trade based on the value of the underlying metal), and therefore incidental to banks' express power to trade in coins. You may, therefore, proceed with your proposal.

Sincerely,



J. Michael Shepherd
Senior Deputy Comptroller

²In M & M Leasing Corp. v. Seattle First National Bank, 563 F.2d 1377 (9th Cir. 1977), cert. denied, 436 U.S. 956 (1978), the court found that the leasing of personal property is incidental to the business of banking under the Arnold Tours test because a property lease is "functionally interchangeable" with a loan of money secured by the leased property. 563 F.2d at 1383.



12 U.S.C. 24(7)5
12 U.S.C. 24(7)6

Comptroller of the Currency
Administrator of National Banks
Washington, DC 20219

*Interpretive Letter No. 693
December 1995*

November 14, 1995

Re: National Bank May Buy and Sell Copper Pursuant to 12 U.S.C. § 24(Seventh)

This is in reply to your letter requesting that the OCC confirm your opinion that (" "), a wholly-owned operating subsidiary of , may expand its activities to include buying and selling copper pursuant to a national bank's express authority to buy and sell "coin and bullion" under the National Bank Act.¹ For the reasons set forth below, it is our view that 12 U.S.C. § 24(Seventh) authorizes a national bank to buy and sell copper under this enumerated power and as part of or incidental to the business of banking. For the reasons discussed below, the OCC concludes that it is legally permissible for national banks to buy and sell copper and conduct financial derivatives activities with regard to the underlying commodity.²

I. Background

is currently buying and selling gold, silver, platinum, and palladium. You indicate that this business is conducted in conformity with written policies and procedures, and in accordance with established market practices and regulations relating to these metals. The company wishes

¹ See 12 U.S.C. § 24(Seventh).

² We address financial derivatives transactions in this response because you indicate that will engage in hedging activities with copper.

to add copper to its metals activities, and justifies this on several grounds.

The first is that their established policies, practices, procedures and experiences in dealing with precious metals gives them the expertise necessary to buy and sell copper. Secondly, notes that there is an increasing similarity between transactions involving copper and those transactions already being conducted by national banks with respect to gold, silver, platinum, and palladium ("GSP&P"). There is also a similarity between the policies, methods and procedures already administered by with respect to its GSP&P transactions and those required for the administration of copper transactions. perceives an expanding need from business and industry, including their existing customer base, for a reliable source of supply and financing of refined copper and use of copper as a vehicle for hedging market risk. Finally, believes the benefit in offering a product to the community which is appropriately offered by a bank subsidiary experienced in metals transactions will enhance 's competitive position in relation to non-bank metals dealers.

II. The National Bank Act

A national bank may engage in activity pursuant to 12 U.S.C. § 24(Seventh) if the activity is part of or incidental to the business of banking. The OCC previously has concluded that national banks have authority to buy and sell, as agent for customers and for the bank's own account, gold, silver, platinum and palladium coins and bullion pursuant to the enumerated power in 12 U.S.C. § 24(Seventh) to buy and sell "exchange, coin, and bullion."³

A. Enumerated Power to Buy and Sell Coin and Bullion

Paragraph Seventh of 12 U.S.C. § 24, authorizing the purchase and sale of "coin and bullion", does not define the terms. While the section does not specify that copper may be bought and sold under this enumerated power, neither does it place a limitation on the types of metals that constitute coin and bullion.

The OCC has previously concluded that the term "bullion" includes uncoined gold and silver in bar or ingot form, consistent with the first dictionary definition of the term "bullion" as "gold or silver considered as so much metal."⁴ See Banking Circular 58 (Rev.) (November 3, 1981) ("BC-58"). This circular also defines the term "coin" as coins held for their metallic value which are minted by a government, or exact restrikes of such coins minted at a later date by or under the authority of the issuing government. The OCC has concluded that the term "bullion"

³ Interpretive Letter No. 553 (May 2, 1991), reprinted in [1990-1991 Transfer Binder] Fed. Banking L. Rep. (CCH) ¶ 83,300; see also Interpretive Letter No. 648 (May 4, 1994), reprinted in [1994 Transfer Binder] Fed. Banking L. Rep. (CCH) ¶ 83,557.

⁴ Webster's Ninth New Collegiate Dictionary 186 (1986). See also U.S. Department of Interior Bureau of Mines, A Dictionary of Mining, Mineral, and Related Terms 150 (1968).

also includes platinum⁵ and palladium.⁶ This conclusion was supported by several considerations: market developments indicating that platinum and palladium were part of the bullion banking market, the other common dictionary definition of "bullion" as "metal in the mass", the minting of platinum and palladium coins,⁷ and the fact that some state law definitions of "precious metal" included platinum and palladium. In reaching the conclusion that "bullion" encompassed platinum and palladium, the OCC indicated that other metals also may be characterized as bullion.

One of the definitions of bullion is "metal in the mass."⁸ Another definition is "quantities of gold, silver or copper coins when measured by weight."⁹ Other dictionary definitions of bullion mention gold, silver, or the term "precious metal."¹⁰ A number of state laws now include copper in their statutory definitions of "precious metals"¹¹, and at least one state statute explicitly refers to copper in bullion form.¹²

⁵ Interpretive Letter No. 553, *supra*.

⁶ Interpretive Letter No. 683 (July 28, 1995), reprinted in [1994-1995 Transfer Binder] Fed. Banking L. Rep. (CCH) ¶ 83,631.

⁷ Oxford English Dictionary 1170 (Compact ed. 1971). The etymology of the word "bullion" indicates a connection between bullion and the minting of currency. Consistent with the "metal in the mass" definition is the description in The Metals Handbook 6 (8th ed. 1961) of the American Society for Metals, stating that bullion is: "(1) A semirefined alloy containing sufficient precious metal to make recovery profitable. (2) Refined gold or silver, uncoined."

⁸ Webster's Third New International Dictionary 294 (1971). See also Charles J. Woelfel, The Dictionary of Banking 35 (1994); Charles J. Woelfel, Encyclopedia of Banking and Finance 160 (10th ed. 1994).

⁹ F. E. Perry, A Dictionary of Banking 41 (2d ed. 1983).

¹⁰ See, Thomas P. Fitch, Dictionary of Banking Terms (2d ed. 1990), defines bullion as "gold or other precious metals in bar or coin form." See also American Bankers Association, Banking Terminology 46 (3d ed. 1989), which defines bullion as "unminted precious metals suitable for coining."

¹¹ See, e.g., Ariz. Rev. Stat. Ann. § 44-1801(14)(1994); Cal. Corp. Code § 29515 (West 1995); Colo. Rev. Stat. § 11-53-103(13)(1994); Ga. Code Ann. § 10-5A-1(12)(1994); Idaho Code, § 30-1501(1994); Ind. Code Ann. § 23-2-6-15 (Burns 1994); Mont. Code Ann. § 30-10-103 (1994); Neb. Rev. Stat. § 8-1715 (1994); Nev. Rev. Stat. Ann. § 91.140 (1993); Or. Rev. Stat. § 645.020 (1994); Utah Code Ann. § 61-1-13 (1994).

¹² Nev. Rev. Stat. Ann. § 519.080 (1993).

The factors that supported the OCC's conclusion with respect to platinum and palladium generally support inclusion of copper within the coin and bullion authority of national banks. Copper, like platinum and palladium, has been used to mint legal-tender coins. The United States, China and Britain have issued copper coins.¹³ Additionally, copper, like platinum and palladium, is bought and sold as metal in a mass standardized as to weight and purity.¹⁴

's customers increasingly expect to be able to engage in the full range of metals transactions from a reliable source of supply and financing, and a number of state laws now define the term "precious metal" to include copper. At least one state statute defines "coins" to include monetized bullion or other forms of money manufactured from gold, silver, platinum, palladium or other such metals.¹⁵ Based on the foregoing, it is reasonable to conclude that the trading and dealing of copper is encompassed within the enumerated power of national banks to buy and sell coin and bullion.

B. Business of Banking

The basic framework that governs the powers and permissible activities of national banks was, at last, resolved in a clear fashion by the Supreme Court's recent decision in NationsBank v. Variable Annuity Life Insurance Co. ("VALIC"), 115 S.Ct. 810 (1995). The unanimous Court held that the "business of banking" which is authorized to banks in the National Bank Act ("Act"), 12 U.S.C. § 24(Seventh), is not limited to those activities and powers expressly enumerated in the statute. Rather, the Court found that the business of banking is an expansive concept and that the powers enumerated in the Act are merely illustrative. The Court's decision also reaffirmed that courts should accord deference to reasoned decisions by the OCC interpreting the powers of national banks.

In deciding whether a particular activity is part of or incidental to the business of banking and therefore within the OCC's discretion to permit, it is helpful to apply the criteria which VALIC and prior cases have used in making such determinations. The factors may be framed in the form of questions: (1) Is the activity a contemporary functional equivalent or logical outgrowth of a recognized banking function? (2) Does the activity benefit customers and/or strengthen the bank? (3) Are the risks of the activity similar to the type of risks already assumed by banks?¹⁶

¹³ See C. Krause, Standard Catalog of 20th Century World Coins (20th ed. 1993).

¹⁴ A two percent tolerance is allowed on the contract weight when delivering with settlement on the delivered weight. A copper contract may be in the form of wirebars or cathodes both with set standard dimensions for delivery and a specific type of copper. Brackenbury, Dealing on London Metal Exchange and Commodity Markets 24-25 (1976).

¹⁵ See Colo. Comm. Code § 39-26-102(1994).

¹⁶ See generally Julie L. Williams & Mark P. Jacobsen, The Business of Banking: Looking to the Future, 50 The Business Lawyer 783, 783-785 (1995) (explaining the VALIC case and the evolution of the "business of banking" concept).

Affirmative responses to such questions lead convincingly to the conclusion that an activity is properly characterized as part of the business of banking in the evolving financial services marketplace. The OCC believes that each of these three factors is satisfied here.

First, the trading activities which will conduct with respect to copper are functionally equivalent to the trading activities it is currently conducting with respect to GSP&P. Copper, along with GSP&P, is available on various commodity exchanges for transactions with and among the general public.¹⁷ Copper is regularly traded over the counter, on the London Metal Exchange ("LME"), and on the COMEX division of the New York Mercantile Exchange ("NYMEX"). As a result, copper prices are found on recognized markets. Options for copper are quoted on the NYMEX, the LME, and in various cash markets. Because copper is quoted and traded on these exchanges, there is a substantial amount of liquidity for it. The administration and policies of relating to copper will be the same as for other precious metals it buys and sells. Additionally, all copper transactions are proposed to be done with approved vendors and only NYMEX and/or London acceptable brands will be accepted. All copper will be subjected to the same testing criteria as GSP&P.

Second, buying and selling copper will benefit's existing customer base. 's customers have indicated their desire to obtain a reliable source of supply and financing of refined copper. Buying and selling copper will allow to diversify the types of metals that it can offer to its clients for financing, consignment, and hedging. As a result, 's customers will be offered an additional product from a bank subsidiary experienced in metals transactions and not have to go to numerous sources to supply their metal needs. will also be strengthened because it will be better able to compete with non-bank metals dealers by offering a wider selection of metals.

Third, the type of risk associated with buying and selling copper is similar to the risks currently manages in its dealings with GSP&P. anticipates that its copper transactions will constitute only a small percentage of the overall precious metals business and will primarily be customer-driven. Because copper trading activities are functionally equivalent to GSP&P trading activities, will be able to utilize established precious metals policies approved, authorized, and regulated by the OCC in accordance with BC-58.

BC-58 sets forth general safety and soundness guidelines which national banks should implement in their conduct of coin and bullion activities. You indicate that follows the guidance for its GSP&P transactions, and will do so with copper as well. It will subject the copper activities to the same general credit, lending, safekeeping, accounting, and management standards for its other precious metals activities.

¹⁷ Daniel Rappaport, Merger Yields Stronger Trading Opportunities, American Metal Market, June 7, 1995, at 10A.

The risks posed by engaging in financial derivatives transactions involving copper are also of the type already assumed by national banks in connection with their derivatives activities in other metals. currently engages in hedging activities involving GSP&P for its customers. Because the financial derivative transactions that will engage in with copper are similar to the financial derivative activities involving GSP&P, will be able to utilize established policies developed in accordance with OCC Banking Circular 277 (October 27, 1993) ("BC-277").

BC-277 provides guidelines for banks to apply in conducting their financial derivatives activities in a safe and sound manner. The guidelines address senior management and board oversight, market risk management, credit risk management, liquidity risk management, operations and systems risk management, legal issues, and capital adequacy. currently conducts its financial derivative activities involving GSP&P in accordance with BC-277, and will do the same with copper.

Although the trading risks associated with copper and with GSP&P are similar, copper is different from GSP&P in two ways. Copper is handled in larger quantities than GSP&P, and its prices tend to be more volatile than GSP&P prices. intends to adopt several policies and practices to address the volatile price issue. It will establish smaller trading limits for copper than its existing precious metals trading limits. Inventories of copper will be maintained at minimum levels, the company retaining only enough to satisfy normal commercial demand. Hedging transactions involving copper will be balanced in terms of maturity and quantity. Options related to copper will be employed only to offset commercial demand. And finally, will hire an experienced copper dealer who will report regularly to management.

Because copper is normally handled in larger quantities than GSP&P, 's facilities for copper storage, sale, and physical delivery will be larger those that required for GSP&P. The copper will be stored in COMEX-approved warehouses for copper that meet 's security requirements for precious metals. It will also be transported by approved armored transport carriers.

Based on the above stated reasons, buying and selling copper is part of or incidental to the business of banking authorized in 12 U.S.C. § 24(Seventh), and may buy and sell copper and engage in financial derivatives activity involving copper in accordance with pertinent safety and soundness guidelines.

III. Conclusion

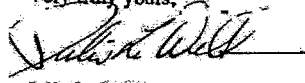
Based on the foregoing, it is my opinion that buying and selling copper and conducting financial derivative activities are encompassed within the enumerated authority of a national bank in 12 U.S.C. § 24(Seventh) to buy and sell coin and bullion, and that such activity is legally permissible as part of or incidental to the business of banking. Please note that buying and selling copper and financial derivatives activity with regard to copper, as described above, are subject to the principles and guidelines set forth in Banking Circulars 58 and 277.

1659

- 7 -

I trust this reply is responsive to your inquiry.

Very truly yours,

A handwritten signature in dark ink, appearing to read "Julie L. Williams", written over a horizontal line.

Julie L. Williams
Chief Counsel

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United States Senate

COMMITTEE ON
 HOMELAND SECURITY AND GOVERNMENTAL AFFAIRS

WASHINGTON, DC 20510-6250

July 16, 2012

VIA EMAIL (rule-comments@sec.gov)

Elizabeth M. Murphy
 Secretary
 Securities and Exchange Commission
 100 F Street, NE
 Washington, DC 20549

**RE: Proposed Rule Change to List and Trade Shares of the JPM XF Physical
 Copper Trust Pursuant to NYSE Arca Equities Rule 8.201;
Release No. 34-67075; File No. SR-NYSEArca-2012-28**

Dear Ms. Murphy:

The purpose of this comment letter is to express concern about a proposed rule change by the NYSE Arca, Inc. ("NYSE Arca") to list and trade shares of JPM XF Physical Copper Trust ("the Trust"), a commodity-based Exchange Traded Fund ("ETF") linked to copper. There is ample evidence that the proposed ETF will disrupt the market supply of copper by removing from the market a substantial percentage of the copper available for immediate delivery. This supply disruption is likely to affect the cash and futures market for copper, increasing volatility and driving up its price to create a bubble and burst cycle. The proposed ETF is unlike any other metal ETF currently listed on the NYSE and would allow speculators to create a squeeze on the market. The proposed rule change is inconsistent with Section 6(b)(5) of the Securities Exchange Act of 1934 ("Act"), which requires that rules be designed to prevent manipulative acts and protect investors and the public interest. This letter respectfully suggests that the proposed rule change should be denied.

Exchange Traded Funds. Exchange Traded Funds enable investors to buy and sell shares in the fund on a stock exchange in the same way that investors can use the stock exchange to buy and sell shares in a corporation. ETFs linked to commodities appeared on U.S. stock exchanges for the first time in 2004, when an ETF linked to gold was offered for sale. Today, retail investors and other market participants can use stock exchanges to buy and sell shares in a wide variety of commodity-based ETFs, some of which track broad commodity indexes, others of which track sub-indexes, and some of which reference a single commodity. By buying and selling these shares, commodity-based ETF traders gain exposure to commodity prices without ever having to transact business on a commodity exchange subject to CFTC oversight.

The particular type of ETF addressed in the NYSE Arca proposal is structured as a trust whose assets are limited to a single physical commodity, copper. The ETF's investment objective is to track the spot price of copper, less trust expenses and fees, and provide its

Permanent Subcommittee on Investigations

EXHIBIT #86a

shareholders with exposure to changes in the commodity price. The ETF does not sell or redeem individual shares, but instead sells large blocks or "Creation Units," in units of 2,500 shares each, to broker-dealers or other financial institutions known as Authorized Participants (AP). In return, as a condition of the sale, APs are required to deliver to the ETF a specified amount of the physical commodity to support the value of the ETF shares being issued.

APs then sell the individual ETF shares to investors through the stock exchange. If the commodity price increases, the share values increase, and the investors gain; if the price drops, the share values fall, and investors lose. If the fund attracts more investors, the ETF typically sells more creation units (or blocks of shares) and receives additional physical copper deliveries to support those shares; if investments in the fund decrease, the ETF typically reduces its commodity holdings. The copper underlying the ETF may be purchased in cash markets or in commodity futures markets.

Subcommittee Investigations. The Permanent Subcommittee on Investigations, which I chair, has conducted several in-depth investigations into commodity markets, examining how speculation overwhelms normal supply and demand factors and increases prices at the expense of consumers and American businesses.

In 2006, for example, the Subcommittee released a report which found that billions of dollars in commodity index trading on the crude oil market had pushed up futures prices in 2006, caused a corresponding increase in cash prices, and was responsible for an estimated \$20 out of the then \$70 cost for a barrel of oil.¹ In 2007, the Subcommittee released a report showing how a single hedge fund named Amaranth made huge, speculative trades on the natural gas market using futures on a regulated futures exchange and swaps on an unregulated electronic energy exchange.² These trades pushed up futures prices and increased natural gas prices for consumers and American businesses.

In 2009, the Subcommittee released a bipartisan 260-page staff report and held a hearing examining commodity index trading in the wheat market.³ One key topic was the impact of commodity index-based ETFs on futures contracts and commodity prices. Essentially, the report found that the purchase of wheat futures contracts to support the commodity index financial instruments, including ETFs, swaps, and exchange traded notes, had created a new demand for those futures contracts; had distorted the prices of those futures contracts by overwhelming normal supply and demand factors; had interfered with the convergence of wheat futures and cash prices; and had hurt American businesses and consumers by causing unreliable wheat prices and hedging failures.

In 2011, the Subcommittee held a hearing on excessive speculation in commodity markets and compliance with the Dodd-Frank Act. We studied the rise of commodity index

¹ "The Role of Market Speculation in Rising Oil and Gas Prices: A Need to Put the Cop Back on the Beat," U.S. Senate Permanent Subcommittee on Investigations Report, S. Prt. 109-65, June 27, 2006.

² "Excessive Speculation in the Natural Gas Market," U.S. Senate Permanent Subcommittee on Investigations Report, S. Hrg. 110-235, June 25 and July 9, 2007.

³ "Excessive Speculation in the Wheat Market," U.S. Senate Permanent Subcommittee on Investigations Report, S. Hrg. 111-155, July 21, 2009.

funds, commodity-related Exchange Traded Products, and the mutual fund industry.⁴ Our investigation discovered that these funds had put billions in speculative money into U.S. commodities markets, causing increased price volatility. The investigation identified the risk posed to the American economy from unstable prices for materials essential to industry, including copper.⁵

In January of this year, the Subcommittee investigated mutual fund speculation in commodity markets. Through our investigation we learned that IRS private letter rulings had allowed mutual funds to use either wholly-owned offshore corporations or financial instruments called “commodity linked notes” to make unrestricted commodities investments, although the law restricts them from deriving no more than 10% of their income from commodity investments. These investment strategies permitted a flood of billions in new speculative commodity investments.⁶

Copper Market Background. The global copper supply comes either from primary production through the extraction and processing of copper ore or from secondary production through the recycling of copper scrap.⁷ The supply of copper is inelastic,⁸ in part because extraction from old mines is declining and new mine projects have encountered delays.⁹

Copper is used in vital industries such as the construction, electrical, and electronics industries.¹⁰ It is used to produce cable and wire used in power transmission and generation and in telecommunication, as well as for pipes used in plumbing and heating.¹¹ Copper demand comes from fabricators and manufacturers who create these products and copper is used as an end product by consumers throughout the world.

The majority of the copper produced annually is sold through long-term supply contracts. While such contracts specify the amount of copper to be delivered, price is typically not fixed until the time of delivery, exposing market participants to price uncertainty.¹² Copper prices tend to experience wide and unpredictable fluctuations.¹³ Producers and consumers participate in

⁴ “Excessive Speculation and Compliance with the Dodd-Frank Act,” Opening Statement of Senator Carl Levin before the U.S. Senate Permanent Subcommittee on Investigations, November 3, 2011.

⁵ *Id.*

⁶ “Compliance with Tax Limits on Mutual Fund Commodity Speculation,” Opening Statement of Senator Carl Levin before the U.S. Senate Permanent Subcommittee on Investigations, January 26, 2012.

⁷ Amendment No. 5 to SEC Form S-1 Registration Statement for JPM XF Physical Copper Trust, July 12, 2011, at p. 32-34 (hereinafter “Registration Statement”).

⁸ Inelasticity of supply means that an increase in the global demand for copper cannot be met with a short-term increase in supply.

⁹ Registration Statement, at p. 32.

¹⁰ *Id.*, at p. 34.

¹¹ *Id.*, at p. 31.

¹² SEC Notice of Filing of Proposed Rule Change to List and Trade Shares of the JPM XF Physical Copper Trust; Release No. 34-66816; File No. SR-NYSEArca-2012-28, April 16, 2012, at p. 13 (hereinafter “SEC Notice”); available at <http://www.sec.gov/rules/sro/nysearca/2012/34-66816.pdf>.

¹³ Registration Statement, at p. 14.

copper futures exchanges to hedge against this price instability.¹⁴ Speculators also participate in these exchanges, buying price risk in exchange for potential profit.¹⁵

The London Metal Exchange (“LME”) is the largest and most influential copper futures exchange. “As a result of daily trading [of copper futures contracts on the LME], prices are ‘discovered’ and published by the LME.”¹⁶ The LME’s prices are then used by producers and commercial end-users around world as the basis for the contract price for the physical purchase or sale of copper.¹⁷ In addition to the base price, copper has an added “locational premia” based on the supply and demand for copper at the location from which it is supplied.¹⁸

The LME is the main source of information about the physical demand for and supply of copper, because it has traditionally been a “market of last resort” for producers to sell excess stock and consumers to fill short-term needs for copper beyond the amount for which they have contracted.¹⁹ Copper is sold on the LME through “warrants,” or “bearer document[s] evidencing the right of the holder to possession of a specified lot of metal at a specified LME warehouse location.”²⁰ Copper sold on the LME must be Grade A and of an “Acceptable Delivery Brand,” a brand registered with the LME.²¹

Disrupting Supply. There is ample evidence that if the ETF shares are listed and traded on the NYSE exchange, the Trust will disrupt the global supply of copper. Although the Trust’s registration statement cites that in 2008 there was an estimated 2.47 million metric tons of copper stocks in the global copper market, only 390,000 metric tons of this copper was registered with exchanges.²² The copper registered with exchanges is part of the small percentage of global refined copper stocks that are “liquid stocks” available for immediate delivery.²³ For example, in 2011, total global copper stocks were 3.515 million metric tons while liquid stocks were only 808,000 metric tons.²⁴

Of those “liquid stocks,” only a small percentage of physical copper is truly available for purchase by third parties. When one removes from the calculation of “liquid stocks” extra copper held by consumers and producers, stocks that are waiting to pass through customs into importing countries, and stocks on the Shanghai Futures Exchange (“SHFE”) which are

¹⁴ SEC Notice, at p. 14

¹⁵ *Id.*

¹⁶ Registration Statement, at p. 40.

¹⁷ *Id.*

¹⁸ SEC Notice, at p. 25

¹⁹ Registration Statement, at p. 41.

²⁰ *Id.*, at p. 40-41.

²¹ *Id.*, at p. 42.

²² *Id.*, at p. 20.

²³ *Report on Refined Copper Inventories on the Global Market*, Table 3: “Refined Copper Balance Detail,” Bloomsbury Minerals Economics Ltd, October 12, 2011 (hereinafter “BME Report”). Available at <http://www.sec.gov/comments/sr-nysearca-2012-28/nysearca201228-5.pdf> as Exhibit A of Submitted Comment from Robert B. Bernstein, Vandenberg & Feliu LLC, July 13, 2012, p. 15. Bloomsbury Minerals Economics is a specialized consultancy engaged in base metals market and price analysis, focusing in particular on copper.

²⁴ BME report, Table 3.

unavailable outside of China, it appears that most of the remaining copper stocks available for immediate delivery are on the LME and Commodity Exchange, Inc. ("COMEX").²⁵

Additionally, the proposed EFT will accept and hold only Grade A copper of an "Acceptable Delivery Brand," exactly the type of copper on the LME.²⁶ Thus, even though the copper held by the Trust will not be held through LME warrants,²⁷ the set-up of the Trust makes it extremely likely that its copper will be acquired from LME warehouses.

In August 2011, the LME reported that it possessed approximately 464,000 metric tons of copper stocks and the COMEX had about 81,000 short tons (or about 73,500 metric tons), giving them combined approximately 537,500 metric tons of copper stocks.²⁸ As discussed above, copper supply is inelastic, so even with advance warning about an increase in the demand for copper, supply on these exchanges is not likely to increase. According to the Trust's registration statement, the Trust will acquire 61,800 metric tons of copper to back its initial shares.²⁹ In addition, on June 22, 2012, NYSE Arca filed a rule proposal to list another copper trust, iShares® Copper Trust, sponsored by BlackRock Asset Management International, Inc., which would also significantly increase the demand for physical copper.³⁰ If BlackRock's copper ETF is also approved, it will acquire an initial 121,200 metric tons of copper.³¹ Together these Trusts would hold approximately 34% of the stocks of copper available for immediate delivery.³²

Effecting Price. Removing one third of the available copper stocks undoubtedly will affect and increase the price of copper. If the supply of copper available for immediate delivery drops by about 34%, it naturally follows that the price of copper will rise. As the price of copper in the market rises, demand for shares of the Trust will likely increase as well, leading the Trust to create more shares, removing even more copper from the market and further decreasing the liquid supply. This artificial supply and demand pattern is likely to create a boom and bust cycle, as speculators enter and leave the market.

The Trust itself warns that "[b]ecause there is no limit on the amount of copper that the Trust may acquire, the Trust, as it grows, may have an impact on supply and demand for copper that ultimately may affect the price of the shares in a manner unrelated to other factors affecting the global markets for copper."³³

Moreover, according to the Trust's registration statement, "[p]urchasing activity in the copper market associated with the purchase of Creation Units from the Trust or selling activity

²⁵ *Id.* The Commodity Exchange, Inc., or COMEX, is a division of the New York Mercantile Exchange.

²⁶ Registration Statement, at p. 44.

²⁷ Registration Statement, at p. 43.

²⁸ LME Stock Report, J.P.Morgan, 9:07 AM, August 10, 2011.

²⁹ Jack Farchy, *JPMorgan copper ETF plan would 'wreck havoc'*, Financial Times, May 24, 2012.

³⁰ SEC Notice of Filing of Proposed Rule Change to List and Trade Shares of iShares Copper Trust; Release No. 34-67237; File No. SR-NYSEArca-2012-66, June 22, 2012.

³¹ Jack Farchy, *JPMorgan copper ETF plan would 'wreck havoc'*, Financial Times, May 24, 2012.

³² See LME Stock Report, J.P.Morgan, 9:07 AM, August 10, 2011; and Jack Farchy, *JPMorgan copper ETF plan would 'wreck havoc'*, Financial Times, May 24, 2012.

³³ Registration Statement, at p. 20.

following the redemption of Creation Units may affect the price of copper . . .³⁴ There is nothing to prevent high investor demand from causing an increase in copper prices or a quick drop in demand from driving down copper prices. The risk of a bubble in the copper market creates a corresponding risk that the bubble will eventually burst. When it bursts, investors may dump thousands of metric tons of copper back onto the market, swamping the market and depressing the price, and again impacting the world economy at large.

U.S. Impact. The impact on copper supply and price will be strongest in the United States because it is likely that the ETF's copper will come from LME warehouses in the United States. The Trust will likely acquire its initial copper holdings from the location with the lowest locational premia. In addition, of the countries where the Trust has "initially permitted warehouse locations,"³⁵ the United States is the country with the lowest locational premia.

