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FRACTIONAL RESERVE BANKING AND THE FEDERAL RESERVE: THE ECONOMIC CONSEQUENCES OF HIGH-POWERED MONEY

HEARING

BEFORE THE

SUBCOMMITTEE ON
DOMESTIC MONETARY POLICY
AND TECHNOLOGY

OF THE

COMMITTEE ON FINANCIAL SERVICES
U.S. HOUSE OF REPRESENTATIVES

ONE HUNDRED TWELFTH CONGRESS

SECOND SESSION

JUNE 28, 2012

Printed for the use of the Committee on Financial Services

Serial No. 112–141

U.S. GOVERNMENT PRINTING OFFICE
76–112 PDF WASHINGTON : 2012

For sale by the Superintendent of Documents, U.S. Government Printing Office
Internet: bookstore.gpo.gov Phone: toll free (866) 512–1800; DC area (202) 512–1800
Fax: (202) 512–2104 Mail: Stop IDCC, Washington, DC 20402–0001

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CONTENTS

	Page
Hearing held on:	
June 28, 2012	1
Appendix:	
June 28, 2012	23

WITNESSES

THURSDAY, JUNE 28, 2012

Cochran, John P., Ph.D., Emeritus Professor of Economics and Emeritus Dean of the School of Business, Metropolitan State College of Denver	5
Salerno, Joseph T., Ph.D., Professor of Economics, Lubin School of Business, Pace University	3
White, Lawrence H., Ph.D., Professor of Economics, George Mason University	7

APPENDIX

Prepared statements:	
Paul, Hon. Ron	24
Cochran, John P.	27
Salerno, Joseph T.	44
White, Lawrence H.	54

FRACTIONAL RESERVE BANKING AND THE FEDERAL RESERVE: THE ECONOMIC CONSEQUENCES OF HIGH-POWERED MONEY

Thursday, June 28, 2012

U.S. HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON DOMESTIC MONETARY
POLICY AND TECHNOLOGY,
COMMITTEE ON FINANCIAL SERVICES,
Washington, D.C.

The subcommittee met, pursuant to notice, at 2:30 p.m., in room 2128, Rayburn House Office Building, Hon. Ron Paul [chairman of the subcommittee] presiding.

Members present: Representatives Paul, Jones, Luetkemeyer, and Schweikert.

Chairman PAUL. This hearing will come to order.

I now recognize myself for 5 minutes to make an opening statement.

I thank all the Members attending today, and I thank the panel for being here today. I will make a brief statement because we are anxious to get to the testimony.

I find today a very interesting day in our history because there is lots in the news today. There is a contempt vote in the House that will be voted on, as well as there was a major Supreme Court ruling today which has caught the attention of not only people in Washington, but everybody around the country.

But I would like to suggest that the hearing we are holding today is not to be dismissed as insignificant, because we are dealing with a subject that is rarely thought about but has a major impact on our economy, on how deficits are financed, how government grows, and how financial bubbles are formed, and why we have crises, which are the corrections and the depressions. So, for this reason, I think this emphasis today on fractional reserve banking is very apropos, because without the understanding of this and the understanding of the nature of money, we really can't get to the bottom of the business cycle.

There are certainly those who argue that fractional reserve banking is something that is advantageous, it facilitates the market, it makes credit easy, it causes economic growth. Others would choose to say that there is also a downside for fractional reserve banking because there is an encouragement of those who can find credit rather easily, not coming from savings but from a computer or a printing press or fractional reserve banking, causes problems. It causes problems because it does affect interest rates, it sends out

bad signals, it causes malinvestment and overinvestment that, indeed, the marketplace requires that these mistakes be corrected.

And this is the reason why we are having these hearings today, because much has been talked about in the last several years about the influence of the Federal Reserve itself, how it can increase the monetary base and high-powered money, but it doesn't end there. Money continues to expand with the cooperation of the banks with what we call fractional reserve banking. But we also have to deal with and think about exactly where capital comes from in a free market system.

My understanding is that capital should come from work, hard effort, and having a savings; don't consume everything you earned. If you can't save, you can't invest. And that is a big difference if you understand that capital comes from hard work and savings and then investment and it be distributed by the marketplace by the so-called price or the interest rates; compared to saying, savings are unnecessary, don't ever worry, we can always provide the liquidity and the credit either directly from the Fed or indirectly through fractional reserve banking. So if we indeed think about fractional reserve banking, we have to think about actually where capital comes from and where the mistakes come from and what causes them.

But fractional reserve banking is a major contributing factor to the ease with which governmental bodies accumulate debt. And we can also emphasize the importance and nature—and we will talk more about this today—of worry that there is a moral hazard connected to this. So if there is risky financial behavior with the monetary system we have, it is compounded by the fact that there are going to be guarantees in the system, the lender of last resort, the insurance that says that people can be taken care of and actually be rewarded for the mistakes that they made.

It seems to me that the system seems to work on one part of the cycle and it is a total disaster on the downturn of the cycle. And that is something I think every American, every Congressman, everybody who cares about their fellow man and about a healthy economy should think about and consider. Because if, indeed, the business cycle is caused in this manner, there is actually an answer for us and there is something that we can do about it, rather than the demagoguing and the politicizing of these issues as goes on so often.

So I want to pause there and make sure there are no other Members who have an opening statement. And if not, we will proceed to the witnesses.

The first witness I would like to introduce is Dr. Joseph Salerno, who is a professor of economics and chair of the economics graduate degree program at Pace University in New York City. He is also academic vice president of the Ludwig von Mises Institute in Auburn, Alabama; research associate of the Foundation of the Market Economy at NYU; and policy expert for The Heritage Foundation. He has written extensively on monetary policy theory and banking and comparative economic systems. He finished his undergraduate study at Boston College and received his M.A. and Ph.D. in economics from Rutgers University.

Also with us today, we have Dr. John Cochran, emeritus professor of economics and emeritus dean of the School of Business at Metropolitan State College of Denver and a senior scholar of the Ludwig von Mises Institute. He has published numerous scholarly articles on the refinement and development of the Mises/Hayek Austrian theory of the business cycle. He received his Ph.D. in economics from the University of Colorado Boulder.

Dr. Lawrence White is professor of economics at George Mason University, where he specializes in the theory and history of money and banking. Dr. White is one of the leading experts on free banking and is a member of the Financial Markets Working Group at the Mercatus Center. He has been published in the American Economic Review and the Journal of Monetary Economics and has also authored three books on monetary matters, including, "The Theory of Monetary Institutions." He received his Ph.D. in economics from UCLA and his undergraduate degree in economics from Harvard.

Without objection, your written statements will be made a part of the record. You will now each be recognized for a 5-minute summary of your testimony.

Dr. Salerno?

STATEMENT OF JOSEPH T. SALERNO, PH.D., PROFESSOR OF ECONOMICS, LUBIN SCHOOL OF BUSINESS, PACE UNIVERSITY

Mr. SALERNO. Chairman Paul and members of the subcommittee, I am deeply honored to appear before you to testify this morning on the momentous topic of fractional reserve banking. Thank you for your invitation and attention.

In the short time I have, I will give a brief description of fractional reserve banking, identify the problems it presents for the economy, and suggest a solution.

A bank is simply a business firm that issues claims to a fixed sum of money in receipt for the deposit of ready cash. These claims are cashable on demand and without cost to the depositor. In today's world, these claims may take the form of checkable deposits that are transferred to a third party by writing out a check. They may also take the form of so-called savings deposits that require withdrawal in person at one of the bank's branches or at an ATM machine.

In the United States, the cash for which the claim is redeemable consists of Federal Reserve Notes, the dollar bills that we all are familiar with. Fractional reserve banking occurs when the bank lends or invests some of its deposits payable on demand and retains only a fraction in cash reserves, hence the name "fractional reserve banking." All U.S. banks today engage in fractional reserve banking.

Let me illustrate how fractional reserve banking works with a simple example. Assume that a bank's deposits of $1 million make $900,000 of loans and investments. If we ignore for simplicity the capital paid in by its owners, this bank is holding a cash reserve of 10 percent against its deposit liabilities, the assets of the bank or its cash reserves, and various noncash assets. The noncash assets include business loans, credit card loans, mortgage loans, and securities issued by the U.S. Treasury and other financial authori-

ties. These assets are titles to cash receivable only in the near or distant future.

The key to understanding the nature of fractional reserve banking and the problems it creates is to recognize that a bank deposit is not, itself, money. It is, rather, a money substitute—that is, a claim to standard money or dollar bills—widely regarded as perfectly secure. Bank deposits will be routinely paid and received in exchange in lieu of money only as long as the public does not have the slightest doubt that the bank which creates these deposits is willing and able to redeem them without delay or expense. When this is the case, bank deposits are regarded as indistinguishable from cash itself.

The very nature of fractional reserve banking, however, presents a problem for the bank. On the one hand, all of the bank's deposit liabilities mature on a daily basis because it has promised to cash them in on demand. On the other hand, only a small fraction of its assets is available at any moment to meet these liabilities. The rest of the bank's liabilities will only mature after a number of months, years, or even decades.

In the jargon of economics, fractional reserve banking always involves "term structure risk," arising from a mismatching of the maturity profile of its liabilities with that of its assets. In layman's terms, banks borrow short and lend long.

The inherent problem is revealed when the withdrawal of deposits exceeds a bank's existing cash reserves. The bank is then compelled to hastily sell off some of its longer-term assets, many of which are not readily saleable. Thus, it will incur big losses. This will cause a panic among the rest of its depositors, who will scramble to withdraw their deposits before they become worthless. A classic bank run will ensue, and the bank will fail.

But the failure of fractional reserve banking is only a minor problem. Its effects are restricted to the bank's stockholders, creditors, and depositors, who voluntarily assume the peculiar risks involved in this kind of business.

More important are the harmful effects that fractional reserve banking has on the overall economy. First, fractional reserve banking is inherently inflationary. The issue of money substitutes unbacked by cash expands the money supply and drives up prices. Second, the lending of unbacked money substitutes artificially reduced interest rates below market equilibrium rates. This causes businesses to make unwise and wasteful investments and households to indulge in overconsumption. It destroys wealth, and it creates financial bubbles that end in recession and financial crises.

The inflation and business cycles generated by fractional reserve banking are greatly intensified by Federal Reserve and U.S. Government interference in the banking industry. The most dangerous forms of such interference are the power of the Federal Reserve to create bank reserves out of thin air via open market operations, its uses of these reserves to bail out failing banks in its role as the lender of last resort, and Federal insurance of bank deposits.

In the presence of such policies, the deposits of all banks are perceived and trusted by the public as one homogeneous brand of money substitute, fully guaranteed by the Federal Government and backed up by the Fed's power to print up bank reserves and bail

out insolvent banks. Under such a monetary regime, there is absolutely no check on the inherent propensity of fractional reserve banks that borrow short and lend long to issue unbacked money substitutes, to expand the money supply, and to artificially depress interest rates.

The solution to the problem is to treat banking as any other business and permit it to operate in a market completely free of government guarantees of bank deposits and assurance of Fed bailouts. In order to achieve this ideal, the Fed would have to be permanently and credibly deprived of its legal power to create reserves from nothing. The best way to do this is to establish a genuine gold standard, in which gold coins would circulate as cash and serve as bank reserves. At the same time, the Fed must be stripped of its authority to issue notes and conduct open market operations. Also, banks would once again be legally permitted to issue their own competing brands of notes, as they were throughout the 19th Century and even into the 20th Century.

To conclude, in fact, on the banking market as I have described it, I foresee the ever-present threat of insolvency lurking over fractional reserve banks to compel banks to refrain from further lending of their deposits on demand. They would retain in their vaults and ATM machines the full amount of the cash deposits. This means that if a bank wished to make loans of a longer or shorter maturity, it would only do so by issuing credit instruments whose maturities matched their loans. Thus, for short-term business lending, they would issue certificates of deposit with maturities of 3 or 6 months; to finance car loans, they might issue 3- or 4-year short bonds. Mortgages would take the form of 5- to 10-year balloon loans, as they did in the 1930s, and be financed by bonds of 5 or 10 years.

In short, on a free market, fractional reserve banking, with all its inherent problems, would slowly wither away.

Thank you.

[The prepared statement of Dr. Salerno can be found on page 44 of the appendix.]

Chairman PAUL. Thank you.

Dr. Cochran?

STATEMENT OF JOHN P. COCHRAN, PH.D., EMERITUS PROFESSOR OF ECONOMICS AND EMERITUS DEAN OF THE SCHOOL OF BUSINESS, METROPOLITAN STATE COLLEGE OF DENVER

Mr. COCHRAN. Chairman Paul and members of the subcommittee, thank you for this opportunity to discuss fractional reserve banking, central banking, and its relationship to economic and financial instability.

Fractional reserve banking has historically been viewed by some economists and most monetary cranks as a panacea for the economy, a source of easy credit, and new purchasing power to quicken trade. Better economists, however, recognize fractional reserve banking, with its ability to create credit, as a major source of financial and economic instability.

Credit created by fractional reserve banks—credit extended beyond what could be supported by actual savings—while initially ap-

pearing beneficial, output and employment increase in areas supported by the expanding credit is unsustainable and will end in a bust. A secondary consequence of the bust is a financial and banking crisis, the bank run and associated panic.

The establishment of a central bank was often, when not driven by fiscal priorities of a government, an attempt to achieve the first while mitigating or eliminating the second. For the United States in particular, the effort was misguided. Per Vera Smith, "A retrospective consideration of the background and circumstances of the foundation of the Federal Reserve System would seem to suggest that many, perhaps most, of the defects of American banking could, in principle, have been more naturally remedied otherwise than by the establishment of a central bank; that it was not the absence of a central bank per se that was the root of the evil."

Recent research supports her conclusion. Compared to the pre-Federal Reserve era, the Fed has failed to provide the promised stability and the Fed has guided a significant decline in the purchasing power of the dollar. The dollar currently has a purchasing power of less than 5 percent of the 1913 dollar.

Fractional reserve banks developed from two separate business activities: banks of deposit, or warehouse banking, where banks offering transaction service for a fee; and banks of circulation or financial intermediaries. Circulation banking, if clearly separated from deposit banking, reduces transaction costs and enhances the efficiency of capital markets, leading to more savings, investment, and economic growth. Fractional reserve banking combined these two types of banking institutions into one: a single institution offering both transaction services and intermediation services.

With the development of fractional reserve banking, money creation—either through note issue or deposit expansion—and credit creation became institutionally linked. Banks create credit if credit is granted out of funds especially created for this purpose. As a loan is granted, the bank prints bank notes or credits the depositor on account. It is a creation of credit out of nothing. Created credit is credit granted independently of any voluntary abstinence from spending by holders of money balances.

The existence of a central bank, with its ability to create high-powered or base money, is a necessary prerequisite for excessive credit creation and the resultant boom-bust cycle. While 100 percent reserves could eliminate or reduce the boom-bust cycle and eliminate the threat of bank runs and panics, boom-bust business cycles are really a phenomenon of central banking, not fractional reserve banking per se. Without a central bank, credit creation by fractional reserve banks would be limited in extent. Large misdirections of production caused by credit creation require either newly created base money or the promise to create new base money in the event of a crisis by a central bank.

