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SPECULATIVE INVESTMENT IN ENERGY MARKETS

HEARING

BEFORE THE

SUBCOMMITTEE ON ENERGY

OF THE

COMMITTEE ON ENERGY AND NATURAL RESOURCES UNITED STATES SENATE

ONE HUNDRED TENTH CONGRESS

SECOND SESSION

TO

RECEIVE TESTIMONY ON RECENT ANALYSES OF THE ROLE OF SPECULATIVE INVESTMENT IN ENERGY MARKETS

SEPTEMBER 16, 2008

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SPECULATIVE INVESTMENT IN ENERGY MARKETS

TUESDAY, SEPTEMBER 16, 2008

U.S. SENATE,
SUBCOMMITTEE ON ENERGY,
COMMITTEE ON ENERGY AND NATURAL RESOURCES,
Washington, DC.

The subcommittee met, pursuant to notice, at 2:30 p.m. in room SD–366, Dirksen Senate Office Building, Hon. Byron L. Dorgan presiding.

OPENING STATEMENT OF HON. BYRON L. DORGAN, U.S. SENATOR FROM NORTH DAKOTA

Senator DORGAN. The hearing will come to order. This is a hearing of the Senate Energy and Natural Resources Committee, the Subcommittee on Energy. The purpose of the hearing today is to discuss speculative investment in energy markets.

After yesterday's news about what is happening in our financial markets in this country it is interesting to come and unsettling, I suppose, to come to a hearing and discuss fundamentals, discuss supply and demand, to discuss markets and have people analyze for us what is happening. I recall chairing a hearing in the Commerce Committee, a couple of hearings in the Commerce Committee with respect to Enron. I don't make a connection to Enron in this committee hearing.

But I make a connection to the soothing words provided to us for over a long period of time with respect of what was happening to wholesale electricity prices on the West Coast. Those of us who raised questions about it were told, you don't know what you're talking about. You're nuts. This is supply and demand. For God's sake, why don't you get educated? Get a life.

I recall chairing hearings in the Senate Commerce Committee and Ken Lay, the CEO of Enron came to testify. Jeffrey Skilling came to testify and at the end of what we then knew was that it was a criminal enterprise on the West Coast, at least in part.

Dramatic manipulation occurred there. Some speculation, but also manipulation occurred in those markets. All along the way those of us that were concerned about that and raising issues were told, you know what? You're way out in left field. This is the market that's working.

Sometimes the market doesn't work so well. Sometimes people try to pervert and manipulate the market. Sometimes speculators break the market. There are times when markets don't work very well. It's why we have regulators, regulatory authority.

The regulators, to me, are very much like referees. I don't know of any other method of the allocation of goods and services that is better than the marketplace than the free market. It is a wonderful, wonderful mechanism to allocate goods and services.

But there are times when it needs a referee. The referee ought to be wearing the striped shirt and blowing a whistle to call the fouls. When referees don't exist or when referees exist and are willfully blind, then things break down.

Now let me talk just for a moment about this hearing. It's interesting to me that the price of oil and gas has moved very rapidly up and now more recently moved down about a third of the way. We are told by some that, well, you know what? This is supply and demand that has caused all of this.

From July to July, in a 1-year period, the price of oil and gasoline doubled. When asked, why? The regulator says repeatedly, not just once or twice or four times, but six or eight times. It is the market system of supply and demand. It is the fundamentals.

Yet there's no one in this room today who can describe to me what has changed with respect to the fundamentals that would cause a doubling of the price of oil and gas in that 12-month period. No one, I'm convinced, will be able to tell us the reason for that change. The reason I'm pretty confident that no one will be able to tell us the reason is that we've had these discussions and hearings and opportunities before and there's no information that exists that describes a change in fundamentals that justifies a doubling of the price.

Now the American people paid that price. Some industries are on the brink of collapse as a result of that price. It caused an enormous burden for this country's economy to see the price double. Now begin to recede some.

There are some who say to us, you know what? We believe it's the market working and keep your hands off it and just stay out of the way, would you? You don't understand it. It's complicated and you don't have the capacity to understand.

There are others of us who remember lessons we should have learned in the past. We insist on trying to understand what has happened. My own belief, I might say, is that I believe relentless, unbelievable excess speculation exists in this marketplace.

I think there is much of the market that no one can see. I believe the regulator has testified in this room that he didn't have the ability to see that market very clearly or very effectively. But notwithstanding the fact he couldn't see it, he believed that the fundamentals of supply and demand are what was driving the market.

I profoundly disagree with that as do some others. But we'll have a discussion today with six witnesses. Three I think, who have one view and three who have a different view. In some cases the views will intersect. I think it will be an interesting hearing. I hope we will learn from this hearing.

We have a vote that will start at 3 o'clock today. So I believe it is only one vote. It's my intention to take a very brief recess which should take no more than about 10 minutes for me to go to the floor to cast the vote and come right back because I do want to proceed through this hearing.

You know, let me just say again, the reason for the concern about this issue is oil is not like just some other issue. This economy runs on oil. The futures market for this commodity was established, I believe in 1936. The establishment of that even included a proviso dealing with the issue of excess speculation because there has always been concern about the potential of that happening and what we should do to deal with it.

I think that this is a very, very important time for us to try to understand what has happened. I think what happened yesterday on Wall Street leads me to the same conclusion on a broader basis about other issues. But this issue has plenty impact on this country's economy, a very big impact on this country's economy. We ought to figure out what on earth is happening? What can we do about it? What should we do about it? How do we set it straight?

So I want to thank all of the witnesses who have come here today to testify from very different points of view. I will speak more about some of the issues, the Commodity Futures Trading Commission, among others, later today as we get into some questioning, but I want to call on the Ranking Member, Senator Murkowski. Then I'll call on Senator Cantwell and Senator Domenici. I'm hoping we can have a relatively brief opening comments and then begin with the witnesses.

Senator Murkowski.

STATEMENT OF HON. LISA MURKOWSKI, U.S. SENATOR FROM ALASKA

Senator MURKOWSKI. Thank you, Mr. Chairman. I appreciate you again having this very important hearing. I thank the witnesses for their attendance here today. You note that we have about an evenly divided, one on one side, one on the other.

This is what I understand, at least in the energy committee, this is our third time that we've had an opportunity to discuss the topic in just the past 10 months. It was back in April, most recently. We heard from several of the experts that said, well speculation was playing a small role, if any role, at all.

Then we also heard from some of the witnesses who contended that speculation was indeed a very significant factor. From a policymaking perspective, you look at that and say, ok, we've got conflicting viewpoints here. We need to gather more information. We need to really figure it out.

You're back here again. Again, we've got a table that is divided. In the past 2 weeks now, we have seen two new reports on speculation that have been released. One concludes that speculation played a large role in increasing the crude oil prices. The other report does not.

I do appreciate the fact that we have the authors of those that were involved in that report here today. So that you can walk us through how we can arrive at these differing conclusions. Mr. Chairman, I don't want to take too much time this afternoon, because I too, want to get to the panel.

But I do want to just very quickly reiterate a couple of comments I had made at one of our last hearings and talking about those factors that come into play when we're talking about crude oil prices. I do believe, as you, that speculation does play a role. I'm a co-

sponsor of legislation that would improve the data collection, enhance the market transparency, provide the CFTC with the resources and the authority.

I think we all recognize that that will benefit. But I'm one of those who believes that the speculation piece is one of the pieces, but it's not the piece in the puzzle. It's not the whole puzzle. It is one aspect of it.

We had a very interesting Senate wide Energy summit last Friday. Several of the Senators used that opportunity to ask questions about speculation. Many of the experts that were gathered there repeatedly reaffirmed that there was another factor. It was the factor of supply and demand that they felt was of much greater consequence.

So again, we've got, we do have the issue of supply and demand on the table. That is part of the components when we look at price. Look at what has happened worldwide that influences what we see between the supply of oil and the demand for it, on the demand side, increases in consumption in China and India.

Dr. Yergin spoke to the demand shock. That the oil markets didn't anticipate when those two countries, China and India, are essentially adding consumption in terms of about a million barrels per day that we just didn't anticipate. How do you factor that in?

On the supply side the disruptions that we've seen whether it's Nigeria's production, Iraq's production level, the fact here in the United States that our production levels have been at their lowest that we have seen since the end of World War II. We recognize that supply and demand, I recognize, that supply and demand play an incredible when we look at pricing. We also recognize that there are other factors in play.

I would like to, at this hearing, look to just that one piece of the puzzle. We could have a whole hearing on is it supply, is it demand, is it market speculation? I think the purpose today is to talk about the market speculation piece.

So while I have much more that I would like to add. In deference to my colleagues and the fact that we've got a vote coming up, I will hold at this point in time and look forward to the opportunity to question our witnesses. Thank you, Mr. Chairman.

[The prepared statement of Senator Murkowski follows:]

PREPARED STATEMENT OF HON. LISA MURKOWSKI, U.S. SENATOR FROM ALASKA

Thank you, Chairman Dorgan. And I want to thank our witnesses for agreeing to be here today—some of you for the second time—to share your views on speculation.

This will be the third hearing we have held on this topic in the past 10 months. Late last year, and again in April, we heard from several experts who told us that speculation was playing a small role, if any role at all, in increasing crude oil prices—and we also heard from witnesses who contended that speculation was a significant factor. From a policymaking perspective, these conflicting statements made it clear that we needed to gather more information to find out what was really happening.

In the past week, two new reports on speculation have been released. One concludes that speculation played a large role in increasing crude oil prices, while the second does not. The authors of each report have joined us today, and I look forward to hearing more about their findings and recommendations.

Before we turn to their testimony, I want to reiterate some of the comments I initially made last December. I do believe that speculation factored into crude oil price increases earlier this year. Along with more than 40 of my Republican colleagues, I am a co-sponsor of legislation that would improve data collection, enhance market

transparency, and provide the CFTC with the resources and authority it needs to ensure our commodity markets function appropriately.

But I also believe that speculation is just one piece of a larger and more complicated puzzle. This became even clearer last Friday, when our committee hosted a Senate-wide energy summit. Several Senators used the occasion to ask questions about speculation. In response, the experts before us repeatedly affirmed that another factor, supply and demand, was of much greater consequence.

So before we spend the next few hours discussing speculation, I ask my colleagues to stop, and consider for a moment, just a few of the events that have led to an imbalance between the supply of oil and demand for it.

First, on the demand side, we have seen significant increases in consumption in China and India. Every year, those two countries use an additional one million barrels per day. Dr. Daniel Yergin called this a "demand shock" that oil markets did not anticipate, and were not prepared for.

There have been significant disruptions on the supply side as well. In the first half of this year, up to 40 percent of Nigeria's production was taken offline as a result of unrest and strife. Iraq's production levels are just now returning to their prewar levels. Here in America, production has declined to its lowest level since the end of World War II.

Since our hearing in April, of course, the price of oil has declined substantially—last night, it closed at ____ per barrel. The Ranking Member of our committee, Senator Pete Domenici, asked about this at the summit. The witnesses on our first panel pointed first and foremost to supply and demand. As global economic growth has slowed down, demand for oil has softened. With prices at record levels, new prospects have been brought online throughout the world, including the Thunder Horse field in the Gulf of Mexico. Alternative fuels are making up an increasingly larger share of our fuel supply, and continued improvements in technology are allowing us to do more with less.

To be fair, speculation was not categorically ruled out as a possible factor. But the CFTC's new staff report has shed additional light on this issue. Some of its findings are particularly revealing.

First, that: "While there was an increase in the net notional value of commodity index business in crude oil futures, it appears to be due to an appreciation of the value of existing investments caused by the rise in crude oil prices and not the result of more money flowing into commodity index trading."

And then: "As crude oil prices were increasing during the period December 31, 2007 to June 30, 2008, the activity of commodity index traders in crude oil during this period reflected a net decline of futures equivalent contracts."

In fact, of the 550 swap clients whose trading data for June 30 was analyzed, the CFTC concluded that 35 positions would have exceeded the speculative limits of their markets—and most would have been in excess by a small amount. In the crude oil market, it appears that only six noncommercial investors were above NYMEX accountability levels—and two were on the short side.

It is thoroughly established that supply and demand, not speculation, was the principal driver of record oil prices in the first part of this year. Despite having heard this from our nation's top energy experts, and despite a new report from the agency that is in charge of regulating our futures markets, some continue to claim that supply and demand is nothing more than a myth. To me, this is simply astonishing. Even the authors of the second report we are here to discuss, "The Accidental Hunt Brothers—Part 2," seem to acknowledge that supply and demand has played at least as great a role as speculation.

I understand the allure of blaming speculators for high oil prices. But having reviewed the new report from the CFTC, and having listened to the witnesses at last week's summit, it is clear that the single most important issue that we can focus on as this Congress comes to a close is supply and demand.

The energy challenges we face are the result of global forces, and if we want to pay less at the pump, we must produce more of our own energy. It's time to adopt an "all of the above" approach to energy policy. In part, this will require greater oil and gas production here at home.

For today, however, our focus remains on a small piece of that larger puzzle. As the CFTC staff report makes clear, we do have some work to do in this area. I look forward to hearing from our witnesses, and to working with the CFTC to make sure it has the resources and authority it needs to be successful going forward.

Senator DORGAN. Thank you.

Senator Cantwell.

STATEMENT OF HON. MARIA CANTWELL, U.S. SENATOR FROM WASHINGTON

Senator CANTWELL. Thank you, Mr. Chairman. I'll be brief. Thank you for holding this hearing.

I want to welcome Dr. McCullough for being here, I'm sorry, Robert McCullough for being here from the Pacific Northwest. I first became familiar with his work when he exposed the smoking guns of Enron's manipulation of the electricity market. So I look forward to hearing what he has to say in his research about the speculation in the futures market.

Mr. Chairman, I think that we've had many hearings now on various committees here that really is pointing to the fact that the CFTC's inability or unwillingness to look at the regulatory framework is now really clear to us from everything from credit default swaps to the derivatives market for oil futures. It's causing us a problem. We need to have a more aggressive response.

When the American economy has been on this economic roller coaster of soaring gas prices and housing market bus, we've had a CFTC who's done, I think, very little or really been asleep at the switch when it comes to these key oversight, regulatory issues. The importance of all of this is not lost on me or our economy. Just this last week Alaska airlines announced lay offs of hundreds of people, in fact, going to have a major impact in our area and again, because of high gas prices.

We've seen this deregulated financial market grow from about $13 billion in 2003 to $317 billion today, an unbelievable growth in expansion in all this time, you know when oil went from $27 a barrel to $147 a barrel. So I know that the McCullough report and the Masters report are talking about how smart money rushed into these markets. Now as we are looking at shining a bright light, some of them are leaving the market. I want to make sure that we have markets that are properly policed.

Mr. Chairman we are going to talk about supply and demand. But if I could just put up one chart* because the thing that I think is most interesting here is that while supply and demand have been relatively steady since 1997 growing at a small increase all the way to 2008. We can see at about the time that dark markets started to exist. It may not be the only issue, but dark markets started to exist. Oil started flowing in and in oil futures we saw this incredible run up in price.

So for almost, you know, the better part of the last several years, we have seen an incredible price spike. So I want to make sure that we do our job, that we are doing the oversight of the agencies that need to do their job. We learned from FERC that they didn't do the proper oversight of the electricity markets. I want to make sure that we don't continue to make the same mistakes as it relates to the oil markets.

I thank the chair.

Senator DORGAN. Senator Cantwell, thank you very much.

Senator Domenici.

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*Chart has been retained in subcommittee files.

STATEMENT OF HON. PETE V. DOMENICI, U.S. SENATOR FROM NEW MEXICO

Senator DOMENICI. Mr. Chairman, I was just going to ask isn't that inaccurate? Didn't it start to come down? You don't have the price coming down on that chart?

Senator CANTWELL. I will gladly celebrate the fact that oversight, I think, by us has chased a lot of money since July out of the market and the price has dropped fifty cents a gallon.

[Laughter.]

Senator CANTWELL. So I will get that chart for you. I will show you. I think Mr. McCullough will prove that it's the one thing that has impacted price is the discussion by Congress and its oversight.

Senator DORGAN. Let me just make a point. The full committee has normally recognized the chairman and the ranking member for an opening statement. For those that have just arrived, I would like very much if we could just have opening statements for a minute or so a piece beyond Senator Murkowski and myself and then get to the witnesses because we're going to have a vote starts about 3 o'clock. So with your cooperation, I would appreciate it very much.

Senator Domenici.

Senator DOMENICI. Is that, you said those that arrived late. Do I, even though I arrived a long time ago, fit within the 1-minute rule? It's alright if I do.

Senator DORGAN. Why don't you start?

Senator DOMENICI. Alright. I'll try. Look, I had a statement prepared, but since I've been at so many meetings on this subject and haven't found any concrete evidence from any witness that's credible on the subject of manipulation—not speculation, but whether speculators manipulated—I won't use my statement.

But I will say one thing. Since there is a statement made by one of the witnesses, Mr. Masters, who's first and perhaps will speak first, I want to comment on his report.

He issued a report that was analyzed by an economist named Dr. Verleger, a rather prominent and I would have to say Democratic economist—he was a White House employee in the Carter Administration. I just want to say, just so everyone understands that even when you write a report people don't necessarily conclude that your report is right.

Dr. Verleger describes the report by one of our witnesses as false: "The Accidental Hunt Brothers-Act 2, by Michael W. Masters and Adam K. White is the worst example of junk economic analysis published in a very long time. The authors demonstrate nothing in the article. It is devoid of any intelligent content. One can make a stronger case for a rooster's crow causing the sun to rise. Their report is an utter and complete perversion of what we teach in economics."

Now all I wanted to do was to tell you, Mr. Masters, that there are some economists, even those whose hair has grown gray compared to yours, having worked in the Carter White House, who don't think your report is very accurate. There's another person who is currently the president of Goldman Sachs who used this report before another Senate committee. He used the report of Dr. Verleger as an analysis of your report and its validity.

So I think I'm in good shoes with the president of Goldman Sachs, Mr. Cohn, who used the report. I think I read well. Although I didn't read it as well as I should because on the rooster crowing, that's the whole punch line. I botched that up.

[Laughter.]

Senator DOMENICI. He says it's a stronger case for a rooster's crow causing the sun to rise. That's the way it was written. I just read it wrong.

Having said that, I never would have thought of such a good explanation, but I did read a little bit more about your holdings and where you had investments, Mr. Masters. I think you would feel very much at home sitting at the table with the airline executives—every one of them has come and said there's been manipulation. You have most of your holdings in the airline industry. If you don't you can tell the committee that.

I can't stay here all afternoon. But I want to say, thank you, Mr. Chairman, for the hearing. I believe, having looked at what they have to say, that they're all excellent witnesses. I think they're being very honest and some of them are being very careful.

But I don't think, as a whole, there's any unanimous course coming up here saying that we have another Enron on our hands. That the oil price growth is equivalent to or even similar to the Enron situation of which our Senator from the West Coast so valiantly worked on and would so much like to make oil and gas equate with. She has been unable to do that, even with her sincere effort.

Senator DORGAN. Senator Domenici, you have——

Senator DOMENICI. Thank you, Mr. Chairman.

Senator DORGAN. You have planted a number of time bombs here that will explode after you leave.

Senator DOMENICI. Yes.

[Laughter.]

Senator DORGAN. But Mr. Masters will be able to speak for himself. I'll be recognizing him in a moment. I actually raised the Enron issue. I indicated when I raised it that I wasn't suggesting there was an Enron activity here.

What I was suggesting is those of us who raised the questions about the manipulation of wholesale prices on the West Coast, which we now know was stealing billions, over $10 billion and $20 billion from West Coast consumers. We were told by everybody, including people on this committee just back off. There's nothing going on here. This is the market system.

So I raise it only to say that this is the market and the fundamentals and we've heard all that before. Whatever the facts are we'll get on the table today from this panel. But I was in fact, the one that raised the point of Enron. I chaired the hearings of Mr. Lay and Mr. Skilling and others. My colleague from the West Coast had a lot to do with this as well.

But I'm not a stranger to the issue. I'm not a stranger to being told that, get out of the way. You need to understand the market. The market is working.

In my judgment the reason we're having these hearings is the run up double in the price of oil in 1 year from July to July is not justified by the fundamentals. I think what has happened here is a casino like society has developed with intense reckless specula-

tion that has imposed an enormous burden on this country in a way that I think is unfair. But having said all that I say to those who have come in late, again, I'm going to recognize the two on each side, just a second. The two on each side, if you can give us a minute each, then we'll go to the witnesses.

Let me start with Mr. Salazar then go to Senator Craig and so on.

STATEMENT OF HON. KEN SALAZAR, U.S. SENATOR FROM COLORADO

Senator SALAZAR. Mr. Chairman, I am interested in hearing from the witnesses so I'll submit my statement for the record.

Senator Sanders has to preside at 3 o'clock. So with——

Senator DORGAN. With your permission, Senator Sanders and then Senator Craig.

[The prepared statement of Senator Salazar follows:]

PREPARED STATEMENT OF HON. KEN SALAZAR, U.S. SENATOR FROM COLORADO

Thank you Subcommittee Chairman Dorgan and Ranking Member Murkowski for holding today's hearing on the impact of speculation on energy markets.

Although the price of oil dipped below $100 a barrel yesterday for the first time in many months, the role of speculation in the price run-up of crude earlier this year is still prominent in our minds. As much as some would like to dismiss this episode as a bad dream it is our duty to understand exactly how and why prices spiraled as they did and why they are still so high today. I believe speculation played a significant role in driving up the price of oil and I believe we are duty-bound to ensure this does not happen again. Certainly the strength of the dollar has played an important role in these price movements as well. I am looking forward to hearing from the experts called to testify today their explanations for the spike and recent decline of energy prices.

These are uncertain times for our economy. Families and businesses are still suffering under the weight of high energy prices. We are all disturbed by the recent failures of some of our nation's largest financial institutions. When it comes to stabilizing our economy, volatility in energy commodity markets is something we should eliminate from the equation, to the greatest extent we can. As I have said before, ensuring a rational and open crude oil market is a matter of national and economic security. I look forward to advancing this discussion during today's hearing.

Thank you, Mr. Chairman.

STATEMENT OF HON. BERNARD SANDERS, U.S. SENATOR FROM VERMONT

Senator SANDERS. I apologize to the panel. I've got to preside. I hope I'm not late.

I happen to think this issue and the issues that we're raising in terms of speculation is of enormous significance. The truth of the matter is is that in 2000 when you have people say, when you look at speculation we're paranoid. We're into conspiracy theory.

Hey look at recent history in the last decade. What was Enron about? What the chairman was just saying is what people were talking about Enron, the Enron folks were saying it's supply and demand. In 2004, BP, formerly British Petroleum, artificially increased propane prices. They cornered that market. Then in 2006, the Amaranth hedge fund was responsible for artificially driving up natural gas prices until they collapsed.

What we have seen in January of this year oil was at $95 a barrel, in July it was $145 a barrel. Now it is, last heard, $92 a barrel. Does supply and demand play a role? Sure it does.

But does anyone think that that type of fluctuation is just supply and demand or market fundamentals? I don't think so. I think we're on to something. I think we've got to press this issue.

Senator DORGAN. Senator Craig.

STATEMENT OF HON. LARRY E. CRAIG, U.S. SENATOR FROM IDAHO

Senator CRAIG. Thank you very much. I just happened to click the television before I came out. Oil could hit 90 today. I guess we'll call that manipulating it downward. While some oil experts were saying that as soon as the world economy softened, and it has softened, and as soon as ours softened, the market would head down. It's headed down.

Mr. Chairman, I would only suggest one thing. Please, don't allow this committee to redefine manipulation as speculation or anybody buying stocks, bonds and other kinds of derivatives today in hoping they might go up would become a manipulator of the market. Thank you. Thank you for the hearing.

Senator DORGAN. I don't believe that description exists from this committee.

Senator CRAIG. We'll try to keep it that way.

Senator DORGAN. Senator Corker.

Senator CORKER. Mr. Chairman, I'll think all of us come to this hearing with—from our own insights and biases and I just as soon go to the witnesses and listen to them and ask questions. So thank you.

Senator DORGAN. Senator Corker, thank you very much. Let me again thank all of the witnesses. We'll begin with Mr. Masters.

Mr. Masters is the Managing Member or the Portfolio Manager of Masters Capital Management. Mr. Masters, thank you for being with us. You may proceed. Let me say to all six and I will not repeat it, that your entire statements will be made a part of the permanent committee record and we will encourage you to summarize.

STATEMENT OF MICHAEL W. MASTERS, MANAGING MEMBER/ PORTFOLIO MANAGER, MASTERS CAPITAL MANAGEMENT, LLC., SAINT CROIX, VI

Mr. MASTERS. Thank you, Senator. Perhaps I'll be able to address the allegations from the Senator on those issues at some point after my statement. Thank you, Chairman Dorgan and members of this committee. I appreciate the opportunity to address this committee on the role of speculative investment in the energy markets.

WTI crude oil prices rose dramatically in 2008, from $95 per barrel in January to $145 per barrel in July. Then fell just as dramatically back to around $95 per barrel today. It is becoming very difficult for reasonable people to explain a $50 spike followed by a $50 drop relying exclusively upon supply and demand rationale or a weak dollar hypothesis as their only explanations.

In the first quarter of 2008 EIA was forecasting that supply would exceed demand over the next 12 months. Despite this fact WTI crude oil prices rose substantially. Oil prices continued to rise into July at which point the EIA revised their forecast and sug-

gested that demand would outstrip supply. But within a week, the WTI crude oil price began its precipitous drop.

It is important to note that during the first 6 months of 2008 actual worldwide inventories for crude oil were essentially flat. According to the inventory data, supply and demand were in balance during this time period. It is certainly reasonable to conclude that supply and demand cannot fully explain crude oil's dramatic rise and fall during 2008.

Many people believe that the level of U.S. dollar has had a significant impact on oil prices. This line of reasoning maintains that countries whose currencies are strengthening vis a vie the dollar will demand more oil because the price they pay for oil falls when the U.S. dollar falls. In 2008, the U.S. dollar index never weakened by more than 7 percent. Yet the price of WTI crude oil climbed by as much as 50 percent.

Clearly a 7 percent weakening in the U.S. dollar cannot fully explain a 50 percent increase in WTI crude oil prices. Without question supply and demand fundamentals and a weakened dollar have played some part in the rise and fall of crude oil prices. But it is difficult to believe that they fully explain the tremendous volatility that we have seen.

Our research took data from the CFTC Commodity Index CIT report and used that data to estimate how much money was allocated to the commodity indexes. With these numbers we were able to estimate how many WTI futures contracts were held by index speculators each week. By focusing on the change in the number of contracts we were able to estimate the inflows and outflows of the major commodity indexes.

From January 1 to May 27, index speculators poured over $60 billion into commodity indexes. As Chart One illustrates, this led to the purchase of about 187 million barrels of WTI crude oil futures. We believe this buying pressure contributed greatly to the $33 per barrel increase in the WTI crude oil price during this time period.

Then from May 27 to July 15, there were multiple hearings held in both Houses of this Congress focused on the effect of large speculators were having on food and energy prices. There were several pieces of legislation introduced that were designed to crack down on excessive speculation. In addition the CFTC announced multiple initiatives and investigations with the stated intent of determining what role speculators played in oil's rapid price rise.

It appears likely that many of these index speculators were concerned enough by what was occurring in Washington to pull their money out of commodity index investments. Despite the claims that they were passive, buy and hold or long term investors, beginning on July 15 index speculators led a mass stampede for the exits pulling out approximately $39 billion from the GSCI. As chart 2 shows this resulted in the selling of about 127 million barrels of WTI crude oil futures between July 15 and September 2, we believe this dramatic selling pressure contributed greatly to the $29 oil price drop during those 7 weeks.

The bottom line is when index speculators pour large amounts of money into the commodity markets and buy large amounts of futures contracts, prices go up. When they pull large amounts of

money out, prices go down. These large financial players have become the primary source of the dramatic and damaging volatility seen in oil prices.

Congress needs to pass legislation re-establishing reasonable and rigid speculative position limits at the control entity level that apply to all commodities across all markets including the over the counter swaps markets. Further Congress should take action to ban or severely restrict the practice of commodity index replication because of the damage it does to the price discovery process of the commodities futures markets. Thank you.

[The prepared statement of Mr. Masters follows:]

PREPARED STATEMENT OF MICHAEL W. MASTERS, MANAGING MEMBER/PORTFOLIO MANAGER, MASTERS CAPITAL MANAGEMENT, LLC., SAINT CROIX, VI

Thank you, Chairman Dorgan and Members of this committee. My name is Michael Masters and I appreciate the opportunity to appear before you today to address the role of speculative investment in the energy markets. Last Wednesday, Adam White and I released two reports that address this topic. I will provide hard copies of both reports to your staffs and if more copies are needed, they can download the reports at www.accidentalhuntbrothers.com.

The first report, entitled "The Accidental Hunt Brothers," is a comprehensive report that deals generally with two problems facing the commodities futures markets: excessive speculation and Index Speculation. It encompasses information from my May and June testimonies before Congress as well as additional research we performed. It was not written for academics, but is meant to be easy to understand for people conversant with these topics.

I want to draw your attention to two chapters within the report. Chapter Three presents all the evidence that we have compiled indicating that institutional investors have had a large impact on commodity prices. Chapter Seven deals with legislative solutions where we argue that Congress should act to impose reasonable and rigid speculative position limits (at the control entity level) across all commodities in all markets, including the over-the-counter (OTC) swaps market. In addition we encourage Congress to ban or severely restrict the practice of commodity index replication because it consumes liquidity, increases price volatility and damages the price discovery function of the commodities futures markets.

The second report, entitled "The Accidental Hunt Brothers—Act 2" looks at dollars allocated to commodity index trading strategies in 2008 and the effects that those dollars have on West Texas Intermediate (WTI) crude oil futures contracts.

This afternoon I would like to briefly summarize those findings for you.

WTI crude oil prices rose dramatically in 2008 from $95 per barrel in January to $145 per barrel in July. Since then, oil prices have fallen just as dramatically to their current levels of around $100 per barrel. Economists are now struggling to explain this massive volatility strictly in terms of supply and demand fundamentals.

How can one explain a $50 spike in prices within a few months time followed by a $45 drop in prices just a few months later? Can supply and demand or a weak dollar really explain the roller coaster ride that oil prices have been on?

SUPPLY AND DEMAND DO NOT FULLY EXPLAIN OIL'S PRICE MOVES

The U.S. Energy Information Administration (EIA) is charged with developing forecasts of supply and demand for the United States and the rest of the world. When supply exceeds demand then world inventories grow and vice versa. Chart 1* shows the EIA's monthly forecasts for oil inventories on a 12-month forward-looking basis. This is their professional estimate of what supply and demand will do worldwide over the next 12 months.

In the first quarter of 2008 the EIA was forecasting that supply would exceed demand over the next 12 months. Despite this fact, WTI crude oil prices rose substantially. Oil prices continued to rise into July, at which point the EIA was forecasting that demand would outstrip supply (a bullish sign). A week later WTI crude oil began its precipitous drop.