Moreover, because of the difficulty and expense of transporting copper,³⁶ it is likely the Trust will acquire its copper in the same location as where it plans to store the copper. The Trust's registration statement says that "under most circumstances, the Trust will hold most of its copper in the warehouse . . . that is in the cheapest-to-deliver location [with the lowest locational premium]. Therefore, that Trust's storage of copper may ultimately be concentrated in only a few warehouse locations or even a single warehouse location."³⁷ As discussed above, the United States is likely to be that "cheapest-to-deliver location." Also, most of the copper in LME warehouses in the United States is stored by the Henry Bath Group, a J.P. Morgan affiliate, which has been designated the warehouse keeper for the Trust.³⁸ The Trust could acquire the copper currently stored by Henry Bath for the LME and have it already located in a Trust-permitted warehouse location without any transportation costs.

As of August 2011, there were only about 257,000 metric tons of copper in LME warehouses in the United States and only about 73,500 metric tons in COMEX warehouses, for a total of about 330,500 metric tons of copper stocks available on exchanges in the United States.³⁹ The Trust's initial 61,800 metric tons alone would remove about 19% of the U.S. supply of copper available for immediate delivery. If BlackRock's 121,200 metric tons are included, these ETFs would remove over 55% of available U.S. copper stocks from the market.

Unlike Existing ETFs. While the SEC permits U.S. exchange sales of commodity-backed ETFs for gold, silver, platinum, and palladium, these metals and their markets are substantially different than copper. These four permitted metals are the only precious metals that are currently treated as world currencies. For this reason, they are commonly held for investment purposes. As a result there are substantial existing supplies of these metals which could be acquired to back an ETF without affecting the world market price in these metals.

³⁴ *Id.*, at p. 28.

³⁵ SEC Notice, at p. 26.

³⁶ *Id.*, at p. 11.

³⁷ Registration Statement, at p. 20.

³⁸ *Id.*, at p. 2.

³⁹ LME Stock Report, J.P.Morgan, 9:07 AM, August 10, 2011.

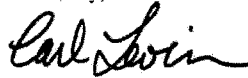
Conversely, copper is not currently held for investment purposes because it is, relative to precious metals, very expensive to store and difficult to transport.⁴⁰ Because copper has not been held for investment, there is not the same existing supply of copper for the Trust to acquire to back its ETF. Holding copper for investment purposes will have a significantly greater impact on the copper market than ETFs holding palladium, platinum, silver, or gold had on their respective markets and the broader economy.

Squeezing the Market. If the proposed rule change is approved, it will make the copper market more susceptible to squeezes and corners by speculators. Creating this market condition is inconsistent with Section 6(b)(5)'s requirement that exchange rules be designed to prevent manipulative practices. A squeeze on the copper market is when a lack of supply and excess demand forces the price upward, and a corner is when one party acquires enough copper to be able to manipulate its price. A squeeze on the copper market already purportedly occurred this year in April when one entity took control of up to 90% of the cash contracts and inventory on the LME.⁴¹ The ETF will make the market more susceptible to squeezes, because it could be used by market participants to remove copper from the available supply in order to purposefully artificially inflate the price. Moreover, their activities would go undetected by the LME, which conducts surveillance for dominant market participants, because ETFs are not currently subject to any form of commodity regulations. By holding physical copper rather than LME warrants, the Trust can control more of the available supply of copper without triggering LME reporting or rules.

Section 6(b)(5) requires that NYSE rules be designed to prevent manipulative acts and protect investors and the public interest. The proposed rule change is not designed to prevent manipulative acts. To the contrary, it may encourage such acts. This ETF may allow speculators to squeeze or corner the market in copper. If approved, the ETF is likely to distort the global price of copper, leading to a boom and bust pricing cycle which will hurt manufacturers who rely on this essential industrial product and will ultimately hurt consumers and the larger economy. It is not in the public interest for a new investment instrument to disrupt the delicate balance of supply and demand that sets the price for an essential commodity. The proposed rule change will benefit speculators at the expense of consumers and American businesses. The proposed rule change should be denied.

Thank you for this opportunity to comment on the proposed rule.

Sincerely,



Carl Levin
Chairman
Permanent Subcommittee on Investigations

⁴⁰ Registration Statement, at p. 36-37.

⁴¹ Eric Onstad, *Copper market expects squeeze, big holding appears*, Reuters, July 2, 2012.

COMMITTEE ON
HOMELAND SECURITY AND GOVERNMENTAL AFFAIRS
WASHINGTON, DC 20510-6250

VIA U.S. MAIL & EMAIL (davisjz@sec.gov)

RE: JPM XF Physical Copper Trust, Form S-1
Registration Statement (Amendment No. 6: filed Jan 17, 2013)

The purpose of this letter is to express concern about the inadequacy of the disclosures in the above referenced Form S-1 Registration Statement (S-1) filing for the JPM XF Physical Copper Trust (JPMXF). The JPMXF registration statement was initially made October 22, 2010, and amended 6 times subsequently. The most recent S-1, filed on January 17, 2013, is incomplete on its face and should not be declared effective until it adequately describes the nature and scope of the activities of JP Morgan Chase & Co and its affiliate entities' (JPMorgan's) in the physical copper market, including its inventory positions and its role in mining, financing, refining, storing, transporting, and trading physical copper; its long and short copper positions in the futures, swaps, and options markets; and its policies, procedures, and practices for pricing services from related parties, identifying and resolving conflict of interest issues, and preventing and detecting any price manipulation, squeezes, corners, and price distortions by JPMorgan affiliates in the copper market.

¹ Section 8(b) states:

(b) If it appears to the Commission that a registration statement is on its face incomplete or inaccurate in any material respect, the Commission may, after notice by personal service or the sending of confirmed telegraphic notice not later than ten days after the filing of the registration statement, and opportunity for hearing (at a time fixed by the Commission) within ten days after such notice by personal service or the sending of such telegraphic notice, issue an order prior to the effective date of registration refusing to permit such statement to become effective until it has been amended in accordance with such order. When such statement has been amended in accordance with such order the Commission shall so declare and the registration shall become effective at the time provided in subsection (a) or upon the date of such declaration, whichever date is the later.

these material activities prior to declaring an effective registration statement for JPMXF Physical Copper Trust.

A. Background

Exchange Traded Funds. Exchange Traded Funds (ETFs) enable investors to buy and sell shares in a fund on a stock exchange in the same way that investors can use the stock exchange to buy and sell shares in a corporation. ETFs linked to commodities appeared on U.S. stock exchanges for the first time in 2004, when an ETF linked to gold was offered for sale. Today, retail investors and other market participants can use stock exchanges to buy and sell shares in a wide variety of commodity-based ETFs, some of which track broad commodity indexes, others of which track sub-indexes, and some of which reference a single commodity. By buying and selling these shares, commodity-based ETF traders gain exposure to commodity prices without having to transact business on a commodity exchange subject to oversight by the Commodity Futures Trading Commission (CFTC).

JPMXF in General. According to its filings, JPMXF is structured as a trust whose assets are limited to a single physical commodity, copper. The ETF's investment objective is to track the spot price of copper, less trust expenses and fees, and provide its shareholders with exposure to changes in the commodity price. The ETF does not sell or redeem individual shares, but instead sells large blocks or "Creation Units," in units of 2,500 shares each, to broker-dealers or other financial institutions known as Authorized Participants (AP). In return, as a condition of the sale, APs are required to deliver to the ETF a specified amount of the physical commodity to support the value of the ETF shares being issued. APs then sell the individual ETF shares to investors through the stock exchange. If the commodity price increases, the shares increase in value, and the investors gain; if the spot price drops, the shares fall in value, and investors lose. If the fund attracts more investors, the ETF would likely sell more Creation Units (or blocks of shares) in exchange for additional physical copper deliveries to support those shares; if investments in the fund decrease, the ETF would likely reduce its commodity holdings. The copper underlying the ETF may be purchased in cash markets or in commodity futures markets.

The S-1 filing also discloses that JPMorgan affiliates will play an active role in JPMXF, filling key administrative posts as well as acting as the purchaser of the initial Creation Units, as an Authorized Participant selling the initial shares to investors, as a market-maker encouraging the buying and selling of JPMXF shares, and as a physical dealer for the copper backing the Trust.²

JPMXF would be one of the few asset-backed ETFs on U.S. stock markets, and would be the first to rely on copper for its value. While the SEC already permits U.S. exchange sales of commodity-backed ETFs for gold, silver, platinum, and palladium, those precious metals and their markets are substantially different than the industrial market for physical copper. Prior to the establishment of commodity-backed ETFs for gold, silver, platinum, and palladium, these four precious metals were already treated as world currencies and commonly held for investment purposes. The supply and demand functions for these precious metals were already a combination of those who needed the metal for commercial or personal uses (for example, to

² Registration Statement, at p. 92.

make electronic components) and those who sought to hold it as passive asset (for example, to hedge against inflation).

Conversely, copper has not historically been held for investment purposes. It is, relative to precious metals, very expensive to store and difficult to transport.³ Its supply and demand functions have traditionally been set according to commercial and personal uses only, and not as a store of value. Thus, for the first time, fabricators, manufacturers, and other industrial businesses who use copper will be forced to compete in the marketplace against the Trust and others seeking to hold the copper as a passive asset, thus changing the dynamic of copper's supply and demand functions.

For that reason, acquiring and holding copper for investment purposes will have a significantly greater impact on the physical copper market than ETFs holding palladium, platinum, silver, or gold had or have on their respective physical markets⁴ and the broader economy⁵. In addition, because it appears to participate extensively in all aspects of the copper market, as detailed below, JPMorgan may be positioned and incentivized to effect or benefit from changes in the value of copper and participation in the ETF. Those interests may be at times in line with, and at times against, the investors in the ETF. For example JPMorgan's interests in negotiating high warehouse fees or shorting copper futures may contradict investors' interests in low administrative expenses and higher copper prices. Further, JPMorgan's other business interests may directly or indirectly benefit from copper price distortions, squeezes, corners, or other price manipulations, which the Trust may knowingly or unknowingly help them to achieve.

Subcommittee Investigations. The Permanent Subcommittee on Investigations, which I chair, has conducted several in-depth investigations into commodity markets, examining how excessive speculation can overwhelm normal supply and demand factors and increase prices at the expense of consumers and American businesses.

In 2006, for example, the Subcommittee released a report which found that billions of dollars in commodity index trading on the crude oil market had pushed up futures prices in 2006, caused a corresponding increase in cash prices, and was responsible for an estimated \$20 out of the then \$70 cost for a barrel of oil.⁶ In 2007, the Subcommittee released a report showing how a single hedge fund named Amaranth made huge, speculative trades on the natural gas market using futures on a regulated futures exchange and swaps on an unregulated electronic energy exchange.⁷ This trading activity pushed up futures prices and increased natural gas prices for both families and American businesses.

³ JPM XF Physical Copper Trust, Form S-1 Registration Statement, Amendment (1/17/2013) (hereinafter "Registration Statement"), at p. 40-41.

⁴ See "Speculative Influences on Commodity Futures Prices," (2010), by Christopher Gilbert, http://unctad.org/en/docs/osgdp20101_en.pdf, at p.8

⁵ See "The Growing Financialisation of Commodity Markets : Divergences between Index Investors and Money Managers," Journal of Development Studies, Vol. 48 , Issue 6, (2012), Jörg Mayer (UNCTAD), at p.752-753.

⁶ "The Role of Market Speculation in Rising Oil and Gas Prices: A Need to Put the Cop Back on the Beat," U.S. Senate Permanent Subcommittee on Investigations Report, S.Prt. 109-65 (6/27/2006).

⁷ "Excessive Speculation in the Natural Gas Market," U.S. Senate Permanent Subcommittee on Investigations, S. Hrg. 110-255, (6/25/2007).

In 2009, the Subcommittee released a bipartisan 260-page staff report and held a hearing examining commodity index trading in the wheat market.⁸ One key topic was the impact of commodity index-based ETFs on futures contracts and commodity prices. Essentially, the report found that the purchase of wheat futures contracts to support the commodity index financial instruments, including ETFs, swaps, and exchange traded notes, had created a new demand for those futures contracts; had distorted the prices of those futures contracts by overwhelming normal supply and demand factors; had interfered with the convergence of wheat futures and cash prices; and had hurt American businesses and consumers by causing unreliable wheat prices and hedging failures.

In 2011, the Subcommittee held a hearing on excessive speculation in commodity markets and compliance with the Dodd-Frank Act. We studied the rise of commodity-related Exchange Traded Products, commodity index funds, and the mutual fund industry.⁹ Our investigation discovered that these funds had put billions of dollars in speculative money into U.S. commodities markets, causing increased price volatility. The investigation identified the risk posed to the American economy from unstable prices for materials essential to industry, including copper.¹⁰

In 2012, the Subcommittee investigated mutual fund speculation in the commodity markets. Through our investigation we learned that IRS private letter rulings had allowed mutual funds to use either wholly-owned offshore corporations or financial instruments called “commodity linked notes” to make unrestricted commodities investments. The IRS rulings unleashed billions of dollars in new speculative commodity investments.¹¹

Copper Market Background. The global copper supply comes either from primary production through the extraction and processing of copper ore or from secondary production through the recycling of copper scrap. The supply of copper is relatively inelastic, in part because extraction from old mines is declining and new mine projects have encountered delays.

Copper is used in vital industries such as the construction, electrical, and electronics industries. It is used to produce cable and wire used in power transmission and generation and in telecommunication, as well as for pipes used in plumbing and heating. Copper demand comes from fabricators and manufacturers who create these products, and copper is used as an end product by consumers throughout the world.

The majority of the copper produced annually is sold through long-term supply contracts. While such contracts specify the amount of copper to be delivered, price is typically not fixed until the time of delivery, exposing market participants to price uncertainty. Copper prices tend to experience wide and unpredictable fluctuations. Producers and consumers participate in

⁸ “Excessive Speculation in the Wheat Market,” U.S. Senate Permanent Subcommittee on Investigations, S. Hrg. 111-155, (7/21/2009).

⁹ “Excessive Speculation and Compliance with the Dodd-Frank Act,” before the U.S. Senate Permanent Subcommittee on Investigations, S. Hrg. 112-313, (11/3/2011).

¹⁰ *Id.*, Opening Statement of Senator Carl Levin.

¹¹ “Compliance with Tax Limits on Mutual Fund Commodity Speculation,” Opening Statement of Senator Carl Levin before the U.S. Senate Permanent Subcommittee on Investigations, S. Hrg. 112-__, (1/26/2012).

copper futures exchanges to hedge against this price instability. Speculators also participate in these exchanges, buying price risk in exchange for potential profit.

The London Metal Exchange (“LME”) is the largest and most influential copper futures exchange. “As a result of daily trading [of copper futures contracts on the LME], prices are ‘discovered’ and published by the LME.”¹² The LME’s prices are then used by producers and commercial end-users around world as the basis for the contract price for the physical purchase or sale of copper.¹³ In addition to the base price, copper has an added “locational premium,” the amount of which is based upon the supply and demand for copper and the storage and transportation expenses applicable to the location from which it is supplied.¹⁴

The LME is the main source of information about the physical demand for and supply and price of copper, because it has traditionally been a “market of last resort” for producers to sell excess stock and consumers to fill short-term needs for copper beyond the amount for which they have contracted.¹⁵ Copper is sold on the LME through “warrants,” or “bearer document[s] evidencing the right of the holder to possession of a specified lot of metal at a specified LME warehouse location.”¹⁶ Copper sold on the LME must be Grade A and of an “Acceptable Delivery Brand,” a brand registered with the LME.¹⁷

B. S-1 Fails to Detail Trust’s Impact on Copper Supply

There is ample evidence to suggest that if the JPMXF registration statement is declared effective and its shares are traded, it will disrupt the global supply of copper, which will affect copper prices.

The S-1 registration statement is incomplete, because it focuses on and provides information about the total size of the copper market, but ignores the much smaller amount of copper that is registered with exchanges. Since the prices for the broader market are largely determined by the prices on the exchanges, any reasonable analysis of the impact of JPMXF on market supplies and prices should also provide information related to the exchanges.

For example, although the Trust’s registration statement states that, in 2008, there was an estimated 2.47 million metric tons of copper stocks in the global copper market, the registration statement and its related filings do not disclose that most of this copper was already allocated for delivery through long-term arrangements, and only 390,000 metric tons was registered with exchanges.¹⁸ The copper registered with exchanges is part of the small percentage of global

¹² Registration Statement, at p. 43.

¹³ Id.

¹⁴ SEC Notice of Filing of Proposed Rule Change to List and Trade Shares of the JPM XF Physical Copper Trust; Release No. 34-66816; File No. SR-NYSEArca-2012-28, April 16, 2012, at p. 13 (hereinafter “SEC Notice”); available at <http://www.sec.gov/rules/sro/nysearcal2012134-66816.pdf>, at p. 25.

¹⁵ Registration Statement, at p. 44.

¹⁶ Id., at p. 44.

¹⁷ Id., at p. 45.

¹⁸ Id., at p. 20-21.

refined copper stocks that are “liquid stocks” available for immediate delivery.¹⁹ For example, in 2011, while total global copper stocks were 3.515 million metric tons, liquid stocks available for immediate delivery totaled only 808,000 metric tons.²⁰ The JPMXF registration statement does not adequately disclose information about the limited supply of liquid copper stocks actually available for immediate delivery.

Moreover, of those “liquid stocks,” only a small percentage of physical copper is truly available for purchase by third parties, including for placement in an ETF inventory. When one removes from the calculation of “liquid stocks” extra copper held by consumers and producers, stocks that are waiting to pass through customs into importing countries, and stocks on the Shanghai Futures Exchange which are unavailable outside of China, it appears that most of the remaining copper stocks available for immediate delivery must be purchased through the LME or the Commodity Exchange, Inc. (“COMEX”), the second largest metals exchange.²¹ Because the ETF represents an even greater portion of the liquid stocks available for purchase by third parties, its impact on copper supplies and prices will be greater than indicated in the S-1. The JPMXF registration statement does not adequately disclose material information about the limited supply of liquid copper stocks actually available, not only for immediate delivery, but also for purchase and placement in an ETF.

Additionally, the S-1 filing has stated that it will accept and hold only Grade A copper of an “Acceptable Delivery Brand,” exactly the type of copper available on the LME and COMEX.²² Thus, even though the Trust states that it will accept copper supplies outside of those held through LME warrants,²³ the Trust’s restrictions on the type of copper that it will accept makes it extremely likely that its copper will be acquired from LME or COMEX warehouses. Otherwise, copper supplies offered for delivery to the Trust would have to undergo expensive testing to establish their acceptability.

In August 2011, the LME reported it possessed approximately 464,000 metric tons of copper stocks, while the COMEX had about 81,000 short tons (or about 73,500 metric tons), producing a combined total of approximately 537,500 metric tons of copper stocks.²⁴ As discussed above, copper supply is relatively inelastic, so even with advance warning about an increase in the demand for copper, supply on the two exchanges is unlikely to significantly increase. According to the JPMXF’s registration statement, it will seek to acquire 61,800 metric tons of copper to back its initial shares.²⁵ That amount represents over 11% of the total supply through the LME and COMEX exchanges. In addition, on February 25, 2013, the SEC approved

¹⁹ *Report on Refined Copper Inventories on the Global Market*, Table 3: “Refined Copper Balance Detail,” Bloomsbury Minerals Economics Ltd., (10/12/2011) (hereinafter “BME Report”). Bloomsbury Minerals Economics is a specialized consultancy engaged in base metals market and price analysis, focusing in particular on copper.

²⁰ BME report, Table 3.

²¹ *Id.* The Commodity Exchange, Inc., or COMEX, is a division of the New York Mercantile Exchange.

²² Registration Statement, at p. 16. Although it does not use the term “Grade A,” the COMEX uses a similar term, “High Grade,” to describe the copper available on the COMEX. See <http://www.astm.org/Standards/B115.htm>, http://www.fcx.com/metals/copper_cathodes.htm.

²³ Registration Statement, at p. 46.

²⁴ LME Stock Report, J.P.Morgan, 9:07 AM, (8/10/2011).

²⁵ Registration Statement, at p. 21.

an NYSE ARCA rule to list another copper trust, iShares® Copper Trust, sponsored by BlackRock Asset Management International, Inc., which would also significantly increase the demand for physical copper.²⁶ BlackRock's copper ETF has indicated that it would seek to acquire 121,200 metric tons of copper to support its initial shares.²⁷ Together, these two ETFs would seek to hold approximately 183,000 metric tons, or 34% of all liquid stocks of copper.²⁸

The Commission – indeed, U.S. investors and the U.S. business community -- have never before contemplated commodity-backed ETFs which may gain “legal” control of such a disproportionate share of an industrial metals market. Such ETFs are not only likely to disrupt global supplies and increase prices, but also raise legal issues related to whether and how the ETF's copper inventories and business activities may trigger concerns involving price distortions, squeezes, corners, and other manipulations in the copper market. Such activities also raise questions about the SEC's and CFTC's abilities to police for these potential violations due to the lack of transparency in the physical copper markets.

C. S-1 Fails to Detail How JPMXF Would Affect Price

Actions taken by JPMXF to remove such a large percentage of the available copper stocks from commodity markets to sit untouched in one or more warehouses for an indeterminate amount of time undoubtedly will affect and increase the price of copper. If the supply of copper available for immediate delivery drops by about 34%, it naturally follows that the price of copper will rise. As the price of copper in the market rises, demand for shares of the JPMXF will likely increase as well, leading it to issue more Creation Units requiring the removal of even more copper from the market and further decreasing the liquid supply. If allowed to occur, this market activity is likely to create a boom and bust cycle, as speculators enter and leave the market.

The impact on copper supply and price will be strongest in the United States, because it is likely that Authorized Participants will acquire needed copper supplies from LME and COMEX warehouses located in the United States due to lower costs. Of the countries where the Trust has “initially permitted warehouse locations,”²⁹ the U.S. warehouses have the lowest locational premia and, thus, the lowest initial acquisition costs.

As of August 2011, about 252,000 metric tons of copper were located in LME warehouses in the United States, and about 73,500 metric tons in COMEX warehouses located in the United States, for a total of about 325,500 metric tons of U.S. copper stocks available on the two exchanges.³⁰ The JPMXF's purchase of an initial 61,800 metric tons alone would remove about 19% of the U.S. supply of copper available for immediate delivery. If BlackRock's 121,200 metric tons are included, the two ETFs would remove over 56% of available U.S. copper stocks from the market. The S-1 filing is silent, however, about the extent to which acquiring copper supplies from U.S. warehouses would restrict U.S. and world copper supplies

²⁶ SEC Notice of Filing of Proposed Rule Change to List and Trade Shares of iShares Copper Trust; Release No. 34-67237; File No. SR-NYSEArca-2012-66, (6/22/2012).

²⁷ Jack Farchy, *JPMorgan copper ETF plan would 'wreck havoc'*, Financial Times, (5/24/2012).

²⁸ See BME report, Table 3; and Jack Farchy, *JPMorgan copper ETF plan would 'wreck havoc'*, Financial Times, (5/24/2012).

²⁹ SEC Notice, at p. 26.

³⁰ LME Stock Report, J.P.Morgan, 9:07 AM, (8/10/2011).

and affect prices, and what steps the Trust might take, if any, in response to U.S. price volatility, supply disruptions, or price distortions.

The S-1 generally recognizes that “the Trust, as it grows, may have an impact on supply and demand for copper that ultimately may affect the price of the shares in a manner unrelated to other factors affecting the global markets for copper.”³¹ Moreover, according to the JPMXF registration statement, “[p]urchasing activity in the copper market associated with the purchase of Creation Units from the Trust or selling activity following the redemption of Creation Units may affect the price of copper . . .”³² While these general statements demonstrate that JPMorgan Chase is well aware of the impact that its copper ETF may have on copper supplies and prices, the S-1 fails to provide any specific information to investors about the next level of impacts.

For example, the S-1 fails to provide details regarding policies or actions the Trust or JPMorgan might take in response to copper price volatility which, in turn, would affect the value of the ETF investments. Because the S-1 says it has “no formal procedures to resolve potential conflicts of interest,” it indicates that either the Trust has no policy or it may have inadequate procedures to protect investors in the event that JPMorgan affiliates trade against the Trust.

In addition, the S-1 does not identify, discuss, or present actions that could be taken to address the legal issues that might arise if the ETF itself is seen as fostering price distortions, squeezes, corners, or other price manipulations in the copper market. Nor does the S-1 detail what policies and procedures JPMorgan would follow to ensure that its other trading and business interests are not impermissibly conflicted with those invested in JPMXF. For example JPMorgan controls a wholly owned subsidiary that warehouses copper and could create a short term squeeze by slowing release of copper from the warehouse. That warehouse subsidiary also control rates charged for storage and could drive copper prices up by driving up the embedded cost of storage.

As currently configured, the Trust contains no provisions to prevent high investor demand from causing an increase in copper prices or, alternatively, a quick drop in demand from driving down copper prices. The risk of a bubble in the copper market creates a corresponding risk that the bubble will eventually burst. If that happens, investors may dump thousands of metric tons of copper back onto the market, swamping the market and depressing the price, impacting not only copper-reliant industries around the world, but also possibly producing large gains for any parties shorting the copper market. Again, the S-1 fails to adequately disclose or discuss the extent of this risk and its impact on the value of JPMXF.

D. S-1 Fails to Detail JPMorgan’s Expansive Role in Copper Markets

JPMorgan’s public filings, as well as press reports about its commodities activities as described above, raise questions about the firm’s concentration of economic power in the commodity markets, generally, and more specifically in the copper markets, the extent of which is not adequately disclosed in the S-1.

³¹ Registration Statement, at p. 20.

³² Registration Statement, at p. 28.

JPMorgan's public filings and public reports suggest that it controls and owns affiliate entities in nearly all aspects of the commodities business, providing it vertical integration in financing, transportation, storage, and trading for its customers and proprietary positions in the physical and financial markets. It is one of the largest derivatives dealers in the world and is a major trader in commodities markets.³³ Its affiliates appear to be active participants in virtually all aspects of the copper market, some of which also plan to provide services to JPMXF. The S-1's disclosures regarding the role of JPMorgan's affiliates with respect to JPMXF, the possible and actual conflicts of interest that may arise, and how investors may be affected are incomplete on their face.

According to JPMXF's most recent S-1 filing, JP Morgan affiliate entities will play an extensive role in supporting the operations of JPMXF, including administering the Trust, warehousing its copper inventory, acquiring initial and subsequent copper supplies to support the Trust, and marketing and selling the Trust shares. The S-1 filing states:

"The Trust, the Sponsor, the Administrative Agent, the Warehouse-keeper and J.P. Morgan Securities LLC, the initial Authorized Participant, are all affiliates of JPMorgan Chase & Co. In addition, the Sponsor will appoint an affiliate of JPMorgan Chase & Co. to act as marketing agent for the Trust. It is currently expected that a JPMorgan Entity will purchase the Initial Creation Units of the Trust and continue to act as an Authorized Participant for the Trust after the issuance and sale of the Initial Creation Units and act as market-maker for the shares or act as a physical dealer of copper. JPMorgan Entities may also buy or sell shares, on their own behalf, as part of a hedge or on behalf of a client. In addition, certain JPMorgan Entities are currently active participants in the copper market and other commodities markets, including in the physical markets for commodities, the futures markets (on multiple commodity exchanges) and the OTC markets, including the trading of commodity swaps, options and other derivatives."³⁴

The S-1 filing also discloses that "A **significant** portion of trading in the physical copper market is currently conducted by such JPMorgan Entities."³⁵ (Emphasis added.)

The S-1 does not go beyond this general disclosure, however, to provide investors with key information about the so-called "JPMorgan Entities," failing even to provide a comprehensive list of those entities and the services each may perform for JPMXF. While the S-1 filing discloses, for example, that the Trust Sponsor and Warehouse Agent are owned by JPMorgan's wholly-owned subsidiary, J.P. Morgan Ventures Energy Corporation, it does not disclose the extent to which J.P. Morgan Ventures Energy Corporation subsidiaries and affiliates appear to be active in copper markets.³⁶ Those subsidiaries and affiliates include J.P. Morgan

³³ See, e.g., "OCC's Quarterly Report on Bank Trading and Derivatives Activity Third Quarter 2012," Tables 1, 2, 5, Office of Comptroller of Currency, <http://www.occ.gov/topics/capital-markets/financial-markets/trading/derivatives/dq312.pdf>.

³⁴ Registration Statement, at p. 92.

³⁵ Registration Statement, at p. 93.

³⁶ JPMorgan Chase & Co., Form 10-K (2011), Exhibit 21.

