Levy Economics Institute of Bard College

Conference Proceedings

24th ANNUAL HYMAN P. MINSKY CONFERENCE ON THE STATE OF THE US AND WORLD ECONOMIES

Is Financial Reregulation Holding Back Finance for the Global Recovery?

April 15–16, 2015
The National Press Club, Washington, D.C.

Organized by the Levy Economics Institute
with support from the
FORD FOUNDATION

Contents

These proceedings consist of edited transcripts of the speakers' remarks and summaries of session participants' presentations.

Foreword

I am delighted to welcome you to the 24th Annual Hyman P. Minsky Conference, "Is Financial Reregulation Holding Back Finance for the Global Recovery?," organized by the Levy Economics Institute with support from the Ford Foundation. As part of its monetary policy research, the Institute is partnering with the Ford Foundation to examine financial instability and the reregulation of financial institutions and markets within the context of Minsky's path-breaking work on financial crises.

The Levy Institute continues to sharpen its focus on strategic issues of economic policy relating to achieving financial stability, long-term economic growth, and higher employment in a period of low inflation. This year's conference will explore some of these issues, among them the design, flaws, and current status of the Dodd-Frank Wall Street Reform Act, including implementation of the operating procedures necessary to curtail systemic risk and prevent future crises; the insistence on fiscal austerity exemplified by the recent pronouncements of the new Congress; the sustainability of the US economic recovery; monetary policy revisions and central bank independence; the deflationary pressures associated with the ongoing eurozone debt crisis and their implications for the global economy; strategies for promoting an inclusive economy and a more equitable income distribution; and regulatory challenges for emerging market economies.

I look forward to seeing you again at future Levy Institute events.

Dimitri B. Papadimitriou
President, Levy Economics Institute, and *Jerome Levy Professor of Economics*, Bard College

Program

Wednesday, April 15

8:45–9:00 a.m.	**WELCOME AND INTRODUCTION** Dimitri B. Papadimitriou, *President, Levy Institute*
9:00–10:00 a.m.	**SPEAKER** James Bullard, *President and CEO, Federal Reserve Bank of St. Louis* "Some Considerations for US Monetary Policy Normalization"
10:15–11:15 a.m.	**SPEAKER** Thomas M. Hoenig, *Vice Chairman, Federal Deposit Insurance Corporation* "A Conversation about Regulatory Relief and the Community Bank"
11:15 a.m. – 12:15 p.m.	**SPEAKER** Paul McCulley, *formerly, Chief Economist, PIMCO* "Escape Fandango"
12:30–1:15 p.m.	**SPEAKER** Elizabeth Warren, *US Senator (D-MA)* "The Unfinished Business of Financial Reform"
2:30–4:00 p.m.	**SESSION 1** **Central Bank Deleveraging and Financial Sector Regulation** *Moderator:* Jim Tankersley, *Economic Policy Correspondent,* The Washington Post Scott Fullwiler, *Professor of Economics and James A. Leach Chair in Banking and Monetary Economics, Wartburg College* Perry G. Mehrling, *Professor of Economics, Barnard College* Michael Greenberger, *Professor, School of Law, and Director, Center for Health and Homeland Security, The University of Maryland*
4:15–5:30 p.m.	**SESSION 2** **Can Better Regulation Prevent The Next Crisis?** *Moderator:* Deborah Solomon, *News Editor*, The Wall Street Journal Bruce C. N. Greenwald, *Robert Heilbrunn Professor of Finance and Asset Management, Columbia University* Jan Kregel, *Senior Scholar, Levy Institute, and Professor, Tallinn University of Technology*

Thursday, April 16

9:00–10:00 a.m.	**SPEAKER** Vítor Constâncio, *Vice President, European Central Bank* "Financial Regulation and Economic Recovery"
10:00 a.m. – 1:00 p.m.	**SESSION 3** **Global and National Recovery Prospects** *Moderator:* Sam Fleming, *US Economics Editor*, Financial Times Lakshman Achuthan, *Cofounder and Chief Operations Officer, Economic Cycle Research Institute* Robert J. Barbera, *Codirector, Center for Financial Economics, The Johns Hopkins University* Daniel Alpert, *Managing Partner, Westwood Capital, LLC* Dimitri B. Papadimitriou, *President, Levy Institute*
2:30–3:30 p.m.	**SPEAKER** Paul Tucker, *Senior Fellow, Harvard Business School*
3:45–5:30 p.m.	**SESSION 4** **Regulating the Regulators** *Moderator:* Pedro Nicolaci da Costa, *Federal Reserve and Economics Reporter*, The Wall Street Journal Éric Tymoigne, *Research Associate, Levy Institute; Professor of Economics, Lewis & Clark College* L. Randall Wray, *Senior Scholar, Levy Institute; Professor, University of Missouri—Kansas City*

Welcome and Introduction

DIMITRI B. PAPADIMITRIOU
President, Levy Institute

Welcome to the Levy Economics Institute's 24th Annual Hyman P. Minsky Conference. This year's conference is based on the topic "Is Financial Reregulation Holding Back Finance for the Global Recovery?"