It is important to note that during the first six months of 2008, actual worldwide inventories for crude oil were essentially flat—they barely changed. Therefore, sup-

*Charts have been retained in subcommittee files.

ply and demand were in balance during this time period. Clearly, supply and demand cannot fully explain crude oil's dramatic rise and fall during 2008.

U.S. DOLLAR WEAKNESS DOES NOT FULLY EXPLAIN OIL'S PRICE MOVES

Many people believe that the U.S. dollar has had a significant impact on oil prices. This line of reasoning maintains that countries whose currencies are strengthening vis-à-vis the dollar will demand more oil because the price they pay for oil falls when the U.S. dollar falls.[1]

Chart 2 shows how the U.S. Dollar Index performed (on a percentage basis) compared with the U.S. dollar price of WTI crude oil. Chart 2 also adjusts the WTI crude oil price, taking into account the weakness in the U.S. dollar, in order to show what non-U.S. consumers would have to pay for crude oil.

In 2008 the U.S. dollar never weakened more than 7%, yet the price of WTI crude oil climbed by as much as 50%. For a non-U.S. consumer prices peaked at 43% above their January 1st level. Clearly, a 7% weakening in the U.S. dollar cannot come close to fully explaining a 50% increase in WTI crude oil prices.

Without question, supply and demand fundamentals and a weakening dollar have played some part in the rise and fall of crude oil prices, but it is difficult to believe that they fully explain the tremendous volatility we have seen. In seeking to identify other factors that might further explain this volatility, we turned our attention to the trading patterns of Index Speculators.[2]

INDEX SPECULATION IS A MAJOR CAUSE OF THE DRAMATIC MOVEMENT IN OIL PRICES

We took data from the Commodities Futures Trading Commission's (CFTC) Commodity Index Trader (CIT) report and used that data to estimate how much money was allocated to the Standard & Poor's Goldman Sachs Commodity Index (S&P-GSCI) and the Dow Jones AIG Commodity Index (DJ-AIG).[3] With these numbers, we were able to estimate how many WTI futures contracts were held by Index Speculators each week and therefore how many contracts were bought and sold as a result.[4]

JANUARY 1, 2008 TO MAY 27, 2008: OIL PRICES SKYROCKET

From January 1st to May 27th, Index Speculators poured over $60 billion into commodity indices. As Chart 3 illustrates, this led to the purchase of about 187 million barrels of WTI crude oil futures. This buying pressure contributed greatly to the $33 per barrel increase in the WTI crude oil price.

MAY 27, 2008 TO JULY 15, 2008: CONGRESS THREATENS ACTION

Then, from May 27th to July 15th, there were multiple hearings held in both houses of Congress focused on the effect that speculators were having on food and energy prices. There were several pieces of legislation introduced that were designed to crack down on speculation. In addition, the Commodities Futures Trading Commission (CFTC) announced multiple initiatives and investigations with the stated intent of determining what role speculators played in oil's rapid price rise.

Those who advocate in favor of Index Speculators' participation in the commodities futures markets highlight the "passive," "buy and hold," "long term" nature of their investment strategy. In spite of their stated intentions, it appears likely that many of these speculators were concerned enough by what was occurring in Washington to pull their money out of commodity index investments.

JULY 15, 2008 TO SEPTEMBER 2, 2008: OIL PRICES PLUMMET

Beginning on July 15th,[5] Index Speculators led a mass stampede for the exits, pulling out approximately $39 billion from the S&P Goldman Sachs Commodity

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[1] Crude oil is priced in U.S. dollars around the world.

[2] An Index Speculator is an institutional investor such as a pension fund, university endowment or sovereign wealth fund that allocates money to a commodity index replication strategy.

[3] The S&P-GSCI and DJ-AIG account for between 85% and 95% of the total investment in commodity index replication strategies.

[4] The methodology for how we calculate these estimates can be found at the back of my May 20th Senate testimony as well as in the Appendix of our large report "The Accidental Hunt Brothers."

[5] July 15th was a significant date because many Institutional Investors make portfolio allocation decisions on a quarterly basis. July 15th was the first day in the 3rd quarter following the index "roll period."

Index.[6] As Chart 4 shows, this resulted in the selling of about 127 million barrels of WTI crude oil futures between July 15th and September 2nd. This dramatic selling pressure contributed greatly to the $29 oil price drop during those seven weeks.[7]

Our findings have been corroborated by a series of research reports by Lehman Brothers that reached similar conclusions. In a July report, Lehman estimates that $98 billion was poured into commodity indices from 2006 to June 2008.[8] And in an August report they estimate that from June to August, $42.6 billion was liquidated by Index Speculators.[9]

When Index Speculators pour large amounts of money into the commodities markets and buy large amounts of futures contracts, prices go up. When they pull large amounts of money out prices go down. These large financial players have become the primary source of the dramatic and damaging volatility seen in oil prices.

THE CFTC'S NEW REPORT ON COMMODITY SWAPS DEALERS AND INDEX TRADERS[10]

Having based our analysis upon the CFTC's CIT data, we eagerly anticipated the release of their report on commodity swaps dealers and index traders, hoping to find richer and more revealing data. We were greatly encouraged when they announced their special call and their intent to ask for much more granular and detailed disclosures. Unfortunately, after reading their report we are greatly disheartened because it represents a step backward rather than a step forward. In fact, the report raises more questions than it answers.

Our concerns center on three different areas: transparency, accuracy and consistency.

Transparency

With regard to our first concern—transparency—our understanding is that the CFTC sent out 43 letters, with two single-page forms attached, asking for summary information of each swaps dealer and index trader's gross long and gross short positions broken down by index "brand" (S&P-GSCI, DJ-AIG, etc.) and within each "brand" by individual commodity. They also requested gross long and gross short positions for single commodity transactions broken down by "commercial," "non-commercial," and "intermediaries." These one-page forms are to be submitted monthly by the 43 swaps dealers and index traders that received them.

For the sake of transparency, we are perplexed as to why the CFTC has released such a miniscule fraction of the data they collected.

- Why have they not released the data on the different "brands" of indices or the breakdown within the indices of all 33 commodity positions?
- Why has the CFTC only released data for three of the last nine months?
- Why have they released none of the data on single-commodity transactions, which might reveal the actions of non-Index Speculators?
- Why has the CFTC only revealed net figures rather than the gross long and gross short positions that they were provided with?

At least with the Commitment of Traders Report, the CFTC included long and short information. Net figures, by their very nature, do not tell the whole story. Net positions are only meaningful when viewed in conjunction with gross long and gross short positions. Net position data does not provide any information about price trends.[11]

It is this apparent unwillingness to provide even a basic level of disclosure that has caused us to question the CFTC's commitment to transparency.

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[6] The Dow Jones—AIG commodity index did not experience outflows during this period; it actually experienced a nearly $7 billion inflow. But because the S&P-GSCI is 40% WTI crude and the DJ-AIG is only 16% WTI crude there were a net 127 million barrels sold.

[7] When Index Speculators liquidate positions they sell all the commodities futures in the index. As a result 22 out of the 25 commodities in the index dropped in price right along with oil.

[8] "Index Inflows and Commodity Price Behavior," Daniel Ahn, et al., Lehman Brothers, July 31, 2008, p.11.

[9] "Punctured Balloon," Daniel Ahn, et al., Lehman Brothers, August 22, 2008, p. 1.

[10] "Staff Report on Commodity Swap Dealers & Index Traders with Commission Recommendations," Commodity Futures Trading Commission, September 2008. http://cftc.gov/stellent/groups/public/@newsroom/documents/file/cftcstaffreportonswapdealers09.pdf

[11] People who advocate "net positions" believe that short positions offset long positions. These are the same people who like to say, "for every buyer there is a seller," as if that explains something about price movement. By definition, there has been a seller and a buyer for every transaction in history, but the question is "at what price?" Financial markets allocate based on price. If there are more buyers than there are sellers at a certain price level then the price will increase until every buyer is paired off with a seller.

Accuracy

Our second concern is accuracy. As one example, the CFTC data shows that the notional value of index investments in Cotton grew from $2.6 billion to $2.9 billion during the March 31, 2008 to June 30, 2008 timeframe. That is an 11.5% increase. However, the price of cotton only grew by 3%. That means that money had to flow into cotton during the 2nd quarter in order to make up the difference. This would result in an increase in the futures equivalent position in cotton. Instead, the CFTC data shows it unchanged.

We have identified several other apparent inconsistencies and inaccuracies. Perhaps if the CFTC releases a new report with more detailed and granular data, then these issues can be resolved. We note that the CFTC states in their report that

> . . . as a result of the survey limitations, there may be a margin of error in the precision of the data which will improve as the staff continues to work with the relevant firms and to further review and refine the data.

I hope that as the new CFTC data is further refined, we will see much more detailed disclosure to help the public discern if, in fact, there are discrepancies in the data. Until that time, the question remains as to whether or not commodity swaps dealers and index traders submitted truly accurate data and whether or not it was compiled accurately by the CFTC.

Consistency

Our final concern centers on the lack of consistency between the CIT data that CFTC has been releasing to the public for more than two years and this new data that they just released. There are vast differences between the two data sets.

Using Corn as an example, the newly released data says that on March 31, 2008, index traders held 362,000 contracts. However, the April 1, 2008 CIT report shows them with a net position of 439,000 contracts—a difference of 77,000 fewer contracts in the new report compared to the CIT data.

On the flip side, the newly released data for Wheat shows that index traders held 194,000 contracts on June 30, 2008. However, the CIT report from July 1, 2008 shows them with a net position of approximately 178,000 contracts—a difference of 16,000 more contracts in the new report compared to the CIT data.[12]

In 29 out of 36 data points, the index trader position size in the CFTC's CIT report is significantly larger than the position sizes implied in their new report. The new data is self-reported by commodity swaps dealers based on the notional value of their OTC derivatives outstanding, while the CIT data showed existing commodity swaps dealers' positions on the exchanges. One must question the accuracy of the self-reporting done by the swaps dealers.

With this new report, the CFTC challenges the validity of its own CIT data. The CFTC has been releasing the CIT data for over two years, and financial professionals rely upon that data for their analysis of the markets. If the CFTC is saying that the old data is not accurate and should be replaced with this new data, it would be natural for people to question whether the new data is, in fact, any more accurate than the old data.

For the reasons that we have outlined, we are seriously concerned about this new data set. In his dissent, Commissioner Chilton repeated similar concerns, saying

> I am concerned that, while I believe the staff did a tremendous amount of work in a short period of time, the agency may not have received the type of comprehensive data sets needed to make reliable analyses and conclusions. . . . Absent compelling evidence, I believe that the most responsible course of action is to refrain from making conclusions or declarative statements based upon such limited and unreliable data.

In our opinion, it would be a mistake to replace the existing CIT data with this new data that is less transparent, less accurate and less consistent. If the CFTC believes that the CIT data is truly inaccurate, then they should issue a press release and remove it from their website immediately. As it stands right now the general public cannot tell which, if any, of the CFTC's data sets are reliable.

Conclusion

Excessive speculation and Index Speculation in the commodities futures markets are two problems that are not going to be resolved until Congress takes action.

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[12] The new CFTC report lists the notional index investment in Wheat at $8.7 billion and the price of Wheat on June 30, 2008 closed at $8.435. Therefore, one would expect the futures equivalent position size to be equal to 206,000, not 194,000. If the 194,000 figure should in fact be 206,000, then that would mean a difference of 28,000 contracts instead of 16,000 contracts.

Congress needs to pass legislation re-establishing reasonable and rigid speculative position limits at the control entity level that apply to all commodities across all markets including the over-the-counter swaps markets. Further, Congress should take action to ban or severely restrict the practice of commodity index replication because of the damage it does to the commodities futures markets.

If Congress fails to act, then our commodities futures markets will remain excessively speculative and extremely volatile. There currently is nothing to prevent Index Speculators from pouring more money back into these markets and driving prices to new highs.

Senator DORGAN. Mr. Masters, you have a right to respond to two things Senator Domenici said. One he asked about your holdings and so on which suggested that your testimony relates to your holdings. The second point was Dr. Verleger. Do you wish to respond to that? I'll give you 2 minutes to do that before we go on.

Mr. MASTERS. Sure, thank you, Senator. With respect to our holdings, we have held many transportation positions. They're certainly not all of our portfolio. They are a small component of the portfolio.

We've held these positions in many cases, on and off, since the beginning of 2000. The transportation names have been the area we feel like we have some expertise in, and we have consistently had positions.

Also during the last 12 months, we have had significant energy positions as well, so the idea on the long side. So the idea that we're coming up here to testify to alter our portfolio performance is quite frankly, ridiculous. Senator, you well know how hard it is to do anything up here, to pass any legislation, to get anything done in both chambers of Congress. The idea that I would come up here and try to alter my portfolio's performance by changing congressional legislation and then getting the President to sign a law is outlandish. It's just not true. That's clearly not the reason that I came up here.

With respect to Mr. Verleger, Mr. Verleger is entitled to his opinion. I happen to disagree with his conclusions. He disagrees with my conclusions.

Senator DORGAN. Mr. Masters, thank you very much. Next we will hear from Mr. Robert McCullough, the Managing Partner of McCullough Research in Portland, Oregon. Mr. McCullough, welcome. You may proceed.

STATEMENT OF ROBERT F. MCCULLOUGH, JR., MANAGING PARTNER, MCCULLOUGH RESEARCH, PORTLAND, OR

Mr. MCCULLOUGH. Thank you, chairman. Thank you, Senators. I was here 6 years ago commenting on regulatory indifference and market anomalies. Obviously it was a pretty crazy thing to say. In retrospect we've collected over $10 billion in settlements and had many convictions.

The fact of the matter is there are mistakes so seductive we make them again and again and again. Free enterprise is the best system on the planet. But it works best when it is transparent. If you can't see what's going on, we make terrible mistakes.

The right answer here is we have to fix the CFTC reporting. They have to have the staff. They have to have the powers. Most of all they have to have the reports.

The report they issue, that we all read every week and I thank you Dr. Harris. I read it carefully. It started out in 1924, showed up in its basic form now in the early 1960s.

Quite bluntly this is the moral equivalent of an antique bought on Ebay. We need something more similar to the FERC Electric Quarterly Report so we can actually address the questions Senator Domenici raised. At the moment I don't know the answers.

We lost 2 percent of the world oil production 3 days ago. The price of oil has gone down 10 percent or more over the last 3 days. This is the wrong answer. We need to get to the facts.

Now the first chart I put up there was the price chart. We all know that by heart. In fact because it was built on Friday, it's now out of date.

The point of the matter is all that supply and demand study from the EIA is that red line at the bottom. The smartest people we know, who are working their tails off, were dead wrong all summer. Good news is the prices have almost caught up with their forecast. They look a lot smarter today than they did last week.

Let's turn to the next chart. This chart shows net withdrawals. Now this is actually the distillation of supply and demand. On July 3, on a daily settlement price we hit a peak. In July the EIA tells us that we were withdrawing more oil from our stockpiles than we were in the previous month.

Supply and demand, which many of us have taught in college, there's something wrong with this chart. The fact of the matter is the prices should have gone up in July, not down. Now do we know all of the facts? No, we do not even accumulate a quarter of the facts we'd like to bring to this committee. But this is not a pleasing chart. This leads us to a concern with what's happening.

Can we move to the next chart? Ok, now this is a pretty interesting one. As I said I go through Dr. Harris' work very carefully. The CFTC Commitment of Trader's report tells us whether noncommercial interests are increasing or decreasing. We can calculate their net long position. In other words, are they betting on the future price of oil?

Interestingly enough they're net long position went effectively to zero before the peak. Now does this bother me? Yes, it does. I hate press ants. If a stockbroker tells me he can predict the future I fire him. There are a lot of people who did a pretty good job here. They were diminishing their position as the price increased. They were out when the price collapsed.

Do I know whether that meant manipulation? I don't. But I do know that by coincidence in July, we identified one player, Vitol. We discovered that they 25 percent of the long positions, non-commercial, long positions.

We also know that they say on their website they move 1.4 billion barrels of oil. By the way, I believe someone made a comment of one million barrels a day. Vitol alone, dwarfs that. This is what we know as an all accomplished. This is someone who can execute market power.

Do we have any evidence that they're bad guys? Absolutely not. Do we know that we have a market power position when one guy is that big? Yes.

Let's turn to the last chart. Now just to raise the Enron issue, this is a chart you haven't seen. You would have had to lasted through the years of litigation to see it. This is Enron's net position on the West Coast. You'll notice that they drew their forward position to zero just before the prices returned to market prices.

When we see something wrong going on, we would expect to see omniscience. But it's not really omniscience, it's because in oligopoly a player could execute enough to change the prices and take unfair profits. Bottom line, we need an oil quarterly report.

Thank you very much.

[The prepared statement of Mr. McCullough follows:]

PREPARED STATEMENT OF ROBERT F. MCCULLOUGH, JR., MANAGING PARTNER, MCCULLOUGH RESEARCH, PORTLAND, OR

Thank you for the invitation to testify today.

Six years ago, I appeared before this Committee to discuss market pricing anomalies and regulatory indifference. Some mistakes are so seductive that we feel impelled to make them again and again. Today, I am discussing the same topic as before, probably with many of the same actors and similar facts. At the heart of the matter is transparency—markets that function in secrecy easily fall victim to manipulation. My testimony today is based on a report issued by my firm on August 5, which we have updated and reissued today.

Energy price regulation in the United States is now divided haphazardly into three agencies: the Federal Energy Regulatory Commission (FERC), the Federal Trade Commission (FTC), and the Commodity Futures Trading Commission (CFTC). A fourth agency located in the Department of Energy, the Energy Information Administration (EIA), is in charge of collecting data and making forecasts.

The events in the oil markets over the past nine months make it clear that none of these agencies or the nation's policy-makers currently have enough information to make informed decisions.

On January 2, 2008 the price of West Texas Intermediate (WTI) crude was $99.64 a barrel. Both NYMEX forwards and the EIA's Short Term Energy Outlook predicted July prices in the range of $80 to $90 a barrel—a gradual decline for the immediate future. The predictions were off by 50%. This would be understandable if a major dislocation in supplies had occurred, but there was no such dislocation.

Instead, by July 3, 2008, the price of WTI crude crested at $145.31. Facile explanations published in the media include surging demand for oil in China and India, faltering global sup-plies, and expectations of dramatic changes in the Middle East.

The irony is that if any of these explanations were correct, the price of oil would have re-mained at high levels. Yet in the following four months, oil has gradually dropped close to and even below $100. The EIA's forecast, which explicitly considers Chinese and Indian consumption, global supplies, and a host of other factors, was hopelessly inaccurate by mid-summer. It is now looking fairly good.

A careful review of the fundamentals does not explain why the price of oil increased by 50% in the first six months of this year and then fell by 50% in the next three months. Supply and demand stayed in rough balance over the first nine months of 2008.

The obvious conclusion from the fundamentals is that prices should have continued upwards in July, not declined precipitously.

When the standard explanations fail, this is a strong indication that we are driving ahead of our headlights. A scientist in this situation views this as a wonderful opportunity when theo-ries are disproved by the facts. This is the case in the July price spike.

As Senator Cantwell said last week, eighty percent of Americans believe that speculators are manipulating the price of oil. Clearly, they are reacting to the same inconsistencies between prices and explanations that bring us here today.

While the CFTC market surveillance efforts are both arcane and insufficient, it does publish an interesting document on a weekly basis called the Commitments of Traders Report (CoT). The first such reports date back to 1924 and the Grain Futures Administration. The CoT was introduced in 1962 and it has a vintage feel—using old-fashioned terminology and unique statistics to cover a large subset of U.S. forward markets. Among the markets is WTI Sweet Crude on the NYMEX.

This is a surprising chart. It shows that speculators, or non-commercial traders in CFTC terminology, reduced their net position to zero on the NYMEX as the price

of oil soared. This traders' behavior illustrated is troubling. In July 2001, Hunter Shively, an Enron natural gas trader, showed similar prescience in a scheme to set prices on the NYMEX Henry Hub forward market. Eventually, the CFTC discovered his manipulation and prosecuted Shively.

A similar, though less well-documented exploit was conducted by another Enron trader, Timothy Belden, in the electricity markets on the West Coast during the Western Market Crisis of 2000-2001. Indeed, the chart of Enron's forward positions and market prices during the infamous "California crisis" is almost identical to the chart above.

The mechanics of such exploits, called Spot Forward Gambits, is to create a large enough change in spot prices so that the forward curve reacts to the new information. This effect is called a "curve shift" and is a common characteristic in many forward markets. Once the forward curve has shifted, traders can liquidate their position at favorable prices. Since the profits in the forward market can dwarf the losses in the spot market, the net effect can be quite favorable for the traders.

Such exploits are only possible when market players hold market power—generally as a result of oligopoly or monopoly. In mid-July, a reclassification of the trader, Vitol, revealed that such oligopoly power is present in the NYMEX. Vitol held more than 25% of the for-ward positions in sweet crude on July 15, 2008.

The resemblance of the July 3, 2008 oil price spike to earlier spot forward gambits is troub-ling. Even more troubling is that data on WTI Crude spot and forward prices gathered by FERC, the FTC, the CFTC, and at the EIA is too insufficient to determine whether the price of oil was manipulated. Even more disturbing, last week's CFTC report that minimized the effects of speculation on oil prices chose to stop its analysis in June, prior to the price spike.[1]

Today, a double standard exists for data reporting and publishing. For example, electricity market data is published in FERC's Electric Quarterly Reports (EQR). Unlike the CFTC's weekly CoT, the EQR contains all transactions by market participants, right down to locations, quantities, and prices.

When market results look anomalous, the correct response is to assemble and publish data so questions of market power and market manipulation can be directly addressed. A good first step would be to create an Oil Quarterly Report with the same level of detail as EQR. An Oil Quarterly Report should include spot and forward trades for bilateral transactions, and at both NYMEX and ICE. This data would allow policy-makers to proceed on the basis of facts.

Thank you. This completes my comments.

[Charts have been retained in subcommittee files.]

ATTACHMENT

Date: September 16, 2008

To: McCullough Research Clients

From: Robert McCullough

Subject: Seeking the Causes of the July 3, 2008 Spike in World Oil Prices (Updated)

Over the past two years the price of oil has roughly doubled. The increase has surprised both the markets and official forecasters such as the Energy Information Administration. This is a situation where the savviest traders and the most sophisticated modelers have equally failed to predict the rapid increase.[1*]

Although an intense public debate has emerged concerning the causes of the price increase, to date little substantive work has been undertaken. There are three reasons: first, a steady climb in oil prices does not provide a good basis for most econometric modeling; second, data is scarce and difficult to interpret; and third, three different federal agencies share inconsistent mandates concerning oil prices. More bluntly, we have the wrong tools; we lack even the most elementary data; and no one agency is clearly in charge.

While medical symptoms may be uncomfortable to the patient, they are useful tools for the internist. The price spike of July 3, 2008 was so sharp that it provides an opportunity to seek causes. A central advantage in reviewing June and July of this year is that the traditional explanations for oil price increases, such as exchange rates, storms, or major geopolitical events, were absent. Relatively little hap-

[1] See, for example, the discussion of crude trading on page 4 of the September 11, 2008 Staff Report on Commodity Swap Dealers & Index Traders with Commission Recommendations.

[1*] July 2008 NYMEX oil futures settled on June 1, 2006 traded for $70.95 a barrel. The contemporaneous EIA forecast predicted a lower price $67.00 per barrel at the end of their forecast period.

pened in June and July of 2008 in any of these areas. Even more significantly, the forward price curves followed the spike in spot prices in lockstep. On June 2, 2008 the price of oil on the NYMEX was $128.43 a barrel for December 2016. By July 3, the price for December 2016 had increased to $142.18 a barrel. By the end of July it had fallen to $117.67 a barrel. By September 14, the price had slipped just below $100 a barrel.

What happened in June 2008 that raised the forward prices of oil so significantly? What happened later in July that caused the forward price of oil for deliveries years in the future to fall even more precipitously?

Pundits are quick to point to increases in demand in India and China or blame price increases on the arrival of "peak oil." While they have the ability to extrapolate from minimal data, economists tend to check the facts. Monthly data on national and in-ternational production and consumption is published by the Energy Information Administration as part of its short term forecast.[2] Despite the pundits' opinions, the supply demand balance in the U.S. appears to have had little relationship to the price of oil this summer.

The following chart shows the relationship—or rather, absence of relationship—between the reduction in U.S. crude inventory and spot prices.

The U.S. continued to draw down its inventory of oil to meet current needs until the end of August, even though prices began to drop in early July. More puzzling, prices dropped throughout July even though the drawdown of inventories in the U.S. was at the greatest level in July—the exact opposite of what economic theory would lead us to predict.

All available evidence indicates that the price spike of July 3 was a form of market failure most likely due to the significant concentration in the energy sector in recent years. There is no evidence that a significant long term change in oil consumption or production took place in June and then faded away in July. The events this summer are eerily similar to Enron spot forward gambits in natural gas and electricity, specifi-cally the timing of profit-taking which appears to show considerable prescience.

OIL

The U.S. is both the single largest consumer and a major domestic and international producer. Traditionally, the "seven sisters" (Exxon, Mobile, Gulf, Socal, Texaco, Shell, and BP) long dominated the industry. Five of the seven were U.S. companies. Industry consolidation has reduced the number of sisters to five. Exxon, Mobile, Gulf, Socal, and Texaco have all merged or been acquired over the past decade. Today, we are down to five sisters, three of them U.S. based.[3]

Oil is a storable commodity. In economic theory this means that market participants can choose to sell oil today or wait for a better market tomorrow. The Organization of Petroleum Exporting Countries (OPEC) exploits this facet of the oil market by setting production targets, spacing out the production of oil over time.

A purely theoretical analysis of oil can be likened to the consumption of a prime, irreplaceable vintage of wine. The consumer calculates the benefit of opening the bottle after considering a desire to hold a reserve against a future need. In a perfect world, forward prices would reflect long term expectations of supply, technology, and demand. The relationship between spot and forward prices would reflect the time value of money.

In practice, the theoretical model asks too much of real consumers, producers, and traders. Technology changes the rules frequently. Reserves are difficult to evaluate and consumers change their preferences continuously. Substitutes for oil were not even considered possible until the past few years. Today, ethanol comprises an increasingly large proportion of retail gasoline for most drivers in the U.S.

In practice, oil's fundamentals are well known. New markets for gasoline like those in the Far East have appeared. The emergence of China and India as major consumers is no longer news. While price shocks such as changes in OPEC policy, civil unrest in Nigeria, or major storms that disrupt production in the Gulf of Mexico cannot be easily predicted, longer term impact are well understood. Thus, we are unsurprised to find that spot prices are more volatile than prices in longer term markets.

Because oil is so important, forward markets for oil are critical to the operation of the economy. The two most significant forward markets are the New York Mer-

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[2] See http://www.eia.doe.gov/emeu/steo/pub/contents.html for detailed monthly data on oil and other energy sources.

[3] The Energy Information Administration has produced an excellent history of industry consolidation in the oil business. This has been reproduced as Appendix A to this report.

cantile Exchange (NYMEX) and the Intercontinental Exchange (ICE). Due to the two so-called "Enron loopholes", only NYMEX is fully regulated by the Commodity Futures Trading Commission (CFTC). Forward trades also take place in the over the counter markets that are also unregulated by the CFTC.[4]

Concerns about the efficiency of the market include the increasingly important role of speculators. In theory, speculators add liquidity to forward markets by taking risks that producers and consumers may not wish to accept. In practice, it is possible that a sufficiently large speculative position will change forward prices and even affect spot prices. In 2006, the hedge fund, Amaranth, had accumulated a massive position in March and April natural gas futures. From evidence collected by later investigations, Amaranth was attempting to support a significant differential in forward prices by repeated intervention in the market. Amaranth failed, but its impact on the relatively large North American natural gas markets has created fears that larger and better-funded entities could effectively set forward prices.

The U.S. government has regulated commodity trading since the 1930s. Responsibility for oil is split haphazardly among the Federal Energy Regulatory Commission (FERC), which has authority over pipelines, the Federal Trade Commission (FTC) which operates the Oil and Gas Industry Initiatives, and the CFTC which views oil as one small part of a large portfolio of commodities. The responsibility for forecasting and understanding the oil markets lies with the Energy Information Administration. As noted above, no one agency has a clear mandate to accumulate data, oversee mar-kets, and evaluate factors that affect consumers.

The CFTC regulates part of the forward market in oil. FERC has traditionally focused on electricity and natural gas. The FTC's Oil and Gas Industry Initiatives focuses more on mergers and relies upon OPIS, a market data firm, and the EIA for data.[5] The EIA accumulates some data and issues periodic forecasts. This disorganized approach makes it difficult to obtain consistent data and even harder to determine the cause of price increases.

THE CURRENT DEBATE

An intense debate currently rages over the causes of recent price increases. An amaz-ing degree of misinformation fuels the debate. For example, one often reads that the increase in the price of oil is due to the decline of the dollar relative to the euro. While exchange rates are a small factor, the U.S. does not buy oil from the European Union, so the exchange rates relative to Europe are not a significant factor. The market basket of currencies used by the ten major nations that provide oil to the U.S. has not changed markedly over time.

Overall, the U.S. dollar has only declined 10% relative to the currencies of its primary oil suppliers.

However, shifts in world consumption are a significant factor. A wealthier world consumes more oil. An analysis of the impacts of international demand is a central part of every recent EIA forecast, but regardless of the attention paid to China and other growing markets for oil each EIA forecast has significantly under-run actual oil prices.

The January 2008 EIA forecast, for example, predicted a steady fall in oil prices in 2008, even after a detailed consideration of international demand.[6]

As noted above, the forward markets have done little better. The NYMEX prices for January 8, 2008 also did not predict a sharp increase in the price of oil.

While the EIA's forecast looked extremely poor by July, in September it began to look quite a bit better. Of course, the difference was the gradual reduction in the July 3, 2008 price spike.

The detailed components of the EIA's forecast including oil production and consumption have been relatively accurate. The EIA overestimated consumption, relative to actual August data, by 1.6%. An offsetting forecast error underestimated production in August by .8%. While these are relatively good forecasts of the world oil market, they would not normally appear to explain a forecasting error of 26.72% in crude oil prices.

Another side of the debate blames the price increases on excess speculation. As yet, there is relatively little data accumulated on the significance of excess speculation in the market for petroleum. As noted above, forward oil markets are subject to partial market surveillance. The one document that offers some insight into the forward market for oil at the NYMEX is an outdated and not easily interpreted re-

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[4] For a detailed discussion of the Enron loopholes see my testimony entitled "Regulation and Forward Markets Lessons from Enron and the Western Market Crisis of 2000-2001", May 8, 2006, http://www.mresearch.com/pdfs/191.pdf

[5] See http://www.ftc.gov/ftc/oilgas/gas—price.htm for a description of collection efforts.

[6] Short Term Energy Outlook, January 8, 2008, page 9.

port known as the "Commitments of Traders Report."[7] If speculators have taken a commanding position by purchasing large forward positions in oil, it is virtually impossible to detect given the CFTC's current powers and procedures.