China Commodities Corporation, J.P. Morgan Commodities Canada Corporation, J.P. Morgan Commodities Sarl, J.P. Morgan Metals & Concentrates LLC, J.P. Morgan Metals Group Limited, and J.P. Morgan Metals Limited.³⁷ None of them are mentioned in the S-1, and the roles which they may play in JPMXF are not disclosed.

The S-1 does provide more specific information about one JPMorgan affiliate, The Henry Bath Group, which has been appointed warehouse-keeper for the copper of JPMXF. The S-1 states: “The Henry Bath Group is a warehousing services provider specializing in the storage and shipping of exchange-traded metals and soft commodities around the world. The Henry Bath Group operates a global platform of exchange-approved storage warehouses for holding, making and taking delivery of physical commodity products.”³⁸ “The Henry Bath Group has over 200 years of experience in storage and handling of metals traded on the LME (London Metals Exchange).”³⁹

The S-1 filing also generally states: “Banks provide a variety of services to the copper market and its participants, thereby facilitating interactions between other parties. Services provided by the banking community include traditional banking products as well as mine financing (both secured and unsecured), physical copper purchases and sales, hedging and risk management and inventory management for industrial users and consumers.”⁴⁰

The S-1 filing does not, however, disclose any policies, procedures, or practices for pricing the services to be provided by JPMorgan affiliates and ensuring those services are provided in a reasonable way to benefit the Trust and its investors. The filing does not disclose, for example, whether JPMXF will allow JPMorgan affiliates to charge it the same price as each affiliate charges other JPMorgan affiliates, the lowest price charged by the affiliate to any third party client, the highest price charged to any client, or some other price, but is instead silent. The only related disclosure is that the firm “has not established formal procedures,” but then fails to describe its informal or actual procedures, even though pricing of required services will be central to the profitability of the ETF. Recent history has shown that a financial institution’s affiliates, when involved with administering a complex financial instrument sold to investors, can administer their duties in ways that advantage their parent corporation at the expense of investors.⁴¹ Adequate information about which affiliates will be providing which services to JPMXF using what pricing and administration principles is essential to investors making informed decisions about the returns on a JPMXF investment.

Moreover, based on publicly available information beyond what is contained in the S-1, JP Morgan appears to be a major merchant in physical commodities and plays a dominant role in

³⁷ Id.

³⁸ Registration Statement, at 3.

³⁹ Id. at 3.

⁴⁰ Id. at 34.

⁴¹ See, e.g., “Wall Street and the Financial Crisis: Anatomy of a Financial Collapse,” U.S. Senate Permanent Subcommittee on Investigation, S. Hrg. 112-675, Volume 5, (4/13/2011), at 687-703. That Subcommittee investigation found that a Goldman Sachs affiliate had acted as the Liquidation Agent for a financial instrument in which the investors held the long side, but another Goldman affiliate secretly held the short side. The Liquidation Agent then delayed selling certain assets that were losing value because, although the reduced value damaged the long investors, it benefited the short investment held by another Goldman affiliate. See also id., 703-718 (discussing how a Goldman affiliate handled default swap collateral purchased in connection with certain financial instruments).

global commodity markets. JPMorgan filings and public reports suggest that it controls and owns affiliate entities in nearly all aspects of the commodities business, providing it vertical integration in financing, transportation, storage, and trading for its customers and proprietary positions in the physical and financial markets. Although the public information is limited about JPMorgan copper related entities, in 2008, the firm acquired the physical commodity trading assets of failing Bear Stearns. In 2010, JPMorgan bought the global commodities business of Royal Bank of Scotland. Both of these businesses were major players in the commodity markets. In 2012, JPMorgan reported to the Federal Reserve that its gross fair value of physical commodities inventory was \$17.2 billion respectively.⁴²

In late 2011, JPMorgan bought a stake in the London Metals Exchange (LME) from MF Global and is now the exchange's largest shareholder.⁴³ According to the LME's website, "The London Metal Exchange is the world centre for industrial metals trading and price-risk management. More than 80% of global non-ferrous business is conducted here and the prices discovered on our three trading platforms are used as the global benchmark." The LME's prices "are used the world over by industrial and financial participants for referencing, hedging, physical settlement, contract negotiations, margining and portfolio evaluations The prices discovered on the LME are used the world over as the reference price for physical negotiations."⁴⁴

Press reports also indicate that JPMorgan has been buying up copper since 2010, in anticipation of its ETF launch.⁴⁵ In April 2012, the firm reportedly held 30-40% of total copper positions on the LME.⁴⁶ This may already have artificially inflated the price of copper, which is up more than 15% since 2010.

Nevertheless, it is not clear whether JPMorgan intends to use its copper supplies to provide an inexpensive source or to buy copper ahead of JPMXF investors at a lower price, profiting when it resells the copper to the Trust at higher prices to the investors in JPMXF, an obvious conflict of interest which is unaddressed by the S-1.

The general disclosures in the S-1 filing about JPMorgan's broad, commodity activities also does not adequately address the firm's ability to remove from the market and store in its own warehouses for indeterminate periods of time vast quantities of this critically important metal, potentially distorting not only the copper trading and financial markets, but also JPMXF's expenses and financial viability. The S-1 does not sufficiently describe the firm's dominant position as a major dealer and market-maker in the physical and financial copper markets, nor

⁴² JP Morgan, Form FR Y-9C, (12/31/2011), Schedule HC-D "Trading Assets and Liabilities," Item M.9.a.(2), and JP Morgan, FR Y-9C, (3/31/2012), Schedule HC-D "Trading Assets and Liabilities," Item M.9.a.(2). Form FR Y-9C is a quarterly report filed with the Federal Reserve Board by bank holding companies with total consolidated assets of \$500 million or more. 12 U.S.C. § 1844; 12 C.F.R. § 225.5(b).

⁴³ Mark Scott & Michael J. De La Merced, *JPMorgan Said to Buy MF Global Stake in London Metal Exchange*, N. Y. TIMES, (11/23/2011).

⁴⁴ <http://www.lme.com/pricing-and-data/pricing/>

⁴⁵ Louise Annitstead & Rowena Mason, *JPMorgan as mystery trader that bought £1-bn-worth of copper on LME*, TELEGRAPH, (12/04/2010).

⁴⁶ *CESCO week: Glencore, JPMorgan hold dominant copper position as backflares – sources*, ETALBULLETIN.COM, (4/18/2012).

does it adequately disclose copper positions that may be held by JP Morgan, its affiliates, sponsored funds, and its customers. Because JP Morgan is so involved in every segment of the copper markets, its concentration in copper markets may be great and it may be in a position to exert improper influence over its price and take advantage of JPMXF investors. Greater disclosure is called for so an investor may weigh the true risk of the firm's ability to self deal through its affiliates.

E. S-1 Fails to Address Pervasive Conflicts of Interest

Issues related to how the Trust would handle copper acquisitions, price volatility, warehousing, service costs, and legal issues involving price manipulation, squeezes, corners, and price distortions are further complicated by pervasive real and potential conflicts of interest arising from the active involvement of JPMorgan and its affiliates in the copper market.

Although the S-1 discloses that JPMorgan and its related entities "may" have a conflict of interest between the bank's own interests and interests of the investors in the trust, the filing does not adequately describe the extent of such conflicts or acknowledge that those conflicts do, rather than "may," exist.⁴⁷ Because of the limited disclosure in the S-1, the nature and extent of JPMorgan's involvement in copper activities remains incomplete. The S-1 filing's description of JPMorgan's role in copper is at best an outline of its activities. The details of each JPMorgan entity's role in copper mining, mine financing, refining, transportation, storage, delivery, sales, marketing and trading activities, including the extent of its proprietary positions in the physical and financial markets, needs to be disclosed, because such information is material to investors so they may evaluate the likelihood of JPMorgan's incentive to trade against them.

The use of "may" is also inadequate if JPMorgan's conflicts already exist. The S-1 states: "[t]hese affiliations and trading activities may present a conflict between the interests of shareholders and the Trust, on the one hand, and the interests of JPMorgan Entities, on the other." Unless it is able to establish that the conflict does not exist at this time, the use of "may" is misleading.⁴⁸ There is ample evidence in the public domain that actual conflicts exist which require JPMXF to make greater disclosures. As noted above, in April 2012, the firm reportedly held 30-40% of total copper positions on the LME. If true, this position and any other copper positions held by the firm through its affiliates and sponsored funds must be disclosed in its registration statement. In addition, JPMorgan reported to the Federal Reserve its commodities inventory was over \$17 billion in 2012. To the extent that inventory includes physical copper, investors are entitled to know this information to evaluate the magnitude of this actual conflict.

⁴⁷ Registration Statement, at p. 4, 92.

⁴⁸ A federal court has held, for example, that disclosing a potential adverse interest, when a known adverse interest already exists, can constitute a material misstatement to investors. See, e.g., SEC v. Czuczko, Case No. CV06-4792 (USDC CD Calif.), Order Granting Plaintiff's Unopposed Motion for Summary Judgment (Dec. 5, 2007) (finding defendant made a material misstatement to potential investors when he disclosed that officers, directors, employees and members of their families "may" trade in the stocks recommended on his website, without disclosing that he, his father, and business partner were trading in those stocks and had an interest in them). See also In re Arleen Hughes, Securities Exchange Act Rel. No. 4048 (Feb. 1948) (holding a broker-dealer, who is also a registered investment adviser, had to disclose the "nature and extent" of its adverse interest); In re Edward D. Jones & Co., L.P., Exchange Act Rel. No. 50910 (Dec. 22, 2004) (settled order), at 21 (disclosure inadequate for failing to disclose full nature and extent of the broker-dealer's conflict of interest).

If its copper holdings are located in warehouses under the control of its affiliates, those holdings must also be disclosed -- because JPMorgan would be in a position to delay deliveries and impact price.

In addition, in the S-1, JPMXF disclosed “A **significant** portion of trading in the physical copper market is currently conducted by such JPMorgan Entities.” (Emphasis added.) That general disclosure is incomplete and inadequate, because it does not explain what is meant by “significant,” does not detail which JPMorgan Entities engage in copper trading, and, in particular, does not specify the extent to which JPMorgan Entities hold long versus short positions in the physical, futures, swaps, and options copper markets.

Investors are entitled to information about the extent and nature of these trading activities and positions, so that investors may evaluate the extent of JPMorgan’s incentives to trade against them, to favor higher or lower copper prices, increase price volatility, the issue additional Creation Units to remove more copper from the market, or redeem of existing Creation Units to release more copper into the market. Recent history is replete with instances of financial institutions using their affiliates to sell financial products to their clients, only to take an opposing position in one or more financial markets and trade against their clients.⁴⁹ Studies have also shown how commodity speculators can affect copper prices.⁵⁰ To ensure investors understand the conflicts of interest, in appearance and reality, that will affect how JPMorgan and its affiliates will trade with respect to JPMXF, the JPMXF registration statement must provide full disclosure of the trading activity and the long and short copper positions held by JPMorgan Entities, in particular those entities contemplating involvement in the operation of the ETF.

In addition, investors must understand the degree of JPMorgan’s vertical integration in the copper markets. The physical commodities markets are opaque, and public information on holdings in each layer of the vertical chain is limited. At a minimum, the S-1 should disclose the extent to which JPMorgan Entities retain ownership, leasing, or collateral interests in copper mines, refining facilities, transportation facilities (such as railroad or trucking facilities dedicated to copper), supply contracts, and storage facilities. Each of those activities could have a direct impact on the ETF’s costs and profitability – how much it will cost JPMXF to acquire copper supplies, refine copper into Grade A condition, transport it from the refinery to a warehouse, store it, and, if necessary, sell it.

⁴⁹ See, e.g., “Wall Street and the Financial Crisis: Anatomy of a Financial Collapse,” U.S. Senate Permanent Subcommittee on Investigations, S. Hrg. 112-675, Volume 5, (4/13/2011), at 661-662. Among other examples, the Subcommittee investigation determined that, while Goldman Sachs was actively marketing Timberwolf securities to investors at inflated prices, its own trading desk was shorting the underlying Timberwolf assets. Not only were investors not informed of those aggressive shorts, but Goldman may have also benefitted from the decision to market Timberwolf at inflated values, because it may have allowed its trading desk to buy shorts at lower prices than would have been available had the Timberwolf securities been marked down to accurate prices.

⁵⁰ See “Speculative Influences on Commodity Futures Prices,” (2010), by Christopher Gilbert, http://unctad.org/en/docs/osgdp20101_en.pdf, at p.8; “The Growing Financialisation of Commodity Markets : Divergences between Index Investors and Money Managers,” Journal of Development Studies, Vol. 48 , Issue 6, (2012), Jörg Mayer (UNCTAD), at p.752-753.

In addition, by participating directly in virtually every aspect of the physical copper market, JPMorgan and its affiliates will have an unfair informational advantage regarding the ETF's positions and could easily manipulate their services or trading to take advantage of JPMXF investors. To make an informed investment decision, investors need to understand the incentives applicable to JPMorgan Entities, and what policies, procedures, and practices will be used to counteract the apparent, pervasive conflicts of interest. Currently, the S-1's disclosures are wholly inadequate to enable investors to perform that conflict of interest analysis.

JPMXF acknowledges in the S-1 that although it "attempts to monitor these conflicts, it is extremely difficult, if not impossible, ... to ensure that these conflicts do not, in fact, result in adverse consequences to the Trust."⁵¹ Presumably, JPMXF describes monitoring the conflicts of interest as "extremely difficult," because of the lack of transparency regarding the activities of all the JPMorgan Entities involved in the copper business. If JPMXF finds it impossible to monitor conflicts, it creates an even greater need for disclosure of all known material facts that exist relating to JPMorgan's global reach and dominant position in commodities prior to its registration statement being declared effective.

F. S-1 Does Not Detail Indemnification of Affiliated Entities.

One shareholder right that has been severely curtailed in the JPMXF filing is the right to sue. Specifically, by providing essentially unlimited indemnification of all JPMorgan affiliates providing actual services to the Trust, the filing appears to attempt to cut off any right of action against those parties.⁵² The indemnification requires the Trust to defend any and all of the "bank affiliated entities" with investor funds, with no limits on the expenditure amounts, even in the case of negligent performance. At the same time, the S-1 does not provide a complete list of the affiliated entities given such sweeping indemnification. The result is that investors are apparently limited to pursuing the sponsoring entity, a shell company, in the event of misperformance, yet even there, the S-1 fails to disclose the extent to which that shell company will be capitalized or insured to cover possible losses or damages.⁵³ At a minimum, investors should be fully informed of all of the bank affiliated entities that are being indemnified, receive notice that even affiliates providing negligent services are indemnified with investor funds, and obtain a clear explanation of the extent to which the Trust will acquire insurance to pay litigation costs, losses or damages in connection with investor lawsuits, without recourse to investor funds.

G. Additional Disclosures Needed in JPMXF S-1

The JPMXF S-1 filed on January 17, 2013 is incomplete on its face and should not be declared effective until it provides meaningful disclosures of at least the following matters which provide critical information for investors to make an informed evaluation of the JPMXF investment:

- (1) the nature and extent of the role and business activities of JPMorgan and its affiliates in the physical copper market, including the role played by specified

⁵¹ Registration Statement, at 92.

⁵² Id. at 83.

⁵³ Id.

JPMorgan affiliates or entities in the mining, financing, refining, transport, storage, or trading of physical copper;

- (2) the Grade A and non-Grade A physical copper inventories held by JPMorgan and its affiliates each month during the six-month period prior to JPMXF's launch, including whether those inventories were held under LME or COMEX warrants, whether they were held at warehouses under the control of JPMorgan or its affiliate, and how those copper inventories compared to total world copper inventories, liquid stocks available for immediate delivery, and liquid stocks available for immediate purchase;
- (3) material trading positions held by or for JPMorgan and its affiliates in the futures, swaps, and options copper markets each month during the six-month period prior to JPMXF's launch, detailing long and short positions without netting;
- (4) an enhanced discussion of the Trust's potential impact on the price and volatility of the copper market, including enhanced disclosures of the risks to investors arising from the Trust potentially constituting such a large portion of the exchange market;
- (5) a description of JPMXF policies, procedures, and practices to identify and address conflicts of interests between JPMorgan and investors in JPMXF, including the determinations of whether to issue new interests in the Trust;
- (6) a comprehensive list of each JPMorgan affiliate or entity expected to provide services to JPMXF, together with, for each such entity, the services to be provided;
- (7) a description of JPMXF policies, procedures, and practices to determine how services provided by a JPMorgan affiliate or entity will be priced, and whether those services are being provided in ways that disadvantage JPMXF investors;
- (8) a comprehensive list of each JPMorgan affiliate or entity that will be indemnified by the Trust in connection with providing services to the Trust; and
- (9) the extent to which the Trust will obtain insurance to respond to investor lawsuits and pay any losses or damages, without using investor funds.

Thank you for the opportunity to provide comments on the JPMXF filing to increase investor safeguards.

Sincerely,



Carl Levin
Chairman
Permanent Subcommittee on Investigations



ATTORNEYS AT LAW

Robert B. Bernstein
 TELEPHONE: 212-763-6801
 rbernstein@vandfeliu.com

July 18, 2012

VIA EMAIL

Elizabeth M. Murphy
 Secretary
 Securities and Exchange Commission
 100 F Street, NE
 Washington, D.C. 20549-1090

Re: File No. SR-NYSE Arca-2-12-66

Dear Ms. Murphy:

This firm represents Southwire Company, Encore Wire Corporation, Luvata, and AmRod, as well as RK Capital LLC. Southwire is based in Georgia, Encore in Texas, Amrod in New Jersey, and Luvata has plants in Ohio, Connecticut, Missouri, Kentucky, California, Wisconsin, Texas and Florida. Together these companies comprise about 50% of the copper fabricating capacity of the United States. RK is an international copper merchant with offices in London and New York. We oppose the rule-change.

This is the second of two rule-changes that NYSE is proposing to list and trade shares of a physical copper-backed exchange traded fund or "ETF." The first proposed rule change, on behalf of JPM XF Physical Copper Trust, calls for the initial removal from LME and Comex warehouses of as much as 61,800 metric tons of physical copper; the second proposed rule change, on behalf of BlackRock's iShares, calls for the initial removal from these same warehouses of as much 121,200 metric tons of physical copper, for a total of 183,000 metric tons.

Almost all of the refined copper produced annually worldwide is subject to long-term delivery contracts with copper fabricating companies. By contrast, the copper in the LME and Comex warehouses is the only refined copper generally available for immediate delivery.

At present, there is only about 240,000 metric tons of copper in LME warehouses worldwide, and an additional 60,000 metric tons of copper in Comex warehouses in the United States, or about 290,000 in total. If successful, the listing and trading of shares for these two funds would result in removing from the market as much as 63% of the copper from these warehouses.

As shown below, the removal of so much copper from these warehouses would disrupt the copper market, particularly in the United States, in numerous material ways. Indeed,

the risks associated with the removal of so much copper from the market could have potentially devastating effects not just on potential investors in the shares, which should be of concern to the SEC, but also on existing and future investors in industries that depend on copper for their primary feedstock – because it is these companies that will face artificially inflated prices, shortages of supply and increased price volatility if the listing and sale of these shares is successful. No ETF backed by a base metal used exclusively for industrial purposes has ever before been listed and sold on any nationally recognized exchange in the United States.

Significantly, even though the registration statements for both the JPM and BlackRock ETFs were first proposed in October 2010, because of the huge risks involved, they have had to be amended numerous times and yet, the SEC's Corporation Finance Division, which has been waiting for nearly a year for additional amendments from both applicants, has still not allowed either registration statement to become effective.

Indeed, BlackRock's most recent draft registration statement was filed on September 2, 2011 – nearly a year ago. Thus, the Exchange's latest proposed change in the rules – to allow shares of BlackRock's copper ETF to be listed and sold – is therefore based on a draft registration statement that is nearly a year old and whose contents will almost certainly be subject to change.

It is against that background that the Exchange believes the SEC should nevertheless now allow the Exchange to be permitted to list and sell shares in both BlackRock's and JPM's copper ETFs. We respectfully disagree.

First, there should be no doubt that the purpose of the BlackRock ETF, like the JPM ETF, is to remove enough copper from the market for copper available for immediate delivery, i.e., copper from the LME and Comex warehouses, to cause an artificial rise in price. Thus, the only copper that can qualify for delivery to the BlackRock Trust is copper that meets the LME specifications for copper on warrant. The most obvious and freely available source of such copper is copper on warrant in LME warehouses today; Comex copper will also qualify. All other copper that might qualify is either (i) part of the supply chain of copper that is subject to long-term contracts between producers and consumers and therefore not available to be acquired, or (ii) copper held in bonded warehouses in China and destined for the Chinese market; only on rare occasions are small amounts of such copper ever delivered to LME warehouses in Asia; or (iii) copper held by the governments of China and South Korea, respectively, for strategic reserves, and also not available for purchase. See Report on Refined Copper Inventories on the Global Market, Table 3: "Refined Copper Balance Detail," Bloomsbury Minerals Economics Ltd., October 12, 2011. Available at Exhibit A of Submitted Comment from Robert B. Bernstein, Vandenberg & Feliu LLC, July 13, 2012, p. 15. Bloomsbury Minerals Economics is a specialized consultancy engaged in base metals market and price analysis, focusing in particular on copper.

BlackRock's draft registration statement tries to convey the false impression that because there is copper tonnage outside of LME and Comex warehouses, such copper must therefore be available for its ETF to acquire. Thus, BlackRock states that in 2010, refined copper production totaled 19,075,000 tonnes, "more than 33 times greater than the 568,057 tonnes of combined copper inventories held in warehouses registered with the LME, the

Shanghai Futures Exchange and the Comex division of the CME Group,” that “at the end of 2010 world stocks of refined copper totaled 1,289,000 tonnes” and that “there are at least an additional 1.5 million tonnes of refined copper in global inventories based on reported Chinese copper usage and trade flow data statistics for China.” BlackRock draft prospectus, dated September 2, 2011, at 10-11.

However, BlackRock has no evidence to suggest that any of this non-exchange inventory is available for delivery for its ETF. Indeed, all BlackRock states in this regard is that “[m]etal stored in the area of the warehouse approved by the exchange that is not registered with the exchange [i.e., not on warrant] is not reported in exchange inventory data,” that “there are no comprehensive statistics or data on physical copper stockpiles held by all commercial and non-commercial market participants,” and that “the quantity of copper available in the physical market that meets LME specifications for “good delivery” cannot be calculated because detailed reporting on copper specifications is not typical for the industry.” *Id.* at 10, 22. In short, BlackRock appears to be playing fast and loose in not explaining that there in fact is no copper available for “good delivery” to its ETF other than copper in the LME and Comex warehouses, which may be one reason why the SEC’s Corporate Finance division has not allowed BlackRock’s registration statement, upon which the Exchange’s rulemaking is based, to become effective without further amendment.

What is more, BlackRock’s draft registration statement makes clear that by depleting warehouse stocks, they (and others marketing similar ETF products) will be able to artificially raise prices for copper and thus of the ETF shares themselves. First, BlackRock states that no matter how much copper stock may be available outside of the exchange warehouses, it is “inventory levels at exchange warehouses [which] tend [] to reflect market conditions.” BlackRock then states that “[a]n increase in the demand for copper, driven by the success of the trust or similar investment vehicles, could result in increases in the price of copper that are otherwise unrelated to other factors affecting the global copper markets.” *Id.* at 10.

BlackRock further explains that in order for the investment to be successful, they will have to continue to be able to remove enough copper from the market in order to keep raising prices high enough to cover the monthly costs of storing the copper. Thus, BlackRock states:

“If all of the 12,120,000 Shares registered in this offering had been issued on the day the initial Shares were issued to the Initial Purchaser at a per-Share consideration of 10 kilograms of copper, a total of 121,200 tonnes would have been deposited into the trust at that time. . . . The amount of copper represented by the Shares will decrease over the life of the trust due to the sales necessary to pay trust expenses. Without increases in the price of copper sufficient to compensate for that decrease, the price of the Shares will also decline and you will lose money on your investment in the Shares. However, because there is no limit to the number of Shares that the trust can issue, a very enthusiastic reception of the Shares by the market, or the proliferation of similar investment vehicles that issue shares backed by physical copper, would result in purchases of copper for deposit into the trust or such similar investment vehicles that could be large enough to

result in an increase in the price of physical copper. If that were the case, the price of the Shares would be expected to reflect that increase.”

Id. at 10. (emphasis added).

However, as with all artificially created squeezes, there comes a time when the boom will bust, and BlackRock admits that may occur here as well. Thus, BlackRock states:

“It is impossible to predict whether, or at what point, the demand for copper-backed investment instruments like the Shares would eventually stabilize and, if it does, whether the price of copper would remain stable or return to historical levels. An investor purchasing Shares at a time when they reflect a temporarily inflated price of copper will sustain losses upon the sale of such Shares after the effect of such events causing such inflated prices has ceased and the price of copper has returned to a deflated level.”

Id.

Given these disclosures, it should be clear that the listing and trading of shares in physical copper backed investment instruments like that being proposed by BlackRock and JPM – and the consequent drawdown and removal from the market of most of the copper in LME and Comex warehouses -- risk endangering the price discovery functions of the LME and Comex. In addition, industries which rely on copper as a feedstock will face artificially high prices, price volatility when prices collapse, and a risk that supplies from the market for copper available for immediate delivery may not be available when most needed to satisfy consumer demand.

What is more, these effects are, as a practical matter, most likely to be felt most directly in the United States. The reason is that, as with the JPM offering, the copper that is cheapest to acquire will most likely be copper on warrant in United States warehouses. This is because, for the most part, the cheapest location premiums for copper on warrant is from copper in LME warehouses in the United States. The “Authorized Participants,” like Goldman Sachs, who will be authorized to acquire copper for the BlackRock Trust will want to acquire copper at the cheapest location premiums possible in order for the price of ETF shares to be issued in exchange for the copper to mirror as closely as possible, the price per metric ton of copper on the LME. Thus, depletion of copper from the LME warehouses will most likely be felt the hardest in the United States and, once copper from the LME warehouses is depleted, copper from the Comex warehouses will be depleted as well, as copper there is moved to LME warehouses in order to take advantage of higher prices.

The principal victims will in the first instance be United States consumers who typically rely on supplies of copper for immediate delivery to augment their long-term supply. These fabricators will not only be forced to pay higher prices, and incur the risk of price volatility once prices collapse, but there may be periods of time when those who can least afford it will be unable to get supply.

Most U.S. copper fabricators enter into long-term supply contracts for about 85% of their annual requirements. In that way, they can protect against the risk of reductions in demand for product without having to incur the added expense of storing inventory they cannot

use. Thus, U.S. copper fabricators depend on the market for copper available for immediate delivery, which is to say, they depend on there being copper available in the LME and Comex warehouses. But the physical copper backed instruments that BlackRock and JPM wish to list and trade on the Exchange will substantially reduce the supply of copper available for immediate delivery in the United States, and with that comes the risk that some fabricators will not be able to acquire the supply they need to meet demand – particularly if the housing market were to recover and demand were to spike.

As supplies of copper in the United States get tighter as a result of the listing and trading of shares of physical copper backed investment instruments such as these, the chief beneficiary will likely be competitors in China. China consumes 40% of the world's copper, which makes it the world's largest copper consumer. Because the copper being taken off market will come mainly from the United States, Chinese manufacturers will have the copper feedstock on hand to produce copper rod, tubing and wire, while at least some of their American counterparts will not.

And to make matters even worse, it now appears that the overall market for copper globally, which has been in deficit for the past several years, will continue to be in deficit, that is, annual global demand will exceed annual global supply. See e.g., Bloomberg, "Looming Copper Surplus Contracting as Mining Fails: Commodities," July 18, 2012. Thus, Bloomberg reported today that "[a]nalytists are slashing predictions for the first copper glut in four years as producers from Chile to Indonesia contend with aging mines and strikes at a time of record demand." A copy of this story is enclosed.

In short, the proposed ETF is unlike any other metal ETF currently listed on the Exchange and would allow speculators in the guise of purchasers of shares to create a squeeze on the market. The proposed rule change is therefore inconsistent with Section 6(b)(5) of the Securities Exchange Act of 1934, which requires that rules be designed to prevent manipulative acts and protect investors and the public interest.

Finally, we agree with the comments of Senator Levin, dated July 16, 2012, in opposition to the Exchange's proposal to list and trade shares of the JPM XF Physical Copper Trust. Those comments apply with equal force here. Likewise, we incorporate by reference the comments and attachments which this firm filed on behalf of our clients also in opposition to the Exchange's proposal concerning the JPM Trust.

Sincerely,



Robert B. Bernstein

From: Jennifer.Giordano@lw.com [mailto:Jennifer.Giordano@lw.com]
Sent: Monday, November 10, 2014 3:39 PM
To: Sean.Berkowitz@lw.com; Gellach, Tyler (HSGAC)
Cc: Lueptow, Michael (HSGAC)
Subject: RE: Final Questions

Ty--

In response to your second question below, we assume that you are referring to the LME's public "Warrant Banding Report". Published daily, the warrant banding report shows the number of market participants with a concentration of LME warrants. The report from December 15, 2010 is set forth below.