During the period known as "the great moderation," roughly 1982 to 2000, the U.S. economy experienced a period of apparent relative stability and prosperity. The U.S. economy was then buffeted by two boom-bust cycles tied directly to credit expansion and low interest rates. While much of the discussion following the recent crisis focused on why the recovery has been so slow, a lesson that should have been learned is that credit-driven artificial booms

cannot last. High-powered, money-driven credit expansion, enhanced by the money multiplier of fractional reserves, is a major destructive power that misdirects production, falsifies calculation, even in a period of relatively stable prices, and destroys wealth. Policy-induced booms tend to piggyback on whatever economic development is under way. The interest rate break, which normally would stop the event before they turn into bubbles and booms, is effectively neutered by credit creation.

Central bank response to the most recent crisis has moved in the direction of greater, not lesser, central bank involvement in the economy. Recent trends are troubling. John Taylor recently reported that the Federal Reserve purchased 77 percent of the net increase in the debt by the Federal Government in 2011. The Fed is moving from a monetary policy to a "mondustrial" policy, a policy environment that is not a monetary framework; it is an intervention framework financed by money creation. These trends make a return to sound money, which involves abolishing the central bank and paper fiat money and restoring a commodity money chosen by the market and totally subject to the market, imperative.

Fractional reserve banking supported by a central bank is a cause of the boom-bust cycle, both the dot-com and the 2007 financial crisis and great recession. Elimination of the source of instability requires monetary reform, such as H.R. 1094, which is most consistent with the reforms in the written testimony. H.R. 4180 would be a strong improvement over current Fed operations, as would H.R. 245, but both of these, while improving monetary policy, would still leave the economy subject to boom-bust cycles.

[The prepared statement of Dr. Cochran can be found on page 27 of the appendix.]

Chairman PAUL. Thank you.

And now, I will recognize Dr. White.

STATEMENT OF LAWRENCE H. WHITE, PH.D., PROFESSOR OF ECONOMICS, GEORGE MASON UNIVERSITY

Mr. WHITE. Thank you, Chairman Paul, and members of the subcommittee.

I want to second what has been said by Dr. Salerno and Dr. Cochran. The problem is not fractional reserve banking per se, but the lack of constraints on fractional reserve banking which have been created by: one, the Federal Reserve system; two, our system of deposit insurance combined with "too-big-to-fail;" and three, other restrictions and privileges placed upon banks.

In my statement, I offer some historical background on the origins of fractional reserve banking, and talk a little about the effect of fractional reserve banking on the money supply. But I think the important issue here is to focus on the problems of bank runs and financial instability and the reforms needed to improve our banking system, so let me focus on that.

Undoubtedly, the leading argument made in favor of government regulation of banks, at least since the 1930s, has been the argument claiming that fractional reserve banking is inherently fragile, and so it needs a lender of last resort; it needs deposit insurance to prop it up. I find that is actually not correct. Uninsured fractional reserve banking is not, in fact, inherently prone to runs; it

is not inherently prone to panics. The runs and panics that were a problem in the United States in the late 19th Century and in the Great Depression were due to weakness that was specific to the United States and created by the legal restrictions and privileges that I have mentioned.

It is true that runs have harmful effects, I don't think there is much disagreement about that, at least when a run takes place on a bank that is actually solvent. In a sense, the depositors think there is not enough to go around, but there really is. We would all like to prevent that. But banks would like to prevent that, too, and I will talk about how they can do that.

And the supposed remedy of deposit insurance, although it does reduce the number of runs, it does so at a cost that is probably greater than the—I think almost surely greater than the benefit that it provides by doing so, because it not only eliminates the tragic runs but it also eliminates the runs that are healthy, the ones that eliminate insolvent banks. And in the absence of that kind of mechanism, we rely on the good graces of the bank regulators to close banks when they begin to get insolvent, and we have found that they are not actually very good at it. They tend to delay closure, and that creates great moral hazard problems.

So if a fractional reserve bank makes promises to pay on demand more than it has in its vault, then it is possible that enough people will claim their money back that the bank can't pay everyone. And if that happens, as Dr. Salerno said, the bank is forced into hasty liquidation of assets. That is certainly possible. It typically happened, historically, when a bank was already insolvent, so it actually—the run closed the bank that ought to be closed. But it could happen even against a solvent bank.

And because that is a possibility, some economic theorists have jumped to the conclusion that banks in practice are actually fragile. But if we look at the historical record and especially if we look outside the United States, we find that that is not what prompted bank runs. What prompted bank runs was a justifiable fear that a bank was already insolvent.

And that explains the pattern of bank runs over the season, over the business cycle, and it explains why bank runs were more of a problem in the United States than they were in, say, Canada, because the United States had a weak banking system in ways that Canada didn't. And the United States system was weak because we restricted branching for so many years and because we restricted notes issued by banks under the national banking system in ways that made them unable to meet peak demands for currency.

There are two way banks can protect themselves from runs. One is to have a clause in their accounts that says, "If necessary, we can delay redemption until we have enough time to liquidate assets in an orderly manner." That was used by some trust companies in the United States. But, most importantly, banks have to assure their customers that they are solvent, and they have to behave in such a prudent way that there is no doubt about their solvency.

And before deposit insurance, banks did that. They held large capital positions; 20 percent capital was typical. But when the FDIC Act came along, the banks hired—banks used to actually paint in their window, "This bank has $5 million in capital." When

the FDIC Act passed, they hired someone to go scrape that paint off the window and put in the FDIC sticker. All right? So, FDIC protection took the place of what should be protecting depositors, namely bank capital. Since then, banks have held as little capital as the FDIC will let them get away with. And the FDIC is not particularly good at monitoring bank capital or discovering when banks have bigger liabilities than they admit on their balance sheets.

So I think our biggest problems today—let me talk about very briefly, in conclusion, about what we need to do. We need to find some way of rolling back and ultimately ending deposit insurance at the Federal level. We need to certainly end immediately the too-big-to-fail doctrine because that compounds the problem and means that even uninsured depositors are not shopping around for a safe bank, so nobody is monitoring banks for prudent behavior. So, some way of ending that needs to be found immediately.

Thank you.

[The prepared statement of Dr. White can be found on page 54 of the appendix.]

Chairman PAUL. Thank you.

I now yield myself 5 minutes for questioning.

I am going to direct this question to Dr. Salerno, but, the rest of the panel, feel free to also answer it.

I wanted to talk a little bit about how, under today's circumstances when we have the Fed doing what they are doing and we are concerned about fractional reserve banking, we know the Fed had an effect on interest rates and an inflationary impact, certainly on the monetary as well as price inflation.

But is there any way to just roughly maybe separate the two: How much of an impact does fractional reserve banking have on interest rates, and how much does it have an impact on actually the inflationary impact which ends up with prices going up? Is this a major contributing factor or not too relevant because the Fed is to be blamed for everything? Can you put that into a proper perspective?

Mr. SALERNO. Yes.

On a free market, as I said, I don't think fractional reserve banking would be too problematic. It would eventually, I think, wither away. I disagree with Larry on that.

But when there is the Fed, a lender of last resort, somebody who can print up reserves out of thin air, there is really a symbiotic relationship between the two. The Fed needs fractional reserve banking, and fractional reserve banking needs the Fed.

So when fractional reserve banking, which I believe is inherently stable, gets into trouble, as when Washington Mutual failed overnight, you then have the Fed intervening, of the too-big-to-fail doctrine. And it is the very fragility of fractional reserve banking that caused the Fed, then, to engage in Quantitative Easing 1 and 2.

Without fractional reserve banking, we would not have had these unconventional ways of injecting money into the system. So I think, yes, fractional reserve banking does contribute a great deal to the problem.

Chairman PAUL. But does it affect the interest rates per se?

Mr. SALERNO. Yes, actually, if the government just printed money and issued it, it wouldn't affect interest rates. If the government just printed up money and spent it, it wouldn't affect interest rates. It needs to have fractional reserve banking in order to put down pressure on interest rates and, therefore, cause bubbles and recessions.

Chairman PAUL. Do either of the others have a comment?

Mr. WHITE. Yes, I think the Fed, even in a world without fractional reserve demand deposits, could affect interest rates by going out and buying a huge quantity of government bonds. That kind of open market operation will push up the price of bonds, and push down the yields on bonds. So it is true that fractional reserve banking gives the Fed, in a sense, more leverage.

When it comes to the price level, if the Fed expands the money supply by 10 percent, quantity theory of money tells us—at least, it is an approximation for the long run—the price level will rise 10 percent. And that is true whether you have 100 percent reserve banking or fractional reserve banking.

So the Fed can raise the price level by a given percentage by expanding its own liabilities by that percentage, and whether the commercial banks get involved or not is not really important to that process. The new money comes from the central bank, and it has that power over the price level with or without fractional reserve banking.

Chairman PAUL. Dr. Cochran, I think we can assume that with the system that we have and with the moral hazard of the guarantees insurance and the Fed being the lender of last resort, there are less runs on the bank than we had without those guarantees.

But does that, in itself—if we don't see the runs, where things have to change and go back to a more normal system, does this then encourage the building up of more debt?

Would this be the reason why the world is engulfed with debt? Because most people now do recognize that the world is facing a debt crisis. People understand it when they look at Greece and these other countries, but look at ourselves, too.

But do you think the fact that there aren't these corrections, we don't have old-fashioned runs on the bank, that we end up with a bigger problem which may be down the road, it takes a little longer to develop, but we end up with this huge debt crisis?

Mr. COCHRAN. That is a tough question to answer in the context of that, but I think, as Joe alluded and Larry has alluded, with the guarantees that we have, we essentially have weakened—one of the control sides—prudence on the side is essentially the lender of funds—and people depositing funds into a bank are lenders, okay—had more restraint on deciding at least who and when and how they lended money when they knew the funds were at risk.

So with some of these restraints that have been taken away, that we have less people paying attention to the safety and soundness of the types of instruments they have invested in, and then with the central banking that can create credit, that once you set an interest rate target, in many ways there is incentive for a bank, even if they don't have the funds currently available, to extend a loan, create the deposit, and then go out and either borrow the reserves in the Federal funds market, and as they borrow in the Federal

funds market—and that would put upward pressure on the Federal funds rate—then the Federal Reserve has an incentive to go in and create the reserves to sustain the overextension of credit.

So, yes, I think there is an interaction between the fractional reserve banking, these restraints, or the lack of, essentially, risk on the downside to the depositors from the apparent safety, that has helped us overleverage.

Chairman PAUL. Thank you.

I now want to yield 5 minutes to the gentleman from North Carolina, Mr. Jones.

Mr. JONES. Mr. Chairman, thank you very much.

As I sit here and listen, I really appreciate you sharing your intellectual abilities and helping us better understand the pros and cons of fractional reserve banking. And it leads me to a number of thoughts.

First of all, a week or so ago, we had Jamie Dimon up here trying to explain how he lost $2 billion in investments. And then, you read in the paper today that it wasn't $2 billion, it was $9 billion.

And I listen to your feelings about fractional banking and whether this is a sound policy or not a sound policy and how it plays in. And I think—I am from eastern North Carolina, and I think I listen very carefully to the people I represent, their concerns about our monetary systems and is it strong, is it challenged, is it weak. And it leads me to a very simple point that I would like your response to.

When the banks failed in the 1930s, the Congress passed what they believed was legislation to create some confidence and some soundness in banking known as the Glass-Steagall Act. I have said many times that in the 18 years I have been in Congress, the two worst votes I ever made were the Iraq war and the repeal of Glass-Steagall.

When I look at all these boutique-type investments that the banks have access to, from the selling of credit defaults, from all these different systems, and fractional banking, how do you get back to some soundness? Because it looks like to me that what we are doing is gambling on Wall Street. And I am talking about the banks as well as the investment banks.

How do we get back? Chairman Paul—I hate to think that he is leaving Congress because I think he has been such an expert, whether you agree with all of his positions on the monetary system. But I think we have allowed a system that is not sound at all. In fact, I think the system is becoming more and more fragile as we continue to move forward.

Do we need to go back to something like Glass-Steagall? Do we need to say to the banks that you have to start banking instead of gambling? Where are we in this process?

I would like all three of you to respond, please.

Mr. SALERNO. I agree with you that repealing Glass-Steagall was ill-considered. It wasn't really deregulation. It only deregulated the banks' assets side. It allowed S&Ls to suddenly begin speculating, not just loaning mortgages but making risky loans in the oil industry and so on. So I agree with you there.

What I suggest is not to put back in place Glass-Steagall but to deregulate the liability side, okay? That is, the ability of banks—

bailing out banks and the deposit insurance was what allowed banks to become irresponsible when you got rid of Glass-Steagall.

So I would have kept Glass-Steagall in place, and when Congress was ready to repeal deposit insurance and when the too-big-to-fail doctrine was gotten rid of, then I think banks would become much more careful. They would operate more like money market mutual funds, which don't go bankrupt, which don't have any problems, which have adjusted to market forces.

Mr. WHITE. Yes, I think that the Act passed in the 1930s that has weakened our banking system more than any other is not the Glass-Steagall Act, and certainly not the repeal of the Glass-Steagall Act, but the FDIC Act.

And when deposit insurance was very closely limited, small amounts and banks, as Dr. Salerno alluded, couldn't gamble with the money, then deposit insurance didn't generate a lot of moral hazard. But now, sort of, everything goes.

And the big problem with the repeal of Glass-Steagall is that it has extended the subsidy of deposit insurance to risk-taking to very creative risk-takers. And so what we need to do to get the genie back in the bottle is to find ways to limit the access of risk-takers to insured deposits. If they want to gamble with their own money, that is fine with me. I don't want to put any restrictions on hedge funds, for example. They are not involved in the payment system. They haven't been considered too-big-to-fail so far; let's hope that continues.

But investment banks sort of fell into this gray area, where traditionally they were not considered part of the Fed's purview even, but 5 years ago, the Fed decided that it needed to jump in and save Bear Stearns from its own foolishness. I think that was a real mistake, and it has led to and encouraged a trend that was already under way toward overleveraging.

So it is not that all leveraging is bad, but, clearly, we have gone too far. We have encouraged banks to go too far, and we need to take away those encouragements.

Chairman PAUL. I thank the gentleman.

Now, I recognize the gentleman from Missouri, Mr. Luetkemeyer.

Mr. LUETKEMEYER. Thank you, Mr. Chairman.

Mr. White, you have been doing most of the discussing here with regards to deposit insurance. And I have just kind of an observation first, and then we will get to a question.

In 2008, in my district, there were a number of runs on banks. And people would go in and they would take out $10,000, $20,000 worth of cash, but they also would take their money that was above the $100,000 deposit insurance level and move that to another bank. And that is a run of sorts, in that it is taking money out of banks and shifting it around, although it didn't go into their pocket or in a tin can in the backyard.

But because of the insurance that was in place, it did put a floor under some of this activity and did show that the consumer had a trust level to that much, at least. And I guess it was a trust in the government, with FDIC insurance backing it up.

So I guess my question is, I understand where you are coming from, but I think if you open it up, make it the wild, wild west with

regards to investments out here and it is up to the individual to do his own research, it is going to get kind of hairy.