This conference is again made possible with the generous support of the Ford Foundation, which funds a Levy Institute – Ford Foundation project on the reregulation of financial markets and institutions that provides policy proposals drawing from Minsky's work of many years in this particular area. I want to thank the Ford Foundation for their generosity.

My sincere thanks also go to my long-term colleague and friend Jan Kregel, who runs the Institute's Monetary Policy and Financial Structure program and also had a very strong hand in putting this conference together.

It has been almost five years since the Dodd-Frank Wall Street Reform Act was passed, and its regulatory implementations are ongoing. We assume that banks subsequent to the financial crisis of 2007 have improved their understanding of the challenges they face in the area of liquidity risk. But the crisis has also focused the attention of regulators on early detection of systemic risk, bank liquidity and management, and solvency. Stress tests for banks have been established to determine the risk-adjusted capital adequacy against the agreed-upon benchmarks, although differences of opinion among regulators—the Federal Reserve and the FDIC in this particular case—still exist regarding the appropriate evaluation of derivative contracts and the banks' real exposure from them should a distortion or a financial crisis occur.

Some other regulatory changes have also been put in place, such as a watered-down version of the Volcker rule prohibiting proprietary trading; and the requirement that banks put in place living wills that detail their resolution plans at the time of failing, so as to prevent the need for taxpayers financing rescue programs. Relatively recently (September 3, to be exact), a new rule for the liquidity coverage ratio was released by US regulators, while on October 31, 2014, the Basel Committee updated the standards for the net stable funding ratio, both of which are awaiting approval and adoption by the US Congress.

But even with the implementation of all these regulatory changes, it is not at all clear that it will prevent a financial crisis from happening again. Banks carry an urge to evolve in a way that maximizes revenue. Thus the increasing costs to banks resulting from the new regulatory requirements will find their way to counterparties, including consumers, who, not having easy access to the Federal Reserve or other government agencies, will end up in shadow banking institutions. Moreover, banks, in concert with markets, can quickly create newer, riskier, and more profitable products. It is the very nature of modern finance to transform its structure in response to the prevailing regulation and to evade it successfully. Expanded activity impacts banks' size and interconnectedness with other institutions, perpetuating the concern about being too big to fail and the de facto assumption of government support in future crises.

To many, all these regulatory changes have provided the means for the financial system to withstand the occasional shock. The Dodd-Frank Reform Act is indeed based on the idea that financial markets are normally stable, with the exceptional alarming event. Dodd-Frank was an attempt to remedy random and ad hoc crises like the financial meltdown of 2007, which we all have come to recognize as a "Minsky moment." Ironically, Hyman Minsky actually believed that these moments were anything but random or ad hoc. He had discovered that our complex and sophisticated economic system was prone to an endogenous generation of instability. He was keenly aware of the limitations of macroeconomic theory and policy, and he insistently advocated that the conventional wisdom—that financial markets were operating with no constraints in facilitating production, real investment, and economic growth—was a fantasy.

More than 20 years later, the president of the Minneapolis Fed, Narayana Kocherlakota, acknowledged this by saying, "I believe that during the last financial crisis, macroeconomists—and I include myself among them—failed the country, and indeed the world. In September 2008, central bankers were in desperate need of a playbook that offered a systematic plan of attack to deal with fast-evolving circumstances. Macroeconomics should have been able to provide that playbook. It could not. Of course, from a longer view, macroeconomists let policymakers down much earlier, because they did not provide policymakers with rules to avoid the circumstances that led to the global financial meltdown."

The increasingly risky practices that fuel danger and instability in our economic system, if they're allowed to continue, will ultimately lead us to yet another financial crisis. This new threat to stability is destined to be different from the last, and Dodd-Frank aims at identifying the most vulnerable institutions and practices. Under Dodd-Frank, however, banks continue to function more or less as they did in the past. Their enormous size and multifunction operations are subject only to trivial changes. The Act's most significant measures have been diluted, and many of its other regulations are tied up in delays and very strong lobbying against their passage and implementation. Instead of the fundamental changes that would cushion our fragile system from shocks, Dodd-Frank's centerpiece places a limit on the use of public funds to rescue failing banks. To be sure, it is an understandable response to the megacosts of TARP, which capitalized insolvent financial institutions because they were interconnected. But limiting taxpayer exposure to the next bank breakdown is not the same as preventing a systemwide collapse from happening again.