Still others debate that banks and hedge funds have gambled on the forward oil market, bidding up the price of forward contracts. Their impact on spot prices is not easy to understand unless speculators have either colluded with producers or their activities are obvious enough that the producers are restricting spot sales in order to sell the oil later at higher prices. This argument does not fit with the facts of the July 3 price spike which took place soon after Saudi Arabia announced a significant increase in oil production.[8] (The logical impact of the production increase would have been a reduction in the forward curve for oil.)

A better model for the July 3 price spike would appear to be the Enron market manipulation of the Henry Hub forward market on July 19, 2001.[9] In this case Enron purchased a large quantity of spot gas and took advantage of the price increase to sell at an artificial price in the forward markets. Enron's positions dramatically exceeded the levels that would provide legitimate economic hedges.

There is a strong possibility that the high level of concentration in the spot and forward oil markets have made the market strategies of the principal market participants more significant than fundamentals at least in the short term. This is consistent both with the inability of forecasters and traders to foresee major market movements and also explains the very tight correlation between spot and forward prices.

WHAT DID HAPPEN IN JUNE AND JULY 2008?

As noted above, the most significant change in fundamentals, the decision by Saudi Arabia to increase oil production in July, took place immediately before the price spike. The most important events over this two-month period were:

3-Jun	Senator Cantwell chairs a Senate Commerce Committee hearing on oil market manipulation and federal authorities. Experts, including George Soros, testify that the CFTC has been slow to react to the energy crisis and that speculation could be adding as much as 20%-50% to the price of oil per barrel.
13-Jun	Fourth fall in US reserves pushes up oil prices
17-Jun	US Air Transport Association asks Congress to impose new restrictions on "rampant oil speculation"
17-Jun	Iranian President Mahmoud Ahmadinejad tells OPEC meeting in Isfahan the rise in oil consumption is lower than the growth in production; certain powers are controlling the prices in a fake way for political and economic gains; blames weakening of the US dollar
18-Jun	Bush calls for end to US offshore drilling ban
19-Jun	Movement for the Emancipation of the Niger Delta blows up Chevron pipeline; Chevron declares force majeure, halts output by 120,000 bpd; attacks Shell's offshore Bonga oilfield
20-Jun	China raises raise petrol and diesel prices by more than 16% to reduce the gap with soaring international oil prices; Organization of Islamic Conference meeting in Kampala says, "If we (the Islamic world) produce the bulk of the oil, why can't we be party to deciding what is a fair and equitable price? Unless OPEC returns to arrest the situation, mankind will cross the border of self destruction."
23-Jun	Saudi Arabia hosts summit attended by 36 nations in Jeddah; announces plans to increase output by more than 200,000 bpd to 9.7 million starting in July
23-Jun	Movement for the Emancipation of the Niger Delta announces ceasefire
23-Jun	Congressman Stupak holds eight-hour hearing on energy market speculation; experts testify that the explosion of speculation in the oil futures market could be driving up prices from $20 to $60 per barrel

[7] http://www.cftc.gov/marketreports/commitmentsoftraders/index.htm

[8] Saudis offer to boost oil production, USA Today, June 23, 2008.

[9] U.S. CFTC v. Enron Corporation and Hunter Shively, Complaint for Injunctive and Other Equitable Relief and Civil Monetary Penalties Under the Commodity Exchange Act, March 11, 2003.

26-Jun	EIA sees $70/b average crude price by 2015
26-Jun	By 402 to 19, the House by-passes legislation to direct the CFTC to use its emergency powers to take immediate action to curb speculation in energy market
27-Jun	Senate Republicans object to Unanimous Consent to pass the House-passed emergency powers legislation
30-Jun	Russian oil exports fell 5.3% to 757mln bbl in Jan.-May; world oil prices drop on unex-pected US stockpile rise
9-Jul	House Agriculture Committee holds three hearings on increasing CFTC authority
9-Jul	Iran test-fires nine missiles, including ones capable of hitting Israel
15-Jul	OPEC revises 2008 world oil demand forecast to 1.20 percent from 1.28 percent, citing an economic slowdown and high fuel prices
15-Jul	Majority Leader Reid introduces the Stop Excessive Energy Speculation Act of 2008
15-Jul	Federal Reserve Chairman Ben Bernanke tells Senate Banking Committee that the US economic downturn would prove more persistent, and potentially more severe, than initially thought
22-Jul	Iran's Oil Minister Gholam Hossein Nozari says that it is unnecessary for OPEC to change the current output
22-Jul	US Senate invokes cloture on the motion to proceed to debate on Reid's Stop Excessive Energy Speculation Act of 2008
24-Jul	CFTC Charges Optiver Holding BV, Two Subsidiaries, and High-Ranking Employees with Manipulation of NYMEX Crude Oil, Heating Oil, and Gasoline Futures Contracts
24-Jul	House Agriculture Committee reports the Commodity Markets Transparency and Accountability Act of 2008
25-Jul	US Senate fails to invoke cloture on the Commodity Markets Transparency and Accountability Act of 2008
30-Jul	House fails to pass the Commodity Markets Transparency and Accountability Act of 2008 on a required 2/3 vote on suspension of the rules
30-Jul	White House announces its opposition to legislating new position limits to be devel-oped by the CFTC

While many of these events might affect the price of oil, some of them are more likely to affect long term markets rather than spot transactions. Congressional hearings, for example, presage changes in national policy that will most likely take place at a later date. Civil unrest in Nigeria and production decisions by Saudi Arabia are more likely to have short term impacts. Arguably, the most significant event during this period was the Saudis' June decision to unilaterally increase production in July. However, immediately following this announcement, prices increased. As one trader remarked when the price fell sharply after July 3, "No news is good news, or in this case, no news is bearish news."[10]

To test the statistical significance of these events on the price of oil, we have developed two different models:

Spot:	A regression using EIA weekly data and events with short term impacts to explain spot prices
Forward:	A regression using spot prices and longer term events to explain forward prices.

Time series data, especially from complex markets with unobserved variables, can be difficult to interpret and analyze. A central assumption of classical linear regression is that the error terms are independent and identically distributed. This is seldom the case in economic time series.

Fortunately, time series analytical methods provide reasonable tools that can show useful results for a variety of economic time series that possess a particular

[10] Oil Drops Sharply, Associated Press, July 8, 2008.

kind of non-standard error distribution. Among the most useful of these methods employs the Generalized Autoregressive Conditional Heteroskedastic time series model (GARCH).

We considered a model for spot oil prices that used refinery utilization and U.S. petroleum stockpiles as fundamentals. It also included proxy variables for three short term events: the unrest in Nigeria until the ceasefire announcement, the Saudi pro-duction increase announcement, and the change in Chinese retail petroleum pricing.

The statistical results for the model are excellent overall with significance far better than the .01 level. Unfortunately, the proxy variables for the three short term events are not significant at any acceptable level. In the careful language of the statistician, we cannot reject the hypothesis that these announcements had no impact on spot oil prices. The results are reproduced in Appendix B.

The forward model used spot prices as a fundamental and the Saudi announcement, the Russian production report, and the period between introduction and the failure to pass the Commodity Markets Transparency and Accountability Act of 2008. The high degree of correlation between NYMEX forward contracts makes results for dif-ferent delivery periods largely unnecessary. In this study we used forward contracts for delivery in December 2016.

The results for the second regression were also highly significant. As before, the proxy variables for the Saudi production increase and Russian production news were insignificant. The proxy for the short-lived Commodity Markets Transparency and Accountability Act of 2008 was highly significant. Interestingly, this was the only va-riable that would have affected excess speculation as opposed to supply and demand fundamentals.[11]

One conclusion to be drawn from these statistics is that the news stories cited by pundits to explain the dramatic spike in oil prices have little or no explanatory power. While we can construct a sufficiently complex explanation to explain any result, we have very little evidence that explains the massive spike that occurred on July 3. A second conclusion is that the best forecast for future prices in 2016 is the daily spot price today. This is likely to occur only if the daily spot price has more information than any set of fundamentals.

PIVOTAL SUPPLIERS

Paul Samuelson taught generations of undergraduates, "It takes more than the existence of a competitor to create perfect competition." As a general rule, a competitive market will require more excess capacity than the market share of the largest market participant. Stated more directly, a market where supply and demand are in close balance, with no quickly available substitutes, is in danger of seeing non-economic pricing if one supplier can withhold enough to create a temporary shortage. As we also learned in college, the student with the car gets to choose the movie.

The economic term for markets where the decisions of one supplier can set prices is called monopoly or oligopoly. The supplier with the ability to set prices is called the pivotal supplier.

We should, but we do not, have data to help determine whether we currently have one or more pivotal suppliers in the oil markets. We do know that if pivotal suppliers exist, the market decisions of the pivotal supplier will be more important than changes in fundamentals. Like the grocery consumer in a small town with few choices, the best forecast of the pivotal suppliers' strategy is the current price. If the pivotal suppliers are aggressively setting high prices, a wise trader would forecast this state of affairs to continue to dominate the market for the immediate future.

A trader who based its forward price quotes on fundamentals would quickly go bankrupt in the face of a pivotal supplier. A sudden 14% price increase unmatched by market fundamentals means that the market strategy has changed. An intelligent trader would factor the market strategy into long term prices. This is exactly the behavior that occurred during the July 3 price spike.

If data on spot market transactions was routinely collected and reported, as it is in other energy markets, we would be able to check whether there is evidence of increasing market concentration. If well head price data was routinely collected and reported, we could check whether the increased prices were being paid directly to oil producers or to pivotal suppliers in the U.S. market.

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[11] No alternative specifications of these models were analyzed. This decision was not made lightly. Statistical tests are based on the submission of a specific hypothesis for testing. Repeated testing of alternative hypothes-es is a practice almost certain to eventually stumble on an apparently significant result.

We can glean some information about market concentration and markups relative to well head prices from CFTC and industry sources. The information is not sufficient to conclusively answer the question, but it is interesting enough to propose the need for additional investigation by the FTC, the CFTC, or the EIA.

As mentioned above, the CFTC provides a weekly Commitments of Traders Report CoT). A recent report (July 29, 2008) is reproduced below.

CRUDE OIL, LIGHT SWEET - NEW YORK MERCANTILE EXCHANGE — Code-067651
Commitments of Traders - Futures Only, July 29, 2008

	Total	Reportable Positions							Nonreportable Positions	
	Open Interest	Non-Commercial Long	Non-Commercial Short	Non-Commercial Spreading	Commercial Long	Commercial Short	Total Long	Total Short	Long	Short
	(CONTRACTS OF 1,000 BARRELS)									
All	1,220,537	201,622	202,282	328,020	629,322	616,483	1,158,964	1,146,785	61,573	73,752
Old	1,220,537	201,622	202,282	328,020	629,322	616,483	1,158,964	1,146,785	61,573	73,752
Other	0	0	0	0	0	0	0	0	0	0
	Changes in Commitments from: July 22, 2008									
	3,162	3,603	623	5,381	-11,943	-10,045	-2,959	-4,041	6,121	7,203
	Percent of Open Interest Represented by Each Category of Trader									
All	100.0	16.5	16.6	26.9	51.6	50.5	95.0	94.0	5.0	6.0
Old	100.0	16.5	16.6	26.9	51.6	50.5	95.0	94.0	5.0	6.0
Other	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	# Traders	Number of Traders in Each Category								
All	307	88	111	126	82	99	248	264		
Old	307	88	111	126	82	99	248	264		
Other	0	0	0	0	0	0	0	0		

	Percent of Open Interest Held by the Indicated Number of the Largest Traders							
	By Gross Position				By Net Position			
	4 or Less Traders Long	4 or Less Traders Short	8 or Less Traders Long	8 or Less Traders Short	4 or Less Traders Long	4 or Less Traders Short	8 or Less Traders Long	8 or Less Traders Short
All	32.8	22.8	43.4	33.0	15.8	8.2	20.5	11.9
Old	32.8	22.8	43.4	33.0	15.8	8.2	20.5	11.9
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

The report is neither user-friendly nor substantially detailed. The last block of data in the report shows the degree to which the four largest traders dominate the "long" or supply positions. In the July 29, 2008 report the top four traders held 32.8% of the long positions.

One of the problems with this report is that the measure of concentration used by the CFTC differs from the standard measure in use by the FTC, the U.S. Department of Justice and the FERC. While one is not necessarily superior, the more widely used Herfindahl-Hirschman Index (HHI) has the virtue of being more readily compre-hended.[12]

While it is possible to translate the Commitments of Traders data into the HHI, it is not possible to get a specific value. The best that can be accomplished from the CFTC data is a range where, mathematically, the actual HHI will be found. The fol-lowing chart shows the HHI range for NYMEX crude since 2005.

Neither the low nor the high HHI bounds are close to the U.S. Department of Justice guidelines for a concentrated industry. In fact, given the lack of reporting outside of the NYMEX, a substantial degree of market concentration could occur that would never show up in the Commitment of Traders Report. It is significant, however, that the HHI appears to be increasing over time, with a significant increase in July 2008. In the worst case, it is mathematically possible that one trader could hold as much as one quarter of the open long positions on the NYMEX from the data reported at the CFTC. If so, this trader would have a commanding position and could well be a pivotal supplier.

A pivotal supplier would also have the ability to increase oil prices above the well head prices paid to suppliers. Recent statements by OPEC representatives clearly appear to indicate that they have some concerns in this direction.[13] Supplier production and pricing is not transparent. Saudi Arabia, the world's largest producer, provides relatively little data and the Venezuelan government's estimates of crude oil well head receipts differ markedly from the EIA's estimates for Venezuela.

Though the data indicates an increasing differential, Venezuelan crude is a very dif-ferent product from U.S. crude, so a number of alternative explanations could be made for the differential.

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[12] A simple explanation of the HHI can be found at http://www.usdoj.gov/atr/public/testimony/hhi.htm

[13] See for example the comments of OPEC Secretary General Abdullah al-Badri on June 24, 2008 reported in OPEC president sees no easing of oil prices, Xinhua News Agency, June 28, 2008.

VITOL

On July 18, 2008, the CFTC reassigned Vitol from commercial to non-commercial status. An unusual opportunity to analyze the impact of a single trader on the CoT Report took place recently when the CFTC reclassified a single firm from Commercial to Non-Commercial. The reclassified report indicates that the trader held 144,856 open interests. These positions are classified as "spread positions" since they represent long positions in one contract and corresponding short positions in another contract. Since the total open positions in the NYMEX crude market is only 1,249,914, it indicates that this trader has more than 10% of the NYMEX market. More significantly, Vitol had 25% of the long positions owned by non-commercial interests (the CFTC's term for speculators).

There is no evidence that Vitol was involved in any suspicious activities. The evidence only shows that the levels of concentration are significantly higher than those suggested by the CoT report. It is also worth noting that Vitol's physical deliveries of oil are 1.4 billion barrels of oil, a vast amount, considering that U.S. oil imports in 2007 were 4.9 billion barrels. Although CFTC reports do not indicate which contracts were held by Vitol, the scale of its positions was larger than all but two of the NYMEX contracts in sweet crude:

This corroborates the HHI calculations above that a substantial degree of concentration may be present in the NYMEX forward markets.

THE MARKET RISK PREMIUM

The enormous increase of speculation over the last few years has coincided with an increase in the price of commodities. A metaphor might be real estate: if speculators buy up attractive shorefront property in order to profit from a projected price increase, they will hoard a scarce commodity and increase the price of the property. This is not a bad metaphor, but it is not entirely correct. The key difference is that a forward contract for oil does not actually tie up physical oil before delivery. A contract for future supply is simply a promise to provide 1,000 barrels at a set price on a given date. Most market participants plan to sell or "offset" the contract before delivery. In theory, a perfectly workable forward market might be very large compared to the spot market and still not raise prices, as long as the market is characterized by the rules of perfect competition (many suppliers, many consumers, transparency, and freedom of entry and exit). To make the real estate metaphor more precise, imagine that the speculator proposes selling a promise to supply beach property at a given price at a future date. This promise would not tie up beach property or cause a shortage in the short run.

Of course, the central question is "what price?" When you buy insurance, the insurance company figures the risk it is insuring against and then adds a profit to cover its risks. This is the risk premium. The offering price for a forward contract is equal to the forecasted price plus a risk premium.

Many students (and some traders, in my experience) are surprised to learn that risk premiums can be positive or negative. This appears counterintuitive until they realize that since they view themselves as customers of the insurance company, they almost always see a positive risk premium.

An example of how such premiums can vary involves a farm and a bakery. The farmer is always "long" on wheat. While the farmer is unlikely to run out of wheat, he faces an uncertain future in terms of price. He would be happy to offer to exchange his wheat for a fixed price even if he has to take a small loss against his best guess of future prices. In selling his forward contract, he is willing to accept a negative risk premium. The bakery has the opposite problem since it must know the cost of the bread it plans to bake. The baker is happy to pay a positive premium over the expected price to be able to plan ahead. When the farmer and the baker meet to set the price of their forward contract, the final risk premium will be set by haggling. A savvy farmer might well receive a positive risk premium simply because he is a better negotiator or, vice versa, the baker might enjoy the upper hand.

What happens if the two cannot agree? They can call their brokers at the Chicago Board of Trade and place orders for their forward contracts in the wheat market. Their orders, and thousands of others, will show up in the trading pit where a price will be hammered out by the willingness of speculators—non-commercial traders in the parlance of the CFTC—to take risks in the future price of wheat.

Speculators carry a portfolio of risks. When possible, they will be hedged against a similar commodity. Since not all risks can be hedged, the speculator will end up with a Value At Risk (VAR) that it must be willing to accept in exchange for a profit. If the VAR is large, the speculator will require a larger profit. If demand for a specific contract is high, the speculator will end up with a large unhedged position,

its VAR will expand enormously, and it will either demand a much larger risk premium or withdraw from further trading in that commodity.

In the Western Market Crisis of 2000-2001 the VAR became so large that all of the speculators abandoned the NYMEX forward markets on the West Coast. Halfway through the crisis, open interests on both NYMEX exchanges went to zero. Interestingly, Enron and others offered a negative risk premium at the height of the crisis—they sold forward contracts at less than the expected price. We now know that this was because their own forecasts recognized that the crisis would not last long and they needed to sell their forward contracts before the rest of the market discovered that prices had been manipulated.

A simple rule of thumb for estimating risk premiums is to compare the forward contract prices with the actual spot prices in the month of delivery. Since forecast errors tend to cancel out over time, the residual, positive or negative, is the risk premium. Unfortunately, this simple technique works poorly where spot and forward prices are increasing over a long period. Given the past two years in the WTI crude market, this rule of thumb estimate is unworkable.

In a perfect world, we could view the difference in prices from the EIA Short Term Forecast and the NYMEX forward curve to estimate the risk premium. As mentioned above, the forward price is equal to the forecast plus the risk premium. Unfortunately, the EIA forecast lacks substantial credibility. Over the past seven months, the EIA has apparently calibrated its forecasts to spot. While this avoids recognition that EIA's analysis of fundamentals is not matching spot prices, it also reveals a lack of precision in the estimating process:

While the EIA forecasts are not perfect, they do allow us to compare the forecasted prices with the NYMEX forward curve. According to economic theory, the forecast is the actual price expectation. The NYMEX forward curve is the price traders require to take a forward position. The difference between the two is an estimate of the risk premium. These risk premiums range from $11.00 to a negative $4.00. It is suggestive, although not definitive, that the risk premium calculated in this fashion has fallen during the same period in 2008 where the substantial long positions were liquidated by the non-commercial traders.[14]

Overall, non-commercial market participants liquidated their long positions in 2008. As they liquidated their positions, the risk premium fell approximately $30 per barrel.

SPOT FORWARD GAMBITS

In July of 2001, Hunter Shively, a mid-level Enron gas trader, initiated an exploit to manipulate Henry Hub natural gas futures on the NYMEX. The CFTC complaint provides a blueprint on how to conduct a spot forward gambit:

> B. The Manipulative Scheme
>
> 23. On or about July 19, 2001, Shively, with the assistance of at least one other Enron natural gas trader, engaged in a scheme which manipulated prices in the HH Spot Market, and had a direct and adverse affect on NYMEX Henry Hub August 2001 Futures, including causing prices in NYMEX Henry Hub Futures to become artificial.
>
> 24. Defendants' manipulative scheme involved a plan among Enron traders to purchase an extraordinarily large amount of HM Spot Market natural gas within a short period of time (the "Manipulative Scheme").
>
> 25. Defendants effectuated their Manipulative Scheme through a variety of acts and practices that were intended to, and did, manipulate prices in the HH Spot Market. NYMEX August 2001 Henry Hub Futures were affected by Defendants' Manipulative Scheme as well, including causing NYMEX Henry Hub Futures prices to become artificial.
>
> 26. Enlisting the assistance of the East Desk Enron trader who managed the HH Spot Markel on EOL, Defendants bought a very large amount of natural gas in the HH Spot Market in a very short period of time, approximately fifteen minutes, in the morning of July 19, 2001, causing prices to rise artificially.

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[14] There are more sophisticated tools. One approach is to see if the variance of forward price estimates increases or decreases the forward curve. Statistically, the term for this is GARCH in Mean. While the mathematics can be complex, the explanation is simple. If the relationship between spot and forward prices becomes difficult to forecast, this will increase the VAR and require a larger risk premium.

This approach does not allow numerical results for small datasets: significant amounts of data are required to perform the calculations. The results from the beginning of January 2008 to the end of July 2008 indicate that the risk premium has become negative over this period.

27. Immediately following the prearranged buying spree, Enron began unwinding its HH Spot Market position and prices declined in that market. Prices in the HH Spot Market declined in the first ten minutes while Enron unwound its position.

28. Before Shively implemented the scheme, other Central Desk traders learned that Shively was going over to the East Desk to bid up the HH Spot Market. The head of Enron's NYMEX desk was also informed of Shively's plan. Later, at some point during Enron's HH Spot Market trading, an Enron trader indicated to the Central Desk that the East Desk was "bidding up" the HH Spot Market. Shortly thereafter, a trader at the Central Desk stated that the East Desk was going to sell the HH Spot Market.

29. To ensure the participation of the Enron East Desk trader who managed the HH Spot Market on EOL, Shively agreed to cover any trading losses that trader incurred by participating in the Manipulative Scheme.

30. On or about July 19, 2001, to cover the losses of that East Desk trader, Shively directed that over $80,000 be transferred from an administrative trading account he controlled to the trading account of the Enron East Desk trader who agreed to participate in the Manipulative Scheme.

31. Shively acted in the scope of his employment in carrying out and directing the conduct of other Enron employees in furtherance of the Manipulative Scheme.[15]

A similar, though less well-documented exploit was conducted by Timothy Belden in the winter of 1999. Enron's senior west coast trader gradually accumulated a portfolio for forward contracts. His position was so large that it became the dominant risk position for the entire corporation. While this speculative position would have appeared foolhardy based on the fundamentals (even Enron's own forecasts indicated that it was a foolish speculation), it was not nearly as speculative as it appeared. Belden's trading position showed prescience. His liquidation of his long position was even more prescient since he sold his inventory just before the California energy crisis ended in June 2001. We now know his prescience was no more or less than the product of his market manipulation efforts. If FERC's Electric Quarterly Report had been in existence in 1999, Belden's dramatic gamble would have been detected quite early and the Western Market Crisis might well have been averted.

In summary, a powerful case can be made for market power, not fundamentals, as a contributing factor to the oil price spike on July 3, 2008. The spike has the following characteristics that cast doubt on fundamentals and speculation as causes:

1. Short duration, reflecting no specific supply disruption or increase in demand.
2. Events in June, to the degree they were present, should have lowered the prices in July, not increased them.
3. A large speculative position was liquidated just before the spike.
4. Long term prices followed the very brief spike in lockstep fashion.
5. Evidence exists, both anecdotally and statistically, for increased concentration in the NYMEX long positions.
6. Evidence exists that may indicate an increasing differential between some well head receipts and market prices.

Five Recommendations

1. The FTC and the CFTC should accumulate data on spot and forward markets for oil that will allow the identification of market shares. If supply and demand are tight, this is exactly the situation where economic theory would predict the existence of pivotal suppliers. Given the probability that market participants have a very good idea of the market shares and pricing, there is no logical public policy reason why this information should not be accumulated and provided to regulators and decision-makers.

2. The current chaotic state of CFTC market surveillance should be corrected. At the moment, the department store detective only watches one exit. This is worse than useless because it provides the illusion of market surveillance while allowing sufficient room for any offender to escape observation.

3. The Commitments of Traders reports should be expanded to incorporate the same concepts and measures used elsewhere in the industry. Specifically, the report should provide HHI for both NYMEX and ICE. It is important to include data on forward trades in the OTC transactions. In sum, we will only be

[15] Docket H-03-909 CFTC Complaint, March 12, 2003, pages 5-6.

able to detect the influence of excess speculation if we have the measure of the entire market, not just a portion.

4. The CFTC should adapt FERC's detailed Electric Quarterly Report to oil transactions. It is logical that reports for electricity would be useful in evaluating the situation in oil.

5. The EIA should develop a methodology for reporting well head prices for the ten largest suppliers to the U.S. This report should be issued on the same frequency as other EIA reports so that regulators and decision-makers can make contemporaneous judgments concerning price spikes.

[Charts and appendixes A and B have been retained in subcommittee files.]

Senator DORGAN. Mr. McCullough, can you do that chart one more time? I missed the front part of your explanation. I'm sorry.

Mr. MCCULLOUGH. May I stand?

Senator DORGAN. Yes, please.

Mr. MCCULLOUGH. This chart took hundreds of hours of investigated research. We were able to reproduce Enron's net position through the crisis. In the course of the fall of 1999, long before anyone worried about electricity in the Northwest, Enron—advanced electric position. They bought so much forward from a single largest risk element—was West Coast Electricity.

Over the course of the crisis when they said it would take two to 4 years to resolve. Instead they drew their position down by April. In fact they went negative on April 1, 2001, when the prices weren't deep. Soon afterwards the price collapsed.

They were either omniscient or guilty. We now know after 6 years of litigation and many convictions, they were guilty. This is a pattern that concerns me. We need to be able to determine whether we're seeing similar behavior in oil. Thank you.

Senator DORGAN. Mr. McCullough, Vitol, as my understanding, is a foreign company. Where is it based?

Mr. MCCULLOUGH. Switzerland. It's privately held. So there's almost no data on Vitol publicly available. In fact the only way I knew it was Vitol is I read the Washington Post.

Senator DORGAN. Alright. Thank you very much. Next we will hear from Jeff Harris, the Chief Economist from the Commodity Futures Trading Commission. My understanding is the Commodity Futures Trading Commission has sent a North Dakotan down to testify, is that correct?

Mr. HARRIS. Yes, that's right.

Senator DORGAN. That's rather underhanded.

[Laughter.]

Senator DORGAN. Mr. Harris is the Chief Economist and where are you from in North Dakota originally?

Mr. HARRIS. In the heart of Walsh County, Park River.

Senator DORGAN. Thank you very much, Dr. Harris for being with us. You may proceed.

STATEMENT OF JEFFREY HARRIS, CHIEF ECONOMIST, COMMODITY FUTURES TRADING COMMISSION

Mr. HARRIS. Thank you. Good afternoon, Chairman Dorgan and Ranking Member Murkowski and other distinguished member. My name is Jeffrey Harris and I am testifying today as the Chief Economist of the CFTC and not on behalf of the Commission. But we actually do have hard data on these subjects.

I appreciate the opportunity to testify in front of you about the CFTC's recently released staff report on commodity swap dealers and index traders. In response to questions about the role of index traders in our markets, the CFTC announced in May that it would be using its special call authority to gather new and detailed information from swap dealers on the amount of index trading occurring in our markets. Last week the CFTC released its staff report which compiled substantial information on index futures and other transactions that are being conducted through swap dealers.

The special call was intended to capture all commodity index trading for activity for month end dates beginning December 31, 2007, through June 30, 2008, and continuing thereafter. Staff analyzed key commodities including crude oil, corn, wheat and cotton in this report. While the preliminary survey results represent the best data currently available about swap dealers and commodity index trading, there are limitations to this data due to the time and resource constraints and the complexity in the amount of data that we received.

With that in mind, the CFTC staff report found that on June 30, 2008, the total amount of commodity index trading, both over the counter and on exchange activity stood at $200 billion. Of this amount $161 billion was tied to commodities traded on U.S. markets that are regulated by the CFTC. For NYMEX crude oil the net notional amount of commodity index investment rose from about $39 billion in December to about $51 billion in June, an increase of more than 30 percent.

However this rise appears to have resulted from the increase in the price of oil which rose from approximately $96 to $140 per barrel over the same period. Measured in standardized futures contracts equivalent these figures amounted to an 11 percent decrease in the aggregate positions of commodity index traders during this 6-month period from approximately 408,000 contracts to 363,000 contracts. We're looking at the types of entities that are investing in commodity indexes.

Not surprisingly, staff found a significant percentage of these index investments were held by pension funds, endowments and other large institutions. The CFTC staff survey also revealed that 9 percent of the commodity index trader's investments, excuse me, were held by several large sovereign wealth funds, primarily located in North America, Europe and Asia. Staff also looked to determine whether the clients of swap dealers were putting on over the counter and exchange positions that would have exceeded exchange position limits or accountability levels in crude oil. Looking at our most recent report of June 30, the survey data identified 35 of these instances in 13 markets, out of 550 different clients trading at more than 30 of the markets analyzed.

In light of the preliminary data and the findings, the Commission made several recommendations that include enhanced transparency, increased reporting and information and improved controls and practices used to oversee the markets while keeping the futures markets competitive, open and on U.S. soil. In addition to the special call in analysis, the Office of the Chief Economist continues to examine and analyze trading in the regulated futures markets. My staff played a central role in producing the July 2008

interim report on crude oil, working with the inter agency task force on commodity markets which did not find evidence to support the view that non-commercial trading has been systematically driving price changes in the crude oil market.

CFTC staff continues to analyze the markets utilizing detailed agency data that includes positions of various groups of traders that includes index traders, hedge funds and other non-commercial entities. In the market for crude oil we witnessed a significant run up in prices through mid July 2008, as we know, with prices falling substantially through the past 2 months. The chart that I included in my testimony displays this price pattern along with net price positions or net positions, excuse me, of the commercial entities, swap dealers who bring index fund positions to these markets and speculators in the crude oil futures markets.

As displayed in the chart while oil prices were rising dramatically during the first half of 2008. The net speculative positions were actually decreasing. This pattern mirrors the data that we've collected through our special call to swap dealers and commodity index traders, showing that commodity index net long positions in NYMEX crude oil contracts fell by 11 percent during the same 6-month interval.

My staff continues to analyze the markets to work with the interagency task force on commodity markets. I expect that we will update and supplement the analysis that we provided in the interim report on crude oil in the next few weeks. Thank you for the opportunity to appear before you today to discuss the CFTC's economic analysis and staff report on commodity swap dealers and index traders. I'd be happy to answer any questions you might have. Thanks.