I know right now—in the past, banks have always had to publish a quarterly financial statement, and everybody could see what their—and it has to be disclosed in the public area so people could see the solvency of the bank. But how many of the average consumers in this room today can read a financial statement or understand it? It is pretty complicated stuff.

So I am questioning, if we are going to continue with fractional reserve banking, I think deposit insurance certainly is a part of that.

And I have a follow-up question when you get done with that.

Mr. WHITE. I think you are right that it would be hairy if we eliminated deposit insurance tomorrow without any preparation, because banks have adopted positions, they have taken risks, they have put themselves in illiquid positions knowing that deposit—or, expecting that deposit insurance will be there tomorrow. So it would take some preparation to even phase it back a little bit, even to introduce coinsurance or—

Mr. LUETKEMEYER. I would assume that if you want to get rid of deposit insurance, you would want to raise capital requirements. Is that one of the ways you want to go?

Mr. WHITE. I would encourage banks to hold more capital. I am not sure I would do it in the form of a requirement.

But if we look over the broad sweep of banking history, we find very solid banking systems that didn't have deposit insurance, where the banks held adequate capital because it was in their interest to do so. So that is sort of the goal I have in mind.

Now, getting to that kind of system, we kind of have a bomb in front of us and we have to snip the wires in the right order. I appreciate that.

Mr. LUETKEMEYER. It is kind of interesting because I was in a discussion this morning with one of the higher-level folks in the Treasury Department, and they are advising the Europeans to try and implement deposit insurance. So I am just kind of like, you have to be kidding me.

But, anyway, I think you made a point a while ago that I thought was excellent. It kind of spurred a thought here, with regards to the home mortgage problem that we had during the early 2000s. And part of it was access to money, lots of money. But the other part of it was the lending, loosening the lending standards. And I think when the Fed throws money out there, if they would also think about restricting lending standards, I think that is another way to control the access to these funds.

And I think if you see the quality of the new loans being made by the GSEs, you can see that suddenly their balance sheets look pretty good on the loans they have made since this, under new restrictions, going back to the old lending standards, which would seem to me, if we had just done this thing right to begin with, we wouldn't be in this problem.

But I am kind of curious with regards to the 100 percent reserve banking, where you have a bank that takes in all the money and all the deposits and lets it sit there and it is just sort of like a piggyback that goes back and forth, and then we have a separate enti-

ty that is a loaning bank. Where does the loaning bank get its money from?

Mr. WHITE. If it can't lend out demand deposits, checking account dollars, it can still lend out savings account dollars. So money that it takes in with certificates of deposit would still be available for lending. But it could restrict the amount of lending banks could do, and the money that people hold—

Mr. LUETKEMEYER. In other words, you still make a deposit into your savings account or certificate of deposit, and that is the money, then, that is loaned out; it is not the checking account money.

Mr. WHITE. That is right.

Mr. SALERNO. If I might interject, the savings deposits would have to be true savings deposits. That is, they would have to have some sort of 30-day maturity or something like that. Today, they technically do, that you are supposed to give 30 days' notice, but that has been a dead letter since the 1920s.

Mr. LUETKEMEYER. Has there ever been in history a system like this?

Mr. WHITE. I think the closest, the most nearby example is the Canadian banking system. Up until the first world war, there was nationwide branch banking, they had very few restrictions on note issue by banks, on deposit making by banks, and there were no panics in the Canadian banking system. They didn't have a panic of 1907. They didn't have a panic of 1930, 1931, or 1932. No banks failed in Canada during the early years of the Great Depression. It is quite remarkable. And yet, they had no deposit insurance, and there wasn't any movement for deposit insurance.

Mr. LUETKEMEYER. Thank you, Mr. Chairman.

Chairman PAUL. Thank you.

I now recognize the gentleman from Arizona, Mr. Schweikert.

Mr. SCHWEIKERT. Thank you, Mr. Chairman.

And I appreciate you all being here because this is one of those—I know sometimes it feels a little esoteric.

But I want to go a little bit to the side and sort of make sure I have my head around part of the global side of where you see the problem. Is it the expansion of liquidity that the design now creates? Is that the simple way to phrase it?

Mr. WHITE. Yes, that loose monetary policy has been a big problem over the last—

Mr. SCHWEIKERT. And that becomes dollars that go in and create bubbles?

Mr. WHITE. That is right.

Mr. SCHWEIKERT. Can we play, sort of, game theory for a moment? Do credit card issuers in some ways, with the way they are chartered and issue credit expansion, do they add to that same sort of liquidity out there?

Mr. SALERNO. I would say "no." A classic credit card, that money is basically an instant loan, so that the money that is lent to—or, actually, paid to the retailer that you purchased from, that money comes from a loan. It doesn't have to come from a fractional reserve bank.

Mr. SCHWEIKERT. Is there an agreement that organizations organized off of that type of credit—how about a store credit or auto-

mobile credit or even a credit line attached to your house? Does that create that same type of multiplier effect of the expansion of money supply?

Mr. SALERNO. A legitimate loan, where someone gives up the amount of money, let's say, an equity loan for 5 years, they don't have the money to spend, and you do have the money to spend. That has no effect on prices and that has no effect on interest rates, so it does not cause bubbles and financial crises and so on. But because everything is so tied up with fractional reserve banking, it ramified into almost all of these loans.

Mr. WHITE. Credit cards are not money. In some circumstances, they are a substitute for spending money. But if the total supply of credit is determined, then it is a matter of what kind of credit is being issued.

Mr. SCHWEIKERT. So if it is on the back end, is saying, look, there is a certain amount of total credit that is able to be offered, and we as the institution have to have that properly capitalized over there.

Mr. WHITE. Right. Yes. But money is an asset to the holder, and having an unused credit card line is not an asset.

Mr. SCHWEIKERT. So, other than, sort of, the ratios of deposit to how much can be lent out, do you see any other types of financial instruments or activity in the American marketplace that also creates that sort of expansion of cash that is out there chasing assets?

Mr. WHITE. Not in a big way—traveler's checks, a tiny bit, not very big.

Mr. SCHWEIKERT. Traveler's checks. So it is basically the Fed, fractional reserve banking, and then maybe a couple of other externalities out there, issuers of certain lines of credit that do it with very little—sort of a hope-and-pay type of system.

Mr. SALERNO. Right now, it is the Fed. It is the Fed pumping liquidity into the system in order to prop up these fractional reserve banks that have extended loans that have gone bad in a massive way. So I think that was what Dr. Paul referred to as the, sort of, complementarity between the Fed and fractional reserve banking.

Mr. SCHWEIKERT. Okay. And this actually sort of ties back into what our chairman has touched on many times before. Let's say we are all sitting here 3 years from now and the Fed is still buying a massive portion of U.S. sovereign debt, we see a credit expansion. What does our world look like 3 years from now? Are we in a massive debasing of the currency? Are we seeing a huge inflationary cycle? Each of you, I would love your prediction of what our world looks likes 36 months from now if we continued on this path.

Mr. SALERNO. If we continue on this path and the banks finally begin to lend money out—because they are sitting on a lot of this liquidity that has been injected into the system by the Fed. They have over a trillion dollars of excess reserves. If that is lent out, then we begin to see—I think what we are going to see is, first, a very rapid depreciation of the exchange rate.

And with the overhang of foreign ownership of U.S. sovereign debt, what we are going to see happening is the dumping of that debt, further exchange rate depreciation, which is going to feed on itself, push import prices in the United States through the roof,

and, also, interest rates are going to rise tremendously as people just unload U.S. debt.

Mr. SCHWEIKERT. Okay.

Mr. SALERNO. I see that happening.

Mr. COCHRAN. I would tend to echo that, that my biggest fear is not really a total collapse in the currency but really, a return to the economic stagnation and inflation that was a real problem in the mid-1970s through the early 1980s, and I think is overlooked in this current crisis, where people have jumped back and tried to compare this to the 1930s, and our biggest threat is getting back to a period with significantly high interest rates, with inflation premiums, and double-digit inflation and threatening double-digit unemployment.

Mr. SCHWEIKERT. With your patience, Mr. Chairman, may I have Mr. Wright answer?

Mr. WHITE. Yes, I have the same concern about inflation. I don't know at what rate, but we learned in the 1970s, I thought, that you can have rising inflation even while unemployment is high. The fact that there is slack capacity in the economy doesn't mean that prices can't start to be bid up for the goods and services that people are buying and selling.

Now, of course, the Fed assures us that it will start to pay attention to inflation if it rears its ugly head, but there is a lag in recognizing what the problem is and there is a lag in turning that ship around. So I worry that inflation will rise substantially, maybe between 5 and 10 percent, before they can do anything about it.

Mr. SCHWEIKERT. Within that scenario, do you also see, literally, if you are debasing the currency in that, almost a currency war between sovereigns?

Mr. SALERNO. I think we are in a currency war. I think the United States has been waging a currency war from the 1960s—that is, devaluing its currency in order to help prop up so-called aggregate demand or total spending in the economy to continuously get us out of recessions and so on.

Mr. SCHWEIKERT. All right. Thank you.

And thank you for your patience, Mr. Chairman.

Chairman PAUL. Thank you.

I believe we will have time to go on with a second round of questioning. So I will yield myself 5 minutes.

Suggesting that we could move into something like in the 1970s with low growth and prices going up, history also shows that you can get inflationary depressions, too. The depression actually gets worse, and then you also have a destruction of the currency. And let's hope we can prevent that from happening.

But I wanted to ask the panel, and I will start with Dr. Salerno, about some of the challenges we get, those of us who believe in commodity money or even the gold standard, that they always throw the 19th Century up to us, and they say that the gold standard was a total failure because we had bank runs; that is why we had to have the Fed, and that is why we had to have this system.

But, Murray Rothbard wrote about the booms and the busts in the 19th Century, and he didn't blame the gold standard like they did in the 1930s. They said that the gold standard was at fault. But he talked about the pyramiding of debt and the deposits.

Would that be saying that there is some blame for fractional reserve banking for contributing to those crises that we had in the 19th Century, and it was that rather than the gold standard that caused those problems?

Mr. SALERNO. Yes, I think that is right, that fractional reserve banking was really to blame for most of those panics and depressions. Particularly after the Civil War, when we had the national banking system, you had this pyramiding not only on gold, but—Wall Street banks pyramided on gold. Gold was concentrated on Wall Street. That was one of the points of the legislation. And then the country banks pyramided not on gold, they didn't hold gold, they held Wall Street bank notes and deposits as their reserves.

So we had this huge, unstable, upside-down pyramid which was ready to topple over at the slightest problem or small—or large default on some loan. And that is exactly what the cause was, not the commodity money standard itself.

Chairman PAUL. Now, if we were back in the 19th Century, what would have been the tool for preventing those bubbles from forming? Would there have been a government role in trying to prevent what you just described?

Mr. SALERNO. Yes, get rid of all of the policies that caused the pyramiding. Let the banks each stand on their own bottom. If they want to have fractional reserve banking, let them hold their own reserves. If they can get a loan from another bank, they may be able to go on for a little while. But that would prevent it.

Chairman PAUL. Do you care to make a comment, Dr. Cochran?

Mr. COCHRAN. Yes. Some of the panics and problems with the banking system at that time were not a result of banks holding commodity reserves and making loans on that, but were actually restrictions put on their note issue that they first had to buy State government debt or, with some of the national banking, Federal Government debt. And it was the government debt that was supposedly backing their note issue, not the commodity reserves.

So there was some very, very strange symbiosis between governments using the banking system to help their fiscal situation that were much more responsible for some of the panics and the financial crisis, particularly the myth of the wildcat banks.

Chairman PAUL. Dr. White?

Mr. WHITE. Yes, I would disagree with Dr. Salerno a little bit on this. I think fractional reserve banking was a necessary condition for bank runs and panics, but it is not a sufficient condition. And if you look around the world, as I said before, you find other countries that had sound fractional reserve banking systems where the banks were not artificially hamstrung; they were well-diversified, and they did manage their own reserves, as Dr. Salerno said. They didn't have inter-regional banks' deposits of reserves, like country banks into city banks and city banks into New York, because banks were allowed to open their own offices in the financial capital. So they didn't have to put their money in the hands of another bank and then create that instability. But under the national banking system, the reserve requirements were structured in such a way that it encouraged this kind of interbank depositing.

But if you look at Canada, if you look at Scotland—which is my favorite example—if you look at Switzerland, if you look at Sweden,

you see systems where banks were on their own two feet, they had the penalty of failure in front of them if they failed to keep enough reserves or to invest prudently, and the banking systems were competitive and they were solvent, they were solid. So that is how I would draw the lesson.

Chairman PAUL. Okay. Thank you.

I now yield to Mr. Jones from North Carolina.

Mr. JONES. Mr. Chairman, thank you.

And I couldn't help but think—in some of your answers, several of you have mentioned other countries and their systems seem to be relatively sound. And I couldn't help but think that is because they probably have a different system of raising money for campaigns. This country—I don't think we could ever do what is right for the banking system or some other systems as long as we have lobbyists. Both parties raise money—and I am guilty of that too, by the way—and they have influence.

When people like yourself, for whom I have great respect—you are professionals, you are intellectuals, this is your area of expertise so to speak, you probably could help us write a really good bill that maybe would make some meaningful changes and make the system a little bit more sound. And yet you, other than hearings like this and other committees, you probably—that is the limit.

And I guess my point is that, I don't know how we are going to ever get the system sound again as long as the paid lobbyists come down here and tell us they like this page of the bill, and they don't like that page of the bill, so you need to change that.

Do you have any thoughts? I really have taken you way off field, so to speak, but do you have any thoughts about a system like ours, which really doesn't encourage the honesty and integrity to change things for the good of the system but also the good of the people? I will end at that and let you take a shot at it.

Mr. SALERNO. I work in New York. I work at a university in New York City a few blocks away from "Occupy Wall Street." And I think that things will only change, especially in the banking sector, when we have a grassroots movement that shares some of these opinions, that is like "Occupy Wall Street," in that it spreads throughout the constituencies of the United States.

I think that is one of the things that we should be working to do. And I think Congressmen who think—like yourself and Dr. Paul—that things should be changed should encourage these movements to the extent that you can.

Mr. COCHRAN. And the concern is not just limited to banking. I think Adam Smith, as far back as 1776, which I think also is a significant date for this country, really phrased it that, for the economy to operate properly, there needs to be an elimination of all systems of privileges and restraints. And the lobbying comes in both as necessary because of the unnecessary restraints we put on market participants, but also them recognizing that the system that restrains them also can be the system that grants special privileges and monopolies in the true sense, which is a government-protected privilege to offer goods and services to the public.

Mr. WHITE. In the 19th Century, we had a weak banking system because the small banks had the very powerful lobby, and they lobbied for restrictions on their competitors so that they could stay in

business. Today, in the 21st Century, it is very different. The main problem of weakness is caused by privileges, and the privileges are being lobbied for by the largest banks. And the weakest banks are no longer the smallest banks; the weakest banks are now the largest banks. And they are the most dependent on these privileges, so they are the ones who are going to be lobbying the most to keep these privileges intact.