Even constructive aspects of the Act can have perverse consequences unless the rules are subject to sophisticated and ongoing reexamination as the world of finance develops. It's by now accepted that the role of central banks should be focused on two interdependent areas: first, to institute macroprudential policy and to supervise financial institutions in interconnected markets to prevent financial fragility; and second, to act as a lender of last resort, to provide liquidity in times of financial stress. Economists and policymakers have been urging central banks to focus largely on the macroprudential role that comes in concert with increased regulatory authority; that is, the early detection of the likelihood of a crisis, rather than reducing the cost of dealing with a crisis.

However, as Ross Levine said in 2005, "The goal of banking and financial development regulation should be to support and enhance sustainable economic growth, consistent with consumer protection that maintains the integrity of the markets. A large body of research suggests that a deep and developed financial system is a driving force behind economic development and growth."

Minsky had proposed that the place to start in enhancing financial stability and the integrity of the markets would be for regulators to begin by breaking banks down into smaller units. He also suggested different approaches to supervision and examination of banks, articulating a framework of dynamic macroprudential regulation. In Minsky's view, a bank holding company structure with numerous types of subsidiaries, each one subject to strict limitations on the type of permitted activities, would be a valuable deterrent to risky behavior. We need banks that can earn competitive rates of return, but that also focus on financing capital development, not on big risks. We need reforms that limit profiting without producing, and instead promote enterprise and industry over speculation. They will have to be as innovative, flexible, and opportunistic as the markets they aim to improve. Restrictions on size and function would allow a reasonable chance at understanding esoteric subsidiaries and an opportunity to react quickly to mutations.

These reforms are necessary because, as Minsky long argued, there is a complementarity between financial stability and economic growth and employment. I want to emphasize the connection to employment, because Minsky extended his work on financial fragility to include the exploration of policies that ensure full employment by shifting the emphasis from capital-intensive investment growth to investment in jobs as a means of ensuring both stability in consumption, the most important contributor to GDP growth, and an equitable income distribution.

While private sector investment is crucial, government policy has little influence in stabilizing it. Stability in consumption, however, can be influenced by government policy that targets full employment. And Minsky proposed an employment policy that could ensure a level of full employment and thus stabilize consumption.

The Levy Institute continues to sharpen its focus on strategic issues of economic policy relating to achieving financial stability, long-term economic growth, and higher employment in a period of low inflation. This year's conference will explore some of these issues and the linkages mentioned. We invite you to take a look at some of our work that has been published—it is available just outside this room—and we will certainly welcome your comments.

Thank you very much for coming, and enjoy the conference.

Speakers

JAMES BULLARD

President and CEO, Federal Reserve Bank of St. Louis

Some Considerations for US Monetary Policy Normalization

Thank you very much and good morning. It's a pleasure to be here. I'm going to talk a little bit about normalization of US monetary policy.

I did meet Hyman Minsky at the tail end of his career at Washington University. I actually went to his retirement party at Washington University. It was a pleasure to get a chance to meet him before he left St. Louis.

I always like to come to this conference. It's one of my favorite venues, and I appreciate the organizers inviting me once again.

The normalization topic is a hot one in global monetary policy, and so I thought I'd lay out some of the factors behind the decision that the FOMC [Federal Open Market Committee] faces on normalization. . . .

Current monetary policy remains extremely accommodative in the US, at least by conventional measures. Most people are thinking about big balance sheets, extremely accommodative, over $4 trillion, interest rates at zero; so on the monetary policy side, we're far from normal.

But if you look at the economy itself, the economy itself is no longer in crisis mode. It's much closer to normal behavior than it has been in many years. The idea behind normalization is that there's a mismatch between the monetary policy side, which is still at emergency settings, and the economy itself, which is arguably reasonably close to normal; and that probably you should try to get monetary policy more in sync with what's going on in the economy. So now may be a good time to begin normalizing monetary policy so that it's set appropriately for an improving economy over the next couple of years. Again, there are lags in monetary policy, so you want to start moving now so that you're in a good position a couple of years from now. That will be a theme of my talk here. . . .

Even with a little bit of normalization you still have an extremely accommodative monetary policy in the US. . . . That's why I like to use the term *normalization.* It's still an extremely accommodative monetary policy; it's just not zero interest rates anymore.

Let me just talk about five factors during this talk. This is how I'm going to organize the talk, and we'll take questions at the end.

First of all, labor markets: they've been improving at a fairly rapid pace over the last year.

Then I'll talk a little bit about GDP growth. GDP has been relatively robust, and I'll talk about that.

There is low inflation in the US, but that's due mostly to temporary factors [that] I think will abate going forward.