[The prepared statement of Mr. Harris follows:]

PREPARED STATEMENT OF JEFFREY HARRIS, CHIEF ECONOMIST, COMMODITY FUTURES TRADING COMMISSION

Chairman Dorgan, Ranking Member Murkowski, and other Subcommittee Members, thank you for inviting me to testify before the Energy Subcommittee. My name is Jeffrey Harris and I am the Chief Economist at the Commodity Futures Trading Commission (CFTC or Commission). I am testifying today in my capacity as Chief Economist and not on behalf of the CFTC. My testimony today will focus on the CFTC's staff report on the commodity swap dealers and index traders issued Thursday September 11, 2008.

The CFTC recognizes that a secure, reliable, and sustainable energy future is of great importance to the American people. We are acutely aware that high commodity prices have been, and continue to be, painful for American consumers. We are also aware that speculative activity can affect the price discovery and risk management roles of the markets we regulate. With that context, let me summarize what the Commission is doing to insure that the markets that we regulate are serving the public interest.

The CFTC continuously monitors and analyzes trading in the markets we regulate. We collect and analyze data on a daily basis, and monitor positions, price movements and activity in these markets. The CFTC data includes positions and trading of noncommercial traders like hedge funds and other managed money traders. As noted in the Interim Report on Crude Oil produced by the Interagency Task Force on Commodity Markets, staff did not find evidence from this data to support the view that noncommercial trading has been systematically driving price changes in the crude oil market.

Despite these findings, the CFTC continues to analyze the data for evidence of such a connection. During the last year, the CFTC has been systematically reviewing satellite markets that complement and compete with the centralized and regulated futures markets in the United States, in order to determine whether satellite markets are having an impact on regulated futures markets. As you know, a com-

bination of Congressional and Commission action has resulted in increased regulation of trading on exempt commercial markets and increased transparency and reporting of trading on foreign boards of trade that seek access to trade contracts linked to any U.S. regulated contract.

More recently, the agency has been reviewing the role of swap dealers and index traders and whether their connection to the futures markets is having an impact on the price of commodities. In May, the CFTC announced that it would use its special call authority to gather new and detailed data from swap dealers on the amount of index trading occurring in the OTC markets. Last week, the CFTC released its staff report, which compiled substantial information on index funds and other transactions that are being conducted through swap dealers.

CFTC REPORT ON SWAP DEALER AND INDEX TRADER ACTIVITY

The staff report represents a survey of swap dealers and commodity index funds to better characterize their activity and understand their potential to influence the futures markets. This type of a compelled survey relating to off-exchange activity is unprecedented, but the growth and evolution in futures market participation and growing public concern regarding off-exchange activity supported the need for this extraordinary regulatory inquiry.

In June 2008, Commission staff initiated a special call to futures traders, which included 43 request letters issued to 32 entities and their sub-entities. These entities include swap dealers engaged in commodity index business, other large swap dealers, and commodity index funds. The special call required all entities to provide data relating to their total activity in the futures and OTC markets, and to categorize the activities of their customers for month-end dates beginning December 31, 2007 through June 30, 2008, and continuing thereafter. The scope of the survey attempts to answer the following questions:

- How much total commodity index trading is occurring in both the OTC and on-exchange markets?
- How much commodity index trading is occurring by specific commodity in both the OTC and on-exchange markets?
- What are the major types of index investors?
- What types of clients utilize swap dealers to trade OTC commodity transactions?
- To what extent would the swap clients have exceeded position limits or accountability levels had their OTC swap positions been taken on exchange?

The preliminary survey results represent the best data currently available to the staff and the results present the best available snapshot of swap dealers and commodity index traders for the relevant time period. However, as a result of the survey limitations, there may be a margin of error in the precision of the data, which will improve as the staff continues to work with the relevant firms and to further review and refine the data. As entities continue to provide monthly data to the Commission in response to their ongoing obligation to comply with the special call, Commission staff will continue to examine the data, refine the specific requests, and further develop the analysis.

FINDINGS

In analyzing the total OTC and on-exchange positions for index trading, the report focuses on three quarterly snapshots—December 31, 2007, March 31, 2008, and June 30, 2008—and has thus far revealed the following data:

- Total Net Commodity Index Investments: The estimated aggregate net amount of all commodity index trading (combined OTC and on-exchange activity) on June 30, 2008 was $200 billion, of which $161 billion was tied to commodities traded on U.S. markets regulated by the CFTC. Of the $161 billion combined total, a significant amount of the OTC portion of that total likely is never brought to the U.S. futures markets.
- Net Notional Index Values vs. Total Notional Market Values: For comparison purposes, the total notional value on June 30, 2008 of all futures and options open contracts for the 33 U.S. exchange-traded markets that are included in major commodity indexes was $945 billion—the $161 billion net notional index value was approximately 17 percent of this total.

  —The total notional value of futures and options open contracts on June 30, 2008 for NYMEX crude oil was $405 billion—the $51 billion net notional index value was approximately 13 percent of this total.

—The total notional value of futures and options open contracts on June 30, 2008 for CBOT wheat was $19 billion—the $9 billion net notional index value was approximately 47 percent of this total.
—The total notional value of futures and options open contracts on June 30, 2008 for CBOT corn was $74 billion—the $13 billion net notional index value was approximately 18 percent of this total.
—The total notional value of futures and options open contracts on June 30, 2008 for ICE-Futures US cotton was $13 billion—the $3 billion net notional index value was approximately 23 percent of this total.

- Crude Oil Index Activity: While oil prices rose during the period December 31, 2007 to June 30, 2008, the activity of commodity index traders during this period reflected a net decline of swap contracts as measured in standardized futures equivalents.
- During this period, the net notional amount of commodity index investment related to NYMEX crude oil rose from about $39 billion to $51 billion—an increase of more than 30 percent. This rise in notional value, however, appears to have resulted entirely from the increase in the price of oil, which rose from approximately $96 per barrel to $140 per barrel—an increase of 46 percent.
- Measured in standardized futures contract equivalents, the aggregate long positions of commodity index participants in NYMEX crude oil declined by approximately 45,000 contracts during this 6 month period—from approximately 408,000 contracts on December 31, 2007 to approximately 363,000 contracts on June 30, 2008. This amounts to approximately an 11 percent decline.
- Types of Index Investors: Of the total net notional value of funds invested in commodity indexes on June 30, 2008, approximately 24 percent was held by "Index Funds," 42 percent by "Institutional Investors," 9 percent by "Sovereign Wealth Funds," and 25 percent by "Other" traders.
- Clients Exceeding Position Limits or Accountability Levels: On June 30, 2008, of the 550 clients identified in the more than 30 markets analyzed, the survey data shows 18 noncommercial traders in 13 markets who appeared to have an aggregate (all on-exchange futures positions plus all OTC equivalent futures combined) position that would have been above a speculative limit or an exchange accountability level if all the positions were on-exchange. These 18 noncommercial traders were responsible for 35 instances of either exceeding a speculative limit or an exchange accountability level through their aggregate on-exchange and OTC trading that day. Of these instances:

- 8 were above the NYMEX accountability levels in the natural gas market;
- 6 were above the NYMEX accountability levels in the crude oil market;
- 6 were above the speculative limit on the CBOT wheat market;
- 3 were above the speculative limit on the CBOT soybean market; and
- 12 were in the remaining 9 markets.

These combined positions do not violate current law or regulations and the amounts by which each trader exceeded a limit or level were generally small. However, there are a few instances where a noncommercial client's combined on-exchange futures positions and OTC equivalent futures positions significantly exceeded a position limit or exchange accountability level.

In light of the preliminary data and findings, the Commission made the following preliminary recommendations.

PRELIMINARY RECOMMENDATIONS

1. Remove Swap Dealer from Commercial Category and Create New Swap Dealer Classification for Reporting Purposes: In order to provide for increased transparency of the exchange traded futures and options markets, the Commission has instructed the staff to develop a proposal to enhance and improve the CFTC's weekly Commitments of Traders (COT) Report by including more delineated trader classification categories beyond commercial and noncommercial, which may include at a minimum the addition of a separate category identifying the trading of swap dealers.

2. Develop and Publish a New Periodic Supplemental Report on OTC Swap Dealer Activity: In order to provide for increased transparency of OTC swap and commodity index activity, the Commission has instructed the staff to develop a proposal to collect and publish a periodic supplemental report on swap dealer activity. This report will provide a periodic "look through" from swap dealers to their clients and identify the types and amounts of trading occurring through these intermediaries, including index trading.

3. Create a New CFTC Office of Data Collection with Enhanced Procedures and Staffing: In order to enhance the agency's data collection and dissemination responsibilities, the Commission has instructed its staff to develop a proposal to create a new office within the Division of Market Oversight, whose sole mission is to collect, verify, audit, and publish all the agency's COT information. The Commission has also instructed the staff to review its policies and procedures regarding data collection and to develop recommendations for improvements.

4. Develop "Long Form" Reporting for Certain Large Traders to More Accurately Assess Type of Trading Activity: The Commission has instructed staff to develop a supplemental information form for certain large traders on regulated futures exchanges that would collect additional information regarding the underlying transactions of these traders so there is a more precise understanding of the type and amount of trading occurring on these regulated markets.

5. Review Whether to Eliminate Bona Fide Hedge Exemptions for Swap Dealers and Create New Limited Risk Management Exemptions: The Commission has instructed staff to develop an advanced notice of proposed rulemaking that would review whether to eliminate the bona fide hedge exemption for swap dealers and replace it with a limited risk management exemption that is conditioned upon, among other things: 1) an obligation to report to the CFTC and applicable self regulatory organizations when certain noncommercial swap clients reach a certain position level and/or 2) a certification that none of a swap dealer's noncommercial swap clients exceed specified position limits in related exchange-traded commodities.

6. Additional Staffing and Resources: The Commission believes that substantial additional resources will be required to successfully implement the above recommendations. The CFTC devoted more than 30 employees and 4000 staff hours to this survey, which the Commission is now recommending to produce on a periodic basis. Other new responsibilities will also require similar additional staff time and resources. Accordingly, the Commission respectfully recommends that Congress provide the Commission with funding adequate to meet its current mission, the expanded activities outlined herein, and any other additional responsibilities that Congress asks it to discharge.

7. Encourage Clearing of OTC Transactions: The Commission believes that market integrity, transparency and availability of information related to OTC derivatives are improved when these transactions are subject to centralized clearing. Accordingly, the Commission will continue to promote policies that enhance and facilitate clearing of OTC derivatives whenever possible.

8. Review of Swap Dealer Commodity Research Independence: Many commodity swap dealers are large financial institutions engaged in a range of related financial activity, including commodity market research. Questions have been raised as to whether swap dealer futures trading activity is sufficiently independent of any related and published commodity market research. Accordingly, the Commission has instructed the staff to utilize existing authorities to conduct a review of the independence of swap dealers' futures trading activities from affiliated commodity research and report back to the Commission with any findings.

In sum, this special call data and analysis has given the CFTC a snapshot of the OTC market. While the report's findings are useful and instructive, the data collection and analysis need to continue if the agency is to get a clearer, moving picture of this vast marketplace. The Commission's recommendations include enhanced transparency, increased reporting and information, and an overall modernization of several rules, regulations and practices used to oversee the markets. These changes will improve controls while ensuring that our futures markets remain competitive, open, and on U.S. soil.

OFFICE OF CHIEF ECONOMIST RECENT ANALYSIS OF CRUDE OIL MARKETS USING LARGE TRADER DATA

In addition to the special call data and analysis, the Office of the Chief Economist (OCE) continues to examine and analyze trading in the regulated futures markets. OCE staff played a central role in producing the July 2008 Interim Report on Crude Oil, working with the Interagency Task Force on Commodity Markets. Utilizing the detailed data included in the CFTC's Large Trader Reporting System, we continue to monitor and analyze various groups of traders, including index traders, hedge funds, and other non-commercial traders.

In the market for crude oil, we have witnessed a significant run-up in prices through mid-July 2008, with prices falling substantially during the past two

months. Figure 1* below displays this price pattern along with the net positions of commercial entities, swap dealers (who bring index fund positions to these markets), and speculators in the crude oil futures markets. As displayed in Figure 1, while oil prices were rising dramatically during the first half of 2008, net speculative positions have been largely falling. This pattern mirrors the data collected by the special call to swap dealers and commodity index funds showing that commodity index net long positions in NYMEX crude oil contracts declined by approximately 11 percent during this same six-month interval.

The Office of the Chief Economist continues to work with the Interagency Task Force on Commodity Markets and expects to update and supplement the findings produced in the July 2008 Interim Report in the near future.

CONCLUSION

The CFTC is working hard to protect the public and the market users from manipulation, fraud, and abusive practices in order to ensure that the futures markets are working properly. Thank you for the opportunity to appear before you today to discuss CFTC efforts in ensuring the integrity of the futures markets. I would be happy to answer any questions you may have.

Senator DORGAN. Dr. Harris, thank you very much for your testimony. The vote has started. We will attempt to recess and be back in about 10 minutes. So the committee will stand in brief recess.

[Recessed.]

Senator DORGAN. The subcommittee will come to order. Our next witness will be Mr. Lawrence Eagles from JP Morgan. Mr. Eagles, thank you for being with us. We would ask you to proceed.

STATEMENT OF LAWRENCE EAGLES, GLOBAL HEAD OF COMMODITY RESEARCH, JP MORGAN CHASE, NEW YORK, NY

Mr. EAGLES. Thank you very much, Mr. Chairman and members of the committee. My position in JP Morgan is Global Head of Commodity Research and I'm here in replacement of Blythe Masters, the Head of JP Morgan's Global Commodities business who sends her sincere apologies that she can't make it today.

My background, I'm a trained economist. I've got over 20 years experience in commodity research, energy in particular. I've recently joined JP Morgan from the International Energy Agency in Paris, which is the independent policy advisor to OECD governments.

While I was at the IEA I made the assessment that triggered the release of the international emergency all stocks following the devastation reeked by Hurricanes Rita and Katrina. I've advised OECD governments on financial flows in energy markets. I helped to draft the GA communicade on the issue in Osaka this year.

Let me note at the outset that JP Morgan's commodity business has no incentive to see energy prices rise nor does JP Morgan Chase as a whole benefit from higher energy prices. Higher energy prices hurt our customers. They weaken the economy and therefore they hurt us.

We believe that high energy prices are fundamentally a result of supply and demand. That said, we strongly support the efforts of the CFTC to identify and prosecute anyone found to be manipulating the energy markets. Manipulation though, shouldn't be confused with a legitimate trading activity.

Financial commodity hedging on regulated U.S. markets as producers and consumers of energy protect themselves from price

*Graphic has been retained in subcommittee files.

movements. It keeps our energy markets liquid and strong and provides vital price transparency. Investors and speculators provide the liquidity that enables producers and consumers to offset risk and restricting this activity could have adverse consequences for the U.S. economy, long term oil supplies and could actually end up shifting that activity overseas in more lightly regulated markets.

Today's question is whether passive investment flows have caused oil prices to rise. I reject that assertion. First, we found no causal relationship between investment flows and energy prices.

No one disputes that the rapid growth of investment flows into commodity futures has occurred. But that investment has not in fact caused commodity price inflation. There's a very strong correlation between the consumption of Tylenol and the frequency of headaches, but that doesn't imply causality. If passive index investing drives commodity prices higher than all prices in a given commodity index should rise at the same time. Yet we've observed distinctly different trends between commodity subgroups regardless of investment flows.

Second, we found no evidence of inventory builds that would indicate market manipulation. There may be unreported stocks in places like China and India. But that's a symptom of a rush to achieve supply security. That's not manipulation.

Because spot markets have to clear regardless of what is happening to the futures market, spot markets actually lead futures markets and not vice versa. The absence of inventory builds supports our assertion that fundamentals of supply and demand are driving current fuel prices.

Third, high oil prices show that the market is working to curb demand. Increased energy demands from China, India and the Middle East are set against a background of harder to get supplies. That's an explosive price combination.

When you look back at statistics, if you look back over history you'll always see supply and demand matching. If you get poor supply growth, you'll get poor demand growth because supply and demand have to balance. It's prices that tell you if there's tightness.

In developing economies there are often price caps and subsidies. So all the necessary de-facto fuel rationing has to take place in developed economies where consumers are prepared to pay more.

Fourth, production is getting much more expensive. Recent oil findings in Brazil at five kilometers deep and require penetration through a vast salt crust. These finds may be huge, but getting this oil out of the ground is going to be expensive.

It's going to require significant infrastructure and technological hurdles to be overcome. If it costs more to get oil out of the ground, we're going to have to pay more at the pump and academic work linking oil prices to interest rates, therefore no longer holds.

Fifth, the weak dollar bears some responsibility for the rapid oil price increase and that was shown in a recent study by the IMF which showed that the impact of the weaker dollar could actually cause a greater than one for one increase in the price of commodity in the short term. But it is not the only explanation.

Sixth, I think and very importantly we have had severe constraints, not just in the upstream, but also in the refining sector which is amplified oil price increases. Our use for crude oil is in

the refined product form. So if the price of refined products goes up, the price of crude oil goes up too.

Recent experience in the diesel market demonstrates this relationship. Over the first half of the year, we had almost a perfect storm in terms of increase supply issues. It's a vital factor. I think it probably explains most of the $50 run up in prices earlier this year. But it's poorly understood.

Finally, Mr. Chairman, in recent months, evidence has directly contradicted the assertion that passive investment is causing oil prices to rise. The latest CFTC report reveals a decline in commodity investment as the oil price continues to surge. While price pressures have eased across all commodity markets in recent weeks, the reason is no cause for cheer. The unifying factor is a broad weakening of economic conditions.

We fully support efforts to make energy markets more transparent and to increase information available about commodities themselves. At the same time the CFTC's report clearly implies index fund's investors are not to blame for recent price increases. Arbitrary changes in fund flows could reduce that liquidity, diminish investment and ironically, could actually cause increased prices and volatility in the future.

Recent experience indicates we cannot afford to make this mistake. Thank you very much. I'm very happy to answer any questions that should arise.

[The prepared statement of Ms. Masters follows:]

PREPARED STATEMENT OF BLYTHE MASTERS, MANAGING DIRECTOR, HEAD OF GLOBAL COMMODITIES, JP MORGAN CHASE, NEW YORK, NY

INTRODUCTION

Mr. Chairman and members of the Committee, I am Blythe Masters, appearing on behalf of JPMorgan and SIFMA, of which I am the present chairman. I am responsible for JP Morgan's Global Commodities business. By background, I am a trained economist, with a BA in economics from Trinity College, Cambridge in the UK. I appreciate the opportunity to present our views on the role of speculative investment in energy markets.

JPMORGAN DOES NOT BENEFIT FROM HIGHER ENERGY PRICES

Before addressing specifically the conclusions in some of the recent analyses, I would like to describe what JPMorgan's Commodities' business does, and what JPMorgan as an institution does, to show what effect higher energy prices have on our businesses.

JPMorgan's Global Commodities business provides risk management services, develops investor products and makes markets in energy products around the world. The business is focused on serving corporate clients (including producers and consumers of commodities) as well as investor clients. We stand as intermediaries between our clients and the markets, and we act as risk managers.

Rising energy prices have a significant effect on our clients and therefore on our business. As prices rise, not only do producers tend to hedge less, taking advantage of the favorable price trend, but consumers and investors also tend to postpone transacting, not wanting to lock in high prices. The effect is that overall business volumes decrease and risk increases, which hurts our business. Our Commodities business has no incentive to see energy prices rise and in fact benefits much more in a lower-priced environment.

Moreover, JPMorgan Chase overall does not benefit from higher energy prices. Our Retail Financial Services business serves millions of individual customers in the United States, with branches in seventeen states. Our Card Services business has more than 155 million cards in circulation, the vast majority in the United States. Our Commercial Banking business serves 30,000 clients nationally, including corporations, municipalities, financial institutions and not-for-profit entities with annual revenue generally ranging from $10 million to $2 billion. JPMorgan Chase

is core to the US economy, and rising energy prices result in a weaker economy—consumers struggling to pay for gasoline or energy to heat their homes, businesses having to cut back on investment, defaults rising. As Jamie Dimon, our Chairman and CEO, has stated, "The weaker the economy gets, the greater the impact could be across all our lines of business." Higher energy prices hurt our customers, weaken the economy and therefore hurt us.

One of the truly regrettable consequences of the focus on energy speculation has been to detract from what we believe is a critical issue facing the United States: the development of a long-term energy policy. It is because JPMorgan benefits from a strong US economy that we strongly support the development of a comprehensive US energy policy, one that would reduce our dependence on foreign energy and promote the development of alternative energy in an environmentally responsible manner. We support the efforts of the CFTC to weed out and prevent market manipulation, but we fundamentally believe that high energy prices are a result of supply and demand, not excessive speculation. I will now turn to our analysis of the role of speculation in energy markets.

THE IMPACT OF SPECULATORS ON COMMODITY MARKETS

What we are addressing here today is the impact of investment flows on energy prices, and oil prices in particular. But this debate is not exclusively an oil issue. The same arguments are being discussed in all the primary commodity markets from corn to copper. These commodities form the backbone of the world's industrial and economic system and have a disproportionate impact on the finances of low income groups and developing nations, understanding the root cause of such price rises is extremely important.

From the prime vantage point that JPMorgan Chase has across a broad spectrum of commodity markets, we can see the arguments from many different perspectives. And we can see that the arguments are often very inconsistent.

THE GROWTH OF INDEX FUND INVESTMENT AND ITS IMPACT ON COMMODITY PRICES

Media and political analysis has often focused on the category of investment flows from passive investors, in particular, those investments generally categorized as index funds. They have been widely blamed for rising prices because they have typically been seen as long-term buyers of commodities, rather than being on both buy- and sell-sides of the market as hedge funds and other speculators tend to be.

No one disputes the rapid growth of investment flows into commodity futures—we estimate that the money under management in these commodity indices has increased from $10-15 bn in 2003 to $146 bn at the end of 2007 and $200 bn at the end of June 2008. But we have to be very careful in asserting that because commodity prices have risen over the same period one has caused the other. There is a strong correlation between the consumption of Tylenol and the frequency of headaches but that does not imply causality.

You do not have to scratch too deeply behind these assertions to question the validity of the arguments.

Firstly, if you invest $1mln dollars in a commodity index fund in 2003 of course you would see the value of your investment increase by exactly the same amount as the index it was invested in. Commonsense would tell you that before leaping to a conclusion, you need to see what the net money flows are after you strip out the capital gain associated with these trades. When you do that you find no meaningful relationship between the flows of money coming in and the change in the oil price.

Secondly, index funds tend to hold a basket of commodities, so if investment money is moving one commodity, it should be moving all commodities at the same time. It does not. While there has been a general trend for commodity prices to rise, within that you see distinctly different trends between commodity sub-groups.

These two factors together argue strongly that spot commodity prices in general are not being driven by fund flows, but fundamentals.

The linkage between physical and futures markets is also important to understand. Some recent analysis confuses a trading link between the two with a pricing link.

Futures markets have a much more important economic role than simply allowing the hedging and transfer of risk over different time periods. The standardization of commodities traded on futures exchanges offers price transparency that cannot be achieved with the multitude of grades and delivery locations of the spot commodity market. But the concentration of trading in the futures contracts provides a reference point which spot traders use as a benchmark. They then price their spot commodity as either a premium or a discount to the futures price. That links the spot

and futures market from a quotation perspective, but that does not mean that one determines the other.

We had a very clear example of this in the oil market in 2006, when storage tanks in the US Midwest, the pricing point of WTI, were full up due to a combination of increased Canadian pipeline flows, refinery shutdowns and the lack of any infrastructure to ship surplus oil out of the region. As a result, WTI traded at massive discounts to international crudes such as Brent, and US Benchmarks such as Mars and Light Louisianna Sweet crude. This is a classic example of how spot markets have to clear, regardless of what is happening to the futures market—and how spot markets lead futures and not visa versa.

This is important. High school economics students will be able to tell you that if fund flows into commodity markets artificially push spot prices above this equilibrium clearing level, you will distort the market. That distortion will be manifested in a build in stocks. Where was that stockbuild in the oil market between July 2007 and July 2008 when prices rose from $70 to nearly $150/barrel? Where was it when London Metal Exchange stocks were at near zero levels when copper, nickel and zinc prices hit record highs? Where was it when we had the recent surge in wheat and rice prices, or coal come to that?

Some observers point out that this argument does not hold if traders are secretly holding stocks. But have you seen the size of a VLCC—you can't hide one in your back garden. You can't hide an oil storage tank or offloading facility either. Yes, in oil we know that several countries have been building strategic reserves, and don't report the buying, nor do many non-OECD countries report stock levels. But that is not an issue for the markets—if they see more physical buying and supplies tightening, the price rises. This is not fund flows lifting prices, it is not fund flows replicating the Hunt Brothers squeezing the silver market. It is however a strong argument for more data transparency—which we would fully support.

High prices are there for a reason—to choke off demand. If the oil market is working efficiently and effectively you will never see shortages. You will see consumers being priced out of the market, but shortages will only occur if there is a sudden supply shock—not a structural shift.

But what if these investment flows are lifting forward prices? What does that mean?

What it does not mean is that the man at the pump is paying more for his oil—that is determined by the spot market. Higher forward prices should mean more investment: producers can lock in high prices, and can guarantee a cash flow. They send a strong signal to consumers to invest in energy efficient technology, or to look for substitutes.

In the oil and metals industry it may take 5-10 years for an investment to come to fruition—try hedging that risk in a futures market that only had significant liquidity six months forward—as we had in oil a decade ago. Now we have futures markets liquid three to five years forward. Financial intermediaries such as JPMorgan make markets going out a decade or more.

These fund flows have provided a huge economic service to the US and to the world economic system. But are these fund flows distorting the futures markets—again, the answer is no. Look at the latest medium-term analyses—they show that despite these record high prices, and record investments, we will still see crude oil supplies getting very tight again in five years time. These high prices are clearly justified.

Look outside of the commodities and you get more evidence that index fund flows are not driving commodity prices. Look at commodities that are difficult for speculators to access: coal, rice, rubber, minor metals, uranium. All of these commodities have seen sharp price rises at some point over the past five years—yet they do not appear in the main commodity indexes.

There is a much simpler explanation for a generally rising trend in oil prices: strong economic growth in highly populous countries—China and India in particular.

GDP per capita in these countries has risen above the threshold level (usually seen around $1000-$2000/capita) where the population shifts from a subsistence level to consumer status. As their income expands, naturally they want to have access to the same goods as we enjoy in the developed world—housing, running water, better and more food (more meat) electricity, cars, washing machines and so on. Such a rapid expansion requires significant increases in primary commodity consumption.

But supply growth has been poor. The increase in China's oil demand since 2003 has required the discovery of new oil supplies roughly the equivalent of Iraq, or Libya or Angola. However, this growth in demand has come at exactly the same time as the world has struggled to add new production capacity. According to the

International Energy Agency's Medium Term Oil Market Report in July 2008, non-OPEC crude oil supplies have been static or in decline since 2004.

Most of the additional growth has been provided by either OPEC, biofuels or Natural Gas Liquids—the latter of which can not be readily transformed into the much-in-demand transportation fuels.

Quite simply, if you do not have the supply, you have to ration demand—and in the free market we do this with price. And as the government sets the price in many developing countries, it is the developed countries that have to cut back. And the higher your income, the higher the price needed to curb demand.

Oil is also getting more expensive to get out of the ground. No one would debate that. Yet some analysts point to Hotelling's Rule to imply that oil prices are being inflated by fund flows. No academic would invoke this if they understood the oil market, no oil market analyst us this if they understood the academic debate. Hotelling implies that that even if oil is running out, the price of oil should rise by no more than the rate of interest. But he was very clear that this rule only held true if production costs remain constant. In fact, the escalation of production costs has been unprecedented and therefore his assessment has no relevance in today's world. There has been a massive increase in marginal costs since 2003.

Recent finds in Brazil are five kilometres deep and require penetration through a vast salt crust. These finds may be huge, but getting this oil out of the ground will not come cheaply and there will be significant infrastructure and technological hurdles to overcome. It is not speculation or fear of peak oil which is leading to higher prices, but the reality of getting oil out of the ground.

We don't think fear of peak oil is pushing prices higher, but prices are reflecting the higher cost of getting oil out of the ground in more and more challenging locations.

This does not however mean that oil prices stick like glue to the marginal cost—currently $70 to $100/barrel at current costs. Marginal cost provides a rough estimate of where oil prices should gravitate over time. But in the short run, the true marginal cost can be determined by the price at which OPEC is willing to take off or add oil, the price at which corn ethanol is available, or the availability of diesel supplies to a market constrained by ever-tighter product specifications, limited flexibility in refining capacity and surging diesel demand.

The weaker dollar has also had an impact. Academics can debate the precise mechanism for days, but simplistically, a commodity's price is determined by the supply and demand for the commodity not by the currency it is denominated in. If the dollar weakens, the value of oil has not changed globally, so the price in dollar terms has to increase. In fact, a recent study by the IMF showed that the impact of a weaker dollar could actually cause a greater than a one-for-one increase in the price of a commodity. But the impact is not just on the sales price—costs in the oil and other commodity industries are often denominated in dollars as well, so a weaker dollar can raise the marginal cost of production too. But, regardless of this, oil prices have generally risen by much more than the dollar has depreciated, highlighting that this is only one background feature of many.

OPEC has also gained renewed importance in the market. It was slow to raise output in 2007 when demand was increasing, and prices only started to decline when Saudi Arabia ramped up production in July 2008. It has been argued that higher prices are actually leading to less investment and supply as producer countries seek to maximize their long term revenue flow. That is a possibility, although I would argue that the recent decision by Saudi Arabia to increase output sends a clear signal that there is also concern about the impact demand destruction is having on their future market prospects. But regardless of your view, that is a symptom of high prices and political dynamics, not an impact from fund flows.

The oil market has also had problems in the refining sector, which have amplified the rise in the oil price. In fact, we believe that the tightness in global diesel markets was the key factor behind the oil price rally over the past year. It is not a simple mechanism, or one that is easy to understand without an in-depth understanding of oil market functioning. Many traders and analysts will be able to tell you that diesel has been driving the market over the past few years, but few will be able to explain the mechanism, but when you think about it in first principle terms, it is intuitive.

Crude oil is not much use to anyone in its raw form—a couple of power stations around the world may use it for fuel, but that is it. Our use for crude oil is in the refined product form—gasoline, diesel, petrochemicals and fuel oil. Each of these refined products is a commodity in its own right, with a price determined by the supply and demand for that product. If we sum the values of all of these refined products we get the price that refiners will be willing to pay for a barrel of crude oil. So if the price of refined products goes up, the price of crude oil goes up too.

So if we have strong demand for diesel fuel, but not enough refinery capacity or crude supply to meet it, diesel prices will rise, and that will raise the value of the product slate, and so the price of crude oil rises as well. If the supply of crude oil is too high, refiners will make a bigger profit and will store more crude. If the supply of crude is tight, their profits will be less, marginal producers will cut runs—and there will be less diesel supply.

In the past year, demand for diesel has been so strong that prices have had to rise to record premiums to crude oil to restrain demand. In many ways the diesel market has endured a "perfect storm."