Please note that the report is segmented by metal and displayed in five bands: 30 - <40%, 40 - <50%, 50 - <80%, 80 - <90%, 90 - 100%. Figures are reported two business days in arrears. The holdings indicated in this table may no longer be held. Whenever a participant's holdings of LME warrants is 30% or more of the total LME warrants it appears in the respective band below.

Report Date COB
15/12/10

Figure	AH	CA	ZS	NI	PB	SN	AA	NA
30 - <40%	1	0	0	0	0	0	0	0
40 - <50%	0	0	0	0	0	1	0	0
50 - <80%	0	1	1	1	0	0	0	1
80 - <90%	0	0	0	0	0	0	1	0
90 - 100%	0	0	0	0	0	0	0	0
Unreported Warrants(%)	0	0	0.3	0	0.5	0	0	0

Key	AH	Primary Aluminium
	CA	Copper
	ZS	Zinc
	NI	Nickel
	PB	Lead
	SN	Tin
	AA	Aluminium Alloy
	NA	NASAAC

With respect to your third question, the LME submits the following clarifications, which we believe makes the statement more accurate and complete:

Permanent Subcommittee on Investigations

EXHIBIT #88

PSI-LME-06-000001

CONFIDENTIAL - Methodology for Calculating Capacity Payments for Purposes of 5% Limit**Background**

The letter (the "Letter") from the Board of Governors of the Federal Reserve System (the "Board") to JPMorgan Chase & Co. ("JPM") dated June 30, 2010 approved energy tolling as a complementary activity for JPM. JPM committed to include the present value of all capacity payments to be made by it in connection with energy tolling agreements in calculating its compliance with the limit of 5% of tier 1 capital on the aggregate market value of the physical commodities that it and its subsidiaries hold. The Letter stated that JPM committed to conduct energy tolling activities in accordance with the restrictions, definitions and conditions previously imposed by the Board on the conduct of those activities. In its approval to the Royal Bank of Scotland Group plc, The Royal Bank of Scotland Group plc, 94 Federal Reserve Bulletin C60 (2008), the Board (the "RBS Order"), the Board defined "capacity payments" as "a fixed periodic payment that compensates the power plant owner for its fixed costs." The other components of the fixed periodic payment, including those which cover variable operating and maintaining expense and profit to the plant owner, are not within the definition of "capacity payment" and do not need to be included in the computation. JPM had been including the entire fixed payment that it makes in its 5% limit calculation through October 2010. The methodology below describes how JPM calculated the "fixed cost" payment for the November 2010 limit calculation and going forward.

Methodology

The following procedure describes how JPM determined the value of the portion of the toll demand payments attributable to fixed operating costs in order to comply with the Letter.

A. First, we note that the financial information of the power plants is non-public, and we normally do not have access to it. Hence we apply the following line of reasoning to get an estimate of the future cash flows attributable to the fixed operating costs.

1. Toll demand payments are the main source of revenue for the power plant owner. Fixed operating costs are covered from that revenue.
2. Fixed operating costs are independent on the capital structure of the plant (e.g., independent on whether the plant is equity financed or debt-financed).
3. If the plant is being managed on a stand-alone basis (i.e., is not supported by the parent), and if it makes cash distributions from the toll demand payments (e.g., for debt repayment, dividend payments, management fees, etc.) then the fixed operating costs can be covered only from the cash remaining after these distributions.
4. All the plants that JPM tolls are debt-financed at the plant/project level. The information on the debt payments is available in the debt offering memoranda. Further, the offering memoranda provides additional information (such as Debt Service Coverage Ratios, Management Fees, Interest Rate Hedge information) that may be used to infer equity dividends, interest rate swap payments, etc. Note that such information is usually supported by the rating agencies reports produced for the purpose of the financing rating.
5. Consequently, the difference between the toll demand payments and the known distributions (debt/dividend/fees/etc.) provides the upper bound for the fixed operating costs of the plants.

Permanent Subcommittee on Investigations
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EXHIBIT #89

FRB-PSI-300345

6. In certain cases, JPM sold tolls to third parties against the existing tolling positions ("re-tolls"). We believe the demand payments that JPM receives from these re-tolls can be applied to offset the fixed operating cost component of the corresponding existing tolls. For example, assume JPM entered into a 10 year toll with counterparty A whereby JPM pays \$1mm/month to A. Further assume that the fixed operating costs portion of the demand payments is \$400k/month. If JPM re-tolls for 2 years with counterparty B for \$800k/month then the fixed operating costs to be calculated against JPM's 5% limit are fully offset by the re-toll demand payments (as \$800k > \$400k) during the 2 years of the re-toll. If the re-toll demand payments were \$300k/month then JPM would allocate net \$100k/month to the fixed costs out of the \$400k previously determined.
- o Currently, we have partial re-tolls of the AES4000 plant to SCE/SDWR.
 - o We assumed that the re-toll netting is done on semi-annual basis (lined up with the debt payments), and excess re-toll payment in one half-year period cannot offset fixed costs for another period.
7. In certain cases we may have a toll on a part of a project/collection of power plants, while other plants of the same project may be tolled separately. The financial information mentioned above (on cash distribution to debt/equity/etc.) is normally available only at the total project level. In such a case we go through further estimates to determine which portion of the total fixed operating costs of the project is attributable to JPM tolls.
- o Huntington Beach 3 and 4 ("HB3,4") units are a part of AES Southland project. They were not initially a part of the Beavertown AES4000 toll that JPM acquired. The financial (cash distribution) information used for AES4000 is for all of the plants in the project, including HB3,4. We assign the project cash distribution to these tolls according to the respective tolls' megawatt capacities.
8. In certain cases we may have a toll whose term extends beyond the term of the corresponding plant/project financing. Hence, the financial information on the cash distributions from the plant/project is not available for the extended portion of the tolling contract. However, as the extended portion of the tolling contract covers the same power plant/project, we estimate the fixed operating costs of the plant/project to be substantially similar to those during the period we have cash distribution information for.
- o Tolling contract with Tenaska on the Lindsay Hill power plant goes till 2021, as does the financing. The toll is extendible to 2027, and JPM includes the fixed operating costs from the extension period (2021-2027) in the 5% limit calculations. As the demand payments for the extension period are essentially the same as for the preceding period, the fixed operating costs for the extension period are estimated to be the same percentage of the total demand payments as they are for the preceding 10 year period.
9. In those cases when there is no information available to JPM for a particular toll, we use extrapolations for the percentage of the toll demand payments attributable to the fixed operating costs. We extrapolate from the cases of the plants we have information for. We make the determination on whether to apply such a percentage based on materiality of the outcome.
8. The 5% calculation calls for JPM to present value of the future fixed operating costs part of the toll demand payments. As the toll demand payments represent JPM's contractual liability, we believe that the correct discount rate is LIBOR plus JPM's credit spread as reflected in the

CDS market. We believe CDS spreads are appropriate as they are the best representation of JPM's pure credit risk and they are the most transparent and observable spreads available in the market. We use the CDS spread corresponding to the tenor of the capacity payment obligation and we use the bid side of the market.

Calculation Summary

The calculations are in the attached spreadsheet. Here are the results in mm\$ (rounded):

1. \$2,154: the sum of the future values (FVs) of the full demand payments (netted against future values of the re-tolls).
2. \$1,770: present value (PV)
3. \$564: PV of fixed op costs NET of re-tolls.

Our capacity payment calculation as of month-end November 2010 is \$564,248,307.

CONFIDENTIAL

EXCERPT

J.P.Morgan
FRB-PSI-301383

CONFIDENTIAL

FED / OCC / FDIC QUARTERLY MEETING

September 26, 2013

Permanent Subcommittee on Investigations

EXHIBIT #90

STRICTLY PRIVATE AND CONFIDENTIAL

Physical Inventory Limits from FED & OCC

JPMVEEC & Non-Bank subs Physical Inventory (\$'000)					
	9/28/12	12/31/12	3/31/13	6/28/13	
Business	3,239	3,132	2,640	2,419	
Oil	92	99	85	85	Oil inventory decrease driven by decrease in NY Fuel Oil and Plastics as well as inventory balances
Freight	531	832	584	558	
Gas, Emissions, Coal	2,006	1,928	1,879	1,783	
Tolls	760	167	157	98	
Base Metals & Others	6,628	6,458	6,458	6,458	Base Metals and Others - inventory decrease driven by reduced holdings in Coffee and Steel
Total Physical Inventory JPMVEEC	148,425	154,697	163,806	164,027	
Physical Inventory as % of T1C	4.5%	4.0%	3.3%	3.0%	
Tier 1 Capital	5,937	6,188	6,552	6,561	
4% Reporting Req.	7,421	7,138	7,300	8,201	
5 % Limit					
Under/(over) Reporting Req.	1,491	30	1,207	1,608	
Under/(over) Limit	73,873	73,873	2,845	3,248	
Base Metals held in Bank	8,157	6,484	5,759	4,991	Base Metals Held in Bank - inventory decrease driven by reduced holdings in Aluminum and Nickel
Total Consolidated Inventory Position	147,855	152,642	161,104	159,943	

Physical volume (Warrant Notional) is monitored against our financial trading notional and reported to the OCC on request

Base Metals held in Bank (MT)	Trading Notional (MT)	Physical Inventory Notional (MT)	Daily Ratio
As of 9/28/12	76,020	2,984	3.92%
As of 12/31/12	73,873	2,357	3.16%
As of 3/31/13	73,873	2,243	3.04%
As of 6/28/13	74,020	2,105	2.84%

JPMorgan
FRB-PSI-301387

1693

Akin Gump
STRAUSS HAUER & FELD LLP

STEVEN R. ROSS
202.887.4343/fax: 202.887.4286
sross@akingump.com

October 21, 2014

VIA HAND DELIVERY

The Honorable Carl Levin
Chairman
Permanent Subcommittee on Investigations
Committee on Homeland Security & Government Affairs
United States Senate
Russell Senate Office Building, SR-199
Washington, DC 20510

Re: JPMorgan Chase & Co's Responses to Follow-Up Questions

Dear Chairman Levin:

On behalf of JPMorgan Chase & Co ("J.P.Morgan"), I write in connection with your questionnaire dated January 11, 2013 regarding physical commodities. This submission includes information and documents responsive to additional questions posed by your staff on October 13, 2014. As discussed with your staff, J.P.Morgan is working to provide the balance of the follow-up information requested. Responses to the specific questions are as follows:

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Permanent Subcommittee on Investigations

Robert S. Strauss Building | 1333 New Hampshire Avenue, N.W. | Washington, D.C. 20004-4242

Permanent Subcommittee on Investigations

EXHIBIT #91

PSI-JPMorgan-15-000001
00 | fax: 202.887.4288 | akingump.com

Response to Question 1
As of 9/30/2014

(\$mm)					2,202*
Net Value of Physical Inventory of JPMVEC & Subsidiaries					
*Not including capacity payments valued at 1,225 (\$mm).					
Net Value of Base Metals Held In JPMorgan Chase Bank, N.A.					102**
**See corresponding values and offsetting positions listed below.					
(\$mm)	Inventory	Hedges	Net		
Aluminum	2,171	-2,101	70		
Aluminum Alloy	31	-25	6		
Aluminum Neasac	28	-24	5		
Lead	239	-300	-1		
Nickel	812	-797	15		
Tin	44	-40	4		
Zinc	317	-313	3		
Total	3,702	-3,600	102		
Firmwide Tier 1 Capital (estimated)					184,031

Response to Question 2

(\$mm)	9/28/2012	9/30/2014
Value of Inventory of Certain Precious Metals Held in JPMorgan Chase Bank, N.A.	2,656	368
Copper	1,128	368
Platinum	872	-
Palladium	656	-

From: Lenczowski, Mark
To: Kirk, Mike
CC: Nakkab, Armand X
Sent: 1/11/2012 2:59:47 PM
Subject: FW: Consolidated OCC Summary 10 Jan 2012
Attachments: OCC Ratio Summary_10012012-xls.zip

From: Babbage, David
Sent: Wednesday, January 11, 2012 9:59 AM
To: Avent, Neal; Holcombe, Nigel; Clift, Neil; Steppacher, Chip; Vicas, Benjamin X
Cc: Lenczowski, Mark; Baines, Nigel F; Nakkab, Armand X; Bromley, Paul; EMEA Metals Product Control; Camacho, Michael A.
Subject: Consolidated OCC Summary 10 Jan 2012

Please note that the aggregate level is subject to a 5.00% limit.

Index	Trading Notnl (MT)	Warrant Notnl (MT)	Daily Ratio	Monthly Ratio
ALUM	40,664,835	3,492,512	9%	9%
NICK	1,172,062	55,397	5%	5%
LEAD	3,233,196	47,448	1%	2%
TIN	98,761	8,037	8%	9%
STEEL	76,735	1,080	1%	1%
ZINC	13,570,287	672,717	5%	5%
Aggregated	58,815,877	4,277,192	7.27%	7.51%

David Babbage | JPMorgan | Global Commodities Group | Metals Product Control | Floor 3, 20 Moorgate, London, United Kingdom, EC2R 6DA | T: +44 (0)207 7422877 |

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EXHIBIT #92

OCC-PSI-00000336

From: Lenczowski, Mark [mailto:mark.lenczowski@jpmchase.com]
Sent: Friday, January 20, 2012 12:57 PM
To: Kirk, Mike
Cc: Masters, Blythe; Genova, Diane M.; Camacho, Michael A.; Nakkab, Armand X
Subject: FW: Consolidated OCC Summary 19 Jan 2012

Mike,

Below is the latest report. Pursuant to our remediation plans, we had lent material into the market and believed that we would be under the limit as at Jan 18th, which is an LME delivery date. However the total trading notional dropped from 63 mio tonnes on the 17th to 50 mio tonnes on the 18th, and as a result we were still over the limit. We therefore took further action yesterday to lend 100k tonnes of material to the market as well as sell 400k tonnes of material to JPMVEC. As at close today, these 400k tonnes will transfer into VEC and we will be at 5.07% (assuming the trading notional does not change). The further 100k tonnes delivers Monday, at which time, assuming total trading notional is unchanged, we will be at 4.88%. We expect that total trading notional will continue to rise throughout the month (the 3rd Wednesday is the big delivery date each month), but senior business management decided that we will sell a further 100k tonnes of material to VEC to avoid running too close to this limit. We will transact that today, but again, it will not flow into the numbers until close of Monday evening.

As you know, we calculate the limit as the instantaneous measure of the inventory position divided by the instantaneous measure of the total notional of outstanding derivatives, all measured in tonnes. We would like to investigate with the OCC changing from an instantaneous measure of total notional derivatives positions to a 3 month rolling average, to avoid the volatility caused by third Wednesday deliveries as well as fluctuations in trading notionals from our customer-driven business. We believe a rolling average would be a more accurate measure of our total transactions involving these eligible commodities. If we were to use the 3 month rolling average as of today, we would be at 4.5%.

We look forward to discussing this with you and are happy to answer any questions you might have.

Best regards,
Mark

From: Babbage, David
Sent: Friday, January 20, 2012 12:29 PM
To: Avent, Neal; Holcombe, Nigel; Clift, Neil; Steppacher, Chip; Vicas, Benjamin X
Cc: Lenczowski, Mark; Baines, Nigel F; Nakkab, Armand X; Bromley, Paul; EMEA Metals Product Control; Camacho, Michael A.; Parekh, Amit C
Subject: Consolidated OCC Summary 19 Jan 2012

Please note that the aggregate level is subject to a 5.00% limit.

Index	Trading Notnl (MT)	Warrant Notnl (MT)	Daily Ratio	Monthly Ratio
ALUM	36,440,850	2,328,258	6%	8%
NICK	1,048,359	35,288	3%	5%
LEAD	3,150,228	33,857	1%	2%
TIN	88,976	7,046	8%	8%
STEEL	73,225	300	0%	1%
ZINC	11,478,863	652,349	6%	5%
Aggregated	52,280,501	3,055,097	5.84%	6.88%

David Babbage | JPMorgan | Global Commodities Group | Metals Product Control | Floor 3, 20 Moorgate, London, United Kingdom, EC2R 6DA | T: +44 (0)207 7422877 |

Permanent Subcommittee on Investigations

EXHIBIT #93

This communication is for informational purposes only and does not constitute an offer or solicitation for the purchase

OCC-PSI-00000344

From: Masters, Blythe
To: Kirk, Mike
Sent: 1/20/2012 6:31:48 PM
Subject: FW: Consolidated OCC Summary 19 Jan 2012

Mike

Thanks for your consideration. It will not happen again that you learn about it after the fact when it is an issue within our control.

Best rgds

Blythe

Sent with Good (www.good.com)

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Permanent Subcommittee on Investigations
EXHIBIT #94

OCC-PSI-00000346

From: Lenczowski, Mark
To: Kirk, Mike
Sent: 2/15/2012 9:28:06 PM
Subject: 5% Limit Calculation

Mike,
 Following are our current and proposed methodologies for calculating the 5% limit. Please call or mail me with any questions or comments.
 Best regards,
 Mark

Current Calculation of OCC limit

The limit is set at 5% and is calculated by dividing the numerator by the denominator.

The numerator represents the total tonnage of physical base metal inventory held within JPMorgan Chase Bank, N.A. (the "Bank") on the particular day for which the limit usage is being calculated (copper is not included). Base metals for this definition include Aluminium, Zinc, Lead, Nickel, Tin and Rhodium.

The denominator represents the sum of (1) the total tonnage of all outstanding base metal derivatives contracts, which includes transactions that will potentially physically settle, trades that will financially settle and options transactions, held within the Bank on the same day as the numerator was calculated and (2) the numerator as of such day.

Proposed Calculation of OCC limit

The Bank proposes to change from measuring the denominator at a single point in time to utilising a rolling 3 monthly average of daily measurements. The reason for this proposed change is to smooth the volatility of the denominator, as at present it can change by as much as 25% on the monthly third Wednesday delivery date on the LME, and thus to present a more accurate picture of the Bank's total transactions involving base metals. The Bank would continue to calculate the numerator as it does currently.

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Permanent Subcommittee on Investigations EXHIBIT #95
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OCC-PSI-00000324

1700

From: Greer, Megan [mailto:megreer@akingump.com]
Sent: Monday, November 10, 2014 11:51 AM
To: Gellasch, Tyler (HSGAC); Prober, Raphael; Ross, Steven
Cc: Lueptow, Michael (HSGAC)
Subject: RE: Responses--Take 2

Ty,

Following up on our call on Friday, please find below certain of JPMorgan Chase Bank's (JPMCB's) daily aluminum inventory values and the corresponding LME cash price for aluminum.

On December 21, 2011, JPM Chase Bank's (JPMCB's) total aluminum inventory was 3,322,363 metric tonnes, and the LME cash price for aluminum was \$1968.5 per metric tonne, for a total value of approximately \$6.54 billion.

At the end of December (as of December 29, 2011), JPMCB's total aluminum inventory was 3,403,571 metric tonnes at \$1984.75 LME cash price*, for a total value of approximately \$6.76 billion (*this is based on the December 28, 2011 cash price).

By the end of January (as of January 27, 2012), JPMCB's total aluminum inventory had decreased to 2,238,107 metric tonnes.

The peak notional during this time frame was on January 10, 2012, when JPMCB's total aluminum inventory was 3,501,365 metric tonnes, and the LME cash price for aluminum was \$2135, for a total value of approximately \$7.48 billion. *Note: The inventory was very slightly higher on January 9, 2012 at 3,501,535 metric tonnes, but at a lower price; accordingly, January 10, 2012 was the notional peak.*

We are also checking on the language you sent on the [REDACTED] transaction, and we will be back to you soon on that.

Best,
Megan

Megan L. Greer
Direct: +1 202.887.4517 | Internal: 24517

Permanent Subcommittee on Investigations

EXHIBIT #96

PSI-JPMorgan-23-000001

1701

Akin Gump
STRAUSS HAUER & FELD LLP

STEVEN R. ROSS
202.887.4343/fax: 202.887.4288
sross@akingump.com

October 30, 2014

VIA HAND DELIVERY

The Honorable Carl Levin
Chairman
Permanent Subcommittee on Investigations
Committee on Homeland Security & Government Affairs
United States Senate
Russell Senate Office Building, SR-199
Washington, DC 20510

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Subcommittee on Investigations

Re: JPMorgan Chase & Co's Responses to Follow-Up Questions

Dear Chairman Levin:

On behalf of JPMorgan Chase & Co ("J.P.Morgan"), I write in connection with your questionnaire dated January 11, 2013 regarding physical commodities. This submission includes further information responsive to the additional questions posed by your staff on October 13, 2014. As discussed with your staff, J.P.Morgan is working to provide the balance of the follow-up information requested. J.P.Morgan's response to the specific question below is as follows:

Question 3: Please describe the large aluminum trade that resulted in over \$1 billion of aluminum holdings being booked to JPMVEC. Please include the type and general terms of the financial instrument or transaction that required the hedge and the general terms of the trade, including the relevant dates of the trade, the number of metric tonnes involved, the tenor, and the amount of dollars involved.

Response: The aluminum trade took place between J.P.Morgan and ██████ in December 2011. ██████ contacted J.P.Morgan and proposed the trade on December 12, 2011. At that time, as a result of transactions with its clients, primarily investors, J.P.Morgan held a substantial volume of LME aluminum futures contracts that were due to expire, resulting in physical settlement, on December 21, 2011 (the next LME settlement date).

██████ proposed that J.P.Morgan swap aluminum warrants that it would receive upon the expiry of those LME contracts in exchange for aluminum warrants that ██████ then held in Vlissingen, Netherlands, a location that J.P.Morgan viewed as advantageous from a hedging and

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October 30, 2014
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overall portfolio standpoint.¹ Following [REDACTED] proposal, the parties negotiated and agreed to a swap transaction in which J.P.Morgan (1) delivered contracts for approximately 860,000 tons of aluminum to [REDACTED] (2) paid [REDACTED] a locational premium of ten million dollars, and (3) received from [REDACTED] warrants for approximately 860,000 tons of aluminum in Vlissingen. The transaction was executed on December 20, 2011. The warrants that J.P.Morgan received as part of the trade were a replacement for the expiring contracts, which served as a portfolio hedge of the customer derivatives book.

From the standpoint of the OCC 5% volumetric limit, the effect of the transaction was (1) to increase the numerator of the ratio by the amount of warrants received from [REDACTED], and (2) to decrease the denominator – the notional amount of outstanding derivatives – due to the delivery of contracts to [REDACTED]. What looked like a one-to-one locational swap was in fact a swap of derivatives that were about to expire, resulting in warrants in unknown but likely unattractive locations, for warrants in a known, beneficial location. In addition, the notional amount of outstanding derivatives fell due to decreased activity over the holidays. Consequently, the relevant percentage went from 4.02% on December 20, 2011, the date of the transaction, to 8.42% on December 21, 2011, putting J.P.Morgan over the 5% limit. The percentage steadily decreased from that day, but after discussing the limit with the OCC in early January, J.P.Morgan took additional steps to remedy the breach by selling warrants from JPMorgan Chase Bank, the entity that transacted with [REDACTED], to JPMVEC in an at-market transaction. The percentage fell below 5% on January 23, 2012, 20 trading days later.

* * *

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¹ As holder of the LME contracts, at expiry J.P.Morgan would receive those warrants the seller of the contracts chose to deliver, which would be those that were cheapest to deliver or, put differently, had the lowest locational premium. This could include warrants at any LME delivery point in the world, and those locations most likely would not have been as beneficial to J.P.Morgan from an economic standpoint.

Akin Gump

STRAUSS HAUER & FELD LLP

STEVEN R. ROSS
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sross@akingump.com

November 5, 2014

VIA HAND DELIVERY

The Honorable Carl Levin
Chairman
Permanent Subcommittee on Investigations
Committee on Homeland Security & Government Affairs
United States Senate
Russell Senate Office Building, SR-199
Washington, DC 20510

Re: JPMorgan Chase & Co's Responses to Follow-Up Questions

Dear Chairman Levin:

On behalf of JPMorgan Chase & Co ("J.P.Morgan"), I write in connection with your questionnaire dated January 11, 2013 regarding physical commodities. This submission includes further information responsive to the additional questions posed by your staff on October 13, 2014. As discussed with your staff, J.P.Morgan is working to provide the balance of the follow-up information requested. J.P.Morgan's response to the specific question below is as follows:

Question 3: Please describe the large aluminum trade that resulted in over \$1 billion of aluminum holdings being booked to JPMVEC. Please include the type and general terms of the financial instrument or transaction that required the hedge and the general terms of the trade, including the relevant dates of the trade, the number of metric tonnes involved, the tenor, and the amount of dollars involved.¹

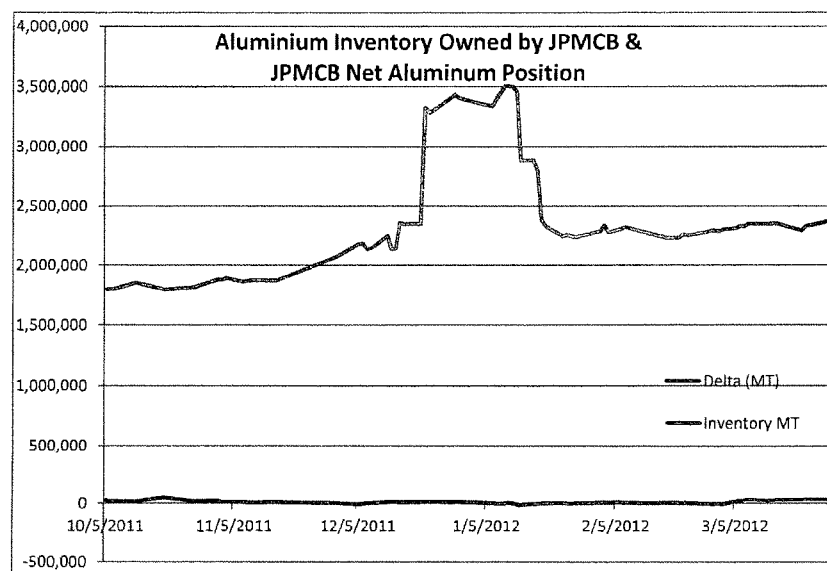
Response: In addition to the information provided by J.P.Morgan on October 30, 2014, and in response to further specific questions, J.P.Morgan has determined the following: on January 19, 2012, JPMorgan Chase Bank, N.A. ("JPMCB") sold, in an arms-length, at-market transaction, 419,400 metric tonnes of aluminum to JPMVEC at \$2,196.75 per metric tonne, or approximately

¹ And specifically with regard to additional information requested by Subcommittee staff by email on November 3, 2014.

November 5, 2014
 Page 2

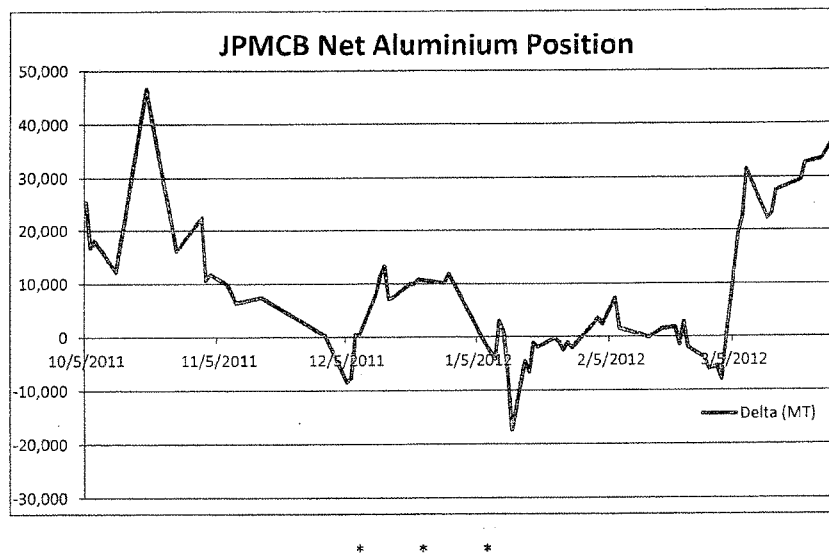
\$921 million. That transaction settled on January 20, 2012. The position was hedged with forward contracts.

Further, for reference, the chart below indicates JPMCB's total aluminum inventory and its net aluminum position, which represents the delta between JPMCB's long inventory and short forwards, from October 5, 2011 to March 30, 2012.



The second chart details more fully the red line above, showing JPMCB's net aluminum position. As you can see, during this timeframe, JPMCB's net aluminum position ranged from short 17,517 metric tonnes to long 46,569 metric tonnes.