And I don't know how to solve that problem, but it has long been a problem that when there—in any area of the economy, if there are privileges and restrictions at stake, there are going to be people who are trying to shape legislation around those things. So there has to be some kind of greater attitude toward letting the banking system operate without privileges and without restrictions.

Mr. SALERNO. Can I just add to that very quickly?

Murray Rothbard, the economist, once said that the way you get true change is to have statesmen and educators who really are interested in the public good reach around the privileged elites and get their message out to the public.

Mr. JONES. I think that maybe the *Citizens United* decision might bring some sanity to the system. It won't happen in my lifetime, but maybe in our children or grandchildren's lifetime, that maybe this would be a system that goes back to being the people's representatives instead of the lobbyist's representatives. And I think it will happen in time. I hope to live long enough, maybe in a retirement home, to see it happen, but I would love to see that happen.

But thank you for your comments.

Chairman PAUL. I thank the gentleman.

Now, I yield to the gentleman from Missouri, Mr. Luetkemeyer.

Mr. LUETKEMEYER. Thank you, Mr. Chairman.

Interesting conversation. I was struck with some of the comments by the gentleman from North Carolina. And it kind of got me thinking about, if we make you king for the day, President for the day, Congressman for the day, whatever, how would you solve our situation now with the weakness that we have in our system? What changes do you think we need to be implementing or working for to get our system back to where it is on solid ground and make it all work? How would you ease it into a more workable solution?

Each one of you?

Mr. SALERNO. I think the first step is to get rid of the too-big-to-fail doctrine wholesale and forthwith. Do it right now. And then phase out—I probably would phase out more quickly than Larry—the FDIC insurance, within the year or something like that, within a year from the date that you get rid of the too-big-to-fail doctrine.

Mr. LUETKEMEYER. So, in other words—

Mr. SALERNO. I think those are the first important steps.

Mr. LUETKEMEYER. So, in other words, what you would suggest is to put the onus back on the banking system for their own—the responsibility for their own decisions. Their own risk has been taken by themselves, not the taxpayer or the FDIC insurance folks and nobody else.

Mr. SALERNO. Right.

Mr. LUETKEMEYER. Okay.

Mr. SALERNO. Because at bottom, all they are, are business firms. They are not special. They should not be special. They should not be privileged. They should operate on the market, bear the burdens of the risks they assume—not only them, but any depositors who want to put money into a fractional reserve bank. They must realize what the consequences can be.

Mr. LUETKEMEYER. It is interesting, I made the comment the other day in committee that I think for the first time in several years here, people are actually now finding out what banks do. They don't just sit there and take deposits and make loans. They manage risk. That is what they do every day. And, as a result, I think the consumers and the citizens of our country are finally figuring out that, whoa, this is a risky business, and there is some responsibility on somebody's part here to manage that risk. And it is determining who takes the risk, who manages it, that is our dilemma here right now of what is going on.

Dr. Cochran?

Mr. COCHRAN. Yes, I would echo Dr. Salerno's comments that the too-big-to-fail doctrine has to go first and, really, with it, the mentality that bailouts are going to come in across the economy, whether it is banking or others, and protect people from the risk they undertook.

Back to the deposit insurance, when it appeared that some of the money market funds were going to break the buck, we came in and de facto offered insurance for the deposit on the money market funds, which just again reinforces the deal.

And then probably on the monetary side, I would look at eliminating all the restrictions right now that make it difficult for anybody to come in and compete with the system. I think recently, we just had someone arrested for coining gold that could or could not have been used as a medium of exchange in competition. So that we really don't allow people who would even want to choose to contract in something payable other than in Federal Reserve Notes to write a contract that would be enforceable for payment in ounces of gold or other mediums of exchange.

Mr. LUETKEMEYER. Dr. White?

Mr. WHITE. In addition to the points that have already been made, I would say that the Federal Reserve needs to be constrained so that it doesn't create such an unstable environment and so that it doesn't issue what became known as the "Greenspan Put," which was the, sort of, open suggestion that if the stock market starts to go down, we will pump in enough money to keep everybody afloat. That sort of thing leads to a relaxation of prudential standards, and I think that has been a big problem in the banking system.

Now, under this kind of caveat emptor system that we are suggesting, it is true that people will have to shop around for a bank and people will have to reeducate themselves as to how do that. But people nowadays shop around for a mutual fund. They don't understand exactly how mutual funds operate. They get a prospectus, and they don't really know what to make of it. But they do know who does know, right? They can read Money magazine, they can read investment newsletters, and they can seek out the

advice of experts. And people can exercise at least that much prudence when they choose a bank.

Mr. LUETKEMEYER. Very good.

Thank you, Mr. Chairman. I yield back the balance of my time.

Chairman PAUL. I thank the gentleman.

I now recognize Mr. Schweikert from Arizona.

Mr. SCHWEIKERT. Thank you, Mr. Chairman.

Back to our happy part of the discussion, which is how the world comes to an end, looking back to the discussion of, whether it be 3 years or 5 years, whatever the timeframe is, we seem to all have a universal agreement here that with the massive amount amounts of liquidity that are out in the system, we see inflation, we may see a runaway type of inflation.

Okay, each of you just became Federal Reserve Chairman. Congratulations. How would you—actually, I will nominate you. In all sincerity, how would you guide the ship of monetary policy? How would you pull that excessive liquidity out of the system? What proposals would you make to avoid that ugly scenario?

Let's start with Dr. White.

Mr. WHITE. Okay. The same way it went in, it can come out. That is, the Fed can sell off its mortgage-backed securities, and the Fed can sell its Treasury bills back into the market.

Now, at the same time, the Fed can reduce the incentive of banks not to lend by scaling back the interest they pay on reserves. Banks are sitting on more than a trillion dollars in excess reserves, in large part because the interest rate the Fed is paying on those reserves is about the same as the interest rate the banks can earn on T-bills.

Mr. SCHWEIKERT. Would you also, in that same scenario, raise reserve requirements at chartered lenders?

Mr. WHITE. Reserve requirements aren't really relevant these days. They are pretty much not binding. Most banks have more cash in their ATMs than they are required to hold.

Mr. SCHWEIKERT. Okay.

Mr. WHITE. Total required reserves in the system are something like $80 billion, and banks have more than a trillion dollars in reserves. So reserve requirements are not really going to do the job.

Mr. SCHWEIKERT. Doctor?

Mr. COCHRAN. Yes. And one of the things I would echo is that you can pull out these excess reserves the way they got in by basically, where you purchased, now sell them. One of the dangers going in is that, as they have changed their balance sheet from short-term securities to longer-term securities, that the value of those securities, the mortgage-backed and others, are much more susceptible to decline in value to rising interest rates.

I do think that, given the amount of excess reserves that are in the system, that a possible way to avoid this, besides reducing—as you reduce the interest that they are paying on these excess reserves, that it is possible that a consideration of a significant increase in the required reserve ratio could be an effective tool as you take more time to pull and sell off some of these assets.

Mr. SCHWEIKERT. Okay.

Mr. SALERNO. And once this was reversed, once the excess reserves were sucked out of the system, I would then, if I were the

Federal Reserve Chair, just stop open market operations at that point, stop printing up reserves and purchasing government securities. And then, that would stop the next influx of liquidity into the system that would get the whole thing started again.

Mr. SCHWEIKERT. Okay. You are more optimistic than I am, I guess mechanically so.

But one of you doesn't think raising the reserve requirements would be effective, just because of how much margin there is there? And you actually believe that would be one of the tools?

Mr. COCHRAN. I think it should be a consideration. It would not be a first tool, but it could be a tool that could allow more of a phased sale of the securities without allowing the reserves to start flooding excess lending into the system.

Mr. SCHWEIKERT. Okay.

And, Dr. White, you looked anxious there.

Mr. WHITE. Well, it is possible to make reserve requirements binding if you are really determined to do so. But, banks have gotten very good with computers at sweeping the reservable deposits off the books at the end of the day, and that makes it very hard to enforce reserve requirements.

Mr. SCHWEIKERT. Okay.

Mr. Chairman, thank you.

Chairman PAUL. I thank the gentleman.

And I want to thank our witnesses for appearing today. As I said at the opening, I believe these are very important hearings, and I very much appreciate you being here.

The Chair notes that some Members may have additional questions for this panel, which they may wish to submit in writing. Without objection, the hearing record will remain open for 30 days for Members to submit written questions to these witnesses and to place their responses in the record.

This hearing is now adjourned.

[Whereupon, at 3:42 p.m., the hearing was adjourned.]

A P P E N D I X

June 28, 2012

United States House of Representatives
Committee on Financial Services
Subcommittee on Domestic Monetary Policy and Technology
Hearing on "Fractional Reserve Banking and the Federal Reserve: The Economic Consequences of High-Powered Money"
June 28, 2012

Congressman Ron Paul
Statement for the Record

During a time of economic crisis, when the topic of stability of the banking and financial sector is at the forefront of most people's minds, it is ironic that the most important factor in the development of the modern banking system is precisely the one topic which is almost never mentioned. The elephant in the room is, of course, fractional reserve banking. In a speech in October 2010, Mervyn King, Governor of the Bank of England, referred to fractional reserve banking as "financial alchemy", an analogy which is particularly apt. Just as alchemists attempted to turn worthless lead into something thousands of times more valuable, modern-day financial alchemists attempt to turn a limited number of bank deposits into an unlimited amount of money and credit. But while the alchemists were never successful in their endeavors, financial alchemists have been all too successful at creating money and credit out of thin air, sowing the seeds for the destructive booms and busts of the business cycle.

Fractional reserve banking is the practice by which banks accept deposits but only keep a fraction of those deposits on hand at any time. In practice, nearly 100% of deposits are loaned out, yet depositors believe that they can withdraw the full amount of their deposit at any time. Loaned funds are then redeposited and reloaned up to the limit of the bank's reserve requirements, compounding the effect. While mainstream economists extol this "money multiplier" as a nearly miraculous process that results in a robust economy, low reserve requirements actually enable banks to create trillions of dollars of credit out of thin air, a process that distorts the structure of production and gives rise to the business cycle.

Imagine that A deposits $100 in a bank. The bank keeps 10% on reserve and loans $90 to B. B deposits that same $90, the bank keeps 10% on reserve, loans the remainder to A, and the cycle continues on and on. Eventually the bank has a combined deposit total of $1000. Theoretically there is now $1000 that can be spent. Yet while the amount of money and credit in the system has increased, the amount of real savings and real production has not changed.

Everyone understands the absurdity of this little example, but once this same process is

expanded throughout the economy, the means by which that $100 deposit turns into $1000 of credit is treated almost as magic. The fact that ten times as much money is chasing the same amount of goods, that the new credit benefits earlier recipients more than later recipients, and that distortion to the capital structure then ensues, are all completely ignored.

Once the boom phase of the business cycle has run its course and the bust commences, some people will naturally look to hold cash. So they withdraw money from their bank accounts in order to hold physical currency. But bank deposits consist of a huge amount of credit pyramided on top of a small of amount of original cash deposits. Each dollar of cash that is withdrawn unwinds the multiplier, resulting in a contraction in credit. And if depositors attempt to withdraw more funds than are available in reserves, the entire of house of cards comes crashing down. This is the very real threat facing some European banks today.

Since the amount of deposits always exceeds the amount of reserves, it is obvious that fractional reserve banks cannot possibly pay all of their depositors on demand as they promise – thus making these banks functionally insolvent. While the likelihood of all depositors pulling their money out at once is relatively rare, bank runs periodically do occur. The only reason banks are able to survive such occurrences is because of the government subsidy known as deposit insurance, which was intended to backstop the stability of the banking system and prevent bank runs. While deposit insurance arguably has succeeded in reducing the number and severity of bank runs, deposit insurance is still an explicit bailout guarantee. It thereby creates a moral hazard by encouraging bank deposits into fundamentally unsound financial institutions and contributes to instability in the financial system.

Rather than enhancing stability, deposit insurance creates instability by rewarding risky behavior on the part of banks. Why engage in sound banking and lending practices if the government promises always to bail out your bank and its depositors? Deposits legally are considered loans to the bank, but depositors are promised by the government that they never will lose a penny of their deposits. Therefore depositors need not perform due diligence when selecting a bank with which to do business. Whether the bank is sound or unsound is immaterial, since deposits are guaranteed by the government. Thus risky banks which would be forced out of business in a free market are guaranteed access to funds with which they engage in their financial alchemy.

Throughout much of banking history, bankers and politicians have colluded to their mutual benefit. Bankers fund government wars in exchange for special protections from the government. In the 19th century, U.S. banks were required to purchase government bonds in order to back their issues of banknotes, thus ensuring funding for government boondoggles. And when too many banknotes were issued and depositors sought to exchange them for gold and silver coin, governments suspended specie redemption, allowing banks to keep their gold and silver and refuse redemption of

their notes. Ultimately taxpayers and savers were the victims of this unholy alliance.

Unfortunately, not much has changed since then. Banks continue to loan money to the government through purchases of Treasury debt, enabling wars of aggression abroad and a massive police and welfare state at home. And when banks make mistakes they are never forced to take losses or go out of business. Smaller banks are merged by federal regulators into larger banks, while banks that are deemed to be "too big to fail" are given billions of dollars worth of bailouts so that they can live to fail another day.

The solution to the problem of financial instability is to establish a truly free-market banking system. Banks will no longer require government charters in order to operate. They will no longer be forced to comply with arbitrary government reserve regulations that treat money loaned to the government as an asset worth more than gold in the vault. And most importantly, banks will no longer have a government backstop of any sort in the event of failure. Banks, like every other business, should have to face the spectre of market regulation. Those banks which engage in sound business practices, keep adequate reserves on hand, and gain the confidence of their customers will survive, while others fall by the wayside. Banking, like any other financial activity, is not without risk – and the government should not continue its vain and futile pursuit of trying to eliminate risk. Get government out of the way and allow the market to function. This will result in a more stable system that meets the needs of consumers, borrowers, and investors.

Testimony before the

Subcommittee on Domestic Monetary Policy and Technology

Committee on Financial Services

U. S. House of Representatives

"Fractional Reserve Banking and Central Banking as Sources of Economic Instability: The Sound Money Alternative"

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June 28, 2012

Introduction

Fractional reserve banking has historically been viewed by some economists and most monetary cranks as a panacea for the economy—a source of easy credit and new purchasing power to quicken trade. Better economists, however, recognized fractional reserve banking with its ability to create credit, Mises's (1971, 268-69) circulation credit or Rothbard's (1994) deposit banking, as a major source of financial and economic instability. The establishment of a central bank was often, *when not driven by fiscal priorities of government*, an attempt to achieve the first while mitigating or eliminating the second. For the United States, in particular, the effort was perhaps misguided. Per Vera Smith (1990 [1936], 166):

> A retrospective consideration of the background and circumstances of the foundations of the Federal Reserve System would seem to suggest that many, perhaps most, of the defects of American banking could, in principle, have been more naturally remedied otherwise than by the establishment of a central bank; that it was not the absence of a central bank *per se* that was at the root of the evil, … there remained [even with a central bank] certain fundamental defects which could not be entirely, or in any great measure, overcome by the Federal Reserve System.