- Europe is consuming ever-more diesel as tax incentives encourage its consumers to switch to diesel cars.
- A market failure has led to China's teapot refineries being closed down, leading China to seek more diesel from an already tight international market.
- Widespread shortages in the retail market prompted China to order an increase in stock levels ahead of the Olympics.
- Power shortages in South Africa and Chile prompted a surge in diesel for backup generators.
- To cap it all, there was a natural gas pipeline accident in Australia which, again, caused a surge in diesel demand. Only when some of these pressures on the diesel market eased (unfortunately partly due to a spreading global economic slowdown) did oil prices start to decline.

Importantly, as oil prices embarked on the largest part of this surge, commodity index investment declined. It is not just our analysis that shows this, but also the most recent and comprehensive analysis by the CFTC.

Similarly, when we look to other markets there has also been an easing of pressure. Some of this has been a response to improved investment: crop yields have increased, investment is underway in the base metals, and international oil companies are reinvesting a greater portion of cash flow than would be seen in any other industry.

Unfortunately, while price pressures have eased in oil (and many other commodity markets) the unifying factor is a widening weakening of economic conditions. But even as we weather this downturn, we must be aware that the fundamentals that underpinned this commodity boom are unlikely to completely go away.

We recognize that there is a need for more information, and we fully support efforts to make these markets more transparent. But we have to recognize that one of the main areas where we lack fundamental information is on commodities themselves. There have been times when estimates of the Brazilian coffee crop have fluctuated between 30 and 50 mln bags; when traders have believed there have been secret stockpiles of metal building up around the world, only to see them "wiped out" by a dramatic upward revision to demand. The discrepancy between crude oil supply and petroleum product demand has exceeded 1 mb/d because we only get reliable data 18 months late. We have no idea of the true production capacity of many major oil producing countries in the world. There is little surprise that pundits jump to the wrong conclusions over the drivers of commodity prices.

Similarly, if we want to regulate markets, we need to know whether they are functioning properly from a supply and demand perspective first.

But while we support the need for more transparency, for both financial and fundamental data, it is imperative that we recognize the benefits that additional liquidity from investment flows provides. Commodity producers can now invest in the future with the financial tools that will help them mitigate risk and lock in profitable returns. Arbitrary changes in fund flows could reduce that new-found liquidity, resulting in lower investment and ironically exactly the opposite effect that was intended—higher prices in the future.

[Graphics have been retained in subcommittee files.]

Senator DORGAN. Mr. Eagles, thank you very much. Next we will hear from Dr. James Newsome, the Director, this says Director. Are you President?

Mr. NEWSOME. No.

Senator DORGAN. Ok.

Mr. NEWSOME. Changed titles, that's all.

Senator DORGAN. Changed titles. Director of the Commodity Mercantile Exchange in New York. Mr. Newsome, thank you for being with and you may proceed.

STATEMENT OF JAMES NEWSOME, DIRECTOR, CME GROUP, NEW YORK, NY

Mr. NEWSOME. Thank you, Mr. Chairman. I appreciate the opportunity to present the views of the CME Group this afternoon. The CME Group is the parent of the CME Incorporated, the Board of Trade over the city of Chicago, the New York Mercantile Exchange and COMEX. We'll refer to them as the Group of Exchanges.

The CME Group Exchanges are neutral marketplaces. They serve the global risk management needs of our customers and producers and processors who rely on price discovery provided by our competitive markets to make important economic decisions. We do not profit from higher crude nor energy prices.

Our congressionally mandated role is to operate fair markets, to foster price discovery and the hedging of economic risk in a transparent, efficient, self regulated, environment, overseen by the CFTC. The CME Group Exchanges offer products in all major asset classes including futures at options based on interest rates, equity indexes, foreign exchange, agricultural commodities, energy, metals and alternative investment products.

Speculators make markets work for the benefit of the hedgers and for all who look to efficient markets for the best source of price discovery. Our markets operate in a global economy. Impediments to legitimate speculative activity on U.S. regulated markets will drive trading off exchange and overseas.

We support proposals to materially improve the enforcement capabilities and machinery of the CFTC, especially of cares taken to avoid driving trading off of the regulated markets into dark pools.

We support greater transparency through expanded, mandatory reporting of energy trading and position information to the Commission in accordance with its recent recommendations. Additionally, we applaud the Commission's preliminary recommendations in the report released last week to encourage clearing of OTC transactions, which would effectively provide greater transparency and oversight to OTC energy swaps. We are also working with the Commission to offer secure, central, counter party clearing facilities for other OTC transactions which will help control systemic risk in that market and offer regulators far greater insight into the positions of market participants.

We believe the disclosure of trading and position information to a regulator with sufficient resources to analyze and act upon unusual or suspicious activities will deter most potential manipulation and assure punishment of those foolish enough to attempt a manipulation. This is the philosophy upon which our internal market regulation has been based and why it has been so successful. We clearly understand that the recent surge in the price of many commodities, particularly energy, has inspired Congress to look for assurance that the only price drivers are legitimate supply/demand factors.

Some who claim expertise or special mileage have asserted that the entire price inflation can be laid at the door of speculators and/or passive index funds that have invested billions in commodity contracts. However, these arguments are flawed. Specifically, Mr. Masters' claim that buy and hold index traders poured more than

$60 billion into the major commodity indexes in January through May of this year resulting in the purchase of approximately 187 barrels of WTI crude oil futures and causing WTI crude prices to soar by nearly $33 a barrel as a result of this buying pressure.

This has been proved false in every material aspect. Our careful evaluation of market participants and trading patterns are to the contrary as are the findings of the CFTC. The recent CFTC report finds that index traders were actually reducing their positions in WTI futures contracts and in the OTC futures equivalent substitutes at the same time that the price was escalating.

Most every competent economist who has looked at real data, rather than using uniformed best guesses and who has applied legitimate economic analysis concludes that neither speculators nor index funds are distorting commodity prices. We worry that legitimate economists will be ignored and that important legislation may be shaped by false economics that is profoundly flawed in both its methodology and logic.

Mr. Chairman, we're strong proponents of securing all of the relevant information from all sources and fairly testing the hypothesis and reconfirming previous academic studies. The evidence to date respecting the impact of speculation on index trading in energy markets parallels the results we have found in our markets. We support the CFTC's continuing efforts to improve the quality of data from over the counter sources and to assure that a thorough analysis informs any subsequent legislative or administrative efforts to deal with the uneconomic price inflation.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Duffy follows:]

PREPARED STATEMENT OF TERRENCE A. DUFFY, EXECUTIVE CHAIRMAN, PRESENTED BY JAMES NEWSOME, DIRECTOR, CME GROUP, INC., NEW YORK, NY

I am Terrence Duffy, Executive Chairman of Chicago Mercantile Exchange Group Inc. ("CME Group" or "CME"). Thank you Chairman Dorgan and Ranking Member Murkowski for this opportunity to present our views.

CME Group was formed by the 2007 merger of Chicago Mercantile Exchange Holdings Inc. and CBOT Holdings Inc. CME Group is now the parent of CME Inc., The Board of Trade of the City of Chicago Inc., NYMEX and COMEX (the "CME Group Exchanges"). The CME Group Exchanges are neutral market places. They serve the global risk management needs of our customers and producers and processors who rely on price discovery provided by our competitive markets to make important economic decisions. We do not profit from higher food or energy prices. Our Congressionally mandated role is to operate fair markets that foster price discovery and the hedging of economic risks in a transparent, efficient, self-regulated environment, overseen by the CFTC.

The CME Group Exchanges offer a comprehensive selection of benchmark products in all major asset classes, including futures and options based on interest rates, equity indexes, foreign exchange, agricultural commodities, energy, and alternative investment products such as weather and real estate. We also offer order routing, execution and clearing services to other exchanges as well as clearing services for certain contracts traded off-exchange. CME Group is traded on NASDAQ under the symbol "CME."

Speculators make our markets work for the benefit of hedgers, commercials and for all who look to efficient markets for the best source of price discovery. Our markets operate in a global economy; impediments to legitimate speculative activity on regulated U.S. markets will drive trading off exchange or overseas.

We unequivocally support proposals to materially improve the enforcement capabilities and machinery of the CFTC, especially if care is taken to avoid disadvantaging regulated U.S. markets for the benefit of dark pools. We support expanding the mandatory reporting of energy trading and position information to the Commission in accordance with its recent recommendation. We share the view of

regulators and legislators on the need for greater transparency most famously expressed by Justice Louis Brandeis:

> Publicity is justly commended as a remedy for social and industrial diseases. Sunlight is said to be the best of disinfectants; electric light the most efficient policeman.
>
> —*Justice Louis Brandeis, Other People's Money, and How the Bankers Use It, 1933*

We believe that disclosure of trading and position information to a regulator with sufficient resources to analyze and act on unusual or suspicious activities will deter most potential manipulators and assure punishment of those foolish enough to attempt a manipulation when all of their actions are visible to the regulator. This is the philosophy upon which our internal market regulation has been based and why it has been so successful.

The recent highly promoted declarations that commodity prices are being driven by speculators and index funds, rather than the expected forces of supply and demand lack any basis in fact or theory. The proponents of the plans to eliminate speculators begin with their inability to forecast prices based on their understanding of supply and demand and jump to the conclusion that their inability to predict price movements demonstrates that the market is not operating correctly.

Most every competent economist who has looked at real data, rather than using uninformed, wild guesses, and who has applied legitimate economic analysis concludes that neither speculators nor index funds are distorting commodity prices. We worry that legitimate economists will be ignored and that important legislation may be shaped by spurious economics that is so profoundly flawed in its methodology and logic that it could be used to prove that lung cancer causes cigarette smoking. Expert economists who reviewed the work of Masters, McCullough and Eckaus found, among other flaws, that:

- Those authors' unfamiliarity with industry fundamentals resulted in misinterpretation of petroleum statistics;
- The authors confuse the consequence of demand for physical product and demand for derivatives;
- The failure of the McCullough model to forecast oil prices is due to problems in the model, not problems in the market;
- The Masters' model of futures markets is overly simplistic, and does not correspond to any of the hundreds of academic research articles on futures published over the last 50 years. The characterization and measurement of "excessive speculation" are arbitrary and meaningless;
- Claims that speculators are the cause of increased volatility misstate volatility trends;
- Master's claim that tough talk from Congress is behind the recent sharp fall in oil prices rests on incorrect facts and borders on the absurd; and
- McCullough consistently conflates speculation and market manipulation to justify his conclusions.

We are strong proponents of securing all of the relevant information from all sources and fairly testing the hypothesis and reconfirming previous academic studies. The evidence to date respecting the impact of speculation and index trading in energy markets parallels the results we have found in our markets. We support the CFTC's continuing efforts to improve the quality of data from OTC sources and to assure that a thorough analysis informs any subsequent legislative or administrative efforts to deal with uneconomic price inflation.

SPECULATION IS ESSENTIAL TO EFFICIENT, LIQUID MARKETS

Fuel and food prices recently bounced to levels that are shocking and painful to consumers and the economy. We share the concerns of this Committee regarding the impact these prices are having on the daily lives of U.S. consumers. Unfortunately, the pressure to reverse rising prices has led some to look for a simple causal agent that can be neutralized with the stroke of a pen. The favored culprit is the traditional villain—speculators. But speculators sell when they think prices are too high and buy when they think prices are too low. They are not a unified voting block and are on both sides of every market. Speculative selling and buying send signals to producers and processors that help keep our economy on an even keel. High futures prices for corn induced farmers to bring new acreage to market. High forward energy prices encourage exploration and new technology to exploit existing untapped reserves.

Futures markets perform two essential functions—they create a venue for price discovery and they permit low cost hedging of risk. Futures markets depend on short and long term speculators to make markets and provide liquidity for hedgers. Futures markets could not operate effectively without speculators and speculators will not use futures markets if artificial barriers or tolls impede their access. Blaming speculators for high prices diverts attention from the real causes of rising prices and does not contribute to a solution. The publicly available data has been relatively consistent over time in demonstrating that speculators in crude oil futures contracts have been relatively balanced as between buy and sell positions in the market. These data have been ignored by commentators who have wrongly suggested that speculators are uniformly on the buy side and are thus pushing prices up on that basis. The weight of the evidence and informed opinion also confirms that the high prices are a consequence of normal supply and demand factors. The Wall Street Journal surveyed a significant cross section of economists who agreed that: "The global surge in food and energy prices is being driven primarily by fundamental market conditions, rather than an investment bubble . . . ."[1]

The traditional production/consumption cycle that has governed prices in commodity markets is stressed by the confluence of a number of factors.

David Hightower, author of the Hightower Report, summed up the supply/demand situation in corn last year as follows: " We have experienced three consecutive years of record corn production . . . and three consecutive years of declining ending reserves. Supply has put its best team on the field and demand keeps winning."

MASTERS' ANALYSIS IS WRONG

The academic work and the contemporaneous explanations of price movements in commodities markets have been largely ignored by a few vocal critics, who have gained an undue share of attention by making sensational claims. In May of this year Michael W. Masters, who operates an off-shore equity investment fund in the Virgin Islands and who by his own admission has never had any actual experience as a futures trader, began a cascade of charges that commodity index funds were responsible for unnatural price escalations in commodity markets.

In particular, his allegations focused on crude oil futures and the underlying crude oil market. We have previously provided detailed explanations as to how the crude oil futures market and physical market interact, how prices are determined, and the common commercial practices and activities that comprise these markets. Among other things, we have emphasized that crude oil is truly a global commodity and that prices in crude oil futures markets are primarily driven by the market fundamentals of the far larger physical market for the crude commodity. We explained that Mr. Masters was dead wrong. NYMEX had repeatedly examined and tested for evidence that would support Masters' fundamental thesis about market performance and had consistently found that his charges had no basis in fact. NYMEX shared these results in its submissions to Congress.

On September 10th, Mr. Masters updated his so-called "analysis," including his allegations about crude oil market participation, price determination and performance. On September 11th, the Commodity Futures Trading Commission (CFTC) released a detailed report that included definitive data and analysis regarding index-long market participation in a group of commodities, including crude oil. Unlike Mr. Masters who guessed at or simply assumed the facts, the CFTC report by contrast provided definitive and unambiguous information as to whether the index funds were increasing or decreasing their positions in a manner that could support Mr. Masters' claims. In addition, the CFTC report provided futures price information that enabled readers to perform the equivalent analysis that Mr. Masters purported to perform in reaching his conclusions.

The information the CFTC provided also was sufficient to enable readers to evaluate the performance of the methodology Mr. Masters purported to perform in reaching his assertions about index-long participation in commodities markets. It should be noted that a core assumption made by Mr. Masters is that all index trading wherever it occurs will inevitably be hedged only on the regulated futures markets. The CFTC report, by comparison, is careful to note that its analysis is set forth in terms of "futures-equivalents," thus referring to activity both on the regulated and transparent futures exchanges as well as in less transparent OTC markets. The unambiguous result of the CFTC analysis, which is based on the best data available today, and its direct implication is that Mr. Masters was wrong about everything; about participation by index-longs, about the price impacts from index-longs, and about how to even count participation by index-longs.

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[1] Bubble Isn't Big Factor in Inflation, By Phil Izzo (May 9, 2008; Page A2.)

- Mr. Masters asserts in Chart 1 that "Index Speculators' Stockpile" of WTI crude oil futures was approximately 520,000 contracts on January 1, 675,000 futures contracts on April 1, and 680,000 futures contracts on July 1 (all this year). By contrast, the CFTC's definitive numbers were: 408,000 futures-equivalents on December 31, 2007; 398,000 on March 31; and 363,000 on June 30. Mr. Masters' claim that futures contracts are "stockpiled" is meaningless. He overstates by 27.4% in January and 87.3% by the end of June the number of contracts held by index funds. Mr. Masters is not only disturbingly off the mark, he shows an unmistakable pattern of significant growth through the first half of the year (over 30% growth—well over 30 when looking at the early June peak) when the actual trend is significantly downward—11% down. In other words, Mr. Masters is completely lost.
- Mr. Masters emphatically asserts—his "update" is devoted to this—that crude oil futures prices follow, virtually in-step, the path followed by his asserted (and completely wrong) levels of index-long participation. He shows crude oil price rising by nearly 50% over the same time period and attributes the rise in its entirety to the rise in index-long participation. This is the essence of Mr. Masters' price-determination theory and he stresses it in his update: when index-long participation grows, the price rises, and, when index-long participation drops, the price decreases. Mr. Masters uses this theory, one which has been repeatedly disputed by responsible energy market economists as well as by NYMEX in its previous submissions, to explain the rise and fall of crude oil prices during 2008. Mr. Masters expressly attributes the rise in crude oil prices from January to May to increases in long-index positions (which, in fact, did not happen) (2nd bullet point on p.1 "Update "). He also expressly attributes the fall in prices from July 15th to September 2nd to reductions in index-long positions (another of his assertions—given his track record, we had better wait for the legitimate information) (p. 4 "Update "). The CFTC report allows the reader to apply Mr. Masters' price determination theory to the real long-index participation data. Its report shows that, as long-index participation fell, prices rose. We of course do not intend to claim that the causality runs in this directions—lower long-index participation, higher prices. We just wish to identify the clear, unmistakable and unambiguous factual refutation of Mr. Masters' thesis.
- Mr. Masters asserted in his May 20th Congressional testimony that index-long positions in commodities' markets were equal to $260 billion in March 2008. The CFTC calculated actual notional value of index long positions in commodities' markets to be $168 billion in futures-equivalents, an overstatement by Mr. Masters of a mere 54.7%.
- Even where there appears to be similarity between Mr. Masters' assertions and the CFTC's fact finding, Mr. Masters' "methodology" nonetheless results in making sweeping assertions that are the complete opposite of the CFTC's findings. Mr. Masters, for instance asserts that index-long positions increased in value by $60 billion during the first five months of 2008 ("Update . . ." p. 1 and 3). The Commission reports that long-index investments increased by $54 billion between December 31, 2007 and June 30, 2008; not identical but arguably close. But Masters further claims that long-index positions in crude oil increased from 520,000 futures equivalent to over 700,000 during that time period (an increase of 34.6%). As was noted above the CFTC clearly states that actual index-long positions in crude oil were reduced from 408,000 to 363,000 (a reduction of 11%). Mr. Masters seems to miss the most basic fact—that the value of long positions increase with rising prices. In other words, while the total notional value of futures equivalent positions held by index traders increased during the first six months (from $39 to $51 billion), the CFTC report demonstrates that this increase in overall value is entirely due to increases in the price of crude oil rather than to increases in the sizes of positions. Indeed, contrary to claims made by Masters and others, the number of futures-equivalent crude oil positions held by index traders actually declined rather than increased during this period, indeed a decline of approximately 11%.
- The CFTC's data on the individual commodities also strongly suggests the inadequacy of the methodology that Mr. Masters asserts to have employed. (We emphasize that we have made no effort to check the work performed by Masters.) Mr. Masters asserted in his May 20 testimony that 95% of the long-index positions in commodities are tied to either the Standard & Poor Goldman Sachs Commodity Index or the Dow Jones AIG index. When looking at the changing relative value relationships between oil, wheat, corn and cotton summarized on p. 3 of the CFTC report and the changing prices over the three dates, this assertion becomes very dubious. Yet, giving Masters the benefit of the doubt that he properly executed his stated methodology, his methodology strongly appears to

be wrong. Therefore, if he performed the methodology right, it is the wrong methodology.

Mr. Masters has successfully captured a number of headlines by trumpeting the supposedly massive inflow of funds by index traders into the regulated futures markets. Yet, as noted above, index trader positions were actually declining during this period. Moreover, the CFTC report is also helpful in providing some realistic context for the overall level of participation by index traders. Specifically, their report compares the notional value of the futures-equivalents held by index traders to notional values for positions in the regulated futures and options contracts traded on markets regulated by the CFTC. Simply put, the notional index values are relatively modest by comparison. For example, even if one was to assume that somehow 100% of index positions ended up being hedged on futures markets, for NYMEX Crude Oil, this would still constitute only 13% of the total notional value for NYMEX Crude Oil futures and options positions. In this regard, the CFTC notes at the outset of its report that such a result is unlikely due to internal netting of positions by swap dealers.

Remarkably, given how fundamentally wrong Masters is about all of the assertions that can be tested against the CFTC's fact finding—and that is the overwhelming majority of Masters' assertions—he never offers any room for qualification in any of his "work." Contrast that with the work of the community of responsible scholars of energy markets who are actual economists and who have analyzed recent price behavior in crude oil markets—including Phil Verlager, Dan Yergin, Robert Weiner and Craig Pirrong to name several but by no means all—and each typically identifies in their own analysis where they need to perform additional work to fortify their conclusions. In fact, it is only fair to contrast it with previous testimony and submission provided by the Exchange where, among other things, we identified our own efforts to consider and evaluate theories of price influence with which we disagreed.

Mr. Masters is dismissive of oil market fundamentals. He has not made any serious effort to uncover the fundamentals. In general, he simply asserts that supply and demand have been in balance and that there has been no change in world inventories over the first six months of 2008. Frankly, we are not even sure what he means by this, but whatever he means, he is at odds with both the US Department of Energy's Energy Information Administration and the International Energy Agency.

In both of their recent market reports, each agency speaks to uncharacteristic changes in OECD inventories during the second quarter this year. In its September report, EIA speaks to an over 1 million barrel per day drop from the "average build . . . during this time of year" for OECD countries during the second quarter. Inventory information is notoriously complex to ascertain in the world oil market. US inventory information is released on a weekly basis and is, probably, the most reliable in the world. The IEA reports OECD countries' information on a monthly basis. The IEA then revises these monthly data, which are reported about six weeks after the fact, in two successive monthly reports. The numbers are commonly revised and frequently the first revision is one direction while the second revision can be in the reverse direction. As for non-OECD cumulative inventory information, it is essentially uncertain. EIA indirectly reports on it but does so as a residual calculation based on estimates for production and consumption (and what it knows about OECD inventories), and claims no certainty over it.

This is why Mr. Masters' dismissive reference to world inventories is problematic. Nobody would seriously suggest that they know for a certainty current world inventory levels. In addition, though, he is factually wrong about what is known. The EIA's current report indicates that there were indeed changes in world inventories during the first half of the year—600,000 barrels per day decrease during the first quarter and 280,000 barrels per day increase during the second quarter. In addition, the EIA's data regarding the first half of the year inventories were revised in its most recent report as they were in last month's report, but each report still indicates that world inventories have in fact changed during the first half of the year. (The August EIA report indicated that world inventories were drawn down 300,000 barrels per day during the first quarter and raised 330,000 barrels per day during the second quarter.) The fact that EIA and IEA revise their data each month is manifestation of the complexity in even ascertaining the correct level of inventories, much the less attempting to understand the relationship that may exist between changes in inventory levels and changes in price. (It also highlights some of the uncertainty regarding core market fundamentals that can have an impact on and be factored into price levels.) Mr. Masters does not seem to even understand these sub-

tleties let alone address them, which raises additional questions respecting his qualifications.

NYMEX has provided Congress detailed taxonomic descriptions of how the futures market interacts with the physical market for oil with special emphasis on the role of arbitrage and its corollary impact, price convergence. In those submissions, we also explained in detail how index-long position taking would impact the oil futures and underlying physical crude oil markets. We also provided the results of market analyses we performed to examine the impact of financial non-oil participants in the futures market as well as to search for evidence of price-related impacts from index-long participation in futures or OTC markets. The consistent result was that there was no evidence to support impacts on price or price volatility by financial non-oil participants or by long-index participation in the markets. These evaluations began in 2004 and included looking at 2007 through the middle of 2008. In the tradition of balanced economic analyses, we can only assert that we found no evidence to support these impacts.

Twice, in recent congressional testimony the CFTC has reaffirmed the validity of its own 2005 analysis.[2] The CFTC's analysis parallels the conclusions of many other economists who have also studied the issue of causation in the context of speculators and commodity futures prices.[3]

Neither the CFTC's study nor reference to the supply/demand factors driving the market has calmed the critics who demand an easy solution to high prices, which they claim can be mandated without cost or consequence. This vocal group, which does not include any competent agriculture or energy economists, insists that driving index funds and/or speculators from the markets will bring prices back to the correct level.

The proponents of this plan do not understand the role of speculation. They do not understand that there are speculators on both the buy and sell sides of the market. Moreover, they fail to grasp that imposing artificial costs and constraints on speculation in markets regulated by the CFTC is likely to drive prices to artificial levels, which can distort future production decisions and cause costly misallocation of resources of production. Such constraints also may well result in the shift of ac-

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[2] During his appearance before the Senate Appropriations Committee on May 7, 2008, CFTC's Acting Chairman Walt Lukken stated that the CFTC's recent revisitation of the 2005 CFTC study using more current data for energy market trading affirmed the conclusions reached in the 2005 study. This conclusion mirrors the views of the majority of 53 economists surveyed by the Wall Street Journal in May 2008, which indicated that the global surge in food and energy prices is being driven primarily by fundamental market conditions, rather than an investment bubble. Wall Street Journal, May 9, 2008, page A-2. Similarly, the US Department of Energy's Energy Information Agency's "Short Term Energy Outlook", published in May 6, 2008, evidenced the tightness in world oil markets, with growth in world oil consumption outstripping growth in production in non-OPEC nations by over 1 million bbls/day, and dramatically increased demand coming from China, India and other parts of the developing world.

[3] See, for example, Antoshin and Samiei's analysis of the IMF research on the direction of the "causal arrow" between speculation and commodity prices in "Has Speculation Contributed to Higher Commodity Prices?" in World Economic Outlook (September 2006):

"On the other hand, the simultaneous increase in prices and in investor interest, especially by speculators and index traders, in commodity futures markets in recent years can potentially magnify the impact of supply-demand imbalances on prices. Some have argued that high investor activity has increased price volatility and pushed prices above levels justified by fundamentals, thus increasing the potential for instability in the commodity and energy markets.

What does the empirical evidence suggest? A formal assessment is hampered by data and methodological problems, including the difficulty of identifying speculative and hedging-related trades. Despite such problems, however, a number of recent studies seem to suggest that speculation has not systematically contributed to higher commodity prices or increased price volatility. For example, recent IMF staff analysis (September 2006 World Economic Outlook, Box 5.1) shows that speculative activity tends to respond to price movements (rather than the other way around), suggesting that the causality runs from prices to changes in speculative positions. In addition, the Commodity Futures trading Commission has argued that speculation may have reduced price volatility by increasing market liquidity, which allowed market participants to adjust their portfolios, thereby encouraging entry by new participants."

Similarly, James Burkhard, managing director of Cambridge Energy Research Associates testified to the Senate Energy Committee on April 3, 2008 that: "In a sufficiently liquid market, the number and value of trades is too large for speculators to unilaterally create and sustain a price trend, either up or down. The growing role of non-commercial investors can accentuate a given price trend, but the primary reasons for rising oil prices in recent years are rooted in the fundamentals of demand and supply, geopolitical risks, and rising industry costs. The decline in the value of the dollar has also played a role, particularly since the credit crisis first erupted last summer, when energy and other commodities became caught up in the upheaval in the global economy. To be sure, the balance between oil demand and supply is integral to oil price formation and will remain so. But 'new fundamentals'—new cost structures and global financial dynamics—are behind the momentum that pushed oil prices to record highs around $110 a barrel, ahead of the previous inflation-adjusted high of $103.59 set in April 1980."

tivity to less regulated and transparent markets abroad, which could shift this activity off the CFTC's radar screen.

The proposal to exclude pension funds and index funds from participating in commodity futures markets is not constructive. These funds use commodity exposure to manage risk in their portfolios. Barring them from regulated U.S. futures markets will only push them offshore or into over-the-counter trading. Surely Congress does not desire to impose a remedy that materially and negatively impacts our domestic energy futures markets and produces no compensating public policy benefit.

Regulated futures markets and the CFTC have the means and the will to limit speculation that might distort prices or distort the movement of commodities in interstate commerce. Acting Chairman Lukken's recent testimony before the Subcommittee on Oversight and Investigations of the Committee on Energy and Commerce United States House of Representatives (December 12, 2007)[4] offers a clear description of these powers and how they are used.

> CEA Section 5(d)(5) requires that an exchange, "[t]o reduce the potential threat of market manipulation or congestion, especially during trading in the delivery month . . . shall adopt position limitations or position accountability for speculators, where necessary and appropriate.
>
> All agricultural and natural resource futures and options contracts are subject to either Commission or exchange spot month speculative position limits—and many financial futures and options are as well. With respect to such exchange spot month speculative position limits, the Commission's guidance specifies that DCMs should adopt a spot month limit of no more than one-fourth of the estimated spot month deliverable supply, calculated separately for each contract month. For cash settled contracts, the spot month limit should be no greater than necessary to minimize the potential for manipulation or distortion of the contract's or underlying commodity's price.
>
> With respect to trading outside the spot month, the Commission typically does not require speculative position limits. Under the Commission's guidance, an exchange may replace position limits with position accountability for contracts on financial instruments, intangible commodities, or certain tangible commodities. If a market has accountability rules, a trader—whether speculating or hedging—is not subject to a specific limit. Once a trader reaches a preset accountability level, however, the trader must provide information about his position upon request by the exchange. In addition, position accountability rules provide an exchange with authority to restrict a trader from increasing his or her position.
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> Finally, in order to achieve the purposes of the speculative position limits, the Commission and the DCMs treat multiple positions held on a DCM's market that are subject to common ownership or control as if they were held by a single trader. Accounts are considered to be under common ownership if there is a 10 percent or greater financial interest. The rules are applied in a manner calculated to aggregate related accounts.
>
> Violations of exchange-set or Commission-set limits are subject to disciplinary action, and the Commission, or a DCM, may institute enforcement action against violations of exchange speculative limit rules that have been approved by the Commission. To this end, the Commission approves all position limit rules, including those for contracts that have been self-certified by a DCM.
>
> It is clear that speculation is an important component of the futures markets, but there is a point when excessive speculation can be damaging to the markets. As a result, the CFTC closely monitors the markets and the large players in the markets, in addition to position and accountability limits, to detect potentially damaging excessive speculation and potential manipulative behavior.

CONCLUSION

CFTC-regulated futures markets have demonstrated their importance to the economy, the nation's competitive strength and America's international financial leadership. We have the means and the power to protect our markets against speculative excesses on our markets and are committed to doing so.

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[4] http://www.cftc.gov/stellent/groups/public/@newsroom/documents/speechandtestimony/opalukken-32.pdf

Senator DORGAN. Dr. Newsome, thank you very much. We appreciate your testimony. Finally we will hear from Mr. Fadel Gheit, who is the Managing Director and Senior Energy Analyst from Oppenheimer and Company in New York. Mr. Gheit, thank you and welcome.

STATEMENT OF FADEL GHEIT, MANAGING DIRECTOR AND SENIOR ENERGY ANALYST, OPPENHEIMER & CO. INC., NEW YORK, NY

Mr. GHEIT. Thank you for having me. I am not an economist. I don't have a portfolio that would benefit from lower oil prices.

I talk to oil companies. I talk to people who invest in oil stocks. I do not trade the commodity. My company does not trade the commodity. My comments today will reflect my own view, not my company's view.

Oil is unlike any other commodity that we deal with. It is has a lot to do with supply/demand. But more it has to do with true politics, whether other factors that can not be quantified.

The oil markets are not free markets. Let's not kid ourself. With 51 percent of the global supply is controlled by a cartel and Russia, there is no free market. It is not a free market. We like to think it's free market, but it's not.