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1706

Simmons & Simmons

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Our ref FMFS/081187-00001/JYM/JYM
Your ref

27 January 2014

Richard Armstrong
Legal Counsel
The London Metal Exchange
56 Leadenhall Street
London
EC3A 2DX

By Hand and Email

CONFIDENTIAL TREATMENT REQUESTED BY
MERO INTERNATIONAL TRADE SERVICES LLC

Dear Sirs

Notified Investigation - Questions requiring responses

This letter is submitted on behalf of our client, Metro International Trade Services LLC ("Metro"), in response to the London Metal Exchange's ("LME's") Notice of Investigation dated 4 December, 2013 and Questions requiring responses dated 6 December, 2013. Metro responds below to the Questions, which we have included below for your convenience.

We hope that this letter and the attached materials address the LME's enquiries but would welcome the opportunity to meet with you to discuss your enquiries further.

Question 1. Kindly populate a table, in the format set out in Appendix A, to show all metal moved from one shed or position within the LME-listed Metro International Trade Services LLC ("Metro") location in Detroit to another shed or position within the same LME-listed Metro Detroit location, from April 2012 to present. Please populate a row for each consignment of metal cancellations, meaning each significant batch of metal relating to cancelled warrants e.g. in Metro's e-mail dated 31 October 2013 to Hilary Pepperman regarding metal eventually placed back on warrant in which you advised that 25,000 tonnes was cancelled on 7 November 2012, it also detailed that 18,850 tonnes was cancelled on 8 November. Therefore the first cancellation would be placed on one line and the second on the next, etc. The following questions should be read to relate to all such metal and deliveries.

Response: In response to Request No. 1, enclosed please find a spreadsheet entitled Appendix A reflecting information for the relevant movements of metal identified above from records that Metro maintains in the ordinary course for its own business purposes.¹ Appendix A covers

¹ Appendix B referred to herein was prepared in the same manner.

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EXHIBIT #99a

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cancellations relating to such metal moved during the period from 1 April, 2012 to the date of this letter (the "Transactions").

Question 2. Please state whether you consider that such movements of metal fulfilled part of, or all of, your delivery load-out obligations over the period in which they took place? If yes, please explain why.

Response: Metro considers the movements of metal identified in Appendix A to have counted towards satisfying Metro's delivery load-out obligations. Specifically, Metro considers metal that is loaded free on truck ("FOT"), at the owner's instruction, in accordance with the order of priority required by the LME and entitling the warehouse operator to the FOT fee, to count towards the operator's load-out obligations. At that point, the warehouse operator has released possession of the metal and thus has loaded-out the metal from its warehouse. The LME has long recognized the right of the metal owner to decide what to do with free metal, and, as the operator of LME-approved warehouses, Metro is bound to respect the owner's instruction.

Metro provided LME auditors (PricewaterhouseCoopers LLP) with detailed documentation to substantiate its compliance with these standards as part of inventory audits in 2012, including bills of lading (copies of which are attached) identifying the shipper, recipient and destination address of a Metro Detroit facility. That audit was intended to reconcile the live and cancelled LME warrants with LME records published in SWORD. LME auditors reviewed these bills of lading on site, and copies were also provided to the auditors for their records. The PWC auditors presented their draft summary of the annual audit for 2012 ("Audit Summary") to Metro, which was reviewed in person with Metro personnel and signed and countersigned by the parties to indicate that this shipped metal with an associated bill of lading constituted valid load-out documentation. No material issues were noted in the Audit Summary in this respect or raised subsequently in correspondence.

Question 3. Please detail how the deliveries were reported to the LME. Please explain how you feel the relevant stock reporting requirements were complied with, in respect of these deliveries (if you indeed consider that this is the case)?

Response: For purposes of its inventory reports, consistent with LME requirements, Metro deducts metal from its inventory once a bill of lading has been signed by both Metro and the truck operator to reflect a transfer of possession from Metro with respect to at least 50% of the material associated with a particular warrant. Metro provides this information to its London Agent, ICS, who in turn enters the information into the LME's SWORD system database for purposes of LME's public inventory reports.

Question 4. For the cancellations in question, please provide a chronological timeline of:

- a. cancellation of the warrants
- b. scheduling of the delivery of the metal;
- c. any approach to negotiate retaining the warrants within the Metro Detroit location; and
- d. the movement of the metal.

Response to 4(a), (b) and (d): The information requested is contained in the attached spreadsheet in Appendix A and Appendix B.

Response to 4(c): We assume this question is meant to cover the commercial alternatives that Metro offers its customers with respect to metal storage and the related financial arrangements.

As a general comment, Metro's interaction with customers, the overwhelming majority of which are sophisticated financial entities engaged in broader metals trading activity, varies on a case by case basis. Metro entertains an ongoing commercial dialogue with its customers. These discussions are fundamentally directed at the choices faced by a market participant holding free metal, which were described in detail in the LME's Public Report of the LME Warehousing Consultation (5.3.2). Specifically, like its LME and non-LME warehouse competitors, Metro offers commercial alternatives to its customers in relation to off-warrant storage. For an agreed quantity of metal, the customer, at the scheduled shipment date of its cancelled warrants, may (1) instruct shipment to a particular destination, such as the premises of a consumer or a non-Metro storage facility, or (2) instruct shipment to a Metro Detroit facility for off warrant storage at negotiated rent rates. While storing metal off-warrant, the customer may at any time (2.a) instruct shipment to a consumer or other non-Metro facility, or (2.b) instruct Metro to create new warrants, i.e., re-warrant the metal. Consistent with industry practice, Metro provides customers with physical warehousing services and optionality that support LME and off-LME metals trading activity, including providing a backstop to the customer's trading activities as referred to in the LME's Public Report of the LME Warehousing Consultation (5.3.2). Depending on its prevailing economic rationale, the customer will exercise one or several of the available options, as was the case with regard to the cancellations discussed here.

A time line setting out the dates on which particular arrangements relating to the cancellations in question were entered into is set out in Appendix B.

Question 5. Were incentives offered to keep the material within the Metro Detroit location? If so, what were the incentives? Please specify the level, form and payment method of any incentives. Who paid the incentives? Who brokered the deal? Please provide supporting documentation, correspondence with third parties and an audit trail for your answers to this question 5.

Response: Consistent with industry practice, Metro negotiates incentives as a means of attracting metal to be placed on warrant at its warehouses. Metro does so in the context of a highly competitive environment in which it competes with other LME and non-LME storage options. We refer you to the general comments set out in the response to Question 4(c). Incentives offered or provided by Metro or its competitors may include payments as reimbursement for freight or other costs incurred by the customers (including, for example, previously incurred FOT fees) or as an inducement to direct metal to Metro. Metro offered such incentives in respect of the Transactions reflected in Appendix A. Details regarding the incentives offered, which were negotiated over the course of the Transactions and were payable by Metro at warranting, if elected by the customer, are reflected in the attached spreadsheet in Appendix B. Also attached are copies of emails reflecting material terms, key parties involved and the sequence of relevant events. We would be pleased to discuss any additional documentation which you may find helpful.

Question 6. It was stated by a senior Metro staff member during the warehouse audit in late October 2013 that Metro took legal advice from counsel at Goldman Sachs before entering into the deal. Please provide the reason advice was sought.

Response: It appears that there may have been a misunderstanding. Metro did not, as far as it is aware based on a reasonable enquiry, seek advice from counsel at Goldman Sachs prior to entering into the Transactions. That said, as a matter of practice, all transactions entered into by Metro are appropriately vetted. The vetting process will vary based on the judgment of Metro's

management and, to the extent relevant, Metro's board of directors. Depending on the particulars at issue, such vetting may involve review by legal counsel or other advisors. Metro regards its vetting practices to be a matter of sound corporate practice and governance.

Question 7. Bearing in mind that legal advice was sought by Metro (see question 6 above) and the obligation under clause 11.10 of the Terms and Conditions applicable to warehouse companies (the "Warehouse Agreement"), why did Metro not contact the LME before undertaking this process?

Response: See Response to Question 6. Appropriate approvals are part of Metro's normal business procedures. We note as a general proposition the fact that a legal review takes place or that legal or other advice is provided does not in and of itself trigger clause 11.10.

Question 8. Please confirm who paid for and organized the movement of metal between warehouse sheds. Please provide all relevant documentation and correspondence with third parties in relation to this.

Response: Attached are copies of emails showing the shipping instructions for each of the relevant releases (see Response to Question 1). On instructions from the metal owners and on their behalf, Metro organized and compensated the carriers for the movement of metal from its sheds. Relevant email correspondence with the carriers for each release is also attached. We are happy to discuss any additional documentation which you may find helpful.

Question 9. In relation to the metal that has been placed back on warrant, please set out how Metro satisfied itself that each warrant was for the appropriate weight at the time any of this material was placed back on warrant (see clause 2.1.2 of the Warehouse Agreement). Please provide copies of your records of weighings undertaken and any other relevant documents.

Response: Consistent with the standard protocols for any new metal arriving at Metro's warehouse, warrant details were validated. Metro used copies of its original Warrant Receiver documents and validated the weight by re-weighing the metal. Metro further validated all other warrant details, including heat numbers, shape, brand and size. Please note that where discrepancies were detected, the relevant documentation was modified accordingly. Copies of Warrant Receivers for all metal placed back on warrant with respect to the Transactions are attached.

Please be advised that the information and spreadsheets provided herein did not previously exist in the form requested, and their compilation required the application of technical and manual processes in order to collect and present the requested information. While we believe the spreadsheets are reasonably accurate and complete, we cannot make an absolute representation that they are or that there were not inadvertent errors in their preparation. We will provide any corrections if we discover missing information or errors.

Pursuant to Clauses 7.3.3 and/or 9.3.3 of the Warehouse Agreement, Metro requests confidential treatment of the attached materials on the ground that disclosure of such material would reveal trade secrets or confidential commercial or financial information of Metro or its affiliates, or protected personal information. Furthermore, the disclosure of the attached materials may not only violate Metro's or its affiliates' proprietary rights, but may also grant competitors an unfair competitive advantage or compromise competitive advantages possessed by Metro and its affiliates, and prejudice Metro's commercial interests. Metro considers that the attached materials are therefore exempt from disclosure pursuant to, *inter alia*, section 43 of the Freedom of

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information Act 2000. Metro also requests that this letter requesting confidential treatment not be disclosed for the aforementioned reasons.

Should the LME wish to publicly release the attached materials or information contained in this letter, or be requested to do so pursuant to the Freedom of Information Act 2000 or otherwise, Metro respectfully requests reasonable notice of its intent to do so, or of any such request, and the opportunity to make representations and to object to such a release or the provision of information pursuant to such a request.

Please contact Jonathan Melrose at 0207 825 4514 with any questions.

Yours faithfully



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(Attachments:

Appendix A

Appendix B

Q2 – Bills of Lading

Q5 – Incentives: supporting documents

Q8 – Movement of metal: shipping instructions; correspondence with carriers

Q9 – Validation of warrants: copies of Warrant Receivers)

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Our ref FMFS/009524-00016/JYM/JYM
Your ref

15 April 2014

CONFIDENTIAL TREATMENT REQUESTED BY
METRO INTERNATIONAL TRADE SERVICES LLC

Attn: Richard Armstrong
Legal Counsel
The London Metal Exchange
58 Leadenhall Street
London, UK EC3A 2DX

COPY

By Hand and By Email

Dear Sirs:

Notified Investigation – Questions Requiring Responses

This letter is submitted on behalf of our client, Metro International Trade Services LLC ("Metro"), in response to the letter of the London Metal Exchange ("LME") dated 10 March 2014 (Notice of Investigation - Further questions requiring responses (the "Questions")) regarding Metro's 27 January 2014 response. As we explained in our 27 January response, in determining the relevant transactions, we identified certain movements of metal relating to warrants that were cancelled during the period 1 April 2012 to 27 January 2014 (the "Transactions").

Before addressing the LME's specific Questions, we believe that providing some overall context for Metro's responses would be helpful. In light of industry practice and market dynamics as described in the LME's statements and the Summary Public Report of the LME Warehousing Consultation Pursuant to LME Notice 13/208 (November 2013) (the "Report"), Metro believes that it has complied fully with the relevant rules with respect to the Transactions.

We note that the LME's questions about queues cannot be considered in isolation and instead must be examined in light of broader macro-economic factors, the system established by the LME, and market participants acting in their economic interest (including their interest to "always follow the route which yields the highest price for the free metal" (Report at 38)) - all of which operate independently of Metro's activities in connection with its provision of warehouse services.

Since the global economic crisis in 2008, the production of aluminium has exceeded consumption each year, resulting in an unprecedented stockpile. The robust contango throughout this same time period - in combination with very low interest rates - has motivated market participants to seek storage for aluminium. Given this global surplus and increased demand for warehouse

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Permanent Subcommittee on Investigations

EXHIBIT #99b

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services, the LME has approved a significant expansion in warehouse capacity primarily in certain geographic regions, and warehouse companies, like Metro, organized their business (e.g., staffing level, investment, and building specifications) based on the then-prevailing LME operational parameters (e.g., LME-compliant load-out rates, building access, and logistical capabilities) to respond to this unprecedented and rapid increase in LME storage demand. Under this system, a massive inventory of metal was stored in LME-approved warehouses. More recently, market participants have sought to retrieve metal from LME warehouses and cancelled a substantial amount of warrants, which warehouses dealt with in accordance with LME requirements. Such cancellations have been partially driven by market participants looking for off-warrant storage. As estimated by Wood Mackenzie in 2013, a leading industry source, about 8.4 of the 13.9 million metric tons of aluminium in storage are stored outside the LME warehouse system.

Cognizant of these dynamics, the former chief executive of the LME, Martin Abbott, recognized that aluminium delivery queues in some locations "are the result of broader macro-economic forces at play in the aluminium industry" - rather than the result of the practices of any particular warehouse operator - and that "the proper role of the LME is to reflect the effect of those macro-economic forces and not try to distort them." (Approved Judgment of the High Court of Justice, Queen's Bench Division, Administrative Court, Case No. CO/1767/2013, dated 27/03/2014, at ¶ 30 (the "Rusal Judgment").)

We also note the very competitive nature of the warehouse services market. As the LME notes in its Report, the "warehouses are part of a competitive metal ecosystem." (Report at 38.) In an effort to attract metal, "it has become common practice for warehouse operators," like Metro, "to offer 'incentives' to metal owners to attract load-in of metals." (*Id.* at 32.) Even in a market where incentives are routinely offered, "normal economic principles of competition continue to apply." (*Id.* at 34.) Such competition is especially vibrant given the numerous options available to metal owners. As the LME recognizes, "[a]t the core of the economic system is the choice faced by a [metal owner] holding free metal in the market," including selling to a physical user, disposing warrants on the LME, or continuing to store the metal either on-warrant or off-warrant. (*Id.* at 37.) "Ultimately, it is the right of a metal owner" - like Glencore and Red Kite - "to decide what to do with free metal." (*Id.* at 38.) Indeed, the "economic decision[s]" of these highly sophisticated entities with which Metro entered into the relevant transactions "provide[] an explanation for the so-called yo-yo trade, under which metal is loaded-out of one warehouse and into another." (*Id.* at 38.)

We further note the LME's role as "a market of last resort" (*Id.* at 68 n.81): historically, only a very small portion of the annual purchase of aluminium by consumers has come from the LME system and end-users do not constitute a meaningful number of metal owners in the Detroit queue. In the summer of 2013, Metro's parent, Goldman Sachs, offered to take the place of client end-users in the queue in exchange for spot aluminium, but this offer elicited no response from end-users given the overall abundant supply. Indeed, the absolute price of aluminium has remained substantially lower than it was before the financial crisis and is also low in comparison to the price of other commodities.

Against this backdrop, Metro responds below to the Questions, which we have included for your convenience. To the extent that the LME has further questions about our response, Metro reiterates its offer to meet in person and is prepared to make its management available at your convenience.

Question: Your response to our Question 2

You state: *"Specifically, Metro considers metal that is loaded free on truck ("FOT"), at the owner's instruction, in accordance with the order of priority required by the LME and entitling the warehouse operator to the FOT fee, to count towards the operator's load-out obligations". Please explain further why you believe this to be the case. In particular, it would assist us if you could identify the particular LME Rules you rely upon in support of that assertion or, as may be applicable, the basis upon which you believe such LME Rules do not apply in the circumstances of this case.*

Response: LME warrants are issued by a warehouse operator, but they relate to metal stored in individual sheds. Pursuant to U.S. commercial law and consistent with Metro's terms and conditions for the provision of warehousing services (which are referenced on the actual printed LME warrant), once a warrant has been cancelled and metal has been loaded "free on truck" ("FOT") (on an appointment date requested by the owner and according to the LME queue rules) and the bill of lading has been signed, the warehouse operator has released possession of the metal and has no right to charge LME rent, and the risk of loss or damage is transferred entirely to the carrier for onward delivery at the owner's instruction. Indeed, once a bill of lading has been signed, the carrier is liable for any losses as a matter of law and contract, and neither the carrier nor the owner has any further recourse against the warehouse operator. At this stage, the metal is "free metal" (see Report at 38) under the full control of its owner and over which the owner has full dispositive discretion and responsibility. As such, Metro regards the metal as having been loaded out and reduces its LME inventory stocks accordingly.

Once possession of the metal has been transferred as described above, evidenced by the signing of the bill of lading, the metal is no longer "in warehouse" (the LME aluminium futures contract is an "in warehouse" contract) - its status changes from cancelled warrant to off-warrant. The warehouse has adhered to the load-out order of priority required by the LME, and the owner of metal, which likewise regards such metal as "free", is no longer subject to the rules or rent obligations of the LME system. In contrast, if the carrier failed to collect the metal when scheduled and no bill of lading was signed, the owner would continue to be obliged to pay LME rent and Metro would not deduct the metal from its LME inventory stock reports. Such treatment of "free metal" is consistent with the stock reporting requirements pursuant to Clause 6.3 of the Warehouse Agreement. That provision provides that "[u]ntil such time as stocks of metal are reported pursuant to LMEsword . . . metal taken off Warrant, but which is still on the Warehouse's premises, must be combined on the stock return with those stocks actually on Warrant . . . or shown in such other manner as prescribed by the Exchange by notice." This "free metal" loaded out as described above has, in Metro's view, left the relevant "premises" - i.e., the shed to which the cancelled warrant relates.

Metro's treatment of such "free metal" is consistent with the LME's own practice. In connection with the LME's administrative audits conducted since Metro began its warehouse operations, Metro has provided the LME with requested outbound documentation such as bills of lading - including certain bills of lading that identified the destination address of a Metro Detroit facility - among other records. In reconciling such documentation with specific stock reports, the LME has invariably accepted a signed bill of lading as sufficient evidence of outbound shipment, and such acceptance has never been contingent upon the shipping destination. Indeed, the LME has never raised any issues with respect to the bills of lading as evidence of outbound shipment. As explained in our 27 January response, the LME's own auditor, PricewaterhouseCoopers, has likewise reviewed numerous bills of lading identifying the shipper, recipient and destination address of a Metro Detroit warehouse, and no material issues were noted in the Audit Summary or raised subsequently in correspondence. Consistent with this LME practice, Metro believes that the load-outs of metal from the sheds in which it was stored pursuant to the Transactions were appropriately counted towards Metro's minimum load-out requirement. Indeed, any other interpretation of the minimum load-out rule would constitute a material increase in the warehouse

company's obligations, thereby triggering the "consultation and notification" requirement under the Warehouse Agreement. (Clause 4.2; see also Clause 9.11.4 (90 days of consultation must be undertaken where any proposed change would have the effect of "materially increasing the obligations of a Warehouse").) Metro has received no such consultation or notification from the LME.

Question: Your response to our Question 5

- (a) You did not address who brokered the deal. From the emails appended to your response, it appears that Metro staff brokered the deals, but please confirm in each instance who brokered the deal.

Response: We understand that by "brokered," the LME is referring to the party that originally initiated the Transactions. As we explained in our 27 January response, Metro engages in an ongoing commercial dialogue with its customers - the overwhelming majority of which are sophisticated financial entities involved in broader metals trading - about various existing and potential deals. In light of this continuing relationship and fluid interactions, and based on reasonable inquiry, Metro is unable to pinpoint which party first initiated the Transactions. To the extent that the emails appended to our 27 January response provide any insight, we note that in the email dated 1 November 2012 relating to DET 1500, a Metro representative stated to a Red Kite representative, "Thanks for approaching me with an opportunity to store approximately 150,000 mt of aluminium which you are holding LME warrants for currently."

- (b) We require a fuller, more detailed picture of these deals than you have provided to date. The Appendix B that you have populated appears to give the options available to the customer ("If re-warranted" / "If arrangement cancelled and shipped to non-Metro facility") but it is not made clear in that table which option was exercised by the customer in each case. Kindly make this explicit, i.e. provide details of each arrangement from the start to the end of each offer and acceptance and execution of the incentive—who were the parties involved in negotiating, concluding and executing the arrangement; what was paid, to whom and when. Please provide clear cross-references to the relevant sections of supporting documentation.

Response: Respectfully, we believe that we provided the requested information in the appendices to our 27 January response, which should be read together. With respect to the Glencore deal, Row 5, column M of Appendix A indicates that the metal was re-warranted.¹ With respect to the remaining deals, Appendix A sets forth the options exercised by the customers. Specifically, this information is presented in column G ("of which re-issued prior to shipment"),² column H ("of which shipped to Non Metro facility"), column I ("of which shipped off-warrant to Metro facility") and column M ("Date New LME Warrant Created (if applicable)"). As noted in footnote 2 to Appendices A and B that we previously provided, for certain tonnage, customer instructions had been provided but not yet performed, or customer instructions were not yet provided.

¹ As we explained in the Appendix A that Metro previously submitted on 27 January, by "re-warranting" or "creating a new warrant," we mean that a warrant is created at the request of the customer for metal that was previously on-warrant in another warehouse but has been cancelled and shipped out.

² As we also explained in the Appendix A that Metro previously submitted on 27 January, by "re-issuance," we mean that a warrant is re-issued prior to shipment at the request of the customer. Metal is no longer part of cancelled warrants, and the delivery slot is allocated to customer(s) next in queue.

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In an effort to present the information in a consolidated format as you requested, we have prepared a new Appendix A (Attachment 1, Tab 1) ("Consolidated Summary") and have made additional clarifications. Specifically, we have prepared a "Simplified Off Warrant Storage Deal Example" (Attachment 2) ("Simplified Example"), which outlines the steps that are referred to in the column headings of the Consolidated Summary. A shipping schedule per Release, showing shipped from/shipped to addresses is also attached (Attachment 1, Tab 2) ("Shipping Schedule") (see also response to Question: Follow-up questions on Appendix A, (a) below). Please note that the Consolidated Summary has been updated to reflect customer instructions that Metro received after its original submission. The information provided by Metro in response to the LME's Questions Requiring Responses dated 6 December 2013 has not otherwise been updated.

With reference to the parties involved in negotiating the Transactions, this is dealt with in our response to Question (a) above.

With respect to the timeline for the Transactions, we refer you to the Consolidated Summary.

With respect to the timing, nature and amounts of incentives, we have attached a spreadsheet (Attachment 3) ("Invoice Summary") that lists all invoices received and issued for the Transactions, as well as copies of the invoices referred to in the spreadsheet (Attachment 4) ("Deal Invoice Copies").

- (c) We requested an audit trail. We note that the emails you appended to your response only clearly state the incentives offered by Metro, and again do not necessarily set out whether those offers were taken up and/or what the outcome of the deal was. Again, please make the position explicitly clear.

Response: As explained above in response to Question (b), we believe that Appendices A and B reflect which offers were taken up and/or the outcome of the Transactions. In response to your request, we have provided the requested information in the Consolidated Summary. Information relating to the level, form and payment method are set out in the Invoice Summary and the Deal Invoice Copies.

Question: Your response to our Question 7

- (a) Please confirm whether any consideration was given to making enquiries of the LME as to the appropriateness or otherwise of these deals? If not, why not?

Response: As explained in our 27 January response, all deals entered into by Metro, including the Transactions, are appropriately considered and reviewed. Depending upon the specific facts and circumstances, such process may vary based on the judgement of Metro's management, and to the extent relevant, it may include a review by Metro's board of directors or a subcommittee thereof, legal counsel or other advisors. Metro regards its process for reviewing all transactions to be a matter of sound corporate practice and governance and therefore did not make enquiries of the LME regarding the Transactions. The LME and its auditors likewise never raised any issues with respect to the movements of metal at issue in connection with, respectively, its administrative audits and its 2012 audit.

- (b) Please give details of the specific "approvals" and/or "vetting" which you reference that was undertaken in relation to these deals. Please provide your records of these approvals/vetting. For the avoidance of doubt we are not asking you to disclose to us legally privileged material.

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Response: As part of its review process, Metro's management considered various economic, market and business factors with respect to the Transactions. Metro's management also sought and received approvals on 1 November 2012 (Red Kite) and 14 February 2013 (Glencore) from a subcommittee of Metro's board of directors, the Commercial Decisions Subcommittee, which is responsible for approving certain expenditures above a pre-established threshold. The Metro board was subsequently advised of these approvals.

Question: Your response to our Question 8

You state that "Metro organized and compensated the carriers for the movement of metal from its sheds." On the face of it, this may constitute an incentive, and yet this incentive is not set out in your Appendix B. Again, please can you re-present an explicitly clear and complete statement of the incentives offered and taken up, as well as providing clear cross-referencing to the supporting documentation such as emails and bills of lading.

Response: In preparing Appendix B, Metro did not include the compensation paid to carriers because Metro did not regard this as an incentive to re-warrant metal; rather, Metro agreed to pay such compensation even if the metal owner decided not to re-warrant the metal (in light of the commercial opportunity to store metal in Metro warehouses on-warrant or off-warrant). In response to the LME's request, in the attached Consolidated Summary, the column entitled "General Off-Warrant Terms" contains the requested information about compensation paid to carriers.

Question: Your response to our Question 9

- (a) What are the "standard protocols" to which you refer? Please provide copies and any related documentation.

Response: The referenced protocols are Metro's Weighing and Warranting Procedures. A copy of each is attached (Attachment 5) ("Weighing Procedures") (Attachment 6) ("Warranting Procedures").

- (b) You state that "where discrepancies were detected the relevant documentation was modified accordingly". Please can you highlight specific examples in the supporting documentation and cross-reference them.

Response: Attached (Attachment 7) ("Example Modified Warrant Receivers") are four examples of modified Warrant Receiver documents and a copy of the respective original Warrant Receiver documents. The following is a summary of the changes:

<u>Original Warrant #</u>	<u>Weight</u>	<u>New Warrant #</u>	<u>Weight</u>
W10440	24,057	HHW10440	25,034
W10421	25,065	HHW10421	24,961
W10470	25,050	HHW10470	25,064
W10441	25,070	HHW10441	24,934

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Note that the yellow highlighted bundle details on the new Warrant Receiver documents show a change in original bundle details.

- (c) You state "*Metro used copies of its original Warrant Receiver documents and validated the weight by re-weighing the metal*". Did Metro use the original Warrant Receiver documents, or copies of the original Warrant Receiver documents? If the former, is it correct to say that where the Warrant Receiver documents were then modified to account for "*discrepancies*", no un-modified version of the Warrant Receiver document remains in relation to the original weighing?

Response: Metro used copies of the original Warrant Receiver documents.

- (d) Please explain whether Metro considers this process of re-using and amending previous notes of weighings to be consistent with its obligation under Clause 11.7 of the Warehouse Agreement to "*keep proper records*".

Response: Metro believes that it is in full compliance with its recordkeeping obligations pursuant to Clause 11.7 of the Warehouse Agreement to "*keep proper records*". Metro maintains Warrant Receiver documents for all individual warrants received into its warehouses, *i.e.*, a unique Warrant Receiver for each unique warrant number.

Question: Follow-up questions on your Appendix A

- (a) We note that in each row, there are instances of the same address appearing in both the "*Address departed*" column and the "*Address arrived*" column. Please confirm whether the metal actually moved from one address to a different address in each case and cross-reference to the appropriate supporting documentation. If there are any instances where metal did not move address, please provide details and confirm whether such "*movements*" were counted against your load-out obligations.

Response: The information presented in Appendix B was aggregated, and some addresses may for that reason have appeared in both the "*Address departed*" column and the "*Address arrived*" column. However, each load was indeed delivered to a different address.

Columns O and P of the Consolidated Summary reflect a breakdown of shipping schedules per release, which are set out in the Shipping Schedule. We are also attaching a spreadsheet in respect of DET 1500 (Attachment 8) ("*DET 1500 – Carrier Invoice and BoL Cross Reference*") and DET 1524-1524S (Attachment 9) ("*DET 1524-1524S – Carrier Invoice and BoL Cross Reference*") which identifies all 6,600 bills of lading representing the movement of metal summarised in the Consolidated Summary, and the respective carrier and invoice details for each load. These confirm that for each load, metal was delivered to a different address.

Copies of the bills of lading broken down by Release are attached (Attachment 10) ("*Copies of Bills of Lading by Release*").