If you look at Taylor-type monetary policy rules, the one I'm going to show you today will tell you that you should have been off zero last year; so we're already being patient with respect to that kind of a metric.

And, finally, something that Minsky would appreciate: I think the financial stability risks are asymmetric toward staying too long at zero. That's where we can really get into trouble going forward, so I'll make that argument at the end.

I'm going to comment briefly on each of these five factors during this talk. But first let me make a few remarks about the FOMC removing "patient" [in reference to normalizing its monetary policy stance] at its last meeting.

If you follow monetary policy closely on a minute-by-minute basis, you know that the FOMC took "patient" out of the statement [issued at the close of its meeting on March 18], and I would interpret this as a return to data-dependent monetary policy. "Patient" was a particular type of forward guidance that suggested that the policy rate would not be adjusted in the next couple of meetings, according to [Committee Chair Janet] Yellen. Markets interpreted "a couple of meetings" to mean "two meetings." By removing "patient," the Committee has the option to look at the data, to return to more standard monetary policy decision making. The reason you have meetings is because you want to make a decision at that meeting based on the data that you have at that meeting as to whether the policy settings are appropriate. So you might think of this removal of "patient" as the end of forward guidance from the Fed.

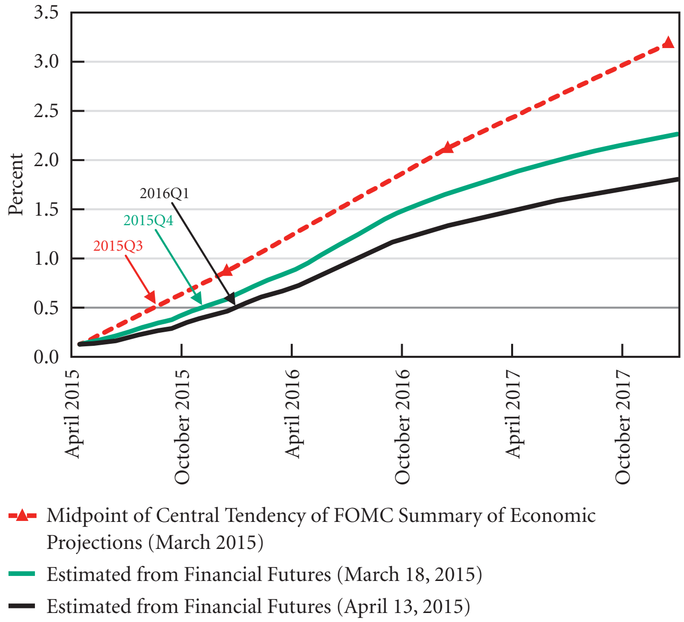
Forward guidance was very popular when we were at zero interest rates, partly because of some theories that are out there that say, well, when you're at zero, you're constrained. One of the things that you can do in that environment is [to] promise to stay at zero even longer, but it's probably not an appropriate way to conduct monetary policy in more normal times.

So: the end of forward guidance with the removal of "patient." Decisions now depend on incoming data relative to forecasts. Better data might push the Committee to pull up its timeline; worse data might push the Committee to push out its timeline further. But the general trend is that the US economy is improving, and this is going to lead to higher interest rates no matter how you cut it. If you say otherwise, I think you'd be risking the "perma-zero" equilibrium experience of Japan in the last two decades; that is, if you're willing to say, even when the economy normalizes, even then we're not going to move off zero, you're really talking about a perma-zero type of policy that Japan has followed.

Just as a little bit of background before I get to these five factors. The current expected policy rate path in financial markets is not in sync with what the Committee is saying. I'm going to show you a picture. The financial markets are saying that rates will come off zero in the first quarter of 2016, according to what I have in this chart here (Figure 1), and that's somewhat later than what the Committee itself is saying. This difference of views is a problem, because those views will have to be reconciled at some point; and if they're reconciled in a sudden way, you'll get a lot of volatility in financial markets.

So here's the picture. In this picture, the top line is what the FOMC is saying and the bottom two lines are what the financial markets are saying according to fed funds futures. The bottom line