Rothbard (2002) covers the history of money and banking in the U. S. and amply documents periods of instability generated by banking panics associated with fractional reserve banking *sans* an explicit central bank. However, compared to this earlier era, fractional reserve banking supported by 'scientific' management of the currency by a central bank has failed to provide the promised stability. Besides the continuing instability, the Fed has guided a significant (massive) decline in the purchasing power of the dollar. The dollar currently has a purchasing power less than 5% of a 1913 dollar. Selgin, Lastrapes, and White (2010), "Has the Fed Been a Failure?" summarize:

> Drawing on a wide range of recent empirical research, we find the following: (1) The Fed's full history (1914 to present) has been characterized by more rather than fewer symptoms of monetary and macroeconomic instability than the decades leading to the Fed's establishment. (2) While the Fed's performance has undoubtedly improved since World War II, even its postwar performance has not clearly surpassed that of its undoubtedly flawed predecessor, the National Banking system, before World War I. (3) Some proposed alternative arrangements might plausibly do better than the Fed as presently constituted. We conclude that the need for a systematic exploration of alternatives to the established monetary system is as pressing today as it was a century ago.

During a period known as the Great Moderation, roughly 1983-2000, the U. S. economy experienced a period of *apparent* relative stability and prosperity. The U. S. economy was then buffeted by two boom-bust cycles tied directly to credit expansion and low interest rates driven by fractional reserve banking supported by central bank activity (Garrison 2012 and 2009, Salerno 2012, Ravier and Lewin 2012, and Cochran 2011). The most recent recession and slow recovery rivals or exceeds the

instability of 1970s and early 1980s in severity and is arguably the most significant crisis since the 1930s. While much of the discussion following the recent crisis has focused on why the recovery has been so slow, a lesson that should have been learned is that the economic growth driven by money and credit creation is short term only; an artificial boom cannot last. Ultimately credit creation is a major destructive power that misdirects production, falsifies calculation, even in a period of relatively stable prices, and destroys wealth (Salerno 2012, 32-36). An economy with a complex financial system like the present banking system, which in turn depends on a government monopoly of the supply of money, is prone to cycles and crisis even with the best of either discretionary or rule-based management. Under our current system of interest rate targeting "Policy-induced booms tend to piggyback on whatever economic development is underway" (Garrison 2009). This would be true whether the central bank followed a single, rather than the current dual mandate, such as a policy goal of price stability or adopted nominal GDP targeting (Garrison 2012, 435-36). Under fractional reserve banking supported by a central bank the interest rate brake which would normally stop such events before they turn into bubbles or booms is effectively neutered (Hayek, 1941, pp. 406–10). Because of this neutering, booms and busts remain a significant threat in a "learning by doing" policy framework (Garrison 2009).

Without a foundation of sound money, a market determined money, cycles are inevitable and destructive not only of short-term economic well-being, but potentially destructive of long-term freedom and prosperity. It is urgent than that policy makers take seriously Hayek's proposal, developed during the economic crisis of the 1970s, for drastic monetary reform, for a "denationalization of money." This call is echoed by Garrison (2012, 436) who argues future prospects for "achieving long run sustainable growth can only rest on the prospects for decentralizing the business of banking."

Sound Money[1]

After the decline of former socialist countries and under the influence of the apparent prosperity in most market economies during the Great Moderation, most economists recognized the importance of markets and private property for long-term economic prosperity.[2] But markets and private property generate prosperity because only in such an order can monetary calculation facilitate rational economic planning. But for monetary calculation to operate in a way most consistent with consumer sovereignty, calculation and prices must be embedded is a sound monetary system. As expressed by Salerno (2010 [1998], 468):

[1] This section draws on Cochran 2004.

[2] Andrei Shleifer summarized, "Between 1980 and 2005, as the world embraced free market policies, living standards rose sharply, while life expectancy, educational attainment, and democracy improved and absolute poverty declined." From "The Age of Milton Friedman." Journal of Economic Literature: 2009, 47:1, 123-135

> While there is now a basic recognition by economists that rational allocation of resources necessitates institutional reforms that return resources to private hands and restore genuine markets for productive inputs, there is no such comprehension of the importance of sound money to the processes of economic calculation.

Salerno (473) continues "Sound money, then is simply one which does not lead to systematic falsification of or nullification of economic calculation." Economic calculation requires money prices, but for calculation to most adequately achieve the goal of solving the economic problem, the money prices used for calculation must reflect the valuations of producers/consumers that are based on their individually unique preferences, knowledge, and resources.

Sound money then is money whose purchasing power and quantity are determined by consumers' and producers' valuations; preferences, knowledge, and resources—that is, a market-determined commodity money absent government intervention. As expressed by Mises (1998, p. 225),

> Economic calculation does not require monetary stability in the sense in which this term is used by champions of the stabilization movement. The fact that rigidity in the monetary unit's purchasing power is unthinkable and unrealizable does not impair the methods of economic calculation. What economic calculation requires is a monetary system whose functioning is not sabotaged by government interference. The endeavors to expand the quantity of money in circulation either in order to increase the government's capacity to spend or in order to bring about a temporary lowering of the rate of interest disintegrate all currency matters and derange economic calculation.

Financial Intermediation and Fractional Reserve Banking and Cycles[3]

The Austrian business cycle theory (ABCT) is a blend of monetary and capital theory and highlights coordination problems connected to "time and money." In the framework developed by Ludwig von Mises, banks create money by creating credit. This created credit finances investment in excess of savings, distorts the structure of production, and sets the stage for the boom–bust cycle.

But what is created credit and when and how do banks create credit? Different answers to this question yield different implications for business cycle theory, research, and monetary policy, as well as different monetary reform proposals. In ABCT banks and central banking provide the link between capital markets, money, and economic instability.

Fractional reserve banks developed from two separate, apparently legitimate, business activities: banks of deposit or warehouse banking offering transactions services for a fee, and banks of circulation or financial intermediaries. Economists early on recognized that circulation banking, financial intermediation, reduces transactions costs and enhances the efficiency of the capital markets, leading to

[3] The following section draws heavily on Cochran and Call 2000 and 1998 and Cochran, Call, and Glahe 1999.

more savings, investment, and economic growth.[4] Fractional-reserve banking combined these two types of banking institutions into one institution—a single institution offering both transaction services and intermediation services.[5] With the development of a fractional reserve banking system, money creation, either through note issue or deposit expansion, and credit creation became institutionally linked.

In an Austrian analysis of money and credit, injection effects matter. The way money enters the economic system—that is the injection—affects the dynamic adjustment process. The spending of those who are initially affected by the monetary disturbance change before the spending plans of those who receive additional money balances only as the effects of the monetary change spread through the economy. In an economy with a developed banking system, monetary changes most often enter the economy as changes in the availability of credit. This analysis, which is the foundation of Austrian business cycle theory, combines the theoretical proposition that injection effects matter with the empirical observation that these effects take place as the banking system extends credit.

Monetary changes that originate through the banking system alter not just bank credit but total credit available in the economy and thus put downward pressure on interest rates. It is not the change in the rate of interest *per se* that is important, but the change in the rate relative to the natural or equilibrium rate.[6] An equilibrium rate reflects the "ratio of the value assigned to want-satisfaction in the immediate future and the value assigned to want-satisfaction in remoter periods of the future. It manifests itself in the market economy as the discount of future goods as against present goods" (Mises 1998, p. 523). Ordinarily, Mises (1998, p. 534) argues, "The loan market does not determine the rate of interest. It adjusts the rate of interest on loans to the rate of originary interest as manifested in the discount of future goods." Credit creation temporarily suspends this adjustment process. Credit creation alters the money rate of interest relative to the equilibrium rate and disrupts the balance between the "supply and demand" for capital.[7]

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[4] For a counter-argument on term intermediation see Barnett and Block.

[5] Selgin (1988, chap. 2) argues that fractional-reserve banking develops naturally in a free economy as "a result of individuals finding new ways to promote their self-interest." Banks are pure intermediaries (Selgin 1996, p. 120). Other Austrians have argued that fractional-reserve banks are hybrid institutions that could only develop as the result of special privileges granted to banks by government. The activities of these hybrids are not pure intermediation. The critical economic issue is: Is credit issued by a fractional reserve bank financial intermediation or credit creation? See Mises (1971, pp. 268–77) and Cochran and Call (1998, pp. 33–35).

[6] The term "natural rate" is controversial. Following Mises (1971, p. 359 and 1978, pp. 120–30), when I use the term it will be to distinguish between an equilibrium rate and a rate that has been altered by credit manipulation.

[7] While Mises argued that money was neither a consumption good nor a production good (1971, pp. 79–92), he definitely classified 'money' as a present good in his discussions on money and credit (pp. 268–77). See particularly (p. 268), "The claim he has acquired by his deposit is also a present good for him. The depositing of the money in no way means that he has renounced immediate disposal over the utility that it commands" and "(t)he note is a present good just as much as the money" (p. 272).

Mises developed an argument clearly explaining why and how credit creation takes place. Mises (1978, p. 119) cautioned:

> One must be careful not to speak simply of the effects of credit in general on prices, but to specify clearly the effects of "increased credit" or "credit expansion." A sharp distinction must be made between (1) credit which a bank grants by lending its own funds or funds placed at its disposal by depositors, which we call "commodity credit" and (2) that which is granted by the creation of fiduciary media, i.e., notes and deposits not covered by money which we call "circulation credit."

Circulation credit is created credit because "[c]irculation credit is granted out of funds especially created for this purpose by banks. In order to grant a loan, the bank prints banknotes or credits the debtor on deposit account. It is creation of credit out of nothing" (Mises 1978, p. 218). Others in the Austrian tradition who seriously attempted to define credit creation include Machlup and Selgin. Machlup explicitly calls Mises's circulation credit "created credit."

> I use the term transfer credit if the purchasing power accruing to the borrower is counterbalanced by purchasing foregone by somebody else, such as a voluntary saver or a disinvesting producer. My term "transfer credit" corresponds to Mises's "commodity credit." For Mises's term "circulation credit," I have substituted the term "created credit," which clearly conveys the meaning that the purchasing power accruing to the borrower is not counterbalanced by any purchasing foregone by anybody else. (Machlup 1940, p. 224n)

Selgin (1988, p. 66) defines created credit as "credit granted independently of any voluntary abstinence from spending by holders of money balances."

The Misesian model of credit creation sees modern fractional-reserve banks as hybrid institutions. Some transactions by these banks are financial intermediation, and as such enhance the efficiency of the saving and investment process. Other transactions by these same institutions create credit. Mises (1971, p. 261) describes these two distinct roles as "the negotiation of credit through the loan of other people's money and the granting of credit through the issue of fiduciary media, i.e., notes and bank balances that are not covered by money." Transactions in which both a depositor and a borrower retain, temporarily, current claims to money may not be intermediation, but credit creation. According to Mises (1971, 268-69):

> It is usual to reckon the acceptance of a deposit which can be drawn upon at any time by means of notes or checks as a type of credit transaction and juristically this view is, of course, justified; but economically, the case is not one of a credit transaction (p. 268) . . . but this is not a credit transaction, because the essential element, the exchange of present goods for future goods, is absent. (p. 269)

The transaction is different in nature from a true credit transaction. In a true credit transaction the lender temporally surrenders "money or goods, disposal over which is a source of satisfaction and renunciation of which is a source of dissatisfaction" (Mises 1971, p. 264).

In this framework money as the medium of exchange is the present good *par excellence*. Since the holding of cash balances, whether in the form of demand deposits or bank notes, does not require the sacrifice of present goods, changes in cash balances financed from current income are part of the allocation of income to provide present utility. Households can use current income for present goods or future goods. If present goods are preferred, the household may choose specific consumption goods or money balances. Hence, the proper economic interpretation of a demand deposit or bank note is that the deposit or bank note is a bailment or warehouse receipt, not a credit instrument.[8] The depositor has not engaged in a true credit transaction because no sacrifice of present utility has taken place. Fractional-reserve banking combined with the creation of circulating credit expands the supply of credit beyond the limits set by prior saving. Banking institutions can and do push interest rates below the natural rate, resulting in spending by ultimate investors exceeding saving.

Created credit eventually causes an economic crisis. The normal operations of the money and banking institutions supported by a central bank generate business cycles by attempting to keep market rates of interest too low for too long. The recession phase of the business cycle is the economic correction of previous monetary excesses and the resulting malinvestment and overconsumption (Salerno 2012).

Alternative Views of Fractional Reserve Banking

In a Keynesian framework (Cochran and Call 1998), banks are viewed as financial intermediaries and money is considered a future, not a present, good; a store of value. This Keynesian framework is what Selgin (1996, p. 119) has labeled the "new view" of money and banking, where banks "are pure intermediaries: they act as brokers of, rather than creators of, loanable funds, and are not an independent cause of investment in excess of *ex ante* saving." Banks are financial intermediaries that issue a liability that the public willingly uses as a medium of exchange. The problem for such a banking system may not be boom–bust cycles caused by credit creation and malinvestment, but secular stagnation. Such an

[8] See Rothbard (1978, pp. 148–49). If bank deposits are considered a short-term loan from a legal standpoint, then the funds are legally considered the property of the bank, not the property of the depositor. But the legal structure does not change the economic impact of the transaction. If such deposits (or notes) are used as a medium of exchange, they are a readily available source of current purchasing power.

economy would suffer from chronic unemployment as money and banking institutions operated so that the market rate of interest would be too high. Saving would exceed investment.[9]

In this Keynesian view, financial intermediation should facilitate the flow of funds from savers to investors. Bank liabilities that do not serve as a medium of exchange are clearly of this type. The owner of the bank liability has loaned the funds to the bank for future considerations. Such intermediation is usually viewed as efficiency enhancing[10]. Just as in a credit transaction without intermediation, the ultimate lender has a claim on future money and the borrower has acquired present money. In the new view, deposit banking is also intermediation. The saver prefers liquidity to return and decides to invest in money. The depositor loans funds to the bank and receives a bank I.O.U.—a bank deposit payable on demand. The bank now owns additional loanable funds. As reserves are loaned out, funds are transferred from an ultimate lender (the depositor) to an ultimate investor (the borrower).

Banks, for legal or economic reasons, maintain cash reserves to back these short-term liabilities (demand deposits or bank notes). As a result total lending will be less than total saving. A dollar held in a reserve balance is a dollar saved but not loaned to an ultimate investor. The supply of credit will be less than available saving and the market rate of interest will rise above the natural rate. Investment will be less than saving and the economy may remain below its productive capacity. Fractional-reserve banks and other intermediaries provide intermediation services that increase investment relative to a system without banking, but when these institutions hold significant cash reserves, the amount of investment may consistently be less than ideal. In this view, there exists no market process that ensures that saving will equal investment at full employment levels. A "natural" rate of interest may exist, but it is an equilibrium rate only in the sense that it preserves a *status quo*, a status quo that may not be ideal. A central bank is a necessary addition to the banking system. Central banks can provide new money and credit, high-powered money, to offset the general contractionary tendencies due to a fetish for liquidity which is part of the normal operation of financial markets (Garrison 2001, chapters on Keynes and Keynesians).