We have provided by way of illustration copies of six sample invoices (the relevant rows on DET 1500 – Carrier Invoice and BoL Cross Reference to which these invoices relate are highlighted in yellow for ease of reference) (Attachment 11) ("*Sample Courier Invoices*"). We have not provided all invoices as a result of the volume of information, and the fact that the Bills of Lading already show the same relevant information.

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- (b) Kindly re-present the material in Appendix A to clearly list each shipment of metal from one address to another on separate rows. Please cross-reference each shipment from one address to another to the appropriate supporting documentation for that shipment, including correspondence you have provided (or will be providing as a result of this letter).

Response: See response to Question (a).

Question: Follow-up questions on your Appendix B

- (a) In the first row, for Glencore, the "Deal Date Confirmed" is stated as "23 Feb 13 & 4 April 13". Please explain how there can be two dates for confirming the deal.

Response: The tonnage for the Transaction in question was modified at a later date pursuant to the customer's request.

- (b) Please explain what you mean by a "Pre-paid incentive". When, exactly, was this offered and paid in each case? Please provide cross-references to any references to pre-paid incentives in the documentation you have already provided; or provide full documentation in accordance with our previous Question 5, which required you to provide an audit trail for all incentives.

Response: For the Transaction involving Red Kile, Metro and the customer, a highly sophisticated financial entity, negotiated an incentive in case the customer decided to exercise its option to re-warrant the metal. A portion of the incentive was agreed to be "pre-paid," at the time of cancellation to offset FOT charges. If the customer decided not to re-warrant the metal, this pre-paid amount was reimbursed to Metro as part of the break-fee. As such, a "pre-paid incentive" can be considered equivalent to incentives on deals where the full amount is paid at the time the metal is warranted.

- (c) In the "Pre-paid Incentive" column you have put "N/A". Does this mean that no pre-paid incentive was offered, or that one was offered but not taken up? Please re-present the information and clearly distinguish between offers and payments of incentives.

Response: Where it appears in Appendix B, "N/A" indicates that no pre-paid incentive was offered to the customer.

- (d) In the "Pre-paid Incentive" column you have put "36". 36 what?

Response: This represents \$36/mt of prepaid incentive.

- (e) As previously noted, please re-present the material in Appendix B to provide a full picture of all incentives offered and taken up, including cross-references to supporting documentation.

Response: Please see the Consolidated Summary.

- (f) In the "If re-warranted" column, what does "discount of 3cts/lb on published rent increase" mean? Please provide a worked example of the calculation of this discount, as it was applied in practice to one of the deals in question. What were the applicable "published rent increases"? Please provide full documentation.

Response: Metro agreed that between 1 April 2013 and the new warrant issue date of the shipped metal, the customer would receive a rent discount of 3c/ct/ton/day on Metro's published 2013/2014 rental rate if the customer decided to warrant the shipped metal. If the customer decided not to warrant such metal, the customer would be charged the full rental rate. Please refer to the email titled "Detroit Ali – off warrant storage deal "NEW DEAL # DET – 1500" from 5 November 2012 that outlines the key terms for this Transaction.

Set forth below is an example of the calculation of this rent discount (on per ton basis)

	per ton
Rent Rate (2012/13)	45 cts/d
Rent Rate (2013/14)	48 cts/d
New Rent Effective	01-Apr-13
Average Re-warranting	20-Dec-13
Calendar Days	263 days
Average Rent Discount	7.89 \$/mt

Question: Follow-up questions on emails provided

- (a) The email with subject line "FW: Detroit Ali – off warrant storage deal * NEW DEAL # DET-1500" refers to "150,000 mt". Where is this deal set out in Appendix B? Again, please correct/re-present the material in Appendix B, if applicable, in accordance with the standards set out in this letter.

Response: The 150,000mt refers to the initial volume that was discussed with the customer. However, the customer subsequently changed the tonnage several times. The final volume of cancelled tonnage included in the Transaction was 188,875mt of which 6,875mt were re-issued by the customer. (For 188,875mt, see the sum of the cells H(6) - H(11) of the Consolidated Summary and for 6,875mt, see cell I(7) of the Consolidated Summary.)

- (b) The email with subject line "Re: New Deal – Glencore Detroit" makes reference to Metro providing off-warrant storage free of charge. This may constitute an incentive and, if so, should have been set out in your Appendix B. Again, please re-present the material in Appendix B to include a complete statement of all incentives offered and taken up (including rent discounts, free off-warrant storage, free trucking and inducements in any other form whatever).

Response: At the LME's request, we have included the off-warrant storage in the Consolidated Summary.

Question: Follow-up questions on incentives

Please state whether Metro considers the movements of metal referred to in this correspondence to be in compliance with Clause 9.3.1 of the Warehouse Agreement, and explain why.

Response: Metro considers the movements of metal pursuant to the Transactions to be in compliance with the Warehouse Agreement. As such, Metro does not consider the incentives it offered to be "exceptional inducements" that "artificially or otherwise constrained" the "proper

functioning of the market through the liquidity and elasticity of stocks of metal under Warrant." (Clause 9.3.1 of the Warehouse Agreement.) As the LME has recognized, it is "common practice for warehouse operators to offer incentives to metal owners to attract load-in of metals". (Report at 32.) The LME has also recognized that neither "the existence of the queues" nor "warehouse operators paying incentives" appears "to cause an economically-irrational market, in that normal economic principles of competition continue to apply." (Id. at 34.) The incentives for the Transactions were in line with incentives that Metro offered to other potential customers as an inducement to attract their metal. To the extent that Metro was able to sometimes (but not always) attract metal into its warehouses, Metro also believes that such incentives were, in line with inducements offered by other market participants and economic parameters in the market at such times.

The only structural aspect of the Transactions' incentives that distinguishes them from other incentives is that they were offered to a customer at a different point in time in relation to its holding of the metal. That is, these incentives were offered to customers holding metal in inventory or in the queue should they decide to re-warrant the metal at a later stage in the context of an off-warrant deal, rather than to owners of metal that were firmly committing to deposit metal to be warranted. We do not believe that this distinction has any bearing on the interpretation of Clause 9.3.1 of the Warehouse Agreement, however, since accepting the incentive and warranting the metal was but one potential course of action that the customer could choose to take. If anything, the timing of the offering of these incentives for the Transactions simply made them less likely to be provided than is generally the case with incentives.

In negotiating the Transactions with the metal owners, Metro recognized that it was competing in a market in which metal owners had multiple choices for warehouse services. The evaluation of inducements should therefore be considered in light of these options that - as noted by the LME - are available to metal owners: the "metal can be sold to a physical user," the "metal can be financed," the "metal can be sold on the LME," and the "metal can be on-sold to another merchant." (Report at 37-38.) Moreover, "[o]nce a[n] [owner's] metal has reached the front of the queue and becomes free metal, [the owner] will again face the same set of options as to how to sell that metal." (Id. at 37.) As the LME has noted, "it is the right of the metal owner to decide what to do with free metal, and there is an economically rational explanation for" metal being "loaded-out of one warehouse and into another." (Id. at 38.) It is also important to note in this context that this course of action is generally regarded as a "backstop" by the metal owner (Id. at 38) and therefore consistent with the stated role of the LME as "the market of ultimate demand." (Id. at 38 n.35).

As recognized by the former chief executive of the LME, Martin Abbott, in a letter dated 21 December 2012 to Rusal, "long aluminium queues in some locations" were "the result of broader macro-economic forces at play in the aluminium industry." (Rusal Judgment at ¶ 30.) In any event, it is worth emphasizing that the overwhelming majority of "free warrants" come from warehouses with longer queues, like Metro's Detroit warehouses. According to the Report, on 19 September 2013, 99% of warrants used in LME settlement were from warehouses with queues. (Report at 31-32.) Far from constraining the "liquidity and elasticity of stocks of metal under warrant," the LME warehouses, like Metro's Detroit warehouses, that have not during the relevant period entered into fixed period storage transactions involving aluminium (which would remove corresponding warrants from the pool of "free warrants") provide virtually all of the liquidity for LME settlements.

Furthermore the Transactions are akin to "standby" agreements as described by the LME. In some instances, "an external stakeholder demands that the metal owner utilises LME storage." (Report at 30.) For example a bank providing metals finance may demand that the underlying metal is backed by an LME warrant.... In this respect, some financing providers are satisfied by a 'standby' agreement, whereby financed metal is held off-LME (hence benefitting from lower rent levels), but with a guarantee from an LME-licensed warehouse that the metal can be warranted

on-demand...." (*Id.* at 30.) In this way, a third-party financing institution would be able to derive comfort that, on a borrower default, the institution would be able to deliver in a warrant against an LME hedge or otherwise have a readily realisable asset. While Metro has no visibility on the actual financing arrangements of its customers, the fact that Metro offers customers an option for future warranting at agreed terms is wholly consistent with industry practice.

Against this backdrop of market dynamics, industry practice and the "competitive metal ecosystem" that "the warehouses are a part of" (Report at 38), Metro believes it has complied with Clause 9.3.1 of the Warehouse Agreement.

In your answer, please specifically respond to the following considerations

- (a) Does Metro consider that the incentives it offered contributed to the perpetuation of metal queues in Detroit? If not, please explain why.

Response: No. From a market perspective, Metro believes that it does not make a difference whether a new LME warrant is created from primary metal or from metal that has previously been warranted on the LME. In both instances, metal is added to the LME system for trading on the exchange. Likewise, the payment of incentives in the context of off-warrant deals is similar to incentive payments for primary metal. In both cases, the metal owner or customer has various options, including but not limited to a sale to a physical user, storage in a non-LME approved warehouse, self-storage, or a sale on the LME. If the metal owner decides to sell on the LME, it will warrant the metal with an LME warehouse operator who may offer an incentive. As noted by the LME, it is "common practice for warehouse operators to offer incentives to metal owners to attract load-in of metals." (Report at 32.) Some warehouses also pay incentives by discounting future rent and by having metal owners commit to fixed periods of storage, resulting in the removal of these warrants from the pool of "free warrants." As the LME has also recognized, the "practice of warehouse operators paying incentives do[es] not appear to cause an economically-irrational market in that normal economic principles of competition continue to apply." (Report at 34.) Furthermore, the actual length of the queue is not determined by overall inventory levels, but rather by the number of warrant cancellations in one specific location. Metro has no influence over warrant cancellations. As such, the actual queue length is not considered in Metro's economic analysis.

- (b) Is it not the case that the incentives you offered resulted in metal being re-warranted, when it is likely that such metal may otherwise have remained outside of the LME system?

Response: Metro does not believe that the incentives it offered for the Transactions - which, as explained above, were largely identical to other incentives - constituted "exceptional inducements" under Clause 9.3.1 of the Warehouse Agreement. As the LME has recognized, "[a]t the core of the economic system is the choice faced by [metal owners] holding free metal in the market." (Report at 37.) These options may include selling metal to a physical user, storing and financing metal off LME, or warranting metal on the LME. (*Id.* at 37-38.) As the LME has explained, a metal owner's choice between LME and non-LME storage is a "trade-off between quality (with the LME storage being higher quality, given the requirements imposed by the LME on providers of LME storage) and cost (with LME storage being more expensive, given the cost of providing the incremental level of service)." (*Id.* at 30.) In fact, with respect to the Transaction involving Red Kite, the customer decided not to re-warrant certain metal and instead paid a break-fee, which included a reimbursement for the pre-paid incentive. Whether a customer decides that its metal should remain outside of the LME system, including the circumstances in which it may or may not wish to have metal re-warranted, or indeed for new metal to be warranted, is a question that the

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customer decides on its own based on its commercial requirements, market dynamics and a host of other reasons of which Metro would not be aware.

(c) Are the incentives for these deals in line with those normally paid by Metro, both in Detroit and at its other warehouse locations? Please provide comparative figures of the average total value of incentive packages:

- for these deals specifically;
- for Metro warehouse operations relating to primary aluminium in Detroit as a whole; and
- for Metro warehouse operations relating to primary aluminium in at least two other warehouse locations.

These figures should cover approximately the same time periods. Please provide appropriate supporting documentation.

Response: The Transactions were agreed to in November 2012 (Red Kite) and February 2013/April 2013 (Glencore). The estimated total incentive equivalent agreed to on those deals range for the majority of metal from \$202/mt (includes value of free rent of \$4.02/mt) to \$203.89/mt (includes value of rent discount of \$7.89/mt). Incentives paid for primary aluminium in Detroit in this time period are in line with those offered by Metro to re-warrant metal as part of the Transactions. By way of example, Metro offered the following incentives for warehousing aluminium in Detroit:

- On 14 December 2012 and on 14 January 2013, Metro warranted 3,375mt and 6,675mt, respectively, of primary aluminium with an incentive of \$199.22/mt (includes value of free rent of \$3.72/mt).
- On 17 December 2012, Metro warranted 1,025mt of primary aluminium with an incentive of \$209.26/mt (includes value of free rent of \$1.26/mt).
- On 18 February 2013 and on 18 March 2013, Metro warranted 7,375mt and 2,600mt, respectively, of primary aluminium with an incentive of \$200.30/mt (includes value of free rent of \$4.21/mt).
- On 25 March 2013 and on 13 May 2013, Metro warranted 4,675mt and 5,275mt, respectively, of primary aluminium with an incentive of \$199.96/mt (includes value of free rent of \$4.21/mt).
- And on 14 June 2013, Metro warranted 8,300mt of primary aluminium with an incentive of \$200.60/mt (includes value of free rent of \$3.60/mt).

Please note that because Metro had no primary aluminium inbound into other locations during the relevant time period, it is unable to provide a comparison across locations.

(d) Please provide details, for each of the categories of incentives set out in (c) above, as to whether the inducements were standardised and published, or whether they were offered and paid on an *ad-hoc* basis, e.g. to certain customers at certain locations only.

Response: Consistent with industry practice, Metro negotiates on an individual basis the terms of incentives with its highly sophisticated customers whose options could change in light of evolving market conditions, and the details thus varied from transaction to transaction.

- (e) What level of visibility or understanding does Metro have of the incentives offered and paid by other warehouse companies in Detroit, and elsewhere? Please provide details. How does Metro consider the incentives offered in these particular deals to compare to the incentives rival warehouse operations were, would have and/or are offering? Please provide supporting documentation if you are able.

Response: Metro has no visibility or specific information relating to the incentives offered by other warehouse companies in Detroit or elsewhere. As mentioned in our letter of 27 January 2014, Metro offers inducements to attract metal into its warehouses consistent with market practice in a highly competitive environment in which Metro competes with other LME and non-LME storage options. To the extent that Metro was able to sometimes (but not always) attract metal into its warehouses, Metro believes that its incentives were in line with inducements offered by other market participants and economic parameters in the market at such times.

- (f) Please set out the basis upon which the total incentive packages offered in these deals were calculated (including, for instance, calculation of incentives by reference to the rent that could be earned on re-warranted metal given the length of the current queue). Include any supporting documentation. To the extent not covered in your further response relating to Question 7 (see above), please set out at what level within Metro the incentive packages were formulated and signed off.

Response: A warehouse operator may evaluate transactions and incentives it can offer based on a variety of factors, including revenues, costs and competition in the market. Metro does not know who owns the warrants covering the metal in its warehouses at any specific point in time or whether and when warrants will be cancelled. In evaluating incentives to re-warrant metal in Detroit, Metro's economic analysis is based, among other things (such as general economic circumstances, future costs and investments to maintain its warehouse capacity, and possible regulatory changes), on a "wind down scenario," i.e., Metro assumes that all metal will be loaded out at the required minimum load-out rate until all inventory has been shipped out, and it estimates associated revenues in such a total liquidation scenario, irrespective of outstanding cancellations. Metro then evaluates how much additional revenue would be generated from a customer's decision to warrant additional metal. Because Metro assumed that all metal will be loaded out as quickly as possible, like Metro's analysis for warranting primary aluminium, the length of any existing queue in Detroit was not a factor in its assessment of the Transactions and the incentives it could offer.

- (g) Does Metro consider that it had a strong bargaining position compared to Glencore and Red Kite in relation to these deals? If not, please explain why. What is Metro's understanding of the other options that were available to Glencore/Red Kite in terms of off-warrant or on-warrant storage of this metal, and does it consider such competition to be likely to have been competitively priced against Metro's offer (including incentives)?

Response: As described in the LME Report and explained above, metal owners have a number of choices, and warehouses - both LME-approved and non-LME-approved warehouses - compete with each other to provide warehouse services. In fact, an industry researcher, Wood Mackenzie, estimates that about 8.4 of the 13.9 million metric tons of aluminum in storage are stored off-warrant. As such, buyers of warehouse services enjoy a strong bargaining position.

The LME has also recognized the "expertise" of highly sophisticated metal owners, like Glencore and Red Kite, "who have built up strong modelling capabilities around premiums and queues."

(Report at 29.) In its negotiations with Glencore and Red Kite regarding the Transactions, Metro offered incentives to attract metal into its warehouses and competed with other storage options available to them. Indeed, as recognized by the LME, the metal owner "will always follow the route which yields the highest price for the free metal," (*id.* at 36), and thus "economic theory suggests" that the prices of competing options "must be in balance" (*id.* at 38). As such, Metro does not believe that warehouses can be considered as having overly strong bargaining power relative to metal owners.

Question: Follow-up question on stock records

Please confirm whether Metro complied with Clause 6.3.2 of the Warehouse Agreement (which states: "Until such time as stocks of metal are reported pursuant to LMEsword alone, metal taken off Warrant, but which is still on the Warehouse's premises, must be combined on the stock return with those stocks actually on Warrant rounded to the nearest complete Warrant lot and also separately identified on the return, or shown in such other manner as prescribed by the Exchange by notice. If no stocks are held, a nil return must be submitted on each Business Day".)

If yes, please highlight specific entries in, and cross-reference to, appropriate stock reports to explicitly demonstrate this compliance.

Response: Metro believes that it has complied fully with Clause 6.3.2 of the Warehouse Agreement with respect to the Transactions. We refer you to our response to "Question: Your response to our Question 2" for an explanation as to why it was appropriate for Metro to remove from the stock report the metal that was loaded FOT at the owner's instruction and for which a bill of lading was issued.

Collated list of clarifications needed

In addition to implementing the list of required clarifications below, please provide such further written explanations as are necessary to fully answer the questions posed above.

1. Combine and re-present the material in Appendix A and Appendix B into one comprehensive document, to the extent possible. The revised document should cover, as a minimum, points 2 to 7 below.
2. Make clear both the offers of incentives made to customers, and the incentives that were actually paid.
3. Make clear whether metal moved from one location to another in each case. In the revised document, please reflect each shipment of metal from one address to another on separate rows.
4. Include all incentives offered and paid, in whatever form, in the revised document.
5. Detail the timings of: offers of incentives, acceptances of incentives, and payments of incentives.
6. Detail the persons involved in brokering the deals and related incentives. Distinguish between persons negotiating the deals and persons making and receiving the payments, if different.

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7. Provide clear cross-referencing to supporting documentation for all of the above.

Response: We have provided the requested information, to the extent available, in our responses above and in the attachments hereto.

We hope that this letter and the attached materials address the LME's enquiries and reiterate the offer that we have made to discuss your enquiries further in person.

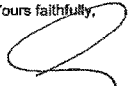
Please be advised that the information and spreadsheets provided herein did not previously exist in the form requested, and their compilation required the application of technical and manual processes in order to collect and present the requested information. While we believe the spreadsheets are reasonably accurate and complete, we cannot make an absolute representation that they are or that there were not inadvertent errors in their preparation. We will provide any corrections if we discover missing information or errors.

Pursuant to Clauses 7.3.3 and/or 9.3.3 of the Warehouse Agreement, Metro requests confidential treatment of the attached materials on the ground that disclosure of such material would reveal trade secrets or confidential commercial or financial information of Metro or its affiliates, or protected personal information. Furthermore, the disclosure of the attached materials may not only violate Metro's or its affiliates' proprietary rights, but may also grant competitors an unfair competitive advantage or compromise competitive advantages possessed by Metro and its affiliates, and prejudice Metro's commercial interests. Metro considers that the attached materials are therefore exempt from disclosure pursuant to, *inter alia*, section 43 of the Freedom of Information Act 2000. Metro also requests that this letter requesting confidential treatment not be disclosed for the aforementioned reasons.

Should the LME wish to publicly release the attached materials or information contained in this letter, or be requested to do so pursuant to the Freedom of Information Act 2000 or otherwise, Metro respectfully requests reasonable notice of its intent to do so, or of any such request, and the opportunity to make representations and to object to such a release or the provision of information pursuant to such a request.

Please contact Jonathan Metrose at 0207 825 4514 with any questions.

Yours faithfully,



Simmons & Simmons LLP

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BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

DANIEL K. TARULLO
MEMBER OF THE BOARD

December 9, 2014

The Honorable Carl Levin
Chairman
Senate Permanent Subcommittee
on Investigations
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

Enclosed are my responses to the supplemental written questions you submitted following the November 21, 2014, hearing before the Senate Permanent Subcommittee on Investigations. A copy has also been forwarded to the Subcommittee for inclusion in the hearing record.

Please let me know if I can be of further assistance.

Sincerely,

A handwritten signature in black ink that reads "Daniel K. Tarullo". The signature is written in a cursive style.

Enclosure

Permanent Subcommittee on Investigations
EXHIBIT #100a

Questions for The Honorable Daniel K. Tarullo, Governor, Board of Governors of the Federal Reserve System from Senator Levin:

1. The Levin-McCain report, “Wall Street Bank Involvement with Physical Commodities,” contains eleven bipartisan recommendations. As discussed during the hearing, Recommendation (8) seeks to prevent financial holding companies from using material non-public information gained from their physical commodities activities to benefit their trading in financial markets. Recommendation (11) urges the Office of Financial Research to conduct a study of the use of physical commodities or related businesses to manipulate commodity prices, including whether regulatory gaps make it difficult to detect, prevent, and punish that type of price manipulation. Please provide your reaction to each of the eleven recommendations, and whether each may be addressed in the rule to be proposed in the first quarter of 2015.

[For ease of reference, each recommendation from the Levin-McCain report is provided below in italics with the response to the recommendation immediately following.]

Recommendation 1: Reaffirm Separation of Banking and Commerce as it Relates to Physical Commodity Activities. Federal bank regulators should reaffirm the separation of banking from commerce, and reconsider all of the rules and practices related to physical commodity activities in light of that principle.

Although the Bank Holding Company Act (BHC Act) generally prohibits bank holding companies (BHCs) from engaging in commercial activities, the statute provides a number of exceptions to this general principle. Section 4(o) provides permanent grandfather rights to several financial holding companies (FHCs) to permit them to engage in a wide range of physical commodities activities. Section 4(k)(4)(H) permits FHCs to own up to 100 percent of the shares of companies engaged in commercial activities through merchant banking authority.

Section 4(k) also permits the Federal Reserve Board (Board) to authorize FHCs to engage in commercial activities that are complementary to their financial activities. The Board has very limited authority to restrict the scope of the commercial activities permitted to grandfathered FHCs under section 4(o). As I indicated in my testimony, however, the Board is re-examining the extent to which FHCs should be permitted to engage in physical commodities activities under complementary authority and is considering tightening the restrictions around FHCs’ merchant banking activities to the extent permitted by the statute.

Recommendation 2: Clarify Size Limits. The Federal Reserve should issue a clear limit on a financial holding company’s physical commodity activities; clarify how to calculate the market value of physical commodity holdings; eliminate major exclusions; and limit all physical commodity activities to no more than 5 percent of the financial holding company’s Tier 1 capital. The Office of the Comptroller of the Currency should revise its

5 percent limit to protect banks from speculative or other risky positions, including by calculating it based on asset values on a commodity-by-commodity basis.

To reduce the potential safety and soundness risks of physical commodities, the Board has limited the market value of physical commodities that a FHC is able to hold under section 4(k)(1)(B) (complementary authority) of the BHC Act to 5 percent of consolidated tier 1 capital. This limit is imposed as a condition of the Board's approval of each FHC to engage in physical commodities trading under complementary authority.

In contrast, the BHC Act specifically permits FHCs to make merchant banking investments without any cap on the volume of the investments and engage in activities pursuant to the section 4(o) grandfather provision subject to a statutory cap that is based on the firm's assets, not capital. There are no prior approval requirements in order for a qualifying FHC to engage in either of these activities. Moreover, national banks controlled by FHCs may engage in activities pursuant to the National Bank Act (NBA) subject to the Office of the Comptroller of the Currency's (OCC) supervision. These banks are not required to obtain the Board's approval before engaging in physical commodities activities authorized under the NBA.

The Board is considering how to address this recommendation and public comments received in response to its Advance Notice of Proposed Rulemaking (ANPR) regarding physical commodities activities¹ that suggest that Board should adjust the current cap on physical commodities activities. Given its ability to impose and modify conditions on activities under complementary authority, one option for the Board's consideration is amending the current 5 percent of tier 1 capital limitation to take account of physical commodities held under other authorities. Board staff expects to discuss with the OCC coordinating the agencies' limits imposed on the physical commodities activities of FHCs and such companies' subsidiary national banks as part of any rules proposed by the Board in this area.

Recommendation 3: Strengthen Disclosures. *The Federal Reserve should strengthen financial holding company disclosure requirements for physical commodities and related businesses in internal and public filings to support effective regulatory oversight, public disclosure, and investor protections, including with respect to commodity-related merchant banking and grandfathered activities.*

The Board asked for comment on potential additional reporting and disclosure requirements around FHC physical commodities activities in the ANPR. As I indicated in my testimony, the Board is exploring measures such as additional data collection and reporting requirements on physical commodities activities of FHCs to help ensure that

¹ Complementary Activities, Merchant Banking Activities, and Other Activities of Financial Holding Companies Related to Physical Commodities, 79 Fed. Reg. 3329 (Jan. 21, 2014) [hereinafter "ANPR"].

such activities do not pose undue risks to the safety and soundness of FHCs and their subsidiary depository institutions, or to financial stability.

Recommendation 4: Narrow Scope of Complementary Activity. *The Federal Reserve should narrow the scope of “complementary” activities by requiring financial holding companies to demonstrate how a proposed physical commodity activity would be directly linked to and support the settlement of other financial transactions conducted by the company.*

As noted in the ANPR, recent actions by FHCs may suggest that the relationship between commodities derivatives and physical commodities markets (or the relationship between participants in such markets) may not be as close as previously claimed or expected. Because complementary activities should be “meaningfully connected” to a financial activity such that it “complements” the financial activity, the Board is reexamining whether each of the previously approved complementary commodities activities continues to meet this statutory requirement. The Board is also comprehensively reevaluating the potential costs and benefits (to FHCs and the public generally) associated with FHC engagement in complementary commodities activities.

Recommendation 5: Clarify Scope of Grandfathering Clause. *The Federal Reserve should clarify the scope of the “grandfather” clause as originally intended, which was only to prevent disinvestment of physical commodity activities that were underway in September 1997, and continued to be underway at the time of a company’s conversion to a financial holding company.*

Section 4(o) of the BHC Act is drafted in a manner that is unusual for grandfather provisions. The two firms currently grandfathered under section 4(o) read the language of the provision to permit a broad and flexible range of activities. The Levin-McCain report, “Wall Street Bank Involvement with Physical Commodities,” and certain comments to the ANPR propose a narrower reading.

As discussed in the ANPR, the Board is considering whether it should impose conditions on activities conducted pursuant to section 4(o) to insure that these activities are conducted in a safe and sound manner. It should be noted that many of the current physical commodities activities in which these firms engage are activities that would be permitted under the most restrictive interpretation of section 4(o).

Recommendation 6: Narrow Scope of Merchant Banking Authority. *The Federal Reserve should tighten controls over merchant banking activities involving physical commodities by shortening and equalizing the 10-year and 15-year investment time periods, clarifying the actions that qualify as “routine operation and management” of a business, and including those activities under an overall physical commodities size limit.*

The Board is considering how to address this recommendation and numerous public comments regarding merchant banking that it received in response to the ANPR. Options for the Board’s consideration include revising the regulations to reduce the investment periods currently permitted under the Board’s merchant banking regulations and providing additional clarity regarding actions that constitute routine management or operation or that would suggest an investment is not part of a bona fide merchant banking activity.

The Board is also considering whether it is appropriate to and, if so, how it may further limit the amount of merchant banking investments in which a FHC engages. The BHC Act does not require FHCs to obtain the Board’s approval before making investments under the merchant banking provisions of the Act and does not impose limits on the amount of such investments. As noted above, one option the Board may consider is to amend one of its conditions for engaging in physical commodities activities under complementary authority--the limit of physical commodities held under complementary authority to 5 percent of the company’s tier 1 capital--to also include physical commodities held under other authorities, such as merchant banking portfolio companies’ ownership of physical commodities activities.