Figure 1 **Expected Federal Funds Rates**



Sources: Bloomberg; author's calculations. Last observation: April 13, 2015

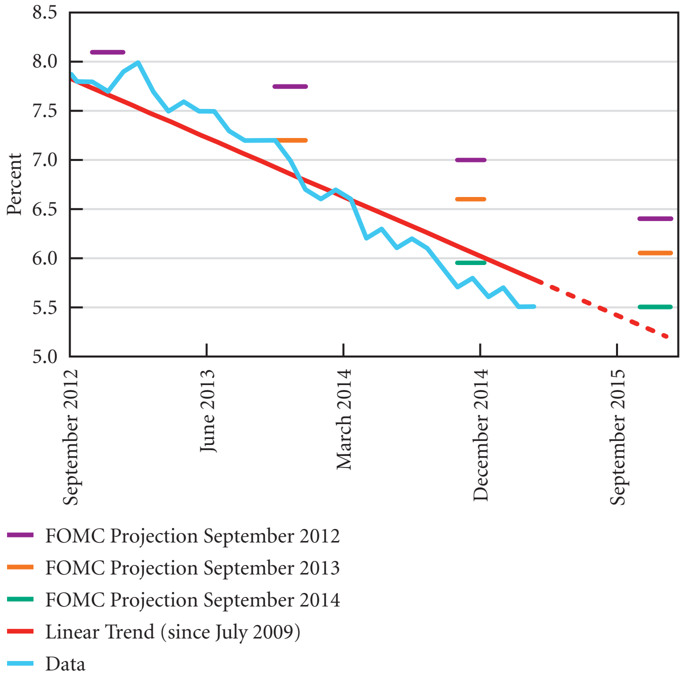
is actually the very most recent line that we have, on this chart anyway. So they [financial markets] are projecting a later start to liftoff and a shallower path for interest rates than what the Committee itself is saying—and that's not the hawks on the Committee like me; this is the median guy on the Committee for the FOMC line here.

The risk here is that there would be some sudden reconciliation of these two lines and that would lead to probably a lot of volatility in financial markets. We certainly had that with the "taper tantrum" in the summer of 2013, so I'm hopeful that these come more into sync as we go forward. And I have been concerned about this. Some people say, well, financial markets have a different view of the future of the US economy than what the Committee has—that the Committee is optimistic and the financial markets are pessimistic about the future of the US economy. But if you look at something like the Blue Chip forecasts, they don't look that different from what the FOMC is saying is going to happen over the next couple of years, so I don't really think that this idea that there's a fundamentally different view of the future of the US economy that's driving this picture is the right one. The right thing for financial markets to do is price to the red line, and that's what I'd like to see.

Let me turn now to these five factors that I mentioned earlier. I'm not claiming that this is an exhaustive list, and you're certainly welcome to bring up other factors in the Q&A.

The first factor was continued improvement in US labor markets. I have a couple of slides on this. Generally speaking, the unemployment rate has fallen faster than the FOMC expected. Jobs have been created at a relatively rapid pace. I've got some pictures of that. Today's unemployment rate is rapidly approaching the range of the longer-run or normal values suggested by the FOMC. Some people say, oh, that longer-run value isn't quite what it used to be, or it's shifting around. But,

Figure 2 **Unemployment Rate**



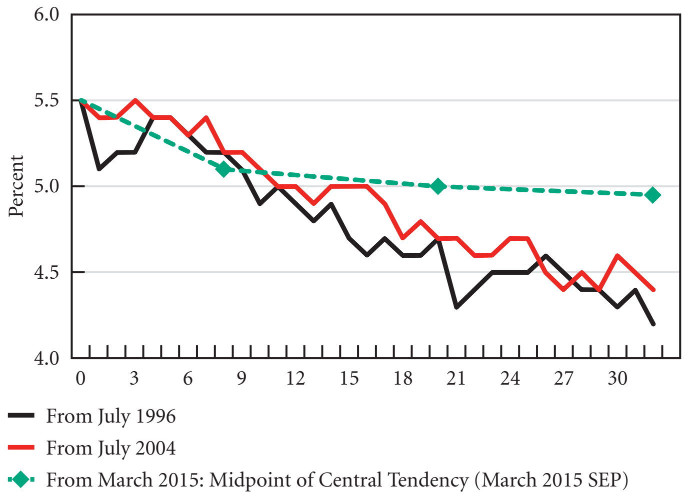
Sources: Bureau of Labor Statistics (BLS); Federal Reserve Board (FRB); author's calculations. Last observation: March 2015

remember that those estimates of where that longer-run value is are subject to a lot of uncertainty. There are wide confidence bands around those estimates. So, saying it should be 5.2 or 5.1 or 5.5 or 4.9—no one knows, because the confidence bands are very wide around that. Those aren't really meaningful statements. I think . . . some things you can say are: Median unemployment in the US over the last 50 years is 5.8 percent; we're below that today. And most people's concept of the long-run or natural rate is in the low 5s somewhere; we're rapidly approaching that. That's probably the most you can say about that.

Here's the picture (Figure 2). Here's the unemployment rate coming down—that's the blue line. In this picture, the red line is a trend, a linear trend. This goes back to September 2012 here on the left part, and up to the present on the right. These other lines represent FOMC projections. If you look at the FOMC projection as of September 2012 on where the Committee expected unemployment to be—that's . . . the top [purple] bars there in this picture—the Committee as of September 2012 was expecting unemployment to be 7 percent; at the end of 2014, the actual number came in below 6 percent, so the Committee was off by a lot on where it thought unemployment was going to be.