Selgin (1988 and 1996) offers a "qualified defense of the new view" that can be considered a middle ground between the Misesian and the new view. While fractional-reserve banking is intermediation, banks can still create credit. Credit is created when credit is "granted independently of any

[9] Selgin and White (1996, p. 101) argue that a consistent application of the Wicksellian framework would recognize not only that money creation can lower rates below the natural rate, but that "unanticipated destruction of money (or a drop in 'velocity') can drive the interest rate in the short run above its natural level, and hereby artificially curtail warranted investments." Here again, the Misesian model leads to a different conclusion. See Mises (1971, p. 360): "The opposite case, in which the rate of interest charged by the banks is raised above the natural rate, need not be considered; if banks acted in this way, they would simply withdraw from the competition of the loan market, without occasioning any other noteworthy consequences."

[10] For an Austrian critique of term intermediation see Barnett and Block 2011, 2009a and 2009b.

voluntary abstinence from spending by holders of money balances" (Selgin 1988, p. 60). *Extensive credit creation requires not just fractional-reserve banking, but central banking.* In this framework, the creation of fiduciary media that is matched by a willingness to hold the additional fiduciary media is not credit creation, but financial intermediation. Such transactions facilitate the flow of saving into investment. In the case where increased saving (reduced spending on present goods) takes the form of an increased demand for cash in the form of "inside" money, consumption is deferred and the funds are loaned to the banks for at least *short periods*. The extension of bank credit and the creation of new fiduciary media do not, in this instance, reduce the market rate below the natural rate, but instead, allow the market rate to follow the natural rate downward. Investment keeps up with a higher level of saving rather than exceeding a fixed level of saving. Credit creation can take place if banks issue fiduciary media and credit in excess of the demand for fiduciary media. But what mechanism prevents excessive credit creation? Here Selgin and White (1996, p. 103) rely on and build on Mises (1998, p. 440):

> Free banking is the only method for the prevention of the dangers inherent in credit expansion. It would, it is true, not hinder a slow credit expansion, kept within very narrow limits, on the part of cautious banks which provide the public with all the information required about their financial status. But under free banking it would have been impossible for credit expansion with all its inevitable consequences to have developed into a regular—one is tempted to say normal—feature of the economic system. Only free banking would have rendered the market economy secure against crises and depressions.

The existence of a central bank with the ability to create high-powered or base money is a necessary prerequisite for excessive credit creation and the resultant boom–bust cycle. Free banking without central banking could provide intermediation services that could mitigate contractionary pressures arising from monetary disequilibrium while also providing sufficient market discipline to prevent excessive credit creation. Austrian-type business cycles are thus a phenomenon of central banking, not of fractional-reserve free banking[11].

The Market Synthesis

The differences between the Keynesian-based new view and Mises, Machlup, and Selgin are significant and lead to different explanations of macroeconomic instabilities and policy proposals. In the Keynesian form of the new view, banks, including a necessary and benevolent central bank, do not create

[11] The above argument depends on the caveat that free banking means banks operate in an environment in which banks are subject to the general rules of commercial and civil law and are not the recipients of special privileges and protections granted by the state. As expressed by Mises (1998, p. 440), "What is needed to prevent any further credit expansion is to place the banking business under the general rules of commercial and civil laws compelling every individual and firm to fulfill all obligations in full compliance with the terms of the contract."

credit. With a 'fetish for liquidity', an economy absent central bank expansion of credit and lower interest rates will be subject to economic stagnation as the rate of interest exceeds the natural rate and investment falls below the level needed to achieve and sustain full employment. Central banking is a needed extra-market solution to a market malady (Garrison 2001).

In contrast, Mises (1971) developed the argument that fractional-reserve banking creates credit. Created credit is the source of the malinvestment of the boom phase of the cycle. But significant malinvestment in the Misesian cycle depends on central bank action or government backed special privileges, either explicit or implied. The central bank either actively provides new base money which banks use to create credit or the central bank passively makes new base money available to provide the needed liquidity (reserves) to an overextended banking system.[12] Without central bank activity, the **credit creation by fractional reserve banks would be limited in extent.** Large misdirection of production caused by credit creation requires either newly created base money or the promise to create new base money in the event of a crisis by a central bank.[13] Central banks provide the source of the newly created credit or remove the market barriers to bank initiated created credit.[14]

Banking freedom can potentially limit the scope of and quickly correct for or reverse any created credit that originates from fractional-reserve banking. Extensive and harmful credit creation is the result of the activity of central banking. The **malady is extra-market**. Created credit distorts the structure of production causing the boom–bust cycle and the remedy, really the preventative, is a return to free markets in money creation. The solution; e**liminate the central bank and restore a free market in money and banking**[15] (Herbener, 2012).

Banking freedom would allow market participants to make the ultimate judgment on what to use as a medium of exchange and where to draw the line between money as a present good and money as a store of value. Bankers would make a judgments on the proportion of their deposits (or notes) that represent saving and the proportion that are currently serving as present money for the holders of the

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[12] Machlup (1940, pp. 247–48) argues, "Professor Mises believes, furthermore, that commercial banks alone without the support of the central bank can never produce a dangerous credit inflation." Mises (1998, p. 788) is quite emphatic on this point, "But today credit expansion is an exclusive prerogative of government."

[13] See White (2011, 497) for an argument, relative to the most recent crisis, why "A commodity standard with free banking, and **no central bank to distort the financial system** [emphasis mine], would have avoided such a boom-and-bust credit cycle."

[14] The existence of a lender of last resort who can and will create credit with newly issued base or high -powered money leads to a moral hazard problem that gives fractional-reserve banks an incentive to over-extend credit, which can show up as either more credit extended at lower rates of interest or riskier loans extended at unchanged rates of interest.

[15] Herbener recommends 100% reserves for deposits that serve as a medium of exchange or for privately issued bank notes. 100% reserves also would more clearly remove threats of bank runs and panics.

deposits. Only funds held as savings may be safely "invested" or loaned. Consumers of banking services make judgments about the safety and soundness of the banking institutions with which they deal. Successful banks will provide the mix of services that meet the needs of their clients.

Monetary Reform[16]

In an introduction to the most recent issue of the *Cato Journal,* "Monetary Reform in the Wake of Crisis" the editor James A. Dorn writes:

> At no time since the founding of the Federal Reserve nearly a century ago has it been more important to reconsider the role of monetary policy in a free society. In particular, as F. A. Hayek noted, "All those who wish to stop the drift toward increasing government control should concentrate their effort on monetary policy."

Central bank response to the most recent crisis and slow recovery has moved in the direction of greater, not lesser central bank involvement in the economy. Recent troubling trends include money creation to finance massive government deficits[17], the Fed engaging in "Mondustrial Policy[18], and becoming a gigantic financial central planner.

Cochran (2011) describes the Fed reaction:

> With this second bust, unlike the first recession of the 21st century, the real economic slowdown was accompanied by a significant financial crisis and if not a public panic, definitely a policy panic. Policy makers feared that the financial crisis would lead to a collapse of the banking and credit system. The fear was deflation. The model was monetary events of 1929 to 1932. The Fed and the federal government responded with an unprecedented bailout of both financial and non-financial firms with the creation and use of new monetary policy tools and Fed-Treasury coordination accompanied by aggressive use of more traditional policy instruments (Duca *et al* 2009). The result has been a massive expansion of the Fed's balance sheet as well as massive re-structuring of the type assets held by the Fed. The picking of winners and losers has moved the Fed very close to a policy which is even more dangerous to liberty and prosperity that an ordinary

[16] See Table 1 (elimination of central banking) and Table 2 (reforms retaining a central bank) for a summary of suggested reforms. Reforms are listed from a-f in order of ability to generate increased economic stability, although on this ground a and b are indistinguishable with perhaps a slight edge to b and with b leading to perhaps greater financial stability. Reforms a, b, and c are consistent with *HR 1094*. Reform e is consistent with *HR 4180* or *HR 245*. Reform f is consistent with HR 245. If either reform a or b would be adopted, discussion should continue on free banking versus 100% reserves.

[17] Per John B. Taylor, the Federal Reserve purchased 77% of the net increase in the debt by the Federal government in 2011. See http://johnbtaylorsblog.blogspot.com/2012/06/fed-bought-77-of-federal-debt-increase.html

[18] In early 2009 at the AEA meetings, Stanford economist John Taylor used the term "Mondustrial Policy to criticize the Fed and Treasury response to the financial crisis. Taylor, as quoted in a *WSJ* blog post by Jon Hilsenrath (http://blogs.wsj.com/economics/2009/01/05/the-feds-outspoken-critic/), used this "unflattering term" to describe a policy environment that was "not a monetary framework. It is an intervention framework financed by money creation."

fractional reserve banking system supported by a central bank; a ***mondustrial policy***; monetary policy as an agency not only of irresponsible fiscal policy, but of industrial policy as well.

In an important paper published in the *Independent Review*, "Ben Bernanke versus Milton Friedman: The Federal Reserve's Emergence as the U.S. Economy's Central Planner", Jeffrey Rogers Hummel provides, without explicitly mentioning the term, the intellectual foundations for a "Mondustrial Policy". Hummel builds his case by illustrating the significant differences in "approaches to financial crisis" between the Bernanke approach and a Friedman approach. In addition to exposing the theoretical foundation of this misguided and dangerous policy, Hummel provides a very detailed almost step by step use of this type of policy in response to the major events of the recent crisis. A must read for anyone interested in the details of how and why the Fed's balance sheet expanded so significantly and how much of what was done did not and does not show explicitly in 'regularly' reported monetary aggregates, their sub components, or Fed balance sheet reports.

Hummel argues the differences have been rarely noticed. The impact as "those differences resulted in another Fed failure – not quite as serious as the one during the Great depression, to be sure, yet serious enough – but they have also resulted in a dramatic transformation of the Fed's role in the economy. Chairman Bernanke has so expanded the Fed's discretionary actions beyond controlling the money stock that it has become a gigantic, financial central planner."

It should be clear, that this failed policy response to the current situation has set up future monetary conditions that may be very difficult to unwind without significant inflation and/or a continuing boom-bust pattern.

These trends make a return to sound money which "involves abolishing central banking and paper fiat money and restoring a commodity money chosen by and totally subject to the market" (Salerno 2010 [1998], p. 474) imperative. There is, however, controversy over the means. Does sound money require 100 percent reserve banking or does it allow banking freedom? Mises (1998, 440) opined, "Only free banking would have rendered the market economy secure against crises and depression. [And] [t]here is no reason whatever to abandon the principle of free enterprise in the field of banking."

However, Rothbard, Salerno, Herbener, Huerta de Soto, Block, and Reisman among others favor 100 percent reserves; a clear separation of deposit banking from loan banking, on the basis of reform proposals made by Mises (1971, pp. 448–57, and 1978, pp. 17–21 and 44–47.) In these proposals, Mises argued for 100 percent backing of any *newly issued notes or checkable deposits*. For reform of a monetary system on the verge of collapse or as a proposal for how we move from our current system toward a

sound money system, such a step may be essential. After reform though, it is also essential that "the question of banking freedom must then be discussed again and again, on basic principles" (Mises 1978, p. 45).

H.R. 1094 is consistent with reform recommended in this testimony. *H. R. 4180* would be a strong improvement over current Fed operations as would *H. R. 245*, but both would leave the economy subject to boom-bust cycles as monetary policy would still not prevent a boom-bust which piggy-backs created credit induced growth on top of productivity driven growth. A movement in the right direction would include elimination of all laws restricting private sector initiatives to develop competing medium of exchanges to Federal Reserve notes. New competitive currencies could be facilitated by privatization of all government stocks of precious metals. More detailed proposals for reform can be found in Rothbard (1991 [1962], 65-72), Salerno (2010, 333-363), White (2102), or Herbener (2012). The *Cato Journal* (Spring/Summer 2012, volume 32, number 2) is devoted to "monetary reform in the wake of crisis." If or while significant reform such as H. R. 1094 is politically impossible, Selgin's (1997) proposal for a productivity norm, which would greatly reduce the likelihood of significant credit creation in response to a productivity shock, should be given strong consideration as an appropriate guide for improving policy under existing banking arrangements.

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Table 1
Summary of Reforms: No Central Bank

a. Commodity Standard with Free Banking	b. Commodity Standard with 100% Reserves	c. Denationalization of Money
Mises (1998, 440): "Only free banking would have rendered the market economy secure against crises and depression. [And] [t]here is no reason whatever to abandon the principle of free enterprise in the field of banking." Free banking means banks operate in an environment in which banks are subject to the general rules of commercial and civil law and are not the recipients of special privileges and protections granted by the state; placing "the banking business under the general rules of commercial and civil laws compelling every individual and firm to fulfill all obligations in full compliance with the terms of the contract."	From Huerta de Soto (2012): "(T)heoretical analysis yields the conclusion that the current monetary and banking system is incompatible with a true free-enterprise economy. … and that it is a continual source of financial instability and economic disturbances." Three recommended reforms: **1.** The reestablishment of a 100 percent reserve requirement as an essential principle of private-property rights with respect to every demand deposit of money and its equivalents; **2.** the abolition of all central banks (which become unnecessary as lenders of last resort if reform 1 above is implemented, and which as true financial central-planning agencies are a constant source of instability) and the revocation of legal-tender laws and the always-changing tangle of government regulations that derive from them; and **3.** a return to a classic gold standard, as the only world monetary standard that would provide a money supply that public authorities could not manipulate and that could restrict and discipline the inflationary yearnings of the different economic agents."	Hayek (1978): Elimination of central bank with denationalization of money and competing currencies. Hayek's proposal for drastic monetary reform: In response to events in the 1970s, Hayek was driven "into proposing the denationalization of money" and a return to a market-determined money" (Hayek in Pizano 2009, 10)

Table 2
Reforms Retaining Central Banking

d. Productivity Norm	e. Policy Rules	f. Price Stabilization (single mandate) with Discretion in Crisis or Nominal GDP Targeting
Selgin (1997, 10): "I submit that a constant that a constant price level, even once in place, would be far from ideal. Instead, *the price level should be allowed to vary to reflect changes in goods' unit cost of production* [emphasis mine]. I call … such a rule for individual price changes a 'productivity norm.' Under a productivity norm, changes in velocity would be (as under zero inflation) from influencing the price level by offsetting adjustments in the supply of money." Productivity norm is consistent with Hayek of the 1930s.	Taylor (2012, 2): "For all these reasons, there is a great need for improvement in the degree to which the Federal Reserve follows rules rather than discretion." And: "However, a more practical and effective approach, in my view, is to reform the Federal Reserve and create strong incentives for rule-like behavior. The starting place for such a reform is the recognition that a clear well-specified goal usually results in a consistent and effective strategy for achieving that goal." And : "In the case of monetary policy, multiple goals enable politicians to lean on the central bank to do their bidding and thereby deviate from a sound money strategy. More than one goal can also cause the Federal Reserve to exceed the normal bounds of monetary policy—moving into fiscal policy or credit allocation policy—as it seeks the additional instruments necessary to achieve multiple goals." Taylor (2012, 4): "(L)egislative reforms which clarify the Fed's mandate, enhance reporting requirements about its strategy or rule for the monetary instruments, restrict the nature of the its purchases of securities, and balance voting rights on the FOMC would allow Congress to exercise appropriate political control without becoming involved in day-to-day monetary policy operations or otherwise micromanaging the Fed. In my view the reforms [H.R. 4180] would enhance the independence of the Fed by adding reassuring accountability appropriate for an independent agency of government and clarifying that its overall responsibility is monetary policy not fiscal policy or credit allocation policy. History and basic economics tells us that such reforms would greatly improve employment and price stability and would help restore America's prosperity."	Price Stabilization: From Hayek (1979 from lectures delivered 1974 and 1975, 17): "Though monetary policy must prevent wide fluctuations in the quantity of money or in the volume of the income stream, the effect on employment must not be a dominating consideration. *The primary aim must again become the* ***stability of the value of money*** [emphasis original]." But (Hayek 1979, 18): Where policy still generates a boom-bust, then, to prevent "liquidity crises or panics" there is a need "to ensure convertibility of all kinds of near-money into real money" For this, "the monetary authorities must be given some discretion" But (Hayek 1979, 10): "I do not believe we shall regain a system of international stability without returning to a *system of fixed exchange rate*[emphasis mine], which impose upon national central banks the restraint essential for successfully resisting pressure of the advocates of inflation in their countries …" Nominal GDP: "The moment there is any sign that the total income stream may actually shrink [during a post-bust deflationary crash], I should certainly not only try everything in my power to prevent it from dwindling, but I should announce beforehand that I would do so in the event the problem arose." F. A. Hayek in 1975, in reply to a question from his old friend Gottfried Haberler in a talk given at the American Enterprise Institute Posted at http://hayekcenter.org/?p=5401 Accessed 06-26-2012.