Supply and demand are impacted by government action, taxes and subsidies. Oil demand increase only in those countries in the last year or so, only in the countries that have subsidized oil prices, everywhere else where people paid full price, demand declined. But despite that the weakness in the market in general oil prices moved up by more than $50 to $148 only to collapse to $90 or $95. Oil prices remain inflated and should go lower. The fact of the matter if it was not for the financial player the decline would have been even steeper.

Having said that, despite the invasion of Georgia, despite the 10-day disruption of oil flow from Harbhajan, which was one million barrel per day, despite the two hurricanes, oil prices in the state of going up as any trained economist would have told you, oil prices actually came down between $15 and $20 until finally the financial market meltdown which brought oil prices lower. Oil companies did not believe in $60 oil, let alone $100 oil and then it went to $140, they just threw their arms in the air and said, we don't know. We cannot make any sense out of that.

I had a chance 3 years ago to spend long hours talking about the oil markets with the Secretary General of OPEC, who also happened to be the head of the Economic Analysis for the Cartel for 14 years. That was the week of Hurricane Katrina and oil prices hit $62. He was very unhappy with the spike in oil prices. As he put it, he said, it will kill the goose that lay the golden egg. It is not in our best interest to have oil prices significantly above $45. That was 3 years ago.

Last year the Secretary General of OPEC said that the fair price of oil should be $55. Our Energy Secretary at the time said that energy prices are moved up by speculation, but it would help if OPEC increased oil supply. Our own President said that I will ask our friends in OPEC to put additional oil on the market.

But despite all this, oil prices moved higher and continue to move higher. Then when you have a major investment bank predicting that oil prices will end the year at $170. So OPEC Secretary General said, I go for that, oil prices should go to $171.

We cannot blame OPEC for the rising oil prices. There is plenty of supply as we seen that oil prices basically are coming down very sharply because they are not supported by market fundamentals. Who gains from higher oil prices? I can tell you.

We pay for every dollar of speculation. We drain our resources by $4 billion a year. In my estimation oil prices have been inflated by at least $10 in the last 5 years. That's $200 billion on the conservative side.

Self regulated markets do not work. If they worked we didn't need an IRS. We don't need a cop to give a traffic violation because people obviously, wouldn't do otherwise.

The bottom line here is that I think oil prices continue to reflect a high level of speculation which is needed, but when excessive information comes into play, it destroyed the market completely. Thank you.

[The prepared statement of Mr. Gheit follows:]

PREPARED STATEMENT OF FADEL GHEIT, MANAGING DIRECTOR AND SENIOR ENERGY ANALYST, OPPENHEIMER & CO. INC., NEW YORK, NY

Good afternoon.

I am here today to share my personal views on the impact of speculation on the oil markets. I believe the energy markets in recent years have been driven more by speculation than by industry fundamentals of supply and demand. Oil prices peaked in July at more than $148/b, despite softening demand, to more than double their levels a year earlier. Since then, oil prices declined by more than 36% despite supply disruptions. Speculation has disconnected oil prices from market fundamentals.

As a managing director of oil & gas research at Oppenheimer & Co. Inc., I closely follow the energy markets for the sole purpose of advising investors in energy stocks. I do not trade energy future contracts or manage investments that could gain from lower energy prices. I have no vested interests in declining energy prices, and in fact, the energy stocks that I own for many years would decline further with lower oil prices.

I testified on the impact of speculation on oil prices on December 11, 2007, before the Senate Permanent Subcommittee on Investigations of the Committee on Homeland Security and Governmental Affairs and the Subcommittee on Energy of the Committee on Energy and Natural Resources. Oil prices then averaged $90.02/b, up 47% from $61.22/b a year earlier. When I testified before the House Subcommittee on Oversight and Investigations of the Committee on Energy and Commerce, oil prices closed at $132.57/b, or double the $66.27/b a year earlier. Although oil prices are down 36% from their peak in July, and down 1% for the year, they are still 43% above the year-ago level.

Even after the recent decline, I believe that oil prices are still inflated and their current levels do not reflect market fundamentals. The price decline was a result of selling of oil future contracts by financial players on fears of slowing oil demand due to the weak global economy and the meltdown in the financial markets. The fact that the decline in crude oil prices has continued despite the Russian invasion of Georgia, the 10-day disruption of oil production from Azerbaijan due to the pipeline explosion of the Turkish pipeline, and the recent hurricanes in the Gulf of Mexico, proves that oil prices are inflated and that they are disconnected from supply and demand fundamentals.

Many people believe that the recent drop in oil prices was a result of pending legislation allowing more drilling in the U.S. Although we should pursue all options, including opening federal land to exploration, this is unlikely to have any meaningful impact on our dependence on foreign oil for years. I believe energy conservation and increased use of alternative energy sources, including renewable energy, is a much better strategy and should be a top priority in any future energy legislation. However, I think the investigations by the Senate and the House have contributed

to the recent decline in oil prices by exposing the role speculators played in creating the oil price bubble.

I have been an energy analyst for more than 22 years, and spent six years before that working for a major oil company. I follow 22 energy companies including the majors, the integrated, the independent refiners and the domestic oil and gas producers. I communicate regularly with the companies I cover, and none of them either publicly, or privately, indicated they expected oil prices to reach, let alone exceed, $100/b. Some even ridiculed $60/b oil and declared it to be unsustainable.

Only a year ago several OPEC ministers said that the surge in oil prices was not due to lack of supply, but due to excessive speculation and a weak dollar. OPEC repeatedly said that the "fair" price for oil is around $55/b. Our Energy Secretary last October agreed with OPEC that speculations, not market fundamentals, were the cause of the run-up in oil prices. That was before he reversed his opinion last June, and agreed with the Treasury Secretary that oil prices reflected supply and demand fundamentals, not excessive speculation.

Three years ago, after hurricane Katrina, I had two long discussions with the secretary general of OPEC, Dr. Adnan Shehab-Eldin, Ph.D, who was also the head of OPEC Economic Analysis for the past 14 years. He expressed deep reservations about the surge in oil prices to $62/b because of its potential negative impact on global economic growth, energy demand, and potential energy conservation and switching to renewable sources. He believed that OPEC prefers to see oil prices closer to $45/b, not $65/b. The unprecedented surge in oil prices was, in my opinion, more due to excessive speculation rather than increased global demand, a weak dollar, or supply concerns.

Self-regulated markets don't work, especially when there are huge sums of money to be made. There are always people who will try to beat the system in markets that are tightly regulated by the government, let alone self regulated. I liken self-regulated markets to trying to enforce the speed limit without traffic cops or speeding penalties, or collecting taxes without filing with the IRS. The self-regulated markets are like private clubs making up their own rules. They will fight change, but should not be given that option. Government agencies should not defend the right of a few to make huge profits at public expense.

Speculation is not illegal, but excessive speculation could result in serious economic dislocation. Investors speculate when they buy or sell stocks and financial players speculate when they buy or sell future oil contracts. Speculators provide the needed liquidity to facilitate trading transactions between commercial hedgers who end up taking physical delivery of the commodity. But, since financial speculators have no intention of taking physical delivery, they usually roll over their hedge positions. They generate huge profit if prices move in line with their bets, up or down. Excessive speculations, however, tend to magnify and exacerbate price movements and create volatility that could disconnect prices from market fundamentals as has been the case in recent years.

Oil is unlike any other commodity where prices are usually based on supply and demand. That is because the oil markets are not free markets since more than half of the world supply is now controlled by OPEC and Russia, while demand is impacted by government taxes and subsidies. Sharply higher oil prices reduced demand in most countries, except where prices are subsidized, like in China, India, and in oil exporting and developing countries. High oil prices limited access to new energy resources as they strengthened the hand of national oil companies, while significantly increasing government take, including royalties, taxes, fees, and tariffs. High oil prices remove the incentive for oil exporting countries to grant new concessions to international oil companies. That explains why high oil prices did not result in increased supply and did not fully impact demand.

I believe the government must regulate the oil markets, and limit, not eliminate financial speculation, which is needed to facilitate trading transaction by commercial hedgers. The CFTC should raise the margin requirement, set trading limits, require transparency, prevent conflict of interests, and limit trading to government regulated exchanges in compliance with U.S. rules.

Senator DORGAN. Mr. Gheit, thank you very much for being with us today. We appreciate the testimony of all six of you. I should mention, Mr. Harris, when I said it was underhanded to send a North Dakotan to testify, I only meant that being a North Dakotan you had such great credibility that make my job more difficult.

[Laughter.]

Senator DORGAN. Let me ask you some questions, Mr. Harris, then I have questions for the rest of the panelists as well. I've read carefully the CFTC reports and the most recent report says the following, "This preliminary report is not able to accurately answer and quantify the amount of speculative trading occurring in the futures market" on page two. Was that an accurate statement that comes from the report?

Mr. HARRIS. Yes, the report was focused on index traders in particular. So it wasn't a comprehensive survey of everybody in the marketplace.

Senator DORGAN. But isn't it also the case that previous reports by the CFTC, they take the same position. That they are not able to accurately answer and quantify the amount of speculative trading. The issue of classification of traders is what is germane in key here.

If they're not classified properly you're pretty clearly unable to get the result so you can analyze the result. We have been told by Mr. Newsome who's testified here that he's not able to see much of what exists out there in over the counter and elsewhere. So if one isn't able to see much of what exists. If the classifications have grown less precise, as you say in your report, the classifications have become less precise as both groups may be engaged in hedging and speculative activity.

By the way, the classifications are done by the CFTC. So if they're less precise, but done by the CFTC and you can't see everything out there, I would understand why you would say that you're not able, accurately, to quantify that which is speculative. Is that a fair statement?

Mr. HARRIS. I think this is one good highlight of this recent report that we have. This is the first time we've actually dug into the positions of individual traders to look beyond the trading that they do on our markets. This is our first foray into looking at the over the counter positions among different traders.

So in that regard this marks, sort of the unprecedented level of activity that we've dug down into our data to try and look at what's behind the position.

Senator DORGAN. If you look at what's behind the position, but you indicate that your classification is a weakness?

Mr. HARRIS. The classification——

Senator DORGAN. Less precise, a weakness.

Mr. HARRIS. The classification for instance that Mr. Masters used for the supplemental report includes trader positions of all types. It includes the positions of all index traders, for instance, which might include positions that don't relate to index trading. So in that regard if you take that data and extrapolate from it, you might be making errors.

But we've always been pretty clear about what our data is and what our data is not. I think part of what we have in our recommendations here is some recommendations looking forward to try to improve upon that and look at different ways to produce data.

Senator DORGAN. I understand you want to improve upon it looking forward, but your chairman has given us very specific conclusions repeatedly, over a period of time that he knows that this is

the fundamentals. This is supply and demand. He's continued to insist that over time and doesn't deviate from that.

That's a curious way, it seems to me, for the regulator to do its job at a time when you see prices doubling in a year in which, I'm going to ask Mr. Eagles in a few moments, he said it's supply and demand. I'd like, in fact, I'd like anybody to be able to answer this on the panel. What happened in supply and demand in 1 year that justified a doubling of the price of oil?

Mr. HARRIS. I can speak to what I think what our chairman was referring to. I believe he's basing that on a lot of the research that my office does. What we do and what we have done is look at different groups of traders.

We can look beyond a simple, the commercial, non-commercial data that we put out in our commitment of trader's reports. We actually break down. Look at hedge funds, specifically. We look at index funds now in this particular market. But we've done our best job as we can to classify traders as a group, as people have mentioned or claimed that they have an impact on the market and look for their specific behavior from day to day on whether they're buying or selling in the market and driving prices one way or the other.

Senator DORGAN. Mr. Masters, Dr. Harris says that you've just thrown everything into a bushel basket here and then added it all up. Your response? I mean what you have described——

Mr. MASTERS. Sure.

Senator DORGAN [continuing]. For us is index trading that moved a substantial amount of money in, in a dramatic way and then just as quickly moved it out. So respond to Dr. Harris, if you would.

Mr. MASTERS. Thank you. One of the interesting things Dr. Harris suggests that there's other things in the report. The name of this report is the Commodity Index Trader's Report. So why you would name the report the Commodity Index Trader's Report and then suggest that there's lots of other entities in the report is beyond me.

But the bigger question here is, is that this is the CFTC's data. This isn't our data. We just looked at the data and analyzed the data. This is the CFTC's own data.

The Commodity Index Trader's Report has come out for the better part of two and a half years. The Commitment of Trader's Report, which is a broader report of which the CIT report is the supplement has come out for over two decades. So the idea that by doing a survey, a special survey in 60 days of different entities around the street and asking them questions. Then coming out and suggesting that all of the previous data that you've put out for the better part of two and a half years may be inconsistent, may be incorrect.

What is this public supposed to rely on? In fact, it's an interesting quandary. We have on the one hand the established data set, the CIT report. On the other we have a new survey of data. What is the public supposed to rely on?

In fact, the U.S. Commodity Futures Trading Commission submitted this report to all of these swap dealers. On it there are numerous questions. In fact, there are questions about speculative questions.

According to the testimony either we didn't get that information. They didn't get that information. If they did get the information, then they didn't submit it. It's not on the record. We don't see any parts of it.

The——

Senator DORGAN. I think you made your point on that. I want to come back to Dr. Harris in a moment. Mr. Gheit, you've described previously what's going on, on the street with the big firms. You've described to me and I think also before this committee that massive hiring, a bunch of speculators, kind of like hogs in a corn crib, a substantial amount of additional speculation, making money by trading oil contracts.

Describe to me what you're seeing. I mean, you're there.

Mr. GHEIT. Basically there's a trend—obviously to find a way to make money in the commodities and especially oil was the hot thing. I mean there were no checks and balances. There is total disconnection from supply and demand fundamentals. There were no shortages.

I talk to oil companies regularly, from the largest of them all to the independent EOP companies and not one CEO of any of these companies thought that oil prices should be a dollar higher than the $60 a year ago. When they saw $100 oil, they were absolutely amazed. Obviously when we see $148 oil, they said the world has changed.

But having said that, in my round of talking to hedge funds, their biggest worry over the last 3 or 4 months was will Congress do something about speculation. They didn't want to know anything about supply and demand. That is not, at all, a factor in what they do.

They want to know if there is a cop on the beat and if something is going to change. I said, I have no faith that anything is going to change.

Senator DORGAN. Mr. Eagles, you hear Mr. Gheit describing what's going on the street. You say, this is supply and demand. Why would JP Morgan know that it's supply and demand and the folks that run the oil companies, whose future and whose success depends on trying to understand supply and demand, know much less.

Mr. Gheit has said and incidentally we've had testimony from CEO of Marathon from executives at Exxon and others who've said exactly the same thing. So why would they miss the mark so much and you describe it as normal supply/demand relationships?

Mr. EAGLES. To describe it as simple supply and demand is perhaps exaggerating it slightly. There are a number of many complex factors which are going into this. Now first of all I should say that if you take a look back at statements from OPEC, from the International Energy Agency and many people, they've looked to the oil price when it was $18 a barrel and said that was far too high. All the way up you can see people saying this price is not realistic.

At the end of each year when we get the consolidated financial statements, people have started to see, particularly since 2003, a very sharp escalation in the cost of production. Now that's not speculation that is pushing that up. That is real cost because we've had

extreme bottlenecks in the industry. We've had underinvestment throughout the 1990s.

When demand increased these companies simply couldn't get a hold of the rigs. They couldn't get hold of the skilled man power. They're having to bid up prices.

Senator DORGAN. But, I'm sorry to interrupt you. I apologize. Would you tell us your assessment of July to July or June to June, the doubling of that?

Mr. EAGLES. Since July there are a couple of factors here. One which was when I was at the International Energy Agency we pointed out very rapidly the amount of supply that OPEC was providing to the market was going to lead to severe tightness in the second half of 2007. They didn't increase output. Surprise, surprise, we had a tight market.

We also had a very sharp weakening of the dollar. We also had what I think is probably one of the most important factors in that we had a perfect storm in the diesel market.

Now if you want a prime example of how unresponsive consumers are to prices, take a look at the European market where they have increased taxes year after year after year since the mid 1980s. Yet demand has continued to increase. They have been paying at the pump prices of well over $200 a barrel for many, many years.

It has taken very large price increases——

Senator DORGAN. But you're not sticking with the 1 year. I just want to show you something.

Mr. EAGLES. Yes.

Senator DORGAN. That chart, the red line, shows what's happened to prices in that period.

Mr. EAGLES. Yes.

Senator DORGAN. They've now since come down. The yellow line and the dates of the yellow start in May 2007 to May 2008. The yellow line represents the EIA assessment, Energy Information Agency Assessment of where the price would be.

In every case that yellow line is almost straight across, in some cases a bit down. These are the experts. We spent $100 million on this agency, by the way. Here's what they thought was going to happen to prices. One would expect they would have folks that would know what you have in CFTC as well analyzing these markets.

But in every case, the real price of oil completely eclipsed what EIA thought was going to happen. They didn't have the foggiest idea where there line was going to go. There's only, it seems to me that despite all the protestations, there's only one possible reason for that. That is that the supply and demand relationship that was evaluated with that yellow line did not exist with respect to the red line.

Mr. EAGLES. Could I ask you?

Senator DORGAN. Yes, of course.

Mr. EAGLES. Could I ask you in terms of driving this, one thing that we have to appreciate is the tightness in the refining sector. We have had a lot of pressure put on the diesel market. Now let me just give you an example. If we take a very simplistic economic example——

Senator DORGAN. Are we talking about the 1-year period?

Mr. EAGLES. I'm talking really about the 1-year period. Diesel and gasoline have been tight for a long period. The gasoline situation started to improve in July last year. But the diesel situation has continued to be very tight.

Senator DORGAN. If that's the case then we need to get new people in the EIA because——

Mr. EAGLES. I think——

Senator DORGAN [continuing]. I assume they would have known that as well.

Mr. EAGLES. I think it's fair to say that what happened in the diesel market wasn't to be expected. We had a number of market failures, a number of market issues. We had in China, we have capped prices for diesel and gasoline.

Senator DORGAN. Right.

Mr. EAGLES. We have free market prices for fuel oil. There are refiners buying fuel oil and turn it into low spec diesel. The rise in prices put them out of business.

Suddenly China had to go onto the International market and buy a very large amount of diesel. The Europeans have a taxation system which encourages them to drive diesel cars.

Senator DORGAN. But——

Mr. EAGLES. They're continuing to buy more. Then we have had outages in Chili, South Africa, Australia, which have forced our generators to use diesel.

Senator DORGAN. But JP Morgan would not have that exclusive province to that information. The EIA would have known that. By the way, I have another chart.

I've taken far more time than I should have, but I have another chart that shows all that has happened that one would have expected to put upward pressure on prices and it has not. I want to just say to Dr. McCullough, I have had some questions for you. I hope that I can get to them later.

But I've taken more time than I should have. It seems to me, Dr. McCullough, you would look at all this and say, there is no way this makes sense. I mean there's no way that there's a classic answer of supply and demand that laces it up tight and smartly. It just doesn't add up. Is that correct?

Mr. MCCULLOUGH. Yes, Chairman. I'm pretty pleased to have a chance to respond to Mr. Eagles.

The fact of the matter is I don't think we should fire the EIA. I went back and reviewed the EIA forecast and detailed against what really happened. I took the January forecast, then I went through the actuals all the up to August.

They were not fools. To the contrary, they did pretty well. They did better by the way than I did as a forecaster. They were off on consumption by 1.6 percent. They had an error on production of 0.8 percent.

The way they went, those offset each other. They did not do a bad job. The fact of the matter is we don't have a clue of how that relates.

Let's talk about tight refineries. Tight refineries mean it's hard to actually get gasoline out of the oil. But it doesn't put pressure on the oil.

It's in fact a crimp in the system. If the refinery goes down, we will have oil unsold because we won't have any use for it. We've had a hundred fanciful explanations.

As you know, I actually broke down over the summer and started testing them statistically. In the main they do a terrible job. As I noted, this morning I read every major reporter's story on this from Jad Mouawad at the New York Times to the Washington Post.

We lost 2 percent of the world's production because of Hurricane Ike. The prices collapsed.

Senator DORGAN. Dr. McCullough, thank you. I apologize to my colleagues. I took more time than I should.

Senator Murkowski.

Senator MURKOWSKI. I want to continue with you, Mr. McCullough. Because after your testimony you kind of wrapped it up and said, you know, part of the answer would be quarterly reports. Does that really help us?

Is that all we need to better understand that we have? You can finish your comments there as you answer that question. It just doesn't seem to me that it's as easy as this.

Mr. MCCULLOUGH. It certainly isn't. Let me note to you on the end of 1999 when Enron had some 60 percent of its risk capital into one commodity in one location. We didn't know it. The CFTC unfortunately stopped including the West Coast energy forward markets in the COT at that time.

By the way, Senator Foyett of your staff had asked why and they couldn't find the reason why they did it. They put it back in place after Enron went bankrupt. If we had known that this major position had taken place out of the blue, the first thing we would have done is we would have called the FBI and have them ask. It was a huge position, an inexplicable position.

The reason why it'd be good to have an oil quarterly report is I'd love to have this debate with a detailed transaction data that post-Enron, I now in electricity. Now is it sufficient that we would have real facts in front of us to answer the question, clearly not. If all of those facts were in front of me, you might say, ok, I now know the answer. It was "x."

But absent that we're going to sit here and have this, frankly, dubious debate because even with my 30 years of experience in the energy business I would never have guessed that Hurricane Ike would lower the price of oil. I said to a staffer at the hotel this morning, shouldn't we have more hurricanes. They said in broken English, I think this is wrong answer.

[Laughter.]

Mr. MCCULLOUGH. It is the wrong answer. But the fact is we don't know. There are very bright people here. I certainly respect them all, but we have no data.

Senator MURKOWSKI. Ok. Let's go to the data and there was some, a whole series of recommendations from the staff report. Does that get us where we need to go?

Mr. Newsome, you suggested that you're in agreement with these recommendations. That speaks to the transparency aspect of it. But it's more than just transparency. It's compiling the data, most clearly.

It seems that we've clearly got gaps on both ends. It's probably easier for us to address the transparency side of it than to figure out how we compile all this data. Am I correct in that?

Mr. NEWSOME. We're certainly supportive of the CFTC recommendations. But a big component of that, of making that transparent, is collecting the data to make it sell.

Senator MURKOWSKI. Making sure that data in the first place is reliable data.

Mr. NEWSOME. Absolutely. I think, you know, Mr. Masters uses an apples and oranges comparison to confuse people. The Commitment of Trader's Report is exchange data that the CFTC has collected for a long time.

The CIT data is index data, particularly in the agricultural markets and to use that data to extrapolate what he thought would occur in the energy sector to start this whole debate 6 months ago. We now know based upon the real data from the CFTC that his approach was completely flawed. That in fact index speculation in energy did not drive higher energy prices because that level was coming down as prices went higher.

So I think it's important to collect the real data, to use real economic analysis, such as the CFTC has started. There's still a long way to go, but I think that's the right path.

Senator MURKOWSKI. Let me ask you, Mr. Masters, do you think it was an apples to oranges comparison. If you have had that data that we're speaking of, do you think that your conclusion would have been different than the report that you've issued?

Mr. MASTERS. Clearly, I mean we don't consider it an apples to oranges data. This is publicly available data that we received. It's index trader data.

All we really did is, you know, calculate the level of energy crisis from the index. So we know in an index, we know from these accounts, as Dr. Harris described their pension funds, institution sovereign wealth funds. By and large the vast majority of them follow the index almost with a religious fervor. If something false——

Senator MURKOWSKI. But is that true? I mean are they all the same? Can they all be treated the same? Calculated in your matrix the same? Or are there differences?

Mr. MASTERS. I mean as long as they're going to follow an index, that is the case. Because if one component, if you know just one component of the index, then you can find out what every other component is. To give you an example, if Kansas wheat is 1 percent of the Goldman Sachs commodity index and that's a billion dollars, then you know the overall index is $100 billion. If you know the waiting for crude oil is 40 percent of that index then it's easy to calculate that there's $40 billion in crude oil.

So we just used the CFTC's data. We calculated it very, very straightforwardly. We think it makes a lot of sense.

The idea that you could go out and do a survey in 60 days and find other data that completely contradicts the data that I and other people have been relying on. I mean, we're not the only ones who came out with this data. Lehman Brothers, last week, came out and said, there was a $42 billion outflow. Citibank has used it. Goldman Sachs has used it. Lots of different other large banks have used this same data and come up with similar conclusions.

Senator MURKOWSKI. Let me ask one last question here. This is directed to you, Mr. Gheit. You stated that excess speculation can destroy the market completely. I would agree with you. So the question is, is some level of speculation ok?

Mr. GHEIT. Absolutely. We need speculation to facilitate transactions between commercial hedgers, airlines, the chemical companies, the oil companies. You need that. Oil companies need to secure their cash-flow so they can invest.

Senator MURKOWSKI. So how do we make sure that we don't?

Mr. GHEIT. Like anything else you need to grease the wheel, but over greasing it, you skid all over the place. Too much of a good thing is a bad thing. That's exactly what we have right now is the tail is now bigger than the dog. So you don't know which is wagging which.

But the point here is that we have to curb speculation. We cannot eliminate it.

Senator MURKOWSKI. Yes.

Mr. GHEIT. We need body fat. We cannot survive without it. Speculation is the body fat. We just can't eliminate it completely. We need that.

Then the notion that it is not speculation. If it's not supply and demand and it's not speculation, so what caused the run up in oil prices? Obviously something must have caused it.

Now in this market perception is reality. Speculation thrives on perception. There is no supply shortage, hasn't been any supply shortages that cause oil prices to move up. All the data pointed out that global demand was slowing down.

As oil prices came down sharply in light of all the events that could have pushed oil prices higher. There was certain disregard to market fundamentals that the threat to supply, that things can go out of hand, didn't matter. Oil prices were in a free fall.

Senator MURKOWSKI. Mr. Chairman, it just speaks to the extreme difficulty you have here. If we recognize that we're not going to be able to eliminate speculation entirely, nor would we want to. But you can't allow it to go too far.

So I guess it takes us back to part of this solution which is a clear understanding as to what we're dealing with and openness and the transparency. Again back to data that you can actually rely on. Thank you, Mr. Chairman.

Senator DORGAN. Senator Cantwell.

Senator CANTWELL. Thank you, Mr. Chairman. To go over the data point because I do think that this is important if we obviously want to have functioning markets. We do have to have transparency.

It seems to me, Mr. McCullough, that you had some concerns about the CFTC report because of the date range that they used in the analysis and the data that they ended up collecting. Could you expand on that?

Mr. MCCULLOUGH. The first thing that occurs when you take a look at the report, and I'm looking at Dr. Harris, is that it goes through June 30. I understand that might have been a factor in their data collection, but the issue we're all talking about happened between July 3 and July—I think the hourly peak in the price was

the 14th or the 15th. So we actually have the wrong time horizon here.

I know Mr. Masters has taken some punishment for a fall that occurred in the first 6 months. But I'm actually a bit more interested in the seventh month. I suspect the solution to this is to have an ongoing data collection effort, not a one-time response to congressional criticisms.

The fact of the matter is I fell for Mr. Masters when he said, look, I'm relying on their report. We need to get those reports standard. We need to get them precise. We need to get them publicly available.

Senator CANTWELL. But Mr. McCullough, can't all this be done in real time and shouldn't it be transparent and shouldn't it be available to the public?

Mr. MCCULLOUGH. I don't think there's any question we can do it in real time. We've got a tremendous amount of capability out there. What we need to do is we need to have a systematic process and your additional staff to work on it. We need to get that information out so we don't have repeated hearings and debates in the press about things that should be factually clear.

Senator CANTWELL. What was done post Enron in the electricity market to improve reporting, particularly between the physical market and the futures market?

Mr. MCCULLOUGH. Almost everything. When we deregulated electricity, FERC is part of its market license, had everyone put in a quarterly report. Some of the quarterly reports were almost amusing. One was actually turned in after it had been left out in the rain. You could see the little raindrops in the report. I won't mention the firm, but it was one of the major Wall Street banks. Not yours, you'll be glad to know.

That was useless. After Enron, FERC established a strict standard that is accumulated according to well understood rules. It is turned in in Excel for those of you who are not computer geeks, that is about the easiest data transformation method known to man. At that point anyone, anywhere in the world can go look up that data. That is a complete set of data.

If that's good policy for electricity, how can it be bad policy for oil?

Senator CANTWELL. What about the discovery of when this information was reclassified for Vitol, what you're saying you found out through the newspapers instead of through the data that was made available. Why should we be concerned about that? Why should we be concerned about this large a player in the market and not knowing until it was reclassified?

Mr. MCCULLOUGH. Fundamentally, as an economist, when you teach ECON one or two, you're very worried about the question of oligopoly. Paul Samuelson told us we have to have many sellers and many buyers. By the way he also told us we have to have transparent information.

If we had the price of oil being set by a half dozen major players, oligopolous, we're very concerned. If it's set by 10,000 dentists, we're perfectly happy. At the moment we really have very little to say on this.

The CFTC COT report uses their own form of market concentration. It's not wrong or right. I criticized it a bit the other day for not being HHI, the standard used in the rest of the regulatory community.

But the fact of the matter is I was surprised to find what a large scale Vitol had. I could have guessed backward that some people do have that large position by reverse engineering some of their numbers. But the fact of the matter is any trader on the floor of the NYMEX has a pretty good idea of who's playing. They had that information.

The only people who didn't have that information are sitting in this room. That's the wrong answer.

Senator CANTWELL. But what are the consequences of that large trading position, of somebody who controls that large a position in the oil market?

Mr. MCCULLOUGH. Simply stated an oligopolist has market power. He is able to change prices with his decisions.

Senator CANTWELL. To drive the market.

Mr. MCCULLOUGH. Yes. You know, Mr. Eagles noted that the spot was a leading indicator on force. This is certainly not news. But the key here is that Vitol has an enormous spot position. This is what they've done traditionally.

Once we see that they have that enormous position then they are able to execute gambits that can move the entire forward curve. I've focused several times on Enron. The July 2001 Enron exploit at the Henry Hub Natural Gas Market, easily one of the most liquid markets in the world, where they ran an F spot out in the natural gas market that they were able to change the forward curve.

Then they sold on the forward curve, made enough money that they were able to pay off the spot traders who had lost money. This is an example of market power. We need the data to be able to identify people who are doing this sort of things.

Now we've no evidence that Vitol could have done it, would have done it, but we do know that whenever we see such a large position concentrated in a few players, they have the potential. We need to test whether the data is supporting that potential.

Senator CANTWELL. Isn't this what we saw with Amaranth too? Didn't we see a large position in natural gas from a hedge fund and was able to drive the market?

Mr. MCCULLOUGH. Actually we saw two players fight over the setting the price of natural gas. That's exactly the problem. Of course the data came out only in the course of the congressional investigation.

Senator CANTWELL. Which brings me to the question, Mr. Gheit, maybe you can answer. Should we be monitoring the unwinding of the commodities market from these big players, Lehman and AIG, because of—so we understand exactly what's transpiring in the unwinding of these positions?