Then, in September of 2013, which [is represented by] the horizontal lines below that, they were projecting, at that point, 6.6 percent unemployment at the end of 2014; the actual number was below 6 percent. So the Committee has been continually surprised. They've had flatter projections for how unemployment was going to decline; the actual declines have come down faster.

Figure 3 Unemployment Rate



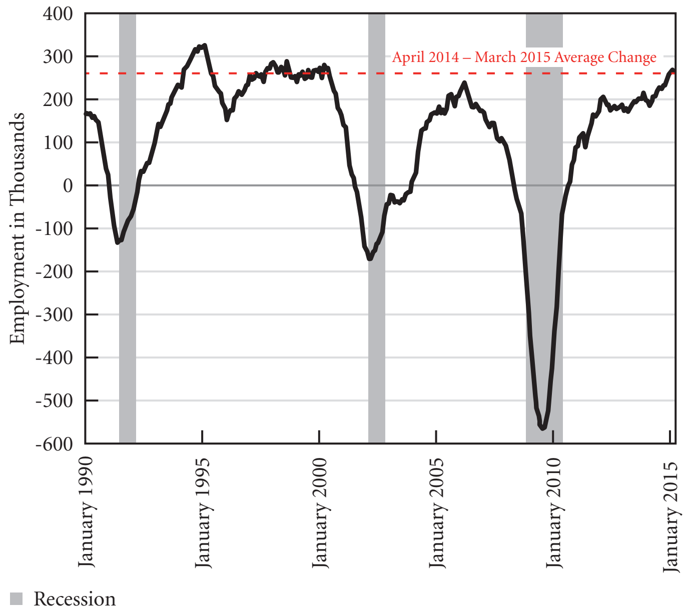
Sources: BLS; FRB; author's calculations

If you look at today's forecast from the Committee, the so-called SEP—which is the Summary of Economic Projections of all Committee members, including me—suggests that unemployment will decline only gradually from its current level. I'm here to tell you that this is wrong. This is the same type of projection that was made in previous years. One way that you can see what's more likely to happen is to consider the last two expansions—the 1990s expansion and the 2000s expansion. You can look at when the unemployment rate was at 5.5 percent, which is where it is at today, and then look at what happened after that and compare that to the current forecast. That's this picture here (Figure 3).

The green dotted line at the top of this picture is the forecast of the FOMC central tendency. So they've basically got unemployment coming down half a percent, and then staying at 5 percent for quite a while. That's kind of a very—I don't know, I won't try and characterize that. It's 5 percent. But then you look at what happened in the last two expansions, and you see unemployment going way into the 4 percent range. In the 1990s there [were] especially strong labor markets. Unemployment eventually hit 3.8 percent at the tail end of that expansion. In the 2000s, unemployment hit 4.2 percent. This suggests that what's going to happen is that, no, we're not going to just stop at 5 percent; we're going to go right down into the 4 percent range. So there is, in a sense, a coming boom in the US economy over the next couple of years.

I want to combine that idea with the lags in monetary policy. You want the interest rate path to be set appropriately for this coming boom period in the US economy. Anytime in the US that you have unemployment in the 4 percent range, that's basically boom times. That's about as good as you can do in our economy. Of course, I say "coming boom times," and of course something can always happen. You can always get hit by a shock and go back into recession. Something bad happens. I'm not saying that. I'm saying, based on just assuming the economy continues to improve over the next couple of years and nothing bad happens, this is what you're going to see: you're going to see unemployment down to the 4 percent range.

Figure 4 **Change in Total Nonfarm Employment (12-month moving average)**

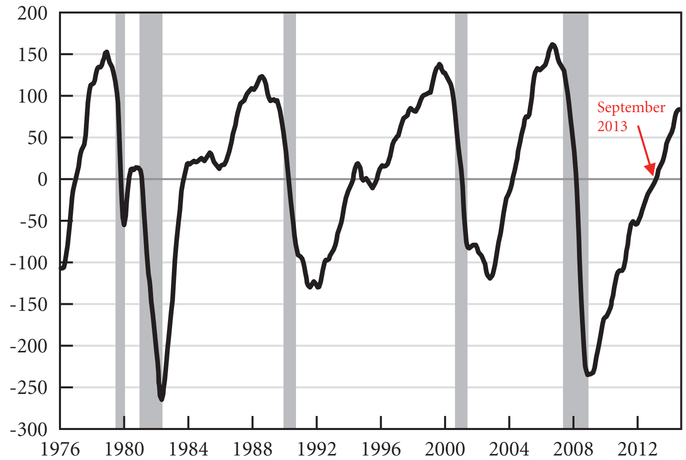


Sources: BLS; author's calculations. Last observation: March 2015

Here's the employment picture (Figure 4). This is nonfarm payroll growth in thousands since 1990. Three recessions are in the shaded regions here. The point of this picture is to say that this point here, which is right at the end on this [chart], the most recent year of job growth: very similar to the late 1990s, and the late 1990s are about as good as you can do—[those were] boom times for the US economy. Job growth has really picked up a lot in the last year, and is really looking about as good as it can in the US economy. It never reached this level, by the way, in the last expansion. You can see that in this picture. This is the year-over-year growth rate.