Recommendation 7: Establish Capital and Insurance Minimums. *The Federal Reserve should establish capital and insurance minimums based on market-prevailing standards to protect against potential losses from catastrophic events in physical commodity activities, and specify the catastrophic event models used by financial holding companies.*

The ANPR sought comment on whether the risks to the safety and soundness of FHCs and to financial stability generated by physical commodities activities should be further mitigated by imposing enhanced capital requirements or increased insurance requirements on FHCs that engage in physical commodities activities. As I indicated in my testimony, the Board is exploring measures such as additional capital requirements and enhanced risk-management requirements on physical commodities activities of FHCs to help ensure that such activities do not pose undue risks to the safety and soundness of FHCs and their subsidiary depository institutions, or to financial stability.

Recommendation 8: Prevent Unfair Trading. *Financial regulators should ensure that large traders, including financial holding companies, are legally precluded from using material non-public information gained from physical commodities activities to benefit their trading activities in the financial markets.*

The Board's supervisory and regulatory authority regarding FHCs and systemic risk is limited to that granted by statute and grounded in concerns for safety and soundness and financial stability.² The authority to oversee the securities, derivatives, and commodities markets is vested in agencies such as the Commodity Futures Trading Commission (CFTC), the Federal Energy Regulatory Commission (FERC), and the Securities and Exchange Commission (SEC), which have specific oversight authority and special enforcement tools for addressing market manipulation and conflicts of interest in trading activities. In particular, these agencies have access to information regarding the practices of a wide range of market participants, whereas the Board only has access to the activities of the participants that are banking firms. As a result, the agencies with direct market oversight authority are in the best position to tell whether certain practices deviate from market practices, including trading and pricing practices.

However, if Board staff suspects a problem as a result of its supervisory review, staff would refer the matter to the appropriate market regulator(s) and, of course, cooperate with that agency, as requested. Moreover, consistent with my testimony on November 21, 2014, Board staff intend to discuss with banking and market regulators the adequacy of current policies and procedures for compliance with the agencies' current regulations and whether there are any lacunae in the regulatory or statutory structure that might warrant revision.

Recommendation 9: Utilize Section 620 Study. *Federal regulators should use the ongoing Section 620 study requiring regulators to identify permissible bank activities to restrict banks and their holding companies from owning or controlling physical commodities in excess of 5% of their Tier 1 capital and consider other appropriate modifications to current practice involving physical commodities.*

The Board is working with the other U.S. federal banking agencies to complete the section 620 study required by the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act). As part of this effort, the agencies are considering, among other things, the costs and benefits of, and the existing limit structures around, the existing commodities activities of banks and bank holding companies.

Recommendation 10: Reclassify Commodity-Backed ETFs. *The Commodity Futures Trading Commission (CFTC) and Securities Exchange Commission (SEC) should treat exchange traded funds (ETFs) backed by physical commodities as hybrid security-commodity instruments subject to regulation by both agencies. The CFTC should apply*

² See, e.g., Board of Governors v. Dimension Financial Corp., 474 U.S. 361 (1986); Western Bancshares, Inc. v. Board of Governors, 480 F.2d 749 (10th Cir. 1973). The Board also has authority to take supervisory actions, including enforcement actions, to prevent or address unsafe and unsound practices. 12 U.S.C. § 1818(b)(3).

position limits to ETF organizers and promoters, and consider banning such instruments due to their potential use in commodity market corners or squeezes.

This matter is within the jurisdiction of the CFTC and SEC.

Recommendation 11: Study Misuse of Physical Commodities to Manipulate Prices.
The Office of Financial Research should study and produce recommendations on the broader issue of how to detect, prevent, and take enforcement action against all entities that use physical commodities or related businesses to manipulate commodity prices in the physical and financial markets.

The Board welcomes the opportunity to assist the Office of Financial Research in its consideration or implementation of this recommendation.

2. Please indicate what actions the Federal Reserve can take to strengthen its coordination with other federal agencies charged with detecting, preventing, and taking enforcement action against price and market manipulation by financial holding companies.

As noted above, the Board's supervisory and regulatory authority regarding FHCs companies and systemic risk is limited to that granted by statute. The authority to oversee the securities, derivatives, and commodities markets is vested in agencies such as the CFTC, FERC, and SEC, which have specific oversight authority including the jurisdiction to address market manipulation. In addition, these agencies have access to information regarding the practices of a wide range of market participants, whereas the Board only has access to the activities of the participants that are banking firms. As a result, the agencies with direct market oversight authority are in the best position to tell whether certain practices deviate from market practices, including trading and pricing practices.

If Board staff suspects a problem as a result of its review of the commodities activities of BHCs, staff would refer the matter to the appropriate market regulator(s) and, of course, cooperate with that agency, as requested. Moreover, consistent with my testimony on November 21, 2014, Board staff intend to discuss with banking and market regulators the adequacy of current policies and procedures for compliance with the agencies' current regulations and whether there are any lacunae in the regulatory or statutory structure that might warrant revision.

3. Please indicate whether you believe that the Bank Holding Company Act, whose purposes include separating banking from commerce, provides the Federal Reserve with sufficient legal authority to establish an overall limit on the size of a financial holding company's physical commodity holdings, even if those holdings were accumulated under multiple legal authorities. Please explain.

As explained above, the Board's authority to impose overall size limits on the conduct of a FHC's physical commodity holdings is dependent on the authority under which the firm conducts the activity. The Board has imposed a size limit on the physical commodities held under section 4(k)(1)(B) of the BHC Act as a condition of the Board's approval of each notice of a FHC to engage in physical commodities trading under that authority. The Board may amend such a condition to include physical commodities held under other authorities.

Subsidiaries of bank holding companies may engage in various types of physical commodities activities using other authorities granted by Congress by statute or by other agencies.³ For example, in section 4(o) of the BHC Act, Congress established a separate statutory authority to engage in certain physical commodities activities and investments and established a statutory limit on the amount such grandfathered activities or investments at 5 percent of the FHC's consolidated assets.

As explained in the Levin-McCain report, the OCC also has provided limits on the agency's approvals of national banks' requests to engage in certain physical commodities activities. As discussed in my testimony, the Board is considering what authority, if any, it has to impose an enforceable overall cap on the physical commodities activities of FHCs. As the OCC has authority to interpret the NBA and is the primary federal regulator of national banks, Board staff will discuss with the OCC coordinating the agencies' size limits imposed on the physical commodities activities of FHCs and such companies' subsidiary national banks.

4. Please provide a date by which the Federal Reserve will consult with the Office of the Comptroller of the Currency about subjecting the physical copper holdings of banks and their holding companies to the same size limits that apply to other base metals, and also indicate whether this issue may be addressed in the rule to be proposed in the first quarter of 2015.

Board staff is consulting with staff of the OCC about the OCC's interpretation of copper as "coin" or "bullion" under the NBA and the related Board interpretation of the BHC Act that allows bank holding companies to buy, sell, or store copper under the same authority as the companies are able to buy, sell, or store gold, silver, and certain similar metals. It is too early in this consultation process to determine whether revisions to the

³ See 12 U.S.C. §§ 1818(b), 1843(k)(7), 1844(b).

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Board's regulations, if any, would be a part of the notice of proposed rulemaking to which I made reference in my testimony on November 21, 2014.

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Chiara Trabucchi

Principal, Industrial Economics Incorporated

Response to Question

received from

Permanent Subcommittee on Investigations

Committee on Homeland Security and Governmental Affairs

United States Senate

Hearing on

Wall Street Bank Involvement with Physical Commodities

December 4, 2014

Permanent Subcommittee on Investigations

EXHIBIT #100b

Chiara Trabucchi. Response to Question

1. **FROM SENATOR LEVIN. During the hearing, you offered testimony about how an effective size limit on the physical commodity holdings of financial holding companies should be designed. Could you please elaborate on how that size limit should be designed and why?**

In my view, the Board of Governors of the Federal Reserve System (Board) should limit the breadth and scope of Financial Holding Company (FHC) involvement in physical commodity activities based on the nature of activity, and not simply on the size of aggregate investment. As I stated in my testimony, tightening approval of complementary activities, tightening controls with respect to the duration and nature of merchant banking investments, denying applications that involve environmentally sensitive commodities with long-tailed risk profiles, and eliminating the ability of any FHC to own or operate facilities engaged in the extraction, transportation, storage or distribution of commodities will mitigate the risk exposure facing FHCs from environmental or catastrophic events associated with physical commodity activities.

Modern portfolio theory suggests that diversification reduces return variance (risk) on financial asset portfolios. However, in the context of physical commodity-related acquisitions by FHCs, diversification does not translate into reduced risk. To the contrary, the more diversified the FHC is across different industrial sectors with sophisticated physical systems that are beyond the scope of its expertise, the greater the likelihood of an environmental or catastrophic event resulting in incident-related expenditures that are financially material. Further, as FHCs continue to acquire facilities with aggressive environmental risk profiles this risk compounds.

In the context of environmental risk management, “larger” in size does not translate to “safer” in risk. Traditional capital adequacy ratios (CARs) and liquidity coverage ratios (LCRs) fail to explicitly impute the environmental risk profile (and attendant probable loss scenarios) of physical commodity-related activities when deriving a measure of “risk-weighted” assets. In my view, the Board should impose financial standards that benchmark the FHC’s “hard” capital, i.e., capital that is free and clear of encumbrances, against risk-weighted assets that impute maximum probable environmental and catastrophic loss scenarios. These scenarios should be

Chiara Trabucchi. Response to Question

derived on an event-specific and site-specific basis, such that the FHC is required to derive monetized estimates of probable loss associated with the specific environmental and catastrophic risks posed by the FHC's activities in physical-commodity sectors.¹ Simply imputing monetized estimates of the lost market value of the commodities involved, or arguing that a legal shield obviates any financial responsibility, defies common sense and will assuredly lead to undervaluation of prospective risk. In addition, the Board should consider embedding a multiplier into the standard such that the FHC must evidence a buffer between the probable loss exposure and the tangible capital available to pay for incident-related expenditures.²

The principles underpinning traditional environmental risk management and financial assurance dictate that companies engaged in industrial activities should remain financially accountable for incident related expenditures. Industrial actors that opt to *self-insure* must evidence the ability to leverage funds in the timing and amounts needed to pay for environmental obligations. Solvency constraints, liquidity thresholds and leverage restrictions ensure that these companies maintain the financial resources to adequately respond to environmental or catastrophic events involving their facilities.

To the degree dedicated financial assurance instruments, e.g., insurance, exist to defray incident-related expenditures, then the value of these instruments should be factored into the design of prescriptive financial standards. However, if the FHC maintains minimal or no third-party financial assurances and elects to 'self-insure' its environmental risk exposure, it is essential that the Board appropriately assess the accessibility of the FHC's unencumbered assets to pay for incident-related expenditures and compensatory damages arising from an environmental or catastrophic event *before* allowing it to engage in physical commodity-related activities.

¹ Such analyses are routinely conducted by firms expert in environmental risk management and natural resource damage assessment.

² See, for example, Title 40 – Protection of Environment, Subpart H – Financial Requirements at 40 CFR 264, and specifically, 40 CFR 264.143(f)(i)(B) for an example of a multiplier standard applicable to owners and operators of hazardous waste facilities that self-insure their environmental obligations under the Resource Conservation and Recovery Act.

Chiara Trabucchi. Response to Question

Finally, when the Board conducts its annual stress tests – in addition to “Economic” and “Financial Market” scenarios, the Board also should conduct environmental and catastrophic event scenarios. In my view, the Board should require FHCs to use at least one environmental incident-related scenario that reflects a high-impact, low probability catastrophic event related to the specific physical-commodity activity in which they are engaged. This scenario should involve an extreme event with maximum loss exposure involving human health effects, fatality, ecological damage, property damage, business interruption, and surface/subsurface trespass. The means by which the injury occurs will vary by commodity type, but should consider injury arising from pipeline rupture or explosion, impoundment failure, mine collapse, contaminant release, industrial accident, mechanical failure, transport accident or explosive decomposition. Depending on the outcome of the above stress tests, the Board should restrict further growth in physical commodity activities and/or require additional financial assurance in the form of independent, third-party financial instruments, e.g., insurance.



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December 9, 2014

By E-mail (Marv_Robertson@hsgac.senate.gov)

Senator Kelly Ayotte
Permanent Subcommittee on Investigations
United States Senate
199 Russell Senate Office Building
1st & Constitution, N.E.
Washington, D.C. 20510

Re: Post-Hearing Questions for the Record

Dear Senator Ayotte:

I write on behalf of The Goldman Sachs Group, Inc. ("Goldman Sachs" or the "Firm") regarding your "Post-Hearing Questions for the Record" relating to Goldman Sachs¹ in connection with the Permanent Subcommittee on Investigation's hearing titled "Wall Street Bank Involvement with Physical Commodities." We have set forth below our responses to these questions, which we have reproduced for your convenience.

1. Could you explain to me why you participate in the physical commodities market? Specifically, could you give me an example of how you would interface with an end-user -- like a municipality or manufacturing company?

A core function of Goldman Sachs is to act as an intermediary, or market maker, for a range of clients. We perform this role across markets for interest rate, currency, equity, credit

¹ The Goldman Sachs Group, Inc. is the Firm's publicly-held parent company. Information Relevant to your questions involves the activities of affiliates controlled by the Firm operating both inside and outside the United States.

Permanent Subcommittee on Investigations

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Senator Kelly Ayotte

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and commodity products. We have been an active market maker in commodities and commodity derivatives markets since 1981.

Many of these transactions are settled financially, in which the parties make payments based on the terms of the transaction. A certain portion of these transactions are settled physically, where one party delivers an asset to the other in exchange for a payment. Though these activities involve physical commodities, they otherwise mirror our market-making in purely financial instruments. In this role, we serve as a bridge between producers on the one hand and consumers and investors on the other, whose interests and exposures offset each other but do not perfectly match.

Although commodity markets include exchange-traded futures contracts, they also encompass large over-the-counter markets, which commodity producers and consumers rely on for the hedging of specific, longer term risks (grade, location, form). In these types of transactions, companies may expect financial institutions to take title to physical commodities and arrange for the storage and transport of commodities with independently managed service providers to help ensure greater liquidity, price stability and certainty of execution.

Goldman Sachs enters into transactions to achieve one or more client objectives, including:

- Funding and Financing. We provide funding to producers and other sellers by agreeing to pay for the commodities we purchase sooner than other purchasers would. We also enter into financing arrangements that effectively monetize client inventories, increasing the amount of capital that these companies have available to invest in their day-to-day businesses and longer-term capital projects. We provide financing to commodity consumers by accepting payment for the commodities we sell them later than other sellers would require. We also provide indirect funding to commodity consumers and other purchasers by maintaining inventory positions in anticipation of near-term customer demand, which clients access as a source of supply.
- Hedging/Investment. We enter into transactions that assist clients in managing the exposures to commodity prices that are inherent in their business activities. Producers may enter into fixed-price sale agreements to protect against price decreases, while consumers may enter into fixed-price purchase agreements to protect against price increases. Bespoke hedging transactions tailored to their specific requirements allow both producers and consumers to increase the efficiency of their operations and lower their costs, which result in more stable prices for the ultimate consumers, which include airline passengers and consumers heating their homes.
- Liquidity. We also provide liquidity to market participants through our willingness to make prices and transact as a market maker.



Senator Kelly Ayotte

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Goldman Sachs' clients in the commodities business include many of the largest companies in the world across virtually every sector:

- Producers, such as natural gas or oil suppliers, power generators and miners that rely on commodities markets to hedge the risks associated with their long-term investment projects.
- Consumers, such as transport companies, utilities and governmental entities that require fuels as well as manufacturers that consume raw materials.
- Investors, such as pension funds and asset managers that buy and sell financial contracts in commodity derivatives markets in order to participate in price movements, act on their market views, and obtain diversification.

Many of these companies as well as several municipal and trade organizations — more than 100 in total — have been outspoken about the importance to them of having financial institutions, like Goldman Sachs, participate in the commodities markets, including with respect to physical markets.²

2. A number of concerns about financial holding companies operating in the physical commodities markets have been raised, and we must ensure that we have a safe banking system, but we should also be mindful of unintended consequences. For example, an article in the *Wall Street Journal* earlier this week noted that until small-town officials brought it to their attention, the Fed was unaware that limiting banks participation in commodities could affect municipalities' ability to get long-term natural-gas contracts. We all want a safe banking system, but we must also ensure that we do not hamper end-users', like our municipalities, ability to operate efficiently. In each of your opinions, what would be the consequences if bank holding companies were forced out of the market? Who would fill the void?

² In response to the Federal Reserve's January 2014 Advanced Notice of Proposed Rulemaking on commodities and merchant banking, end-users, particularly corporate entities, were outspoken in their support for continuing financial institution participation in the commodities markets. (Letters of commenters may be found at http://www.federalreserve.gov/apps/foia/ViewAllComments.aspx?doc_id=R-1479&doc_ver=1).



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Through its role as intermediary, Goldman Sachs believes that its physical commodities business helps producers, consumers, institutional investors and governments manage different types of financial risks, including interest rate risk, credit risk, foreign currency risk, and commodities risk. Although other market participants may provide intermediation services from time to time, their role is notably different from that of financial institutions. The most obvious alternative is a trading house, which participates in commodities markets by sourcing, storing, and delivering physical commodities for other participants. Trading houses typically do not act as market makers on a consistent or ongoing basis; instead they transact in commodities markets to earn a return on their own assets.

Financial institutions differ from trading houses and other non-bank organizations, including non-U.S. companies, in several other important ways. Financial institutions are subject to comprehensive regulation and stringent prudential oversight. Because they have developed an infrastructure and capability to provide multiple financial services, financial institutions are able to offer clients more economical terms than providers that offer a more limited set of services.

3. Mr. Agran, Goldman Sachs has publicly stated that it intends to maintain its commodities business. Why is Goldman Sachs staying in the commodities market while many of your competitors are exiting?

We believe that the participation of financial institutions such as Goldman Sachs in commodities markets provides substantial benefits to these markets and thus to the broader economy.

Companies manage their commodities exposure through physical or financial markets, or both, often using financial institutions as intermediaries. For producers and consumers, hedging the risks associated with their day-to-day operations or their long-term investment projects can support higher returns, lower capital costs, and promote stronger growth, particularly if it encourages companies to undertake worthwhile investment projects. In particular, hedging in commodities markets allows companies to adjust the size and timing of the capital they need to borrow or raise. Such hedging also reduces the size of required equity reserves, which allows more resources to be shifted to profit-making opportunities and companies to avoid project disruptions and undesirable asset sales, the net economic impact of which can be considerable. In many instances, standardized contracts offered on exchanges are not perfect matches for these risks.

Financial institutions like Goldman Sachs provide funding and risk management products to the smaller and mid-sized producers that are at the vanguard of unlocking new discoveries and commodity supplies, lowering prices in the long-term. For example, the United States recently overtook Saudi Arabia as the largest producer of crude oil. But unlike Saudi Arabia, in which a single company, Saudi Aramco, is responsible for the country's entire output, over 4,000 distinct enterprises contribute to U.S. production. The mid- and smaller sized producers in particular



Senator Kelly Ayotte

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need the funding and financial expertise that institutions such as Goldman Sachs are particularly well suited to provide. Hedge programs that financial institutions offer enable these producers to lock in prices on new projects, which help them to attract new capital. In fact, the United States has experienced a surge in U.S. oil and natural gas production since 2008. Many of the companies involved in this "Shale Revolution," which has completely altered the position of the United States economically and strategically, have been clients of Goldman Sachs and other financial institutions.

4. The Subcommittee Report references a 2012 New York Fed report that indicates that your companies did not have allocated capital and insurance to cover extreme loss scenarios. The Subcommittee report notes that your companies each had a shortfall of \$1 billion to \$15 billion. The Report concludes that if a catastrophic event happened and a financial holding company was subject to multi-billion-dollar losses, that the financial holding company would not have the capital and insurance to cover losses. Have you seen the referenced 2012 New York Fed report and how do you respond? Do you have adequate capital and insurance to cover losses?

Goldman Sachs has not been provided with a copy of the "2012 New York Fed report" referenced in the Subcommittee's Report. We nevertheless disagree with the assertion that Goldman Sachs has a shortfall of \$1 billion to \$15 billion with respect to allocated capital and insurance to cover extreme loss scenarios.

As an initial matter, we believe that given the limited nature of bank holding companies' participation in the physical commodities markets, the risks are quite limited and manageable. Financial intermediary activities involve taking title to commodities and arranging for them to be stored and transported by independently managed service providers. For example, with respect to the activities of Nufcor, an affiliate that is a market maker in uranium, the Firm has limited its intermediation activities to unenriched uranium, which as Senator Levin has recognized, "is not a harmfully radioactive substance."³ We do not take physical possession of uranium — let alone transport, deliver, or process it. Our ownership interest is merely reflected as book entries at highly secure depositories that are subject to substantial government oversight.

Most laws that have been enacted to deter environmental damage and allocate liability are based on the common sense notion that the parties that are in the best position to prevent

³ Letter from Senator Carl Levin to Robert deV. Frierson, Secretary, Board of Governors of the Federal Reserve System, dated April 16, 2014, at 14.



Senator Kelly Ayotte

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damages are the parties that will be liable for damages should they arise. Under these laws, it is the owners and operators of facilities that will be liable for damages. Goldman Sachs does not own or operate such facilities as part of its intermediation activities and therefore would not be subject to liability unless Goldman Sachs itself is found to have caused or contributed to the incident. Moreover, it is a bedrock principle of corporate law that stockholders are not liable for the obligations of a corporation, even when the stockholder owns 100% of the shares of the corporation, except where, for example, the shareholder exercises complete domination over the company and uses the domination to commit fraud or wrongful acts against another party.

Consistent with the laws allocating liability, Goldman Sachs has a range of policies, procedures and resources dedicated to ensuring that the risk of our investing activity is limited to the capital at risk. And before making an investment, Goldman Sachs conducts substantial diligence with respect to the target company and its business, including its approach to risk management and mitigation and the strength of its insurance program.

Goldman Sachs believes that it has adequate insurance and capital to cover any potential losses in connection with its role in the physical commodities markets. Although we believe that such role is limited as described above, following Goldman Sachs' acquisition of Nufcor, the Firm enhanced its insurance program to obtain additional coverage, the cost of which was low in light of the remoteness of any potential risks. With respect to capital, Goldman Sachs conducts a comprehensive analysis to determine the amount of operational risk capital to set aside, including examining environmental risk scenarios.

Sincerely,

A handwritten signature in black ink, appearing to read "Abbe David Lowell". The signature is fluid and cursive, with the first name "Abbe" being more prominent.

Abbe David Lowell

cc: Chief Clerk Mary D. Robertson
Steven R. Peikin, Esq.

Akin Gump
STRAUSS HAUER & FELD LLP

STEVEN R. ROSS
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December 10, 2014

VIA ELECTRONIC DELIVERY

The Honorable Carl Levin
Chairman
Permanent Subcommittee on Investigations
Committee on Homeland Security & Government Affairs
United States Senate
Russell Senate Office Building, SR-199
Washington, DC 20510

Re: JPMorgan Chase & Co's Responses to Questions for the Record

Dear Chairman Levin:

On behalf of JPMorgan Chase & Co ("J.P. Morgan"), I write in connection with the November 20 and 21, 2014 Permanent Subcommittee on Investigations hearing titled "Wall Street Bank Involvement With Physical Commodities." This submission includes J.P. Morgan's responses to the post-hearing questions for the record posed by Senator Kelly Ayotte. J.P. Morgan's responses to the specific questions below are as follows:

Question 1: Could you explain to me why you participate in the physical commodities market? Specifically, could you give me an example of how you would interface with an end-user -- like a municipality or manufacturing company?

Response: J.P. Morgan has engaged in a physical commodities business to help its clients that, by nature of their business or investments, buy or sell physical commodities. Specifically, through its Global Commodities Group ("GCG"), J.P. Morgan manages a customer-driven commodity derivatives and commodities financial intermediation business, providing its clients with risk management and financing solutions for their commodity exposures.

As a market-maker, J.P. Morgan serves as a readily available counter-party for entities looking to manage their commodities exposures. Those entities include manufacturers seeking to lock in the price of their commodity inputs, such as a car manufacturer that seeks to hedge the cost of the aluminum needed to make its product, and they include entities that seek to hedge their production of commodities, such as an exploration and production company that seeks to

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hedge the price it will receive for its commodities. These hedges can be financial swaps or they could be forwards that settle by delivery of the commodity. Thus, when J.P. Morgan has bought a physical commodity, it has not done so for itself, but rather to satisfy the needs of those clients that desired a physical hedge. J.P. Morgan strives to maintain a balance between its contracts to buy and its contracts to sell, so that at all times its actual net position for a given physical commodity is fairly modest, and the risk exposure is fairly limited. This is very different from those investors who, speculating that the price of a particular commodity will either rise or fall, build up a position in that commodity for themselves.

J.P. Morgan's physical commodities business—and specifically its role as market-maker, liquidity provider, and financial intermediary—has provided a tangible benefit to its customers. For example, an airline that needs to obtain jet fuel on a regular basis may want to hedge its exposure to fluctuations in the price of the fuel. By offering a financial derivative to the airline, J.P. Morgan's commodities business delivers not only a hedge against future price fluctuations, but also a predictability that allows the airline to focus on the safe operation of its business. J.P. Morgan then hedges the exposure incurred by entering into an offsetting trade with another customer or by transacting in the futures markets. As another example, through the use of derivatives that hedged natural gas prices, J.P. Morgan has facilitated the purchase of natural gas by municipalities around the United States at below the prevailing market price under what are called "municipal gas pre-pay transactions," allowing those municipalities to pass on the benefits to their residents.

Question 2: A number of concerns about financial holding companies operating in the physical commodities markets have been raised, and we must ensure that we have a safe banking system, but we should also be mindful of unintended consequences.

For example, an article in the Wall Street Journal earlier this week noted that until small-town officials brought it to their attention, the Fed was unaware that limiting banks participation in commodities could affect municipalities' ability to get long-term natural-gas contracts. We all want a safe banking system, but we must also ensure that we do not hamper end-users', like our municipalities, ability to operate efficiently.

In each of your opinions, what would be the consequences if bank holding companies were forced out of the market? Who would fill the void?

Response: In J.P. Morgan's experience, the other major entities involved in the commodity financing space generally include commodity merchant traders, private equity, hedge funds, and sovereign wealth funds. It is impossible to predict how that might change if banks and bank holding companies were no longer involved. However, it is worth noting that, in J.P. Morgan's

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experience, there are not many other entities involved with respect to the specific example identified.

Question 3: Mr. Anderson, you stated that JPMorgan has already sold much of its physical commodities assets and business and that going forward, JPMorgan plans to focus on its financial derivatives business, not physical commodities. Why has JPMorgan decided to get out of physical commodities?

Response: It is correct that much of J.P. Morgan's physical commodities assets and business has been sold. In October 2014, J.P. Morgan closed on the sale of a large portion of the business to Mercuria Energy Group and, in addition, has sold and continues to sell other portions of the business to different buyers. The decision to significantly reduce J.P. Morgan's physical commodities activities was part of an overall business simplification strategy and reflects a commitment to concentrate on J.P. Morgan's core strengths. This will allow J.P. Morgan to remain focused on its financial derivatives business going forward. The associated physical commodities activities will be limited to an exchange warrants business in base metals, traditional bank activities involving precious metals, and a commodities finance business that may involve taking title to physical commodities as the underlying collateral to the financing.

Question 4: The Subcommittee Report references a 2012 New York Fed report that indicates that your companies did not have allocated capital and insurance to cover extreme loss scenarios. The Subcommittee report notes that your companies each had a shortfall of \$1 billion to \$15 billion.

The Report concludes that if a catastrophic event happened and a financial holding company was subject to multi-billion-dollar losses, that the financial holding company would not have the capital and insurance to cover losses.

Have you seen the referenced 2012 New York Fed report and how do you respond? Do you have adequate capital and insurance to cover losses?

Response: J.P. Morgan does not have and has not reviewed a copy of the referenced 2012 report, and so is unable to comment specifically on the contents or conclusions of that report. That said, the safety and soundness of J.P. Morgan is the institution's number one priority. J.P. Morgan is very proud of its risk management practices and of its capital strength.

Any discussion regarding the risk of catastrophic events should begin with the understanding that J.P. Morgan has significantly reduced its physical commodities activities and, for instance, does not operate any power plants or transport oil.

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J.P. Morgan first limits its risk and potential liabilities through a robust risk management program that, within GCG, has been tailored to its activities—or, in many cases, prior activities—involving physical commodities. It is important to note that J.P. Morgan does not operate any vessels, vehicles, pipelines or other means of transporting commodities, nor does it operate storage facilities for oil or natural gas. That risk management program includes: (1) pre-operating controls, which include, among other things, hiring skilled personnel who have had specific prior operational experience regarding the relevant physical commodities and maintaining a comprehensive Operating Risk Committee approval process for proposed new business initiatives; (2) strenuous operating controls for ongoing activities, which include policies imposing strict standards that must be used by third party vendors retained by GCG to work with physical commodities¹; and (3) comprehensive post-operating controls regarding incident management, including a customized, stand-alone emergency response procedure. Through this risk management program, GCG has first sought to mitigate any unintended event related to its physical commodities business, as well as any potential exposure for J.P. Morgan that could arise following such an event.