Mr. GHEIT. Absolutely. But you also have very sophisticated products that all the derivatives and things that pulls things, so it is not going to be clear enough what else they have there. But obviously more transparency would educate us, would tell us exactly where they were hiding all of the skeletons.

But we need more transparency. We need more regulation. We don't want to stifle them, but we just want to keep them under control.

Senator CANTWELL. Mr. Chairman, I am a big fan of markets and markets functioning correctly. We have a Northwest economy that has done quite well by people investing in a lot of companies there. But we need to have transparency.

I think Mr. McCullough and Mr. Masters reports show that we aren't collecting all the data that we need to collect. The data that we are collecting, we aren't even collecting it properly that when we aren't collecting the positions and understanding who the major players are, that's only half our challenge. The other half of the challenge, once you know who the major players are, since so many of these individuals are now involved in holding physical supply, or taking physical or being part of buying physical supply.

We need to match up the information that we're getting from the CFTC with other information from the Energy Information Agency and others. I certainly plan on pursuing legislation on data collection to make sure that this is very clear and that the agencies will work together so that this is not a puzzle for the American public and that they know that we are protecting the markets and making sure that there is adequate transparency in this country so markets can function properly.

So I thank the chair.

Senator DORGAN. Senator Akaka.

Senator AKAKA. Thank you very much, Mr. Chairman. It's great that this energy committee has been holding hearings on this, especially coming from Hawaii. As you know we're 98 percent dependent on oil. We have the highest prices on oil there. On the Island of Molokai we're paying over $5 per gallon at the present time, even before that.

We pay for power there instead about 40 cents per kilowatt hour. So we really under stress when the prices rise in a country and it impacts Hawaii, especially. For these reasons I'm very interested in what our witnesses have to say today. To try to get to understand speculation in the oil markets and oil is a commodity that we depend on a lot in Hawaii.

Let me ask this question to Mr. Newsome. I just want to receive your evaluation on some of the comments that were made. This was taken from an article published in Financial Times, September 6, 2008, by Ralph Atkins in Frankfort. This has to do with comments that were made by Mr. Trichet, who's the president of the European Central Bank at the recent ECB conference in Germany where he argued that it was "reasonable conjecture" that financial investors had distorted commodity markets leading to prices above those justified by fundamentals, supply and demand factors.

In particular he said that financial investors encourage sellers to accumulate inventories of delayed production so as to take advantage of expected higher prices. I'm asking you for your comments and your evaluation of the comments of Mr. Trichet.

Mr. NEWSOME. I would address that a couple of ways, Senator. One, particularly in the energy sector, we have seen no collection of that underlying physical product that would lead us to believe

that any one financial players or others are trying to manipulate the market.

Then second, when you talk about markets, you know, there are a number of markets, the cash market, the over the counter market, the futures market. Certainly I can only speak relative to the futures markets because that's what we do. That's what we have oversight for.

The futures markets are the most transparent component of the markets in general. The CFTC as well as the exchange has the view of all the major players within the market. I don't think it should be unusual that the only two entities who have access to the exchange information have said since day one, that these higher prices were not being driven by speculators. I think we have the information coming out now that certainly proves that case.

With regard to over the counter markets, we've also said since day one that we think there should be more transparency. We've supported transparency of those markets. We were very glad to see the CFTC in their report call for that kind of transparency in those markets as well.

Senator AKAKA. Let me ask, Mr. McCullough whether you have any comments also on that, on Mr. Trichet's comments.

Mr. MCCULLOUGH. I grew up on LaSalle Street, so I happen to think very highly of the Chicago exchanges. But you know you guys don't do spot. So the question of whether we would see a spot for a gambit doesn't really show up on your desk.

When Enron ran the spot for a gambit in 2001, some of that showed up on your exchange. But most of it probably didn't. So you'll have no doubts using the smartest people around, it's sort of hard for you to watch the whole world.

You know, I'm banging this drum for getting this data in front of you, but I need to have Dr. Harris have a full data kit. His agency prosecuted that spot for a gambit in July 2001. Thank you very much. But they couldn't have done it without the full data set.

Senator AKAKA. Yes, Mr. Eagles.

Mr. EAGLES. Could I just mention about one large position which actually hasn't been mentioned here at all. That is earlier this year when prices hit their peak King Fahd of Saudi Arabia basically said, enough is enough and ordered Saudi Arabia outside of OPEC to increase output by about 700,000 barrels a day. From the point that started to hit the market prices started to fall. That's a very large increase in supply. After this latest OPEC meeting we still have yet to—the only comment we've had from Saudi Arabia is that they will continue to meet demand for their crude oil.

It's a very large increase in supply. But I've also, in terms of this stock argument that has been mentioned, before joining JP Morgan in September, I worked at the International Energy Agency. I've been very actively involved in data collection on the fundamental side.

One thing that we do not have is information on stocks in round about 45 percent of the consuming world. It is a dramatic lack of data that we have. It's extremely important that we try to improve transparency, not just on the financial side, but also on the fundamental side which I think also echoes Senator Cantwell's comments.

It's really important that we have every single angle of this.

Senator AKAKA. Thank you for your responses. Mr. Harris, I want to thank the CFTC for their efforts to provide the staff report. According to Commissioner Dunn, the data collected from this survey highlights the need for greater transparency to fully understand the activities of swap dealers and the effects that their activities have on the markets.

Furthermore Commission Chilton recommends providing specific statutory authorities allowing the commission to obtain both data regarding over the counter transactions that may impact exchange traded markets. Collecting this data will allow more transparency in the market, of course. But what is your evaluation of this proposal and will the increase in transparency be useful?

Mr. HARRIS. I can perhaps benchmark to Mr. Eagles' comment. He mentions that we have no data on 45 percent of the macro consumption around the world. The comparative blind spots that the CFTC faces minimal when we did our survey for this particular swap, it wasn't a mere survey where we picked a random event. We surveyed 100 percent of anybody who's trading swaps and index traders in our market.

We then, therefore, got 100 percent participation rate, cross referenced all their responses with the actual data we put out in our index reports for the Ag commodities. So from that standpoint this data in this report is 100 percent comprehensive nature of what goes on in index trading in our markets. So to that regard, I believe this is a good step to sort of dispel some of these myths that may be out there that what we don't know might be hurting us in some way.

In the first 6 months of this year, dispelled a myth that index traders were actually driving prices up. These are traders that were actually reducing positions in our market. So I think the nature of the recommendations we have in the report are to that extent. We continue to compile this data. We have now gotten into the end of July and end of August data. We continue to process that data and analyze that data.

I think that also points to one of the resource constraints that we have. We took more than 40,000 or 4,000 man hours to do this report. This took almost 10 percent of our CFTC staff to produce this report last month.

This is not an instantaneously generated report. We have to take unprecedented levels of looking at over the counter positions, converting those positions into what we would consider futures equivalents because the over the counter swap market is by definition a swap is a very tailor made security. To standardize all those things take quite a bit of manual interpretation and analysis to produce a report.

So we do have strong data. We have comprehensive data. I think we plan on continuing collecting data.

Senator AKAKA. Thank you. Mr. Chairman, may I ask another? Yes? Thank you.

I'd like to ask Mr. Gheit. Commissioner Chilton and I mentioned Commissioner Chilton in that report he issued a dissenting statement on Mr. Dunn's. But Mr. Gheit, Commissioner Chilton suggests that at a minimum one of the Administrative steps that the

CFTC should take is to re-analyze the practice of issuance of non-commercial hedge exemptions.

What are your thoughts on the current practice of issuing non-commercial hedge exemptions? Should there be a special category of hedge trade that differentiates the business done to facilitate commercial traders like airlines and speculative traders like hedge funds?

Mr. GHEIT. What I suggested 6 months ago is that we have two schemes. One for the commercial hedgers, should be the 5 percent. But non-commercial hedgers, the national players which are needed to facilitate transaction, we should have them up to 50 percent.

We should also put trading limit. Suppose the market knew only 10 percent or 15 percent of the financial players of the total volume. We cannot make it 300 percent or 400 percent or 500 percent.

So therefore we will need speculators. But we don't need too much speculation because they will control, ultimately will control the market. You cannot have self regulated market that will behave when there are billions of dollars at stake. It's impossible.

The street is in the business of making money, not making friends.

Senator AKAKA. Mr. McCullough, would you care to make any comment on that?

Mr. MCCULLOUGH. You know I'm not smart enough to.

Senator AKAKA. Alright.

Mr. MCCULLOUGH. So I'll hold my peace on something that I'm not an expert on.

Senator AKAKA. Thank you. Thank you very much, Mr. Chairman.

Senator DORGAN. Senator Akaka, thank you very much. I'm going to come back just to a couple of additional questions. Dr. Harris, again the report that you issued states this preliminary survey is not able to accurately answer and quantify the amount of speculative trading occurring in the futures markets. Explain that to me if you would again?

Mr. HARRIS. Yes, the report in particular was determined or the goal of the report is to quantify the amount of commodity index trading in these markets. So my testimony actually included data from our large trader reporting system that actually does identify every trading position inspected of positions. So the testimony and the graph that I provided there actually shows that non-commercial speculative positions have been coming down all year as well.

Senator DORGAN. So you are able to accurately answer and quantify the amount of speculative trading occurring in futures markets?

Mr. HARRIS. We have been able to quantify them to the extent that we identify a trader and classify them.

Senator DORGAN. Right.

Mr. HARRIS. The report in particular didn't take that comprehensive view.

Senator DORGAN. You indicate but if one is not classifying them correctly or your classification system is a quarter century old and weak and not particularly applied appropriately or monitored appropriately than that would be a problem, wouldn't it? So the question I would ask about classification. The CFTC has indicated that

trader classifications have grown less precise over time. The classification system is weak.

So you appear to say with certainty something that appears to me to be not very certain if your classification system is weak.

Mr. HARRIS. I would say we're not 25 years behind the times. This Commitment of Trader's report supplemental that we do for index traders was just started as a pilot program a year and a half ago. So in that regard although we've seen actually quite——

Senator DORGAN. I understand.

Mr. HARRIS [continuing]. A few changes within that category. I think that's one of the assessments that we have in evaluating that particular report on whether it's providing useful information. We've seen that it's been extrapolated into other uses. We've provided the report originally for the agricultural community to feel better about who's trading in their markets, taking one step additional and now we're looking at options in the report that we have and recommendations for perhaps refining that looking forward.

Senator DORGAN. But I'm trying to understand, is the classification system weak or do you feel?

Mr. HARRIS. I would say I'm very confident in the classifications that we've made.

Senator DORGAN. Let me ask the question then about the reclassification that was done in July that we discussed earlier. Some of us were pretty surprised about that. It appeared to me to be buried. A couple enterprising reporters dug it out and found it.

But it was a very substantial reclassification, is that correct?

Mr. HARRIS. Yes, we reclassified a trader in mid-July. I wasn't actually surprised. There's a number of people that follow our commitment of trader's reports.

We put out when we do reclassify traders, an announcement in the Commitment of Trader's Reports. So people that were following those reports would have had access to that.

Senator DORGAN. How large a difference in the commercial verses speculative break down would that one reclassification have made?

Mr. HARRIS. The reclassification moved approximately 12 and a half percent of open interest from a commercial entity to a non-commercial entity.

Senator DORGAN. So one reclassification affected over 10 percent of the assessment of what is commercial verses non-commercial?

Mr. HARRIS. In our publicly reported data, yes. I want to point out though that the Commission actually had record of that reclassification a year prior. So as an entity we were doing monitoring and surveillance on that entity that was reclassified. So we knew the positions of that entity. We were updating that position.

The surprising nature of that entity actually, the reclassified entity was not short in the futures market for almost the entire year. So the effect of that actually was to move less or more selling pressure into the speculator category.

Senator DORGAN. How did that particular entity get the classification that it had before you reclassified it?

Mr. HARRIS. The specifics of that I think are market surveillance team took on, each trader fills out a form with the CFTC and declares themselves the type of trader that they deem to be. We fol-

low that and follow up with those and audit those particular reports.

Senator DORGAN. Do you know when that particular trader was originally classified?

Mr. HARRIS. I do not, no. I do know that August 2007 we have record of that particular position moving from one entity to another. So the market surveillance was aware of the position size.

Senator DORGAN. Let me ask, you know, let me make a couple brief comments if I might. The MERC, NYMEX, the futures market itself, all very important elements of having the opportunity to hedge risk between producers and consumers of a physical product, perfectly reasonable and important to do. So when those of us who discuss speculation talk about the evils of speculation, speculation is necessary and speculation is a part of what makes a market work.

But excess speculation, there are books written about it by the way. I could give you some names of books written about it. Unbelievable run up in excess speculation in various markets over centuries as a matter of fact, starting with tulip bulbs or perhaps even beyond.

That kind of activity can ruin markets and break markets and so the first point I want to make is that this is not about whether speculation is an element that is worthy or unworthy. We will always have, I mean, someone who wishes to hedge is probably going to have someone who wishes to speculate on the back end of that hedge of a physical trader. So that's important to understand.

But it's also a case that most people don't understand what is at work in the regulatory function here because it is so byzantine and complicated. You've issued all these no action letters. I mean I've been critically of the CFTC as you know. You no doubt have read that. I'm critical of a lot of regulators who decided not to be very aggressive in order to please the folks that appointed them.

We're now bearing dramatic results as a result that are going to cost this economy a substantial amount of money and the American people for that matter as well. The, Dr. Harris the reason I have focused on these issues with you is I'm reading from a Commissioner Chilton's dissent. He says specifically, "I have expressed doubts regarding the amount and type of data received in connection with the special call survey." I don't have the foggiest idea whether you have good data or not. I know one Commissioner expresses reservation about what kind of data you've received.

He points out, which I have known of course, the international monetary fund released a report in May saying it appears that speculation has played a significant role in the run up of oil prices. I don't quote Alan Greenspan often because we've had such significant disagreements. But Alan Greenspan in August said, "Financial speculation did play a significant part in the rapid increase in oil prices."

Yet what I find when you explore this issue you have some interests who are determined to say no, speculation didn't happen here in any excess degree. This is supply and demand, market forces, despite the fact and Dr. McCullough, I used to teach a little Economics as well. I would teach freshman in college the laws of supply and demand, how the curve works and so on.

What has happened in a number of the charts that you showed, Dr. McCullough and some others, what has happened, these markets have run in ways that are not explainable given traditional supply/demand relationships. So that's why I think there's concern here. It is the case, I think, and I feel that at the end of today, no one has explained to me the so called fundamentals" or supply and demand relationships that justified a doubling of oil prices. The consequences of which were very significant for our country.

No one has described to me any plausible explanation other than excess speculation for the doubling of the price of oil. I would come back, finally, Dr. Harris. I'll give each of you a chance to respond to this, to the EIA chart. The EIA chart, I mean, Mr. Eagles, you talked about tight refining and so on.

As I said we spent $100 million a year for the EIA. They got folks that all they do, all day long, is evaluate what's going to happen. What are the fundamentals? What's the supply/demand? What do we expect is going on in the world?

Then they plot a line and they say that's what we think is going to happen. The red line is what really happened. That many people can't be that wrong for that long without something else explaining it. It just seems to me that's what's at work here.

I just looked at the clock. I have to be somewhere in about 5 minutes. But if there's someone who won't sleep this evening if I don't recognize a final comment, I'd certainly want to call on you. Is there someone who needs to say additional——

Mr. HARRIS. I'd like to make a comment actually.

Senator DORGAN. Dr. Harris, yes?

Mr. HARRIS. From the CFTC's standpoint, I mean we are on the market looking at these positions everyday. It's not for lack of trying. I think our Commissioner and our Chairman have been very forthcoming in saying we'd like to, sort of, have dire consequences for anybody who's found manipulating or doing anything nefarious in our markets.

We continue to do that. We continue to look. This is one report that looks deeper than we've ever looked before. We've got recommendations in there as an affirmative sort of action to be able to try to do more and uncover more, to provide more information for the marketplace.

Senator DORGAN. Dr. Harris you're here on behalf of the Commissioners. I appreciate very much your testimony. You've been very forthright. I hope you will accept my forthright statement.

I think this has been a weak regulatory function, a very weak function. I think in some cases a description of being willfully blind in some areas. I don't mean that to injure a lot of undoubtedly good, qualified people who work on the staff of the CFTC, but I do believe this regulator has a lot to answer for. I do.

Let me say to all of you, some of you've come a long distance to be a part of this. I appreciate your contribution to the discussion. As you know this discussion will begin likely next week on the floor of the Senate as well as we take up a good number of energy pieces of legislation.

So thank you for your time and the work that all of you have done. This hearing is adjourned.

[Whereupon, at 4:40 p.m. the hearing was adjourned.]

APPENDIX

RESPONSES TO ADDITIONAL QUESTIONS

RESPONSE OF FADEL GHEIT TO QUESTION FROM SENATOR MURKOWSKI

Question 1. How do you define speculation? And, is there a difference between speculation and manipulation?

Answer. Speculation, in my view, is making a bet on a certain outcome not based on complete, correct, or accurate information. Speculators buy or sell future oil contracts betting that the price will be as they predicted. Speculators do not deliver or receive the oil in the contract, but settle their short position on expiration date, and usually roll over their long position further. Oil speculators are not investors. Future contracts become worthless after their expiration date.

Excessive speculation could lead to market manipulation. When large investment banks make oil price predictions, they usually influence the future trading and skew the price in line with their predictions. Investment banks, which are also large oil traders, clearing houses, brokers, and owners of oil assets, face serious conflict of interest issues. They can influence oil prices as their price forecast becomes self-fulfilling prophecy, which amounts, in our view, to market manipulation.

RESPONSES OF FADEL GHEIT TO QUESTIONS FROM SENATOR DOMENICI

Question 1. What would happen to the price of oil if non-commercials were not allowed to participate in the market?

Answer. I believe that barring non-commercial players from trading oil futures would more than likely reduce the oil price volatility. It would also reduce the daily trading volumes, which would mean less revenues and profits for the exchanges. The oil markets operated efficiently for years before the exchanges were established and before speculators poured huge sums of money, estimated at over $350 billion, in oil futures. Given today's advanced telecommunications, I believe the oil markets could operate probably more efficiently and with much less volatility than in recent months, when future oil contracts held by speculators significantly exceeded those held by commercial hedgers.

Question 2. In your testimony you state that oil prices have declined recently despite supply disruptions and conclude that this is evidence that speculation has disconnected oil prices from market fundamentals. You also state that demand was reduced significantly this summer in response to higher oil prices. And that high oil prices previously reduced demand in most countries except China, India and developing countries.

Doesn't reduced demand and significantly lower demand expectations provide a logical reason for lower oil prices, despite short-term supply disruptions?

Answer. The oil markets are not free markets, since more than 50% of the world oil supply is controlled by OPEC and Russia, while demand is skewed by taxes, as in the case of the U.S., Western Europe and Japan, and by subsidies, as in the case of OPEC, China, India and many developing countries.

Oil prices were in a free fall since their peak above $148/b in early July to $92/b two weeks ago, before they turned sharply higher after the financial bailout plan was announced, including a $25/b surge, the largest ever, on Monday, September 22, 2008. In fact oil prices were rising in the first half of the year, despite slowing world demand and growing concerns about possible global recession.

On the other hand, the precipitous drop in oil prices, $56/b, or 38%, in the nine weeks from mid-July to the third week in September, came despite events that caused, or were expected to cause, supply disruptions, including:

- The Russian invasion of Georgia
- The shutdown of the Turkish pipeline, after explosion, which disrupted the flow of almost one million barrels of crude oil per day from Azerbaijan for ten days.

- The shutdown of Gulf of Mexico production due to the hurricanes
- Rebels' attack on oil production facilities in the Niger Delta.

RESPONSES OF JAMES NEWSOME TO QUESTIONS FROM SENATOR MURKOWSKI

In your testimony you indicate that CME supports the CFTC's recommendations to encourage greater clearing of OTC transactions as a means of increasing market transparency and integrity.

Question 1a. Can you please explain the clearing process and [how] this process would enhance market integrity and transparency?

Answer. Eligible participants who enter into OTC transactions have the risk that their counterparty will not satisfy its obligations under that contractual agreement. However, by submitting an OTC transaction to a clearinghouse, a counterparty to an OTC transaction no longer has concerns about the credit risk of its initial counterparty and instead can enjoy the guarantee of financial performance offered by the clearinghouse. Once a transaction has been accepted for clearing by a U.S. futures clearinghouse, which is highly regulated by the CFTC, the clearing of that transaction is then subject to CFTC review and oversight. Thus, for example, transactions executed in the OTC market that are accepted for clearing under the NYMEX ClearPort® Clearing business service are converted into regulated futures and options that are subject to large trader reporting to the CFTC as well as to position limits and position accountability levels, which enhances market integrity and transparency.

Question 1b. Would adding a clearing process to the swaps market add integrity and transparency?

Answer. We do believe that greater use of a clearing process for swaps would promote both market and financial integrity and would increase the transparency of these transactions to the regulator.

Question 2a. A number of individuals have suggested that a persistent flood of net long investors in the commodities markets have driven up the prices.

Does this view accurately reflect the basic principles of futures trading-for every buyer there is a seller and for every seller there is a buyer?

Answer. In any transaction, there is a buyer and a seller. What is important to understand is that these assertions, which were being made by a handful of commentators who were relatively unfamiliar with futures markets, were based on theoretical extrapolations and were not supported by any actual data. The reality, as definitively established by the CFTC "Staff Report on Commodity Swap Dealers & Index Traders with Commission Recommendations," is far different. Reviewing data for the first six months of 2008, the CFTC staff found that the "aggregate long positions of commodity index participants in NYMEX crude oil declined by approximately 45,000 contracts during this 6 month period . . ." (emphasis added.) Based on the data reviewed, this amounted to an approximately 11% decline.

Question 2b. And can you explain how an increase in net long positions increased the price of crude oil?

Answer. As noted above, the premise of a recent increase in net long index positions has been soundly refuted by the recent CFTC staff report.

Question 3. Does your CME research indicate a correlation between commodity prices and the participation in various markets by hedge funds, pension funds and various non-commercial speculators?

Answer. NYMEX's Research Department has conducted extensive analysis on the role of speculators in our energy markets. These evaluations began in 2004 and included reviewing data from 2007 through to the middle of 2008 for our core crude oil and natural gas futures contracts. We found no evidence to support harmful impacts on price or price volatility by non-commercial participants. Our analysis instead disclosed that non-commercial participants are price takers. In other words, they do not initiate movements in price or otherwise set prices, but rather follow price movements that are generated by commercials. In addition, our data indicate that trading by non-commercials or speculators has had a moderating or braking effect on price volatility in the products that were the subject of the study.

Other findings also support our conclusion that speculators are not influencing the futures prices. First, non-commercial participants historically have represented a smaller percentage of the energy futures markets than commercial participants. Second, non-commercial participation consistently has been relatively balanced between longs (buys) and shorts (sells), so there has not been, for example, a disproportionate push on the long side of the market, which would cause the price to increase. Third, non-commercials generally are not in a position to influence final settlement prices because they do not own the physical commodity and therefore,

must liquidate their open futures positions prior to expiration of trading of the applicable expiring contract month.

Lastly, with hundreds of commercial participants and instantaneous price dissemination, any short term "speculative" price impact that creates a discrepancy between the futures price and the price level that would be anticipated on the basis of market fundamentals in the underlying physical commodity market would be expected to be met in reasonably short order with an equally strong "commercial" reaction. Thus, if short-term prices in a futures market should happen to move in a direction inconsistent with actual market fundamentals, a vast number of participants, including energy producers, wholesalers and end-users (as well as government agencies) would respond to ensure that prices return rapidly to where the industry consensus believes they should be to reflect supply and demand fundamentals. Questions from Senator Domenici:

RESPONSES OF JAMES NEWSOME TO QUESTIONS FROM SENATOR DOMENICI

In your testimony, you reject Mr. Masters' analysis and conclusions that the increase in net long investors has driven up the price of crude oil.

Question 1. Can you summarize the most important defects that you see with Mr. Masters' analysis, which in your opinion make his conclusions incorrect?

Answer. As further detailed in our written testimony, earlier this year Mr. Masters began a cascade of charges that commodity index funds were responsible for unnatural price escalations in commodity markets, particularly for crude oil. While Masters is dismissive of market fundamentals, we have emphasized that crude oil is truly a global commodity and that prices in crude oil futures markets are primarily driven by the market fundamentals of the far larger physical market for the crude commodity.

On September 10th, Mr. Masters updated his so-called "analysis," including his allegations about crude oil market participation, price determination and performance. On September 11th, the CFTC released a detailed report that included definitive data and analysis regarding index-long market participation in a group of commodities, including crude oil. Unlike Mr. Masters who guessed at or simply assumed the facts, the CFTC report by contrast provided definitive and unambiguous information as to whether the index funds were increasing or decreasing their positions in a manner that could support Mr. Masters' claims. In addition, the CFTC report provided futures price information that enabled readers to perform the equivalent analysis that Mr. Masters purported to perform in reaching his conclusions. The information the CFTC provided also was sufficient to enable readers to evaluate the methodology Mr. Masters purported to perform in reaching his assertions about index-long participation in commodities markets.

The unambiguous result of the CFTC analysis and its direct implication is that Mr. Masters was wrong about everything; about participation by index-longs, about the price impacts from index-longs, and about how to even count participation by index-longs. Mr. Masters has successfully captured a number of headlines by trumpeting the supposedly massive inflow of funds by index traders into the regulated futures markets. Yet, as detailed in the CFTC report, index trader positions were actually declining during this period.

Question 2. In your opinion, does the fact that a vast majority of speculators do not take physical delivery of crude oil, make a difference in how Congress should view the impact of speculators in the commodity markets?

Answer. To be clear, because speculators lack the wherewithal to make or receive delivery of a physical product, no speculator can take physical delivery of crude oil on a futures market. On the other hand, the vast majority of positions in crude oil held by commercials do not go to delivery of the physical oil. Futures markets are structured to provide hedging and price discovery services and are not intended to provide delivery of the physical product as a routine matter. Perhaps the most salient consideration for Congress concerning speculators being unable to participate in the delivery process is that speculators must sharply reduce their open positions as the termination of trading approaches in an expiring contract month. Consequently, speculators have a reduced ability to have any impact on the determination of the final settlement price for the expiring contract month.

Question 3a. Some view swap dealers as illegitimate users of the CFTC's hedge exemption.

How do you view swap dealers with regard to their use of the hedge exemption?

Answer. Swap dealers do have legitimate market price risk exposure as a result of their swap activity. Consequently, we do believe that the CFTC was warranted in permitting swap dealers to apply for hedge exemptions for their corresponding

futures positions on CFTC-regulated exchanges, while preserving the discretion of exchanges to review such applications on an individualized case-by-case basis.

Question 3b. In your opinion, are swap dealers fairly characterized as commercial, non-commercial, or some other type of market participant?

Answer. As noted in the recent CFTC staff report, swap dealers serve an important market role by acting as market makers both to commercials and to speculators who are seeking to enter into swap transactions. We agree with the CFTC report that the lines between commercial and non-commercial have been blurring in recent years, including with respect to the role of swap dealers. Thus, as noted in that report, a number of swap dealers now have acquired physical facilities and thus have the wherewithal to participate in transactions in the physical cash commodity market. Accordingly, we believe that there may be merit in further delineating the traditional categories that have been used by the CFTC in its Commitment of Traders reports.

Question 4. Do you agree with the CFTC's recent report that recommends that we do not have enough data to draw hard and fast conclusions about how to best categorize swap dealers for the purpose of the exemption?

Answer. The CFTC staff collected an enormous amount of data in connection with their report. Our understanding is that the real difficulty in categorizing swap dealers may be less a matter of the quantify of the data but rather that a good number of swap dealers are involved in a variety of transactions and thus may not fit neatly into the traditional commercial and non-commercial categories that have been used by the CFTC for its Commitment of Traders Reports to the public. We believe that the CFTC's preliminary recommendation calling for more delineated trader classification categories has some merit and warrants further study.

Responses of James Newsome to Questions From Senator Akaka

You testified that transparency and disclosure of trading and position information to a regulator will deter manipulation of the market. Commissioner Chilton recommends providing specific statutory authorities allowing the commission to obtain data regarding Over-The-Counter (OTC) transactions that may impact exchange-traded markets. Going a step further, this data will link a bank's hedge to a swap, thereby allowing more transparency.

Question 1. What is your evaluation of this proposal?

Answer. In calling for additional data to be obtained regarding OTC transactions, Commissioner Chilton's proposal is similar to several of the preliminary recommendations suggested by the CFTC in its recent report. We believe that it is useful to consider a number of approaches regarding the data to be obtained and regarding the use of such data in making OTC activity more transparent to regulators, and we are committed to working with Congress to promote transparency of OTC transactions to the CFTC.

Question 2. In his testimony, Mr. Gheit recommended that non-commercial hedgers should have a five percent margin, whereas non-commercial hedgers should have 50 percent. Do you think these margins are adequate? If not, why? What margins do you propose?

Answer. In recent weeks, there has been tremendous upheaval in the financial markets. The stock market has declined by more than 12% in a very short period and, as has been widely reported, a number of large and reputable investment firms have gone out of business or have been acquired by another financial institution. Yet, U.S. futures clearinghouses have performed extremely well throughout this demanding period. So we have serious concerns about mandates being imposed by Congress that would interfere with and undermine the core purpose of margins in futures markets, which is to ensure the financial integrity of transactions executed on or subject to the rules of U.S. futures exchanges.

As to Mr. Gheit's statement, we understand the question to be whether non-commercials should have significantly higher margin levels than commercials. Given the figures that he is suggesting, we question whether Mr. Gheit understands that futures margins serve as performance bonds and thus provide a distinctly different function from that provided by securities margins. Regardless of the intention underlying Mr. Gheit's suggestion, the clear result would be to harm U.S markets by pushing volume and liquidity to less transparent and less regulated markets overseas. Consequently, by reducing liquidity on U.S.-regulated markets, if Congress actually followed through on Mr. Gheit's proposal, the ironic result would be that price volatility would actually increase.

RESPONSES OF ROBERT F. MCCULLOUGH, JR., TO QUESTIONS FROM SENATOR MURKOWSKI

Question 1. In your report you mention that Enron's market manipulation of the Henry Hub futures market in 2001 might be a relevant model to understanding the increase in crude oil prices. But the Enron case was a situation of manipulation. In your opinion, is there a significant difference between market manipulation and excessive speculation?

Answer. "Excessive speculation" is a term that doesn't have a very solid definition, nor is it a phrase used in the literature. When investors base their expectations on the premise that price increases will continue forever, this certainly seems excessive.

Given the current absence of data on spot and forward markets in oil, it is not possible to determine if the problem is manipulation or unbridled enthusiasm by speculators. There are reasons to be concerned that it might be the former. In tulip bubbles http://en.wikipedia.org/wiki/Tulip__mania speculators tend to hold their positions through the boom and the bust. In the Enron-created price excursions during the Western Market Crisis of 2000-2001, Enron liquidated its positions before the bust.

A similar story played out in the NYMEX non-commercial positions in 2008. All in all, non-commercial speculators showed a suspicious prescience concerning the unforecasted oil price spike on July 3, 2008. Their prescience was all the more surprising since the EIA forecasts of supply and demand for the same period were accurate.