A lot of people say, what about a broader measure of labor market performance? Shouldn't we be thinking about quits? What about hires? What about [working] part-time for economic reasons? What about a myriad of other indicators of labor market performance? Well, I have a line on this, so I'm going to regale you with it: unemployment and nonfarm payroll employment are the two workhorse indicators of US labor market performance. Understand that there are many other possible indicators. The reason these two are the workhorse indicators is that they've been used for decades in empirical assessments of the US macroeconomy. They work very well, and the correlations with other variables are well understood. But if you wanted to take into account these other indicators, you could do a nerdy thing, which is something I would do since I'm nerdy: I would build an index. You could put all these indicators in the one index, and you could create a labor market conditions index. Then you could throw unemployment away, throw nonfarm payrolls away, and just look at the labor market conditions index. This would be a way to take all the information into account on labor market performance in one number.

Figure 5 **Labor Market Conditions Index (index average = 0)**



Sources: FRB and St. Louis Fed calculations. Last observation: March 2015

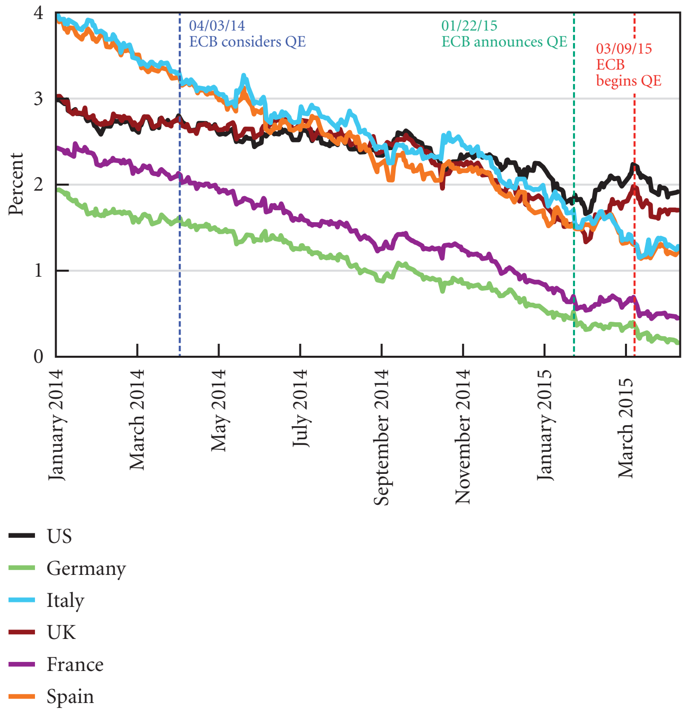
That has actually been done. There's a Fed paper that outlines such an index—a labor market conditions index. And I'm here to tell you, the level of this index has risen above its long-run average value. If you look at the [Federal Reserve Board's] data, they only calculate growth rates. But we've calculated the levels from that and plotted the picture for you, which I'm going to show you here. So even if you want to take into account all these other labor market indicators, you get this picture (Figure 5). And this says that the most recent value, which is over here on the right part of this chart—this chart goes back to 1976—is actually well above the average value and is actually quite strong, and looks like it's poised to go higher.

The other thing about this is that this index is highly correlated with both unemployment and nonfarm payroll employment, so you're going through a lot of rigmarole here to include these other indicators but you're not really getting more information than you would get just by looking at unemployment and nonfarm payroll employment. But if you wanted to do it, then you could do it. Here's the index. It's above average.

So the summary for labor markets is that they continue to improve. They're approaching or even exceeding normal performance levels. Normal labor markets have typically not been associated with a zero interest rate policy. They've been associated with some more normal level of the policy rate, a positive policy rate. And labor market outcomes will likely significantly overshoot long-run levels for the next two years, since monetary policy will remain highly accommodative even as normalization begins.