In addition, GCG carries a significant level of insurance as an additional layer of protection. This insurance coverage includes (as of July 2014): \$1.45 billion in coverage for offshore marine and cargo owner liability; \$500 million in coverage for onshore marine liability; and another combined \$650 million in coverage for all-risks cargo, terrorism, and pollution/legal liability.

Finally, even if—notwithstanding the risk management program described above—an event occurred and liability was ascribed in excess of GCG's robust insurance coverage, J.P. Morgan maintains a sufficient amount of operational risk capital across the institution, as determined by the Federal Reserve, to address such a contingency. The amount of operational risk capital held by J.P. Morgan has increased substantially since 2012, and J.P. Morgan is in frequent communication with the Federal Reserve about this and many other issues.

Question 5: The Subcommittee Report alleges that JPMorgan circumvented both the Fed and OCC 5% limits by excluding certain categories of commodities from your calculation. Can you

¹ For instance, if GCG had chartered a ship to transport oil (an activity in which J.P. Morgan is no longer involved), that ship would have been operated by a vetted and qualified third party vendor, not by J.P. Morgan. Further, the actual owners and/or operators—and not J.P. Morgan—would have carried the primary liability for any incidents. GCG also requires these vendors to carry their own liability insurance policies.

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explain how these limits work and how you calculated them in light of the guidance your regulators provided?

Response: J.P. Morgan is and has always been committed to candor and transparency with its regulators. At no time has it been J.P. Morgan's intent to misrepresent the relevant facts or circumstances, or to circumvent the applicable Federal Reserve or OCC limits.

J.P. Morgan is in regular and ongoing dialogue with both its regulators, the OCC and the Federal Reserve, about its physical commodities business and its compliance with the applicable limits. J.P. Morgan's compliance with the Federal Reserve's limit is reported monthly, and the OCC, per its request, receives reports from J.P. Morgan on a quarterly basis (though, as discussed below, the relevant activity is calculated daily). In addition, J.P. Morgan meets quarterly with both regulating entities, providing the regulators with a broader picture of the status of its overall commodities business, including its activities in physical commodities.

The OCC—as the lead regulator of JP Morgan Chase Bank, N.A. (the “Bank”), a national bank—oversees the physical commodities activities done within the Bank. The OCC has restricted the Bank's physical commodities activities to hedging customer related derivatives business and has imposed an activity limit, requiring that physical activities be only a nominal percentage (5%) of the Bank's overall commodities activity. J.P. Morgan calculates its compliance with the OCC's activity limit daily. As the only physical activity that is in the Bank is base metals, this calculation looks at, within the Bank, the total amount of LME metals and off warrant metals versus the total amount of its overall metals activity (derivatives, LME metals, off warrant metals, and futures). The physical component of these activities is limited to 5%, and is calculated in terms of volumes (measured in metric tonnes). The numerator is the gross amount of base metals held in inventory plus the gross amount of metal that moves through the bank that day in instantaneous title transfer transactions, and the denominator is the gross notional of all metals activity, both physical and outstanding derivatives and futures referencing base metals. Finally, while the OCC's quantity of activity limit is not a risk limit, even if these activities were to be included in a risk limit, the incremental market risk is minimal as the physical commodities activities in question are a hedge within a customer-driven derivatives business, yielding a very minimal net position at any given point in time.

The Federal Reserve regulates J.P. Morgan's physical commodities activities in bank holding company subsidiaries (outside the Bank) and requires that the market value of physical commodities held by J.P. Morgan's holding company (and its subsidiaries other than the Bank) as complementary activities not exceed 5% of its consolidated Tier 1 capital. This 5% limit applies to all complementary physical commodity activities approved by the Federal Reserve under Regulation Y and, accordingly, the limit does not include commodities positions held in

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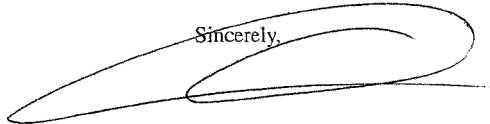
the Bank pursuant to the authority granted by the OCC, and it also does not include precious metals for which the holding company and the Bank have express regulatory and statutory authority, respectively. Thus, for purposes of the Federal Reserve's 5% limit, the numerator is the value of the physical commodity inventory of J.P. Morgan's holding company and its subsidiaries (aside from precious metals), and the denominator is J.P. Morgan's Tier 1 capital.

* * *

Production of this information and documents is not intended to constitute a waiver of the attorney-client, attorney work product, or any other applicable rights or privileges in this or any other forum. J.P. Morgan expressly reserves its rights in this regard.

Please let me know if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Steven R. Ross", written over the word "Sincerely,".

Steven R. Ross
Counsel for JPMorgan Chase & Co

cc: The Honorable John McCain, Ranking Member

WILMERHALE

December 9, 2014

Reginald J. Brown

By E-mail and Courier

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Hon. Kelly Ayotte
Permanent Subcommittee on Investigations
Committee on Homeland Security and Government Affairs
United States Senate
SR-199 Russell Senate Office Building
Washington, DC 20510

Dear Senator Ayotte,

We submit this letter on behalf of Simon Greenshields and Morgan Stanley's Commodities Division ("Morgan Stanley") in response to Senator Ayotte's Post-Hearing Questions for the Record that were submitted on November 24, 2014, in connection with the Subcommittee's two-day hearing, "Wall Street Bank Involvement With Physical Commodities," held on November 20 and 21, 2014.

Responses to Senator Ayotte's Post-Hearing Questions for the Record follow.

* * * *

Could you explain to me why you participate in the physical commodities market? Specifically, could you give me an example of how you would interface with an end-user—like a municipality or manufacturing company?

Morgan Stanley plays a critical role in meeting the needs of producers, processors, and commercial users of commodities by helping them manage complex and long-term commodity price and physical supply risk. Morgan Stanley's clients and counterparties are cooperatives, cities, governments, and corporations, ranging from small businesses to global enterprises.

By owning physical inventory, Morgan Stanley has been able to meet the demands of its clients whose businesses require that they transact in the physical market. These clients may not have the means to fulfill their physical supply requirements economically and efficiently, or they may not have the right infrastructure in the right locations, or they may have difficult-to-address seasonal or cyclical requirements. Ownership of physical commodities also facilitates participation in the derivatives market, where contracts may be settled by physical delivery. Morgan Stanley's ability to participate in both the physical and derivative markets has enabled it to provide clients with customized solutions to their price risk management and supply needs.

Wilmer Cutler Pickering
Beijing Berlin Boston Brussels

Permanent Subcommittee on Investigations

EXHIBIT #101c

Washington, DC 20006

Ark Oxford Palo Alto Washington

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For example, in recent years Morgan Stanley has helped public utility districts ("PUDs") stabilize power rates through a number of hydropower transactions. Typically, Morgan Stanley makes fixed payments to the PUDs in exchange for a percentage of hydropower production under whatever generating conditions exist at the time. The payment stream serves to stabilize rates and overall revenues from year to year, providing more predictability in future revenues and decreasing the risks associated with river flows and changes in wholesale electricity prices. Although it is not guaranteed a specific number of megawatts, as a provider of liquidity and risk management services, Morgan Stanley is able to manage those risks.

Morgan Stanley also helped a private U.S. buyer purchase three struggling U.S. refineries in late 2010 and mid-2011. The private buyer needed working capital along with logistical expertise to supply crude oil at one Ohio refinery and offtake the refined products at two other refineries located in New Jersey and Delaware. Morgan Stanley had the expertise and capacity to offer the logistical services, crude supply, product offtake, and inventory ownership (which replaced the need for financing). Morgan Stanley's services facilitated the continued operation of these refineries during a period of supply constraints in the Northeast market.

In your opinion, what would be the consequences if bank holding companies were forced out of the market? Who would fill the void?

The historical role of U.S. financial institutions in the commodities markets has contributed to enhanced liquidity, more sources of financing, and stronger support for commodity-related projects, while also promoting national economic stability and security. Financial institutions play an important role in meeting the needs of U.S. businesses in critical industries, such as airlines and energy producers, that depend on wholesale commodity markets. The public benefits of permitting financial institutions to engage in wholesale physical commodities activities are real and significant.

The consequences of impairing the role of financial institutions in the commodities marketplace could be negative and wide-reaching. It could reduce competition and our clients' access to risk management and financing services. For example, the development of renewable energy projects such as wind farms and solar power projects could be curtailed if developers are unable to effectively hedge price risks. Airlines, highly vulnerable to jet fuel prices, would also have less access to hedging services. While it is difficult to predict who would attempt to fill the void, it is unlikely that others would be as highly-regulated as financial institutions.

Have you seen the referenced 2012 New York Fed report and how do you respond? Do you have adequate capital and insurance to cover losses?

Morgan Stanley has not seen the 2012 Summary Report. Morgan Stanley is adequately capitalized and insured.

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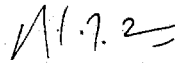
WILMERHALE

Hon. Kelly Ayotte
December 9, 2014
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* * * *

Thank you for the opportunity to provide this response.

Sincerely,

A handwritten signature in dark ink, appearing to read "R. J. Brown", with a horizontal line extending from the end.

Reginald J. Brown
Sarah Pfuhl

cc: Hon. Carl Levin, Chairman
Hon. John McCain, Ranking Minority Member

Written Answers of Jorge Vazquez
 Founder and Managing Director of HARBOR Aluminum Intelligence LLC
 Submitted to
 Senator Tammy Baldwin
 on Post-Hearing Questions on
 "Wall Street Bank Involvement with Physical Commodities"
 December 3, 2014

Senator Baldwin,

Thank you for your questions related to aluminum warehousing in the United States and aluminum physical premiums in the market. Please find my thoughts below.

1. **The price of aluminum has two major components, the London Metal Exchange (LME) Price and the Regional Premium, which in the U.S. is referred to as the Midwest Aluminum Premium, correct?**

Correct. The "all-in price" of aluminum in North America (a collective term comprising the US, Canada and Mexico) has two major components: the LME Price and the Midwest Transactional Premium (regional premium).

2. **Is it also true that for many years, the Midwest Premium was relatively flat and represented a small portion of the all-in price for physical aluminum?**

Correct. Historically and through the end of 2010, Midwest Premiums were relatively flat within a range, moving between \$44-144 per mton and averaging 5 percent of the all-in price of aluminum (LME+ Midwest premium). Today, the Midwest premium is above \$500 per mton and represents more than 19% of the all-in price of physical aluminum.

3. **Quoting the committee report here, "At the end of February 2010, just after Goldman acquired Metro, the Midwest Premium was approximately \$134 per metric per ton. It has since steadily climbed to over \$400. In dollar terms the Midwest Premium climbed over 300% in just a few years. Over the same period, the queue went from about 40 days to over 600 days." Do you agree with the reports assessment on why this happened? Also, in your opinion, who is paying for that increase?**

In June 2009, before *Goldman Sachs (GS)* acquired *Metro*, LME Detroit *Metro* had a critical mass of metal stored in its warehouses. At that time, cancelled warrants were in place for only 11,275 mton, less than 2 percent of the 600,000 mton that LME Detroit actually had on hand, and equivalent to only 11 days of queue waiting time.

Seven months after *GS* acquired *Metro* (LME Detroit), in September 2010, the company started to experience on-going massive cancelations of metal, which stretched the load-out queue to an unprecedented waiting time that eventually surpassed 700 days at some point

this year. Today, 98 percent of the 992,900 mton of metal stored in LME Detroit remains in a queue with a waiting time of 665 days.

As a result of these cancelations and the unprecedented lengthening of the queue, the cost of sourcing metal from LME Detroit rose more than 500 percent—from \$77 per mton in February 2010 to \$600 per mton today. As the cost of sourcing metal from LME Detroit skyrocketed, so too did the reference point that consumers negotiate with, and so did market premiums. The Midwest premium increased from \$133 per mton in February 2010 to more than \$500 per mton today.

Indeed, *HARBOR*'s studies confirm that the lengthening of the queue in LME Detroit (*Metro*) has been the main driver behind the unprecedented increase in Midwest premiums.

Because of the long queue that exists in LME Detroit and the regional production growing shortfall of aluminum, at different points of time in 2014 an additional \$25 -\$75 per mton premium has been added over Midwest premium by some suppliers when selling to consumers on prompt metal needs.

The aluminum end-user has been ultimately paying for this increase in premiums. *HARBOR* estimates that the impact on the Midwest premium of the lengthening queue in LME Detroit has cost the North American aluminum consumer an accumulated sum of at least \$3.5 Billion USD since 2011.

4. **If we saw this sort of wild increase in premium and long queue develop in any other commodity market, what would you believe the CFTC would do?**

I am not an expert on how the CFTC operates or should operate.

However, in my view, the United States needs a regulatory body with the capacity to effectively and promptly identify and correct as soon as possible unusual market developments like those experienced by the aluminum market in Detroit in recent years (by which I mean concentration of metal, inappropriate load-out rates, conflicts of interest issues, and lengthening of load-out queues to unprecedented levels). This regulatory body needs a robust legal framework, and effective jurisdiction and power over any Exchange that operates warehouses in the United States (i.e. LME).

5. **What role did Metro's rapid increase in freight incentives have on the Midwest Premium? My understanding is that these incentives increased nearly 350% over four years. Isn't it correct that these incentives lured metal away from the physical markets and thus the very end users that actually use aluminum in products?**

Historically, it has been a standard practice for LME-approved warehouses to attract metal to their warehouses by offering financial incentives to producers and traders, known as "freight allowances or incentives" or "warehousing incentives" or "warehousing premiums."

In principle, the higher the revenue a warehouse expects (from rental and FOT fees), the greater the incentive that warehouse can offer. Still, warehouses prefer to pay the smallest incentive possible to attract metal and thus maximize their profit.

As a result of the aluminum market surplus generated during 2007 and 2008, by January 2009, LME Detroit *Metro* had accumulated 342,000 mton of primary aluminum in its warehouses. LME Baltimore had similar volumes back then, but the metal was spread among several warehouse companies, which meant each warehouse company in Baltimore held a fraction of what *Metro* had in Detroit. Given the minimum load-out rate of 1,500 mton per business day that was in force at the time and the 342,000 mton of metal stored in its warehouses, *Metro* had at least 570 calendar days of guaranteed rent/revenue for each additional mton unit it managed to attract-- since the warehousing rent fee in LME Detroit is almost ten times more than the cost of warehousing, the warehouse is able to profit considerably for any incoming metal and can share a portion of that profit with the owner of the metal by paying a "warehouse incentive". Because of the concentration of a critical mass of metal in its warehouses in Detroit, *Metro* had dramatically more capacity to pay warehouse incentives than any other warehouse company in North America. This disparity between *Metro* and its warehouse competitors gave *Metro* three things: the ability to offer more attractive warehouse incentives than its warehouse competitors in other locations, b) the ability to pay above-market premiums that consumers were paying (Midwest premium), and c) the start of a self-feeding cycle that allowed the company to permanently increase the metal stored in its warehouses.

Sitting on this critical mass of aluminum and able to outbid with its incentives other warehousing competitors and consumers, in December 2009 LME Detroit became the world's largest LME location of stored aluminum, with more than 800,000 mton of metal. Aluminum stocks stored in LME Detroit continued to increase for the next 3 years eventually reaching a peak of 1.56 million mton in December 2013. In the meantime, North America experienced a strong bounce in aluminum demand and a growing annual deficit of primary aluminum, which eventually reached 1.5 million tons in 2013.

LME Detroit's critical mass gave smelters and traders additional benefits that incentivized them to continue shipping their metal to Detroit despite the growing consumer demand and regional production shortfall. These were:

(a) Cheaper railroad rates. The big volumes traveling *Metro* warehouses in Detroit gave smelters/traders a favored position (economies of scale) in negotiating rail rates that saved them 1-2 cent/lb off the prevailing standard rate vs. diluting those volumes among several plant locations in the Midwest consumer area; b) Cash payments. Warehouses pay cash while selling to consumers typically involves a 30-day wait for payment; c) No credit risk. Selling cash to warehouses shielded the smelter from the risk of default, which smelters faced when selling to consumers; d) Reliable demand. The warehouse provided a steady demand flow, compared to the irregular demand from consumers; e) Flexibility on delivery

deadlines. Consumers have tight schedules, whereas the warehouses don't require strict delivery deadlines, which smelters/traders usually leverage into contango profits; and f) Flexibility on metal purity. Smelters were able to ship metal with trace elements such as Lithium (used to increase purity) that some aluminum consumers wouldn't accept.

As a result of the above – *Metro's* financial and non financial incentives and the growing regional deficit of aluminum -- LME stocks in Detroit increased while other LME locations in the region declined.

HARBOR estimates that warehouse incentives offered by *Metro* in Detroit increased from about \$22 per mton in early 2008 to more than \$395 per mton by early 2014.

However, given *HARBOR's* market intelligence and studies, I do not believe that *Metro* warehouse incentives *per se* have been the main driver of the notorious increase in market premiums we have seen in North America, in particular since early 2011. The core problem has been the lengthening of the load-queue in Detroit. Although warehouse incentives offered by *Metro* skyrocketed after *GS* acquired *Metro* in February 2010-- from \$110 to \$395 per mton, they did so in response to the on-going increase in Midwest premiums caused by the lengthening of the load-out queue in LME Detroit. In other words, the lightening of the queue in Detroit drove up market premiums, and higher market premiums drove up the warehouse incentives that *Metro* was offering to its clients. This relationship lasted until January 2014, when the maximum warehouse incentive that *Metro* was able to offer was not high enough to compete with the on-going increase in market premiums.

To illustrate my point further. In the second half of January 2014, *Metro* basically stopped offering warehouse incentives, and yet market premiums have continued to rise to fresh record highs because the ever-longer queue in Detroit inflated the cost of sourcing metal out from an LME warehouse in Detroit. One cannot make the case that warehouse incentives *per se* were the main driver behind the unprecedented increase in market premiums, when the lengthening queue in Detroit has had such a demonstrable impact.

6. Can you name the most important LME warehouse practices that should be changed and what positive impact those changes would have for end-users?

In my view, the following changes to warehouses practice would be appropriate to consider:

A. Concentrating a critical mass of metal, in one warehouse company in one location, should not be allowed.

If nothing else, the unprecedented developments that have occurred in the aluminum market since 2010 have taught us that regulators should not allow a critical mass of metal to be formed in LME warehouses in one location belonging to one warehouse company. Making sure such a concentration of metal disappears as soon as possible and never takes

place again would eliminate and avoid conditions that have led to: a) warehousing companies attracting metal at the expense of the consumer in times of market deficits; b) metal bottlenecks that restrict the flow of metal out of a warehouse and; c) inorganic premium inflation.

B. Minimum load-out rates should be established as a percentage of the metal stored in a warehouse company in one location, and not, as is currently done, in mton/day.

Establishing a load-out rate as a percentage of total metal stored in one warehouse will help make sure metal bottlenecks that restrict metal flow—and cause price inflation—disappear and don't emerge again. For example, the *Chicago Mercantile Exchange (CME)* currently requires warehouse companies that store aluminum to load-out each business day at least 2 percent of the volume stored in each location or 1,000 tons (whichever volume is bigger). This imposes a maximum load-out queue of 70 calendar days per warehousing company per location. Under the *CME's* current load-out rule, a warehouse company holding the volume that *Metro* has in Detroit (almost one million mton), would be required to load out 20,000 mton per day, instead of the 3,000 mton per day requirement set by current LME rules. This change would reduce to 70 days the load-out waiting time at LME Detroit *Metro*, instead of the 600 days it faces today. Requiring warehousing companies to load-out metal in terms of percentage of metal stored would help avoid and eliminate material bottlenecks and would also significantly lower the cost of sourcing metal from the LME warehouse, which would bring down market premiums.

C. There should be no need of Chinese walls.

In my view, the best Chinese Wall that could ever exist in the aluminum market is to simply ban players with potential conflict of interest from directly or indirectly owning or operating an LME warehousing company (that is, physical and derivative traders such as banks and merchants). Banning companies with potential conflict of interest would contribute to a level field among market players, and would also reduce the potential of undesirable market developments and artificial inflation of premiums.

D. Warehouse revenues should not be linked to market prices.

This would eliminate any potential conflict of interest for the warehousing company, especially when the link has the effect of letting the warehouse company indirectly trade market premiums.

E. Warehousing Companies should not be allowed to incentivize metal cancellations.

This would eliminate any potential conflict of interest because incentivizing the lengthening of load-out queues can materially impact market prices (Midwest premium).

###

RESPONSES TO SUPPLEMENT QUESTIONS FOR THE RECORD

Submitted By Senator Tammy Baldwin

To

NICK MADDEN

**Senior Vice President and Chief Supply Chain Officer
Novelis Inc.**

Hearing On

***Wall Street Bank Involvement with Physical Commodities*
November 20, 2014**

1. To paraphrase your testimony, you have essentially stated "... financial institutions have cornered the market on aluminum and through their effective control of the London Metal Exchange, they have created an artificial bottleneck which distorts your ability to access ready available aluminum without paying inflated premiums which are at an historic high." On the bottleneck issue, why would someone have to wait for access to their property for close to 700 days after payment in full, and furthermore, then have to pay rent while they wait?

RESPONSE:

Once a buyer of aluminum pays in full for the aluminum in Metro warehouse, Detroit, to access the metal they must cancel the warrant which is the title to the metal, and wait approximately 665 days to collect the metal and must pay rent during this period. The delay is caused by the slow rate at which metal can be withdrawn from the warehouse. The LME requires Metro warehouse in Detroit to load metal out at a minimum rate of 3,000 tonnes per day while stocks in the warehouse are greater than 900,000 tonnes. Metro treats the minimum load out rate as a maximum. Hence there is a long line of aluminum queuing to leave the warehouse.

We learned from the report that this line was created as a result of contracts between Metro and certain owners of aluminum in the warehouse (e.g. JP Morgan, Deutsche Bank, Red Kite and Glencore) and it is believed that the objective of these deals was to create a queue whilst appearing to meet the LME's minimum load out requirements. This was shocking to most observers.

The owner of metal is required to pay rent during the wait time because the rules provide for that and do not specify a maximum waiting period nor a cap on rents whilst metal is in a queue. Novelis and the Aluminum User Group are lobbying for such a cap.

2. How much aluminum do you think the Metro warehouse system in Detroit can load out from their 27 sheds in one day?

RESPONSE:

Novelis believes that Metro could ship at least 10,000 tonnes a day. However the LME and warehouse owners have claimed that it is difficult to hire fork lift truck drivers in Detroit, difficult to arrange transport and there are logistical issues finding specific

Permanent Subcommittee on Investigations

EXHIBIT #102b

parcels of metal. This is what I have read in news articles and have heard in discussions with the LME. Of course, I never have accepted these apparent obstacles.

Novelis conducted a small experiment at storage facility in the United States and we concluded that it takes 20 minutes to load a fork lift truck. If the warehouse was operating 24x7, as our plants do, it could theoretically ship 1,500 tonnes per fork lift per day. Of course, this is not how they operate. However, the report does inform us that they were moving metal in and out of warehouses to maintain the queue so I am sure they could ship at the rate we have requested.

To me, the major issue is that the LME only applies the minimum load out rate to a company in a city. As Metro has added significantly to the number of warehouses in Detroit, it enables them to create a massive stockpile behind a single exit door, speaking figuratively. If the load out rule applied to individual warehouses, rather than a city complex, Metro would be required to ship 81,000 tonnes per day. If this were feasible, there would be no queue.

3. What are the consequences to your business if you cannot take timely delivery of aluminum from some of the major strategic U.S. warehouses especially in Detroit?

RESPONSE:

Novelis buys about 800,000 tonnes of LME grade metal per year and is the largest buyer of aluminum, overall, in the world. We commit to longer term contracts with producers, banks and traders to ensure that we have a secure supply. To date, we have not run out of metal. However, if we forecast our needs incorrectly and find ourselves short, we would need to buy on the spot market. We would normally look to the LME as an option. As a consequence of the wait time, this option no longer exists. Consequently it is a risk to our supply chain.

Novelis is a key supplier of aluminum body sheet to the new aluminum intensive Ford F150. Imagine the irony if we run out of metal and cannot access spot metal in Detroit MI, and as a consequence fail to supply Ford and close down manufacturing in Dearborn MI. From my perspective as Chief Supply Chain Officer of Novelis, this is an unacceptable and artificial supply risk.

4. How does this impact transparency and price discovery in the aluminum market?

RESPONSE:

The price discovery of the Mid West Premium is severely impacted. The inability to withdraw aluminum from Detroit, which has held 85% of the aluminum stocks in LME registered warehouses in the United States, creates a divergence between the physical and derivatives markets. As a consequence we have seen the Mid West Premium rise to an all-time high of 23 cents per pound at a time when stocks have been at their highest levels in history. Indeed, premiums have tripled since the banks and trading companies bought into the warehouse business in 2010.

Normally a consumer would assess offers from primary producers and traders and compare these with the cost of taking aluminum from a warehouse like Detroit. If the offers were higher, we would consider buying from Detroit. However, this option is no longer available because of the wait time and therefore suppliers can offer at least a price equivalent to the full cost of a consumer buying warrants and paying rent and finance for 665 days. This is how the premium has risen to an unprecedented level – because the LME option no longer really exists in the United States. And this is caused by the queue which has been engineered by Metro via the “merry go round deals”.

5. What would happen if Metro were to release a large amount of aluminum waiting in line at its Metro International's warehouses in Detroit?

RESPONSE:

If Metro released a large amount of aluminum today, two things could happen. If the metal was released to the free market, I believe that premiums would fall. However, if the owners of the metal are traders and banks, it might move into other warehouses, LME or non-LME and remain out of reach of consumers. All of the companies who own or produce primary aluminum benefit from higher premiums. In the last 4 years, the market has been managed very effectively, with all surplus metal finding its way into financing deals or warehousing deals. Owners and producers have a lot to lose if the premium fell sharply and consequently I believe that they will try to ensure that there is not a flood into the free market.

Having said this, the LME is in backwardation right now, where the future price is lower than the spot price. This makes it impossible for financing deals to be renewed at a profit. If this is sustained, we might see more aluminum becoming available as financing and warehouse deals come to an end.

Novelis still believes that the LME should insist on a much higher load out rate applying to warehouses with large stocks. We believe that ultimately it will free-up aluminum and ease the situation.

6. I have read in the press that Goldman Sachs plans to exit the aluminum warehousing market by selling Metro. Would this action resolve the artificial shortages in the aluminum market? If not, what will solve the problem?

RESPONSE:

Goldman Sachs announced in the Summer that it would try to sell the Metro business. Longer term it would improve the situation because we believe that banks and trading companies get an unfair advantage over other players in the aluminum market when they control warehouses. In the case of Goldman Sachs, they have an LME brokerage business, a physical metal trading business, access to low cost finance, stocks of aluminum and a warehousing business. We believe that this gives a huge information advantage, as was illuminated during the hearing. They also can leverage positions in these different areas of the bank to create value for themselves. It was very clear in the excellent report from the PSI that Goldman and Metro have used the Metro system to

create a queue (through merry go round deals), increase the Mid West premium and benefit from all.

Although there are meant to be Chinese Walls that are intended to avoid this, it was clear that Metro provided information about their business to many people in the Goldman Sachs organization and the Board was comprised entirely of Goldman employees. This creates major questions about the credibility of Chinese Walls and tells me that the industry would be better served if the warehouse was not owned by a bank. The same is true of trading companies like Glencore which owns, through its subsidiary, Pacorini. The Pacorini warehouse in Vlissingen in the Netherlands has a similar stockpile and queue to Detroit.

However, if ownership changes tomorrow, I don't think it would have much impact on the market in the short term. The damage has already been done. It would simply help to make it less likely that the same situation would arise in the future, when we are back in a normal market environment.

7. Can you name the most important LME warehouse practices that should be changed and what positive impact those changes would have for end-users?

RESPONSE:

I would recommend the following measures to improve the situation for end users.

- a. Banks and trading companies should not be allowed to own LME warehouses.
- b. The owner of metal should not pay rent once a warrant has been cancelled. This would take away much of the incentive for warehouses to bid for metal and pay incentives to producers because they could no longer expect rent whilst a queue existed.
- c. The minimum load-out rate should apply to every warehouse in the complex, not one rate for the entire complex. If this is not achievable, then the load-out obligation of a large complex should be increased appropriately e.g. 10,000 tonnes per day.
- d. There should be a cap on the amount of metal any individual warehousing company should be allowed to store in any location.

At Novelis we believe that one or a combination of these measures would greatly improve the situation for end users.

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