TESTIMONY BEFORE

THE U.S. HOUSE COMMITTEE ON FINANCIAL SERVICES

SUBCOMMITTEE ON MONETARY POLICY

June 28, 2012

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Chairman Paul, Ranking Member Clay and members of the Subcommittee, I am deeply honored to appear before you to testify on the topic of fractional-reserve banking. Thank you for your invitation and attention.

In the short time I have: I will give a brief description of fractional reserve-banking; identify the problems it presents in the current institutional setting; and suggest a potential solution.

A bank is simply a business firm that issues claims to a fixed sum of money in receipt for a deposit of ready cash. These claims are cashable *on demand* and without cost to the depositor. In today's world these claims may take the form of checkable deposits, so called because they can be transferred to a third party by writing out a check payable to the party named on the check. They may also take the form of so-called "savings" deposits with limited or no checking privileges and that require withdrawal in person at one of the bank's branches or at an ATM machine. In the United States, the cash for which the claim is redeemable are the Federal Reserve Notes or "dollar bills" that we are all familiar with. These dollar bills are the ultimate cash of the contemporary U.S. monetary system.

Fractional-reserve banking occurs when the bank lends or invests some of its depositors' funds and retains only a *fraction* of the deposits in cash. This cash is

the bank's reserves. Hence the name fractional-reserve banking. All banks today both domestically and abroad engage in fractional–reserve banking

Let me illustrate how fractional-reserve banking works with a simple example. Assume a bank with deposits of $1 million makes $900,000 of loans and investments. If we ignore for simplicity the capital paid in by its owners, this bank is holding s holding a cash reserve of 10 percent against its deposit liabilities. The deposits constitute the bank's liabilities because the bank is contractually obligated to redeem them on demand. The assets of the bank are its reserves, loans, and investments. Its assets then are ready cash as well as IOUs and securities that give it title to sums of cash payable in the near or distant future. The noncash assets include short-term business loans, credit card loans, mortgage loans and the securities issued by the U.S. Treasury and foreign financial authorities.

Now the key to understanding the nature of fractional-reserve banking and the problems it creates is to recognize that a bank deposit is not itself money. It is rather a "money-substitute, that is, a claim to standard money—dollar bills—that people regard as completely secure. Bank deposits transferred by check or debit card will be routinely paid and received in exchange in lieu of money *for as long as the public does not have the slightest doubt that the bank which creates these deposits is able and willing to redeem them without delay or expense* (either to the depositor or to the party that he has paid by check of debit card). Under these

circumstances, bank deposits are eagerly accepted and held by businesses, investors, and workers and are regarded as indistinguishable from cash itself. They are therefore properly included as part of the money supply, that is, the total supply of dollars in the economy.

The very nature of fractional-reserve banking, however, presents a problem for the bank itself. On the one hand, all of a bank's deposit liabilities mature on a daily basis, because it has promised to cash them in on demand. On the other, only a small fraction of its assets is available at any given moment to meet these liabilities. For example, during normal times, U.S. banks effectively hold much less than 10 percent of deposits in ready reserves. The rest of a bank's liabilities will only mature after a number of months, years, or, in the case of mortgages, even decades. In the jargon of economics, fractional-reserve banking always involves "term structure risk" arising from the mismatching of the maturity profile of its liabilities with that of its assets. In layman's terms, banks "borrow short and lend long." The underlying problem is revealed when the withdrawal of deposits exceeds a bank's cash reserves at any moment in time. The bank is then compelled to hastily sell off some of its longer-term assets, many of which are not readily saleable. It will thus incur big losses. This will cause a panic among the rest of its depositors who will scramble to withdraw their deposits before they become worthless. A classic bank run will ensue. At this point the value of its remaining

assets will no longer be sufficient to pay off all its fixed-dollar deposit liabilities and the bank will fail.

A fractional-reserve bank, therefore, can only remain solvent for as long as public confidence exists that its deposits really are riskless claims to cash. If for any reason—real or imagined—the faintest suspicion arises among its clients that a bank's deposits are no longer payable on demand, the bank's reputation vanishes overnight. The bank's brand of money-substitutes is instantly extinguished and people rush to withdraw their deposits in cash—cash that no fractional-reserve bank can provide on demand in sufficient quantity. Thus overnight extinction of its product brand and insolvency is always looming over fractional-reserve banks.

The ever-present threat of insolvency is the least of the problems with fractional reserve banks, however, since its effects are restricted to the bank's stockholders, creditors and depositors who voluntarily assume the peculiar risks involved in this business.

The major problems of fractional-reserve banking are its harmful effects on the overall economy. I will describe two of these problems.

First, fractional-reserve banking is inherently inflationary. When a bank lends its clients' deposits, it inevitably expands the money supply. For example, when clients deposit an additional $100,000 of cash in the bank, depositors now

have an additional $100,000 in their checking accounts while the bank accumulates an additional $100,000 of cash (dollar bills) in its vaults. The total money supply, which includes both dollar bills in circulation among the public and dollar balances in bank deposits, has not changed. The depositors have reduced the amount of cash in circulation by $100,000, which is now stored in the bank's vaults, but they have increased the total deposit balance that they may draw on by check or debit card by the exact same amount. Suppose now the loan officers of the bank lend out $90,000 of this added cash to businesses and consumers and maintain the remaining $10,000 on reserve against the $100,000 of new deposits. These loans increase the money supply by $90,000 because, while the original depositors have the extra $100,000 still available on deposit, the borrowers now have an extra $90,000 of the cash they did not have before.

The expansion of the money supply does not stop here however, for when the borrowers spend the borrowed cash to buy goods or to pay wages, the recipients of these dollars in turn redeposit some or all of this cash in their own banks, which in turn lend out a proportion of this cash. Through this process, bank deposit dollars are created and multiplied far beyond the amount of the initial cash deposits. (Given the institutional conditions in the U.S. today, each dollar of currency deposited in a bank can increase the U.S. money supply by up to a maximum of $10.00). As the additional deposits dollars are spent, prices in the

economy progressively rise and the inevitable result is inflation with all its associated problems.

Fractional-reserve banking inflicts another great harm on the economy. In order to induce businesses and consumers to borrow the additional dollars created, banks must lower interest rates below the market equilibrium level determined by the amount of voluntary savings in the economy. Businesses are misled by the artificially low interest rates into borrowing to expand their facilities or undertake new long-term investment projects of various kinds. But the profitability of these undertakings depends on expectations that bank credit will remain cheap more or less indefinitely. Consumers, too, are deceived by the lower interest rates and rush to purchase larger residences or vacation homes. They take out second mortgages on their homes to buy big-ticket luxury items. A false economic boom begins that is doomed to turn into a bust as soon as interest rates rise again.

As the inflationary boom progresses the demand for credit becomes more intense and more cash is withdrawn from bank deposits to finance the purchase of everyday goods whose prices are rising. The banks react to these developments by raising interest rates and contracting loans and deposits. During the recession that follows the binge of bad investment and overconsumption is starkly revealed in the abandoned construction projects, empty commercial buildings, and foreclosed homes that litter the economic landscape. At the end of the recession it turns out

that almost all households and business firms are made poorer by fractional-reserve bank credit expansion, even those who initially gained by the inflation.

Now the inflation and the boom-bust cycles generated by fractional reserve banking are enormously intensified by Federal Reserve and U.S. government interference with the banking industry. The most pernicious forms of such interference are: the power of the Federal Reserve to create bank reserves out of thin air via open market operations; its use of these phony reserves to bail out failing banks in its role as a lender of last resort; and federal insurance of bank deposits. In the presence of such polices, the deposits of all banks are perceived and trusted by the public as one homogeneous brand of money substitute fully guaranteed by the Federal government and backed up by the Fed's power to print up bank reserves at will and bail out insolvent banks. Under this monetary regime, there is absolutely no check on the natural propensity of fractional-reserve banks to mismatch the maturity profiles of their assets and liabilities, to expand credit and deposits, and to artificially depress interest rates. We can expect bubbles to continually grow in various sectors of the economy and the subsequent financial crises to continue unabated.

The solution to our problems is to treat banking as any other business and permit it to operate on the free market—a market completely free of government guarantees of bank deposits and of the possibility of Fed bailouts. In order to

achieve the latter, the Fed would have to be permanently and credibly deprived of its legal power to create bank reserves out of nothing. The best way to do this is to establish a genuine gold standard in which gold coins would circulate as cash and serve as bank reserves; at the same time the Fed must be stripped of its authority to issue notes and conduct open market operations. Also, banks would once again be legally enabled to issue their own brands of notes, as they were in the nineteenth and into the early twentieth century.

Once this mighty rollback of government intervention in banking is accomplished, each fractional-reserve bank would be rigidly constrained by public confidence when issuing money-substitutes. One false step—one questionable loan, one imprudent emission of unbacked notes and deposits—would cause instant brand extinction of its money substitutes, a bank run, and insolvency.

In fact on the banking market as I have described it, I foresee the ever-present threat of insolvency compelling banks to refrain from further lending of their deposits payable on demand. This means that if a bank wished to make loans of shorter or longer maturity, they would do so by issuing credit instruments whose maturities matched the loans. Thus for short-term business lending they would issue certificates of deposits with maturities of three or six months. To finance car loans they might issue three-year or four-year short bonds. Mortgage lending would be financed by five or ten year bonds. Without government institutions like

Fannie Mae and Freddie Mac implicitly guaranteeing mortgages, and in absence of the relentless appreciation of housing prices due to inflation, mortgage loans would probably be transformed into shorter five- or ten-year balloon loans. the bank may retain an option to roll over a mortgage loan when it comes due pending a re-evaluation of the mortgagor's current financial situation and recent credit history as well as the general economic environment. In short, on a free market, fractional-reserve banking with all its inherent problems would slowly wither away.

Statement of

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before the

House Subcommittee on Domestic Monetary Policy and Technology

United States House of Representatives

June 28, 2011

Chairman Paul, Ranking Member Clay, and members of the subcommittee: Thank you for the opportunity to discuss the fractional-reserve character of modern banking, its positives and negatives, its relationship to financial instability, and to offer my thoughts on how to promote greater banking stability. I will begin by describing the historical origins of fractional-reserve banking (hereafter FRB), then move on to the effect of FRB on the money supply process, its connection to bank runs and financial instability, and finally the reforms needed to improve our banking system.

The origins of fractional reserve banking

A "bank" is a firm that both gathers funds by taking in "deposits" (or creating account balances) *and* makes loans with the funds gathered. A moneylender who draws only on his own wealth is not a banker, nor is a warehouseman who does not lend. A "deposit," in ordinary modern usage, is a debt claim, an IOU issued by the banker and held by the "depositor," which the banker is obliged to repay according to the terms of the contract. We can distinguish between a "time deposit," which the banker is obliged to repay only at a specified date in the

future, and a "demand deposit," which gives the customer the legal right to repayment "on demand," that is, whenever the customer chooses (on any day the bank is open).

Historically, deposit-taking grew out of the coin-changing and safekeeping businesses. Medieval Italian money-changers would (for a fee) swap coins from one city for those from another. Some traveling merchants, who brought in coins of one type, would chose to hold balances "on account" for the time being, preferring to receive coins of another type later when it was more convenient. The earliest deposit-takers in London were goldsmiths, artisans who made gold jewelry and candlesticks, who were also coin-changers. Like the Italian coin-changers, they provided safe-keeping in the vaults where they kept their own silver and gold.

A key to the development of fractional-reserve banking was that vault-keepers (money-changers and goldsmiths) began to provide *payment services* by deposit transfer. The earliest record of payment by deposit transfer is from Italy around 1200 AD. Before deposits became transferable, suppose Alphonso wanted to pay (say) 100 ounces of coined silver to Bartolomeo, both of them customers of the same vault-keeper. Al would go to the vault-keeper, have him weigh out the requisite amount of coins, and transport the coins to Bart, who would then have to transport the coins back to the vault-keeper to have them weighed again and placed back in the vault. There was great inconvenience, not to say risk, in transporting the coins across town and back. And there were fees to pay for weighing the coins. At the end of the day, Al's account balance or claim on the vault-keeper would be down by 100 ounces (plus transaction fees), and Bart's would be up by 100 ounces (minus transaction fees).

A less burdensome and safer way to accomplish such a payment was for Al and Bart to meet at the bank, and simply tell the banker to transfer 100 ounces *on his books* by writing Al's

account balance down and Bart's up. No coins had to be weighed or moved, or even touched at all. Payment was now made not by handing over coins, but by handing over *claims* to coins.

Other methods for authorizing deposit transfer were often more convenient and soon displaced the three-party meeting in the banker's office. For example, Al could sign a written authorization, what we now call a check. Today we have electronic funds transfer, but all of these methods accomplish the same end, which is to make a transfer funds from one account to another.

Some of the earliest deposit-taking was simple warehousing, in which the coins deposited were merely stored, and the exact same coins would be returned to the depositor on demand assuming all storage fees had been paid. (In legal parlance such a claim on the warehouseman is a "bailment" and not a debt.) In the early Middle Ages a customer who wanted this kind of storage would bring the coins to the vault in a sealed bag. The bag was not to be opened by the warehouseman. For each specific bag of coins that could be claimed by Al or Bart, those specific bag of coins were always in the vault. Supposing that the bags' contents were recorded on the books (which they need not have been), we could say that for each ounce of coined silver claimed by depositors there was always an ounce of coined silver in the vault. This arrangement, which resembles the business today of renting safety deposit boxes, is sometimes described as "100 percent reserve banking," although strictly speaking it isn't banking at all, but simply warehousing.