The situation with Hurricane Ike on September 13, 2008 is no more reassuring. Prices fell as the hurricane took out 1.3 million barrels per day in the Gulf and increased when oil and gas production was returned to service (see graph). These anomalies would appear to go beyond speculative enthusiasm and verge upon market manipulation.

Question 2. In your opinion what regulatory policies need to be implemented to assure the competitive workings of energy derivative markets, including those that are not regulated under the Commodities Exchange Act?

Answer. Thank you for this question. We have had 160 years of experience with spot and forward market abuses at the Chicago Board of Trade.

First, shifting from open pit to electronic trading reduces transparency. Open pit trading provides a great deal of trading information to market participants. The information is asymmetric—it benefits exchange members more than the general public—but it is available. Attempts to corner the market such as the one that we suspect occurred on Monday, September 15 are more difficult in an open pit venue because traders can quickly guess where the problem lies.

Since electronic trading is here to stay, it is important to make sure that everyone sees the transaction data. This includes the public, decision-makers such as yourselves, and regulators. A good template for transaction data transparency can be found in the FERC's Electric Quarterly Report (EQR). You can find a detailed description of the report and its methodology at http://www.ferc.gov/docs-filing/eqr/com-order.asp. If the CFTC, etc. had such a weapon in its arsenal, the debate on the causes of the recent price spikes would be moot.

Insiders often argue that transparency is contrary to the public interest because it makes collusion easier; and secrecy is needed to prevent predatory pricing. Neither argument is justified by history or economic analysis. In opaque markets such as the electricity market operated by the Province of Alberta, Enron simply gave its market data to its fellow conspirators. Making the transaction data secret does nothing to prevent conspirators from sharing their data. It only makes detection of collusion more difficult.

Predatory pricing is just as illusory. Most financial transactions such as forward markets have no secret cost structure to use in a predatory pricing scheme. Where there is production data that might be useful in competitors pricing, the market participants are free to keep the data to themselves. Their transactions, however, do not identify their production costs. Thus I emphasize. . .

If transparent transaction data is good policy for electricity, it is clearly good public policy in oil, where market concentration and inexplicable price changes raise significant doubts that the market is functioning efficiently.

I also believe that one regulatory agency needs to be given the mandate to collect all of the data and regulate all of the relevant markets. As Lawrence Eagles, of J.P. Morgan Chase said during your September 16 hearing, spot markets lead forward markets. Asking the CFTC to regulate forward markets without access to spot transaction data makes the commission unable to successfully fulfill its responsibilities. Posting two policemen on one beat is fine if they work together. At the mo-

ment, four police walk this beat—the CFTC, the FTC, FERC, and the EIA—with inconsistent powers, mandates, and information. Their current reports are contradictory and confusing.

Since the start of the runup in oil prices, EIA forecasts have been accurate as to quantities (imports, exports, consumption, and international demand) but are wildly inaccurate in terms of prices. If there is no problem with oil markets, as the CFTC claims, the EIA is incompetent. If the EIA is correct, the CFTC and the FTC are incompetent. This is a terribly ineffective solution for market surveillance.

The Enron loopholes of the 1990s must be closed. If the CFTC is to regulate forward exchanges it must regulate all transactions. A simple solution would be to make forward contracts enforceable only if reported to the CFTC. There are many precedents for solutions of this type in the U.S. economy from patent law to land ownership. The CFTC must be given explicit powers over ICE and the OTC markets.

RESPONSE OF ROBERT F. MCCULLOUGH, JR., TO QUESTION FROM SENATOR DOMENICI

Question 1. In your report, you state that there is a need for more reliable data and analytical tools to accurately determine the link between market fundamentals and speculation. In your opinion, does Mr. Masters' September 10th report change your assertion that there is a lack of data to support a conclusion that speculation has been the primary factor in the increase in crude oil prices?

Answer. Market surveillance in the oil markets suffers from a paucity of data. Part of the problem is the confusion of missions. None of the four police on the beat have a clear and complete mandate or access to even minimal levels of data.

A case in point is the successful corner of the oil market on September 15 now under investigation by the CFTC. Such corners occur when a market is sufficiently concentrated that one or more players can make it impossible for forward contract holders to fulfill their contracts. The outcome was a short-lived $25/barrel spike in oil prices. Since the October contracts settled at the high price, the speculation raised oil prices for a substantial share of U.S. consumers. Moreover, the spike adds to an already high level of volatility. The CFTC did not know the crisis was coming, nor could it have known because the commission has no spot data. It only has partial data from ICE and effectively no data from over the counter markets.

On the other hand, electricity market participants file quarterly reports describing all of their transactions. So we have the market with a high level of risk with little or no data for market regulators and the market with a lower level of manipulation risk with extensive data for regulators. It is very possible that the problems in the oil market may be the result of inadequate regulatory surveillance and the absence of market data.

Michael Masters's report uses a poorly designed and documented CFTC data set to match speculative positions to price changes. At the hearing he was severely criticized for relying on this official CFTC source. As I remember, Senator Domenici, you were a primary critic. Mr. Masters' conclusions mirrored my own, which relied upon a different CFTC data source—the Commitments of Traders report. I think an honest answer is that this is a case of "[i]n the land of the blind, the one-eyed king is blind." The CFTC report is poorly designed and documented. But it is important to understand that this is all of the data the CFTC had until the CFTC report released two weeks ago. Even that report was fragmentary and incomplete—ending the month before the price spike.

The question is not whether speculation is bad: speculation is a reasonable economic function. The question is whether something was wrong with a massive runup in oil prices this year when fundamentals did not remotely provide an explanation for the increase. Mr. Masters's work would indicate one possible explanation. With additional data it might well be possible to determine if his hypothesis is correct.

It is important to note that something beyond pure speculation is at work, here. During last week's hearing I noted several times that the loss of production from Gulf of Mexico drilling rigs was actually correlated with a fall in prices. On Monday, as you are aware, about a third of the rigs had returned to service, but oil saw an unprecedented 25% increase. This clearly indicates that policy makers, such as yourself, will have work ahead of them in upcoming days.

It would be very wrong to choke off your investigation before assembling all of the data. Today we only have scarce data and insufficient manpower, with the result that our "speculative" debates suffer from inadequate research.

RESPONSES OF MICHAEL W. MASTERS TO QUESTIONS FROM SENATOR MURKOWSKI

Question 1. In your report you discuss the Hunt Brothers attempt to corner the silver market, which they tried to do by buying physical silver and storing it in a warehouse. i.e. they stockpiled or hoarded the commodity. Do you have any evidence that speculators are hoarding or stockpiling physical crude oil, or any physical commodities for that matter?

Answer. My understanding of the Hunt Brothers attempts to corner the silver market was that they purchased futures contracts in very large quantities and took physical delivery against those contracts. By accumulating physical silver in addition to their silver futures contracts they were able to reduce the deliverable supply and corner the market. In doing so this made their large futures position even more valuable. Silver prices rose from around $10 to about $50 and when the COMEX and CFTC intervened in the silver futures market to force the Hunt Brothers to stop accumulating silver futures at that point the price of silver (both futures and physical) dropped back to $10 within a few weeks.

I do not have any evidence that proves speculators are hoarding or stockpiling physical commodities nor am I in a position to gather such evidence as a private citizen. We turned over to the House Energy Committee and the CFTC marketing documents from Credit Suisse that detail investments in commodities like iron ore which do not have liquid futures contracts. In order to hedge these investments, Credit Suisse and other swaps dealers would need to buy physical commodities and hold them or contract with physical suppliers for the purchase of physical commodities.

Index Speculators do not have to purchase physical commodities in order to influence and inflate physical commodity prices. The CFTC states on its website that "In many physical commodities (especially agricultural commodities), cash market participants base spot and forward prices on the futures prices that are "discovered" in the competitive, open auction market of a futures exchange." ("The Economic Purpose of Futures Markets and How They Work—Price Discovery or Price Basing," Commodities Futures Trading Commission Website, http://www.cftc.gov/educationcenter/economicpurpose.html) Platts, which is the leading pricing service for the energy industry, describes it this way: "In the spot market, therefore, negotiations for physical oils will typically use NYMEX as a reference point, with bids/offers and deals expressed as a differential to the futures price. ("Platts Oil Pricing and Market-on-Close Methodology Explained—A Backgrounder," Platts, A Division of McGraw Hill Companies, July 2007, page 3. http://www.platts.com/Resources/whitepapers/index.xml) So when futures prices go up then physical prices for grain and energy also go up because physical prices of these commodities are based off of futures prices.

Question 2. How do you explain the rapid increase in prices of commodities that are not traded on futures exchanges or over-the-counter markets, such as iron ore (up over 200% since 2001), rice (up over 400% since 2001) and even onions, which are legally prohibited from being traded on exchanges in the U.S. but still are significantly up in price this year?

Answer. Economists refer to this phenomenon as either the "substitution effect" or the "crosselasticity of demand." It says simply that if the price of something rises then consumers will shift consumption to alternatives, which then leads to an increase in the price of the alternatives. So if the price of aluminum goes up then manufacturers will choose to substitute steel for aluminum. If the price of natural gas goes up then some power plants will choose to burn coal to heat the steam that turns the turbines. If grain prices rise then people will consume more rice, which will cause these prices to rise.

These relationships are so strong and established that even though there is not an existing futures market the people who trade these physical commodities are actively aware of where the substitute commodities are trading on the futures exchange and adjust prices accordingly. In addition, as I mentioned in my answer to question 1, there are investors attempting to invest in non-exchange traded commodities such as iron ore.

RESPONSES OF MICHAEL W. MASTERS TO QUESTIONS FROM SENATOR DOMENICI

Question 1. In your opinion, do commodities markets require both physical hedgers and speculators to function properly?

Answer. Commodities futures markets were created by and exist for physical hedgers. If physical hedgers are not part of the commodities futures markets then the markets lose their legitimacy.

Speculators are also a necessary part of the commodities futures markets and that is why I have never argued for the elimination of speculation. Speculation is needed

in adequate amounts. Too little speculation and there will be insufficient liquidity and bid-ask spreads will reflect this. Too much speculation and the opportunity exists for speculative bubbles to form. That is why we need sufficient liquidity but not unlimited liquidity.

What I have advocated is that speculative position limits apply to every market participant in every market that trades derivatives based on U.S. commodities. So for instance, I believe that speculative position limits are necessary in West Texas Intermediate Crude Oil for speculators on NYMEX, ICE and in the over-thecounter swaps markets.

I agree with the findings of Congress in the 1936 Commodity Exchange Act that determined that speculative position limits were necessary to protect the commodities futures markets from excessive speculation. I see my proposals as simply updating that 1936 Act to reflect the modern world we live in.

Question 2. On the futures exchanges, every buyer has to be paired with a seller. In your opinion, from whom were the speculators buying earlier this year, and to whom have they been selling?

Answer. Unfortunately, because I do not have access to the same data that the Commodities Futures Trading Commission has access to, I am not able to truly determine who is a speculator and who is a physical hedger. The reason is that swaps dealers trade with both speculators and physical hedgers but they are classified in the Commitments of Traders report as "commercial" which until recently was thought to equate to "physical hedgers." So all of the speculation that is taking place through swaps dealers is masked as "commercial." The CFTC has acknowledged this problem and proposed to report a separate swaps dealer category in the COT reports but unfortunately that still does not solve the problem because we do not know what portion of a swaps dealers positions corresponds to speculators and what portion corresponds to physical hedgers. Compounding this problem is the fact that we have no COT data on the ICE and we have no data on the over-thecounter swaps markets.

It is for this reason that we have focused on the actions of one subgroup of speculators, the index speculators, which we can track to some extent using the CFTC's Commodity Index Trader reports. We do not know who these index speculators were buying from and selling to for the abovementioned reasons but we feel confident given their size that their actions had an impact on the marketplace.

RESPONSES OF JEFFREY HARRIS TO QUESTIONS FROM SENATOR MURKOWSKI

Question 1. Some have recommended that an increase in position limits is the key to preventing excessive speculation in the futures market. What are CFTC current rules on position limits? And can you explain the effects of these limits on the market?

Answer. Most physical delivery and many financial futures and option contracts are subject to speculative position limits. Section 4a(a) of the Commodity Exchange Act ("Act") provides that, for the purpose of diminishing, eliminating, or preventing sudden or unreasonable fluctuations or unwarranted changes in the price of a commodity, the Commission may impose limits on the amount of speculative trading that may be done or speculative positions that may be held in contracts for future delivery. Pursuant to this authority, the Commission has established specific limits for several markets (corn, oats, wheat, soybeans, soybean oil, soybean meal, and cotton), which are set out in Federal regulations (CFTC Regulation 150.2).

Furthermore, Section 5(d)(5) of the Act requires designated contract markets to establish position limits or accountability provisions to reduce the potential threat of market manipulation or congestion where necessary and appropriate. The Commission has adopted "Acceptable Practices" for the establishment of exchange-set limits (Appendix B to Part 38 of the CFTC's regulations). Violations of exchange-set limits are subject to exchange disciplinary action. Violations of exchange speculative limit rules that have been certified by an exchange or approved by the Commission are subject to enforcement action by the Commission.

Finally, as part of the 2008 Farm Bill Congress recently added Section 2(h)(7) to the Act, which includes a requirement that Exempt Commercial Markets establish position limits or accountability provisions for contracts that the Commission has determined perform a significant price discovery function. The Commission is currently in the midst of a rulemaking to implement these amendments.

Under CFTC Regulation 150.2 speculative limits for the listed agricultural markets are set for the spot month, all months and all months combined levels. Speculative limits in physical delivery markets are generally set at a more strict level during the spot month (the month when the futures contract matures and becomes de-

liverable). Stricter limits in the spot month are important because that is when contracts may be more vulnerable to price fluctuation caused by abnormally large positions or disorderly trading practices. The Commission's Acceptable Practices specify that spot month levels for physical delivery markets should be based upon an analysis of deliverable supplies and the history of spot month liquidations, and should be set at a level no greater than 25 percent of estimated deliverable supplies. For cash-settled markets, spot month position limits should be set at a level no greater than necessary to minimize the potential for manipulation or distortion of the contract and the underlying commodity price.

Guidance for the establishment of speculative position limits in individual non-spot months and in all-months-combined typically is found in Commission Regulation 150.5. In particular, the level is based on an "open interest formula" calculated as 10% of the average combined futures and delta-adjusted option month-end open interest for the most recent calendar year up to 25,000 contracts, with a marginal increase of 2.5% thereafter.

Question 2a. The CFTC data reports the actual positions and trades of swap dealers and their clients.

Mr. Harris, can you give the committee a sense of how you collected this data and how this data will improve the reporting of these positions. How will this improve your regulatory oversight and better inform investors?

Answer. As detailed in the recent "Staff Report on Commodity Swap Dealers & Index Traders with Commission Recommendations," the Commission used its 'special call' authority (Reg. 18.05) to compel large swap dealers and index funds to provide information on index trading and OTC swaps tied to U.S. futures markets. The responders have an on-going obligation under the special call to file these data monthly, and if resources become available, the Commission will be able to add market transparency about the amount (notional value and equivalent futures contracts) of index trading. These efforts will better inform investors compared to our existing supplemental report to the Commitments of Traders report, which covers only 12 agricultural markets and is a less accurate representation of index trading. DMO

Question 2b. What does this data tell us about the trading behavior / trading positions of swaps dealers?

Answer. It shows that swap dealers and index funds, in aggregate, were reducing long positions in the crude oil futures market as prices (and notional values) were moving sharply higher in the first six months of 2008. It also shows that significantly more than half of the clients for crude oil swaps are commercials in the physical market.

Responses of Jeffrey Harris to Questions From Senator Domenici

Question 1. Does the CFTC have data that indicates a correlation between commodity prices and the participation in various markets by hedge funds, pension funds, and various non-commercial speculators?

Answer. The Commission has price and position data for all categories of participants in commodity markets, including those you mention. On May 22, 2008 we presented an analysis of the correlations between prices and participant positions for a number of agricultural products. The CFTC has also been working with an Interagency Task Force that includes the Federal Reserve, the Securities and Exchange Commission, the Department of Agriculture, and the Department of Energy on a comprehensive study that analyzes this price and position data. In July, the Task Force decided to accelerate the crude oil portion of that study in order to provide the public with greater transparency on the factors underlying the high prices that were seen at that time. The reports are attached in their entirety. Both studies found little evidence to support the proposition that the position changes of traders classified as noncommercial were systematically causing price changes. OCE

Question 2. In the first half of 2008, we saw a dramatic increase in the price of crude oil, but there has been a decrease in net speculative positions. Can you please explain how such a reduction would normally be expected to impact prices?

Answer. The theory of supply and demand dictates that prices can rise with an increase in demand or decrease in supply. We know that the supply of futures contracts (the open interest of futures combined with options on futures) was growing in the crude oil markets during the first half of 2008. Although overall demand for futures positions was rising, as you note demand from commodity index funds (speculators, to some) was falling over the same period of time. In this regard, a reduction in demand might be expected to result in lower prices.

However, as skeptics of the theory, we also test whether changes to net speculative positions affect price changes.[1] The specific procedure we apply is a test for "Granger Causality" which seeks to determine if events in one period predict events in a subsequent period. In crude oil, we tested whether position changes by various categories of traders could predict price changes for the following day. We found no evidence that non-commercial or other speculative position changes preceded price changes during the first half of 2008 or in the years prior. As our report indicates, there are limitations to this test, the most important being that the price changes could come on the same day as the position changes rather than the following day. Nevertheless, we are working to improve our data in order to conduct the same test to determine the intra-day price effects from position changes.

We note that some have argued that demand for futures contracts is the same as demand for crude oil. This is simply not true. As noted above, the supply of futures contracts was increasing during the first half of 2008, but that says nothing about the actual supply of crude oil. Similarly, demand for futures contracts only indicates demand for hedging risk in the crude oil market, and does not indicate demand for crude oil as a product. Since the aggregate supply of and demand for crude oil is not affected by futures positions, the theory of supply and demand predicts that futures trading will have no impact on crude oil prices. OCE

Question 3. The CFTC's staff report makes several recommendations for swap dealers and index traders. What effects will these recommendations have on trading in futures commodity markets?

Answer. The Report makes eight recommendations. These are listed below.

1. Remove Swap Dealers from the Commercial Category and Create a New Swap Dealer Classification for Reporting Purposes: In order to provide for increased transparency of the exchange traded futures and options markets, the Commission has instructed the staff to develop a proposal to enhance and improve the CFTC's weekly Commitments of Traders Report by including more delineated trader classification categories beyond commercial and noncommercial, which may include at a minimum the addition of a separate category identifying the trading of swap dealers.

2. Develop and Publish a New Periodic Supplemental Report on OTC Swap Dealer Activity: In order to provide for increased transparency of OTC swap and commodity index activity, the Commission has instructed the staff to develop a proposal to collect and publish a periodic supplemental report on swap dealer activity. This report will provide a periodic glance at swap dealers and their clients while simultaneously identifying the types and amounts of trading that occur through these intermediaries, including index trading.

3. Create a New CFTC Office of Data Collection with Enhanced Procedures and Staffing: In order to enhance the Agency's data collection and dissemination responsibilities, the Commission has instructed its staff to develop a proposal to create a new office within the Division of Market Oversight, whose sole mission is to collect, verify, audit, and publish all the agency's COT information. The Commission has also instructed the staff to review its policies and procedures regarding data collection and to develop recommendations for improvements.

4. Develop "Long Form" Reporting for Certain Large Traders to More Accurately Assess Type of Trading Activity: The Commission has instructed staff to develop a supplemental information form for certain large traders on regulated futures exchanges that would collect additional information regarding the underlying transactions of these traders. This would provide a more precise understanding of the type and amount of trading occurring on these regulated markets.

5. Review Whether to Eliminate Bona Fide Hedge Exemptions for Swap Dealers and Create New Limited Risk Management Exemptions: The Commission has instructed staff to develop an advanced notice of proposed rulemaking that would review whether to eliminate the bona fide hedge exemption for swap dealers and replace it with a limited risk management exemption that is conditioned upon, among other things: 1) an obligation to report to the CFTC and applicable self regulatory organizations when certain noncommercial swap clients reach a certain position level and/or 2) a certification that none of a swap dealer's noncommercial swap clients exceed specified position limits in related exchange-traded commodities.

[1] This is a summary of the Interim Report of our Interagency Task Force. The full report is attached.

6. Additional Staffing and Resources: The Commission believes that a substantial amount of additional resources will be required to successfully implement the above recommendations. The CFTC devoted more than 30 employees and 4000 staff hours to this survey, which the Commission is now recommending to produce on a periodic basis. Other new responsibilities will also require similar additional staff time and resources. Accordingly, the Commission respectfully recommends that Congress provide the Commission with funding adequate to meet its current mission, the expanded activities outlined herein, and any other additional responsibilities that Congress asks it to discharge.

7. Encourage Clearing of OTC Transactions: The Commission believes that market integrity, transparency, and availability of information related to OTC derivatives are improved when these transactions are subject to centralized clearing. Accordingly, the Commission will continue to promote policies that enhance and facilitate clearing of OTC derivatives whenever possible.

8. Review of Swap Dealer Commodity Research Independence: Many commodity swap dealers are large financial institutions engaged in a range of related financial activity, including commodity market research. Questions have been raised as to whether swap dealer futures trading activity is sufficiently independent of any related and published commodity market research. Accordingly, the Commission has instructed the staff to utilize existing authorities to conduct a review of the independence of swap dealers' futures trading activities from affiliated commodity research. This will be reported back to the Commission with any findings.

Recommendations 3 and 6 address staffing needs so as to enable the Commission to fulfill its greatly increased responsibilities.

Recommendations 1, 2 and 4 focus on increasing transparency by making improvements on the reporting of the positions carried by commodity index funds. My office views these transparency improvements as very important. Though our analyses thus far have found no price impact from index activity, we do feel that a more informed marketplace will be better equipped to discern information-based trades from those that mimic the various commodity indices. Improved transparency benefits market participants, observers and policy makers alike.

Recommendation 5 seeks additional information. Many have questioned the hedge exemptions afforded to swap dealers, arguing that these exemptions undermine speculative limits that would otherwise limit the positions undertaken by commodity index traders. The Commission is leaving no stones unturned as it investigates this policy issue.

Like others, recommendation 7 contributes to transparency by establishing a central point for the collection of information about commodity swaps. This enables more rapid determination of the extent of swaps positions, as well as who holds these positions . This would substantially improve our surveillance capabilities. In addition, the futures industry has long recognized the benefits from centralized management of credit risk. Among those benefits is the enhancement of liquidity. When questions arise regarding counterparty ability to pay, markets can seize up. A central clearinghouse enables positions to be transferred or terminated much more rapidly.

Recommendation 8 also seeks additional information but is primarily putting the industry on notice. The rapid growth of commodity index funds raises the prospect that fund operators might become able to front run customer orders. The Commission takes this concern seriously and is informing industry participants that it will be looking for and prosecuting such activity.

Response of Jeffrey Harris to Question From Senator Akaka

Question 1. Mr. McCullough testified that there should be an Oil Quarterly Report, comparable to the FERC's Electric Quarterly Report that contains all transaction by market participants, down to locations, quantities, and prices. This Oil Quarterly Report should include spot and forward trades for bilateral transactions, at both NYMEX and ICE. He feels that having this data "would allow policy-makers to proceed on the basis of facts." Would it be possible to compile this type of report? If not, what should be done to improve the transparency in the market?

Answer. FERC's Electric Quarterly Report (EQR) and the transparency provisions of Section 23 of the Natural Gas Act contribute to market transparency in their respective wholesale physical markets. It is important to emphasize that the EQR and the proposed report on natural gas include only physical trades, not futures or financial swaps. Thus, they exclude transactions performed or cleared on the NYMEX or cleared by ICE. In terms of transparency required for regulation and oversight, the CFTC has access to all the futures and cleared swaps transaction data from

NYMEX and ICE Futures Europe. Provisions proposed for Significant Price Discovery Contracts (SPDC) will address some information shortcomings already identified by CFTC staff. Furthermore, as a result of the special call, the Commission is now collecting information on related OTC positions held by large futures traders.

In terms of providing the public more information on futures and swaps, a comprehensive quarterly report of the type FERC publishes is not feasible, but the Commission is (per its Recommendation #2) in the process of developing a new periodic report based upon the information that it is receiving from swap dealers and index funds who are large futures traders.

RESPONSES OF LAWRENCE EAGLES TO QUESTIONS FROM SENATOR MURKOWSKI

Question 1. In your testimony you mention that there is a link between the physical and futures markets. Could you please explain this link and its importance? And how if any it is this related to the price of crude oil?

Answer. A prime reason for the creation of futures markets was to add price transparency to a murky physical market characterized by prices "posted" by producers or OPEC pricing. With hundreds of crude grades available, all with different delivery points, sulphur content and product yield properties, there was little liquidity in individual crudes—which in turn increased the potential for price manipulation and price volatility.

The introduction of a standardized futures contract provided a focus for trading activity, and therefore greater price discovery. Traders of individual crudes are offering their physical material for sale at a premium or discount to this futures price when making a transaction.

It is this link that has led to the misperception that futures prices can dictate the level of physical prices.

However, while it is always possible that there could be a day-to-day influence, basic economics shows it is not possible for futures prices to push oil prices away from the price that matches supply and demand, without distorting the market.

This is because the spot physical market has to clear. If futures markets were pushing prices to artificially high levels, then either physical demand would be reduced, leading to a stock build, or the premium of futures prices would be at such a level that it created a risk-free opportunity to hold stocks (thus artificially inflating demand and building stocks).

There is a further relationship—in WTI, the contract is physically deliverable. Any speculator holding crude oil futures to expiry has to deliver the crude oil into Cushing, Oklahoma, the delivery point for NYMEX futures. Again, futures prices have to gravitate back to the realities of physical supply and demand.

This is why, when crude oil prices rose from $70/bbl to nearly $150/bbl, it is important to note that crude oil stocks were drawn down during the first part of the move, and then only rose by around 1/3 of the seasonal norm during the second quarter, when stocks are typically seasonally replenished.

The price was also exaggerated by a series of serious disruptions which caused a surge in diesel demand.

Further, futures prices were predominantly below physical prices for most of this period, and futures prices were never, at any point over this period, at a level that would have offered the risk-free financing of physical stock holdings that would have been needed to declare that futures prices were pushing physical crudes higher.

(Note, while I was working at the International Energy Agency in Paris, we warned in the first half of 2007 on many occasions that low levels of OPEC production would lead to tight crude markets—so to see prices rise when the markets tightened was no surprise. OPEC raised production in November 2007, but strong demand kept stocks low through to the spring. Despite further opportunities early in 2008, OPEC left output unchanged. It was only when prices rose above $135/bbl did they raise output. That being said, we believe the extreme tightness in the diesel market contributed as much to the tightness in the oil price as crude oil tightness).

Question 2. In your opinion would driving speculators out of the market have any unintended consequences?

Answer. Yes.

It would dry up liquidity, creating more volatility in the market (the spike in crude prices on the expiry of WTI is an example of the sort of trading that can occur when there are only a few parties trading crude oil prices, albeit exaggerated by the extreme difficulties in delivering crude in the aftermath of Hurricane Ike).

Greater pricing power would be given to producers.

Producers and consumers would find it harder to hedge their risks—a factor that could reduce the financing available to producers for new exploration and production, which could in turn lead to lower supplies in future years—a critical issue when the world needs 2.5 mb/d of new oil every year just keep output steady.

Speculative limits would prevent the natural growth of the futures markets.

Question 3. What type of energy regulation, or oversight, would be either most damaging, or most beneficial?

Answer. Improved transparency of both financial markets and supply and demand fundamentals is critical to the understanding of market action. The CFTC was unable to draw any conclusions about the impact of investment funds on oil prices until it engaged in a thorough data call and more precise classification of financial positions. Importantly, after intense analysis it concluded that during the period that crude prices rose to $150/bbl, fund flows actually declined. While such data collection comes at a large cost for financial institutions, it is important.

Other non-US futures exchanges should be encouraged to offer similar transparency and regulators should exchange data and conduct cross market analyses.

The slow pace of release of fundamental data (outside of the US) also means that it takes time for a full understanding of market fundamental positions to emerge. In particular, relatively accurate European supply and demand data is only available two months after the event. Data from many developing countries is incomplete and with very little inventory information—often it is only available 18 months later. Given the importance of stocks in providing a supply cushion and in setting price levels, full transparency is vital.

All producers should be encouraged to adopt transparent pricing mechanisms.

However, regulators need to know if a distortion in commodity markets is evolving through higher fund flows. While each of the following events below could be caused by market fundamentals, if they are simultaneously true, then warning lights should be triggered.

- Simultaneously rising prices and rising inventories
- Absence of obvious factor that encourages hoarding (eg: war in producer country, shortage diesel/gasoline)
- Futures prices at sufficient premium to spot prices to encourage stock building
- Positive causality between large fund flows and prices

Market functioning would be harmed by the following:

- Banning or permanently restricting speculative flows. This would reduce liquidity and therefore could distort price discovery, increase price volatility and limit the time frame in which producers (and consumers) could hedge risk. This could ultimately lead to lower future production and supply tightness.
- Speculative limits: Same effects as above, but in addition, this could force regular portfolio rebalancing, which could increase volatility and could shift trading volumes overseas—thus reducing oversight and damaging the US economy.
- Speculative limits could limit the natural growth of the US futures business.

RESPONSE OF LAWRENCE EAGLES TO QUESTION FROM SENATOR DOMENICI

Question 1. Could you please explain the difference between the spot price and futures price in the market? And the impact that Hurricane Ike has had on these prices?

Answer. Spot prices are the price agreed for a physical transaction. The spot market has to "clear" each day, with prices being set at the level at which buyers and sellers are prepared to take/make delivery of physical crude.

Futures prices are set by the buying and selling of paper contracts for the future delivery of a commodity. The contracts are traded on a registered exchange and are for a standardized grade and quantity of a physical commodity (or financial instrument). There is no fixed supply of futures contracts, so as long as a buyer and a seller can be found, a new contract can be created. As there is always a buyer and seller for each contract, these contracts offer a zero sum gain. Many futures contracts offer the opportunity to settle the contract by delivering the physical commodity to a pre-specified destination. The futures contract then becomes a spot contract.

By 3 October, the crude oil supply losses caused by Hurricanes Ike and Gustav totaled a cumulative 36.7 mb. However, with a cumulative loss of 89.5 mb of refining capacity also shut by the hurricanes, the net impact was, ironically to reduce the demand for crude oil by more than the crude oil supply loss. Refining outages however tightened the product markets, albeit with the mitigating impacts of both a sharp drop in US demand and the announcement by the International Energy Agency that it was standing ready to act if the disruption was serious enough.

The hurricanes also coincided with the financial crisis, which prompted distressed selling of physical and futures positions, restricted credit availability and raised concerns of a global recession.

The hurricanes were also a major factor in the unprecedented price spike on the expiry of the NYMEX WTI October futures contract. Low crude oil stocks in the US Midwest were exacerbated by delivery difficulties following the hurricane.

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