As payment by deposit transfer became popular, goldsmiths and coin-changers found that they could offer a different kind of contract to customers who primarily wanted not storage but economical payment services. In a "fractional reserve" contract, the vault-keeper becomes a banker, able to lend out some of the funds deposited. In the early Middle Ages a customer who

wanted this kind of account would bring loose coins to the vault. The coins could be mingled with other depositors' coins, whereas in money warehousing there is no evident rationale for mingling. The customer would receive a redeemable claim, entitling him to get back *equivalent* coins on demand, but not to receive back the *identical* coins he brought in. The account is now a debt claim and not a bailment. Now the coins in the vault are a fraction of immediately demandable deposits. We can describe them as a reserve for meeting the redemption claims that will actually be made.

Later, beginning perhaps in the 1400s, banks began to issue deposit receipts that could be signed over, making them something like traveler's checks today. For their customers' convenience, they soon provided them in bearer form (no signing-over necessary) and round denominations. These we call banknotes, paper currency claims on banks that were payable to the bearer (whoever presented them), typically on demand. As currency, they could be transferable anonymously, and without bank involvement (unlike deposits transfers, which need to be recorded on the books). London goldsmiths were issuing banknotes in the mid-1600s. Banks also held fractional reserves against the total of their banknote liabilities.

When is a fractional reserve feasible?

For a unique or specific coin, which the customer wants to have back, it isn't. A specific coin lent cannot be instantly recalled from the borrower who has spent it. But for coins that customers regard as *interchangeable* with other coins, it is. Likewise, you count on a coat check stand to keep your specific coat there all evening, and not to lend it out, because you don't want back just any coat of the same size. Unlike coat-checkers, most depositors are willing to treat

coins as interchangeable. Depositors do not insist on getting the very same coins back, so any equivalent coin in reserve will be satisfactory.

To avoid defaulting, or breaching the contractual obligation to repay, the bank obviously needs to keep *enough* coins in reserve. How can the bank count on having enough coins to meet all requests? It is a matter of practical calculation: the bank needs to know from experience the probability of any given amount of coins being demand on a given day. If it wants to be 99.99% safe, it needs to hold a reserve (or have ways of replenishing its reserves) sufficient to cover 99.99% of cases.

The economist Ludwig von Mises offered the following illustration. Consider a baker who issues 100 tokens, each stamped "good for one loaf of bread." Leaving aside lost tokens, it is clear that the baker will need 100 loaves. All the tokens will be redeemed, because using them to get bread is their only use. By contrast, transferable claims to coin (bank deposits or banknotes) are *useful even without being redeemed.* Unlike bread tokens, which cannot be eaten with butter and jam, transferable bank accounts or banknotes *can do the job of the coins* in making payments. Once payment by deposit transfer and banknote becomes popular, the banker will reliably find that *not all deposits notes or deposits are redeemed for coins on a given day,* even if all are used to make payments. Thus a banker who issues $100 in demand deposits or notes will need less than $100 in coin to meet all the redemptions that will actually be demanded.

How much less than 100% the banker can hold, and still meet all the redemption demands that he does face, is a problem that the banker must solve by practical statistical calculation. There is no reason to think that a central authority can do the calculation better, and can improve matters by imposing an arbitrary percentage requirement. To provide the right incentive to hold enough reserves, it is important that the imprudent banker who miscalculates, holds too little in

reserves, and fails to pay when obligated to pay, be subject to the ordinary legal penalties for breach of contract.

Advantages and disadvantages of fractional reserves

The advantage to the bank from keeping fractional reserves is clear: it earns interest on the lent-out funds. A few commentators have declared that FRB must be a fraud: the gain is all on the bank's side, and no customer would agree to it if she realized what the bank was up to. But this claim assumes that there are no advantages to the bank's customers. In fact there are clear advantages to the bank's customers, *at least under competition*. To compete for customers, all experience shows, banks offering fractional-reserve accounts charge zero storage fees and even pay interest on deposits, up to point where the interest they pay falls short of the interest they earn only by just enough to cover the bank's operating costs for safekeeping and payment services. In this way FRB creates a *synergy* between payments services (checkable deposits, banknotes) and intermediation (pooling savers' funds for lending to selected borrowers). When the deposited funds that are not needed as reserves can be lent out, depositors enjoy lower (or zero) storage fees and interest on checking deposit balances.

By contrast to money warehousing, the savings of fractional-reserve banking do carry a disadvantage in the form of greater default risk. If the bank's investments go sour, the depositor may not be repaid in full. The warehouse, by contrast, makes no investments. So the customer choosing between a bank account contract and a warehousing contract needs to consider: is the saving in storage fees and the interest paid on deposits high enough (relative to the increased risk of not being paid promptly)? Historically, in competitive systems where banks were free to diversify and capitalize themselves well, the answer was yes for most people. Thus *well informed*

consumers who want economical payment services typically prefer a fractional-reserve bank to a warehouse. In sound banking systems historically, before deposit insurance, the risk of loss was a small fraction of one percent, while the interest was more than one percent, and the sum of interest and storage fee savings was even higher. Thus FRB can arise and survive without fraud.

The economist George Selgin has examined the record of the London goldsmith bankers, and debunked the myth that they pulled a fraudulent switcheroo, promising 100% reserves but holding less, at the beginning of the practice of FRB. Goldsmith bank accounts became enormously popular in the mid-1600s because they offered interest on demand deposits. The offer of interest is a clear signal that the contract is not a warehousing contract.

For payment by account transfer, FRB offers a more economic way of providing payment services. A money warehouse or 100% reserve institution could also offer payments by account transfer, but its services would be significantly more expensive. The other bank payment instrument, redeemable banknotes circulating in round denominations, simply *cannot exist* without fractional reserves. Banknotes are feasible for a fractional-reserve bank because the bank doesn't need to assess storage fees to cover its costs. It can let the notes can circulate anonymously and at face value, unencumbered by fees, and cover its costs by interest income. An issuer of circulating 100% reserve notes would need to assess storage fees on someone, but would be unable to assess them on unknown note-holders. There are no known historical examples of circulating 100% reserve notes unencumbered by storage fees.

Under a gold or silver standard, the introduction and public acceptance of fractionally backed demand deposits and banknotes means that the economy needs less gold or silver in its vaults to supply the quantity of money balances (commonly accepted media of exchange) that the public wants to hold. Thus money is supplied at a *lower resource cost*, that is, with less labor and

capital devoted to mining or importing precious metals and fashioning them into coins or bars. Looking at the change in balance sheets from money warehouses to fractional reserve banks, the economy can now fund productive enterprises where before it only held metal. Gold can be exported, and productive machinery imported. This development in Scotland was praised by Adam Smith as a source of his country's economic growth. As the economist Ludwig von Mises put it, "Fiduciary media [fractionally backed demand deposits and banknotes] … enrich both the person that issues them and the community that employs them."

Under a fiat money standard, as we have today with the Federal Reserve dollar, things are different. There are no mining or minting costs saved by holding fractional rather than 100% reserves in the form of fiat money. For commercial banks to hold 100% reserves in the form of fiat money issued by the federal government would, however, change drastically the function of the banks. Instead of funding productive enterprises, the banks would instead only fund the federal government. Fewer loanable funds would be available to the private economy, and more to the government. Private investment would be suppressed, and public spending enlarged.

The effect of FRB on the money supply process

With banks holding fractional reserves of Federal Reserve dollars (notes and deposit claims on the books of the Fed, whose sum is called "the monetary base"), when the Fed increases the quantity of Federal Reserve dollars by $1 billion, the banking system ordinarily creates a multiple amount of deposit dollars. The total stock of money held by the public ("M1") increases, say by $2.3 billion. At the moment, however, we are in an anomalous situation. Banks are sitting on such vast quantities of excess reserves – paid to do so by the Federal Reserve as it pays a relative high interest rate on reserves – that the monetary base is larger than

M1. Thus the US banking system today actually has more than 100% reserves against its demand deposits.

The problems of financial instability, bank runs, and crises

Perhaps the leading argument made in favor of government regulation of banks is the argument claiming that a fractional-reserve banking system is inherently *fragile* and so needs deposit insurance. The argument rests on three underlying propositions:

(a) An uninsured fractional-reserve banking system is inherently prone to runs and (due to "contagion") panics. (A run means that many depositors seek to withdraw at the same time, out of fear of a reduced payoff if they wait. A panic means that many banks suffer runs at the same time.)

(b) Runs and panics have net harmful effects.

(c) Deposit insurance can reduce runs and panics below their laissez-faire level at a cost less than the benefit of doing so.

My research into banking history convinces me that (a) and (c) are actually false, and even proposition (b) requires some qualification.

A run is always *possible* against fractionally backed bank deposits that are unconditionally redeemable on demand. Against such deposits, a run can even, in theory, be *self-justifying*: if a run forces the bank to conduct a hasty sale of illiquid assets, the bank may receive such a reduced value for its assets that it becomes insolvent (liabilities exceed assets), so that all depositors can no longer be paid in full. From this theoretical possibility, some economic theorists have jumped to the conclusion that fractional-reserve banks are *in practice* inherently run-prone. (The best known statement is a 1983 article by Douglas Diamond and Phillip

Dybvig.) According to this view, a run can happen at any time, in any place, on any bank, triggered by nothing more than random fears or events that have no basis in the target bank's solidity.

But are real-world deposit contracts so fragile? Historical evidence says no. Please consider: If real-world deposit contracts really *were* as fragile as the self-justifying-run theory supposes, it would be a mystery how they survived centuries of Darwinian banking competition before the first government deposit insurance schemes began. Wouldn't a more robust arrangement have come to dominate the field?

The theory of runs that better fits the historical record is that runs occur, not randomly, but when depositors receive bad news indicating that their bank might be *already* (pre-run) insolvent. Receiving such news, depositors run because if assets are already be too small to pay all depositors back, the last in line get little or nothing. Unlike the self-justifying-run theory, the bad-news theory explains why runs typically occurred at onset of recessions (when bad news arrived about the banks' borrowers declaring bankruptcy), and explains why countries that did not weaken their banks with legal restrictions (e.g. Scotland, Canada) very seldom experienced runs and almost never panics.

What makes a deposit contract run-prone? Assume that depositors are rational. There must be a greater expected payoff to arriving sooner rather than later to redeem one's deposit. This implies that the deposit is unconditionally redeemable on demand (and that the bank pays on a first-come-first-served basis), *and* that default is likely on last claim serviced. To make an account *non*-run-prone it suffices to modify *either one* of these two conditions. First, the deposit contract can make redemption *conditional* rather than unconditional. An important historical example was the "notice of withdrawal clause" that many savings banks and trust companies

included in their deposit contracts. If withdrawals were too great for a bank to satisfy without suffering severe losses from hasty asset liquidation, the banker had the option to defer redemption for 60 or 90 days by requiring notice of intent to withdraw to be given that far in advance.

More importantly, banks made default *un*likely by providing their depositors with credible assurances that the bank would maintain solvency, that is, assets sufficient to pay in full even the last in line, even under adverse circumstance. To provide credible assurance, banks before deposit insurance held much higher capital than they do today, in the neighborhood of 20%. They invested much more conservatively, so that they faced much less risk of large asset losses. They avoided loans with high default risk, high risk of loss from interest-rate movements, and loans that were illiquid (hard to resell). Banks that relied on demand deposits and banknotes did not make long-term fixed-rate housing loans, for example. They invested primarily in short-term, high-quality, liquid business IOUs, what were then called "bills of exchange" and is today called "commercial paper." In some countries, banks had an additional backstop in the form of the right to call for more capital from their shareholders if otherwise depositors would go unpaid. Shareholders had extended liability, and in some systems unlimited liability, for the bank's debts.

The historical record does of course indicate that runs and banking panics *were* a problem in United States during the pre-Fed or "National Banking" era (1863-1913), and also under the Fed's watch during the early years of the Great Depression. But *few other countries have had similar experiences.* It is therefore clear that run-proneness and panics are not inherent to fractional-reserve banking. If we look for a pattern across countries, this is what we find: countries like Canada, Scotland, Sweden, and Switzerland, where the banking systems had no more than minimal restrictions on entry, note-issue, branching, and capitalization, had virtually

no problem from runs and none from panics, in contrast to the more restricted and hence weaker banking systems of the United States and England.

The US banking system was made fragile by the federal and state ban on interstate branching, and even branching within many states. Branch banking limits reduced diversification of assets and deposit sources, indirectly limited capitalization, and hampered the effective allocation of reserves. Poorly diversified and poorly capitalized banks could not offer credible solvency assurances, which made them more vulnerable to "bad news" runs.

The US system was also made fragile by federal restrictions on banknote issue that prevented banks from meeting peak demands for currency. Because of those restrictions, seasonal demands for currency became scrambles for reserve money that occasionally escalated into panics.

Reforms to strengthen our banking system

The weakness in the US banking system today stems from a different set of government policies than the ban on branching (eroded in the 1980s and finally eliminated in 1995) and restriction on banknote issue (commercial banks stopped being allowed to issue any notes in the 1930s). Today the weakness is due not to restrictions, but to privileges. One indication of that is that the weakest banks today are not the smallest, but the largest banking companies.

Federal deposit insurance, since its birth in the 1930s, has meant that a comparatively risky bank (one with capital less adequate to cover potential losses on its asset portfolio) no longer faces a penalty in the market for retail deposits. Insured depositors have no incentive to shop around for a safe bank, so they no longer demand a higher interest rate to give it their deposits. Risk-taking is thereby effectively subsidized. Attempts to price deposit insurance according to

risk, so as to recreate a penalty for holding on a risk bank portfolio, were mandated by the FDIC improvement act, but the attempt has failed. The FDIC insurance fund has been exhausted by bank failures, and now has a negative balance. Taxpayers are on the hook for the morally hazardous banking that the FDIC has fostered. Some way of rolling back and ultimately ending federal deposit insurance must be found.

The "too big to fail" doctrine compounds the problem. It gives even blanket protection even to a bank's legally uninsured depositors and subordinated debt holders, removing their incentive to shop around for a prudently managed bank. "Too big to fail" treatment went from the exceptional event to the routine event during the last five years, as the Federal Reserve and the FDIC have deliberately declined to close several large insolvent banks. If no large bank is ever allowed to fail, then large depositors flock to the large banks that have the privilege of an implicit guarantee for all. On such a tilted playing field, an unnaturally large a share of deposits flows into the largest banks. We are already there. Some way of ending "too big to fail" must be found – quickly.

Conclusion

The evidence shows that a fractional-reserve banking system is not unstable when the banking system is free of hobbling legal restrictions *and* free of privileges. The US banking system in the 19th century was weakened by legal restrictions. In response to that weakness, rather than let the banking system become robust by repealing its restrictions, Congress in the 20th century patched over the problem by creating the Federal Reserve system (to act a "lender of last resort") and federal deposit insurance. As a result, the US banking system in the 21st century is chronically weakened by government privileges (especially taxpayer-backed deposit insurance

and taxpayer-backed "too big to fail" bailouts) that generate moral hazard. Banks take advantage of these guarantees by holding asset portfolios too full of default risk and interest-rate risk. They finance their portfolios with excess leverage (too much debt, not enough equity). Rather than trying to come up with another patch, Congress should seek to dismantle the restrictions and the privileges that have left the American people saddled with an unhealthy banking system.

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