Okay. So enough on labor markets. Let's talk about GDP growth. Now, a lot of you know that the most recent data on the US economy has been relatively weak. A lot of people have tracking estimates of the first quarter of GDP growth, which has not come out yet. But let's suppose that that estimate is 1.5 percent, which would be a bit down from where it's been in the last couple of quarters. Let's look at the year-over-year GDP growth rate. It's still 3.3 percent even with a weak first quarter, so I think that a 3 percent growth rate is where the underlying trend is in the US economy over the

Figure 6 10-Year Government Bond Yields



Source: Financial Times. Last observation: April 9, 2015

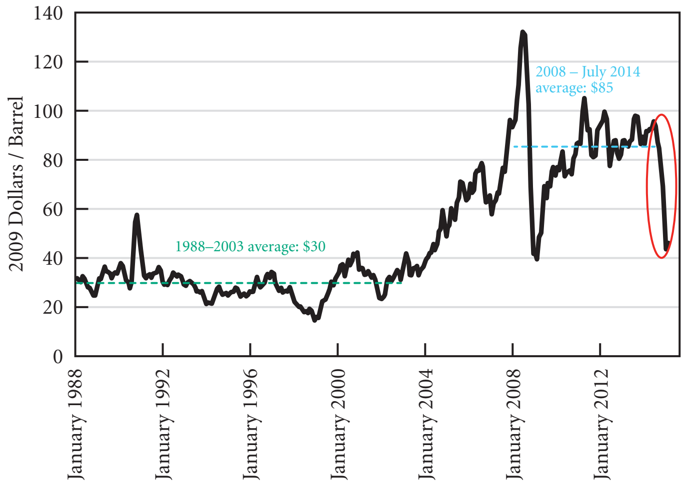
medium term. My other point on this is that the potential growth has been marked down for the US economy. Most people have potential growth for the US down at about 2 percent, so when you're growing at 3 percent, you're a full percentage point above the potential growth rate. So this is good—this is what's driving labor markets to continue to improve.

I think a lot of the commentary has the idea that, oh, we should be at 4 percent, we should be at 5 percent. That was in an economy that had a potential growth rate closer to 3 percent, and we're not there today. In the '90s, we had potential growth of 3; we got growth of 4—boom times. Now we have potential growth of 2 [and] we're growing at 3—also boom times.

We also have tailwinds in the US economy [that] are coming from a persistent decline in oil prices, which has been a very important macroeconomic development in the last nine months or so. The other important macroeconomic development globally is that the ECB [European Central Bank] has undertaken quantitative easing and a major program in sovereign debt. That's driven European yields lower, but it's also driven US yields lower. So as far as bullish factors for the US economy, you can't get much better than saying oil prices have gone down 50 percent and global yields have gone down 100 basis points without us doing anything. We didn't do anything—the ECB did that. So those are very bullish factors for the US economy.

Here's the picture on yields (Figure 6). This picture goes from January 2014, on the left, up to the present, on the right. The yields pictured are the US, UK, Germany, France, Italy, and Spain. The vertical dotted line on the left is when the ECB first started considering a large QE program, which

Figure 7 **Real Oil Price (WTI)**



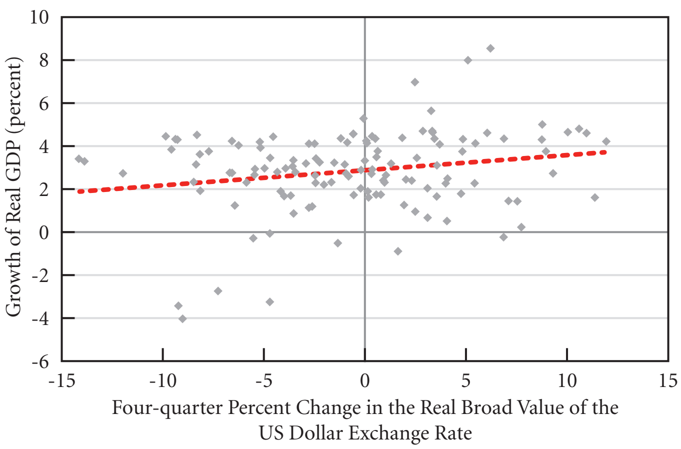
Sources: Energy Information Administration; *The Wall Street Journal*; BLS; author's calculations. Last observation: February 2015

I would pin at about April of last year, when [German Bundesbank President] Jens Weidmann said that it was possible that a QE program could be considered. The first dotted line on the right is when the ECB actually announced QE on January 22nd of 2015. You can see in between those two lines [that] over that nine-month period or so yields globally went down about 100 basis points. I think it was almost all driven by European quantitative easing. As for the way financial markets work, they were anticipating the decision—they were driving yields down. When the decision was actually announced in January, it had already been priced in, and so you saw mixed results after.

Here's my favorite picture on oil (Figure 7). This is the real dollar price of oil since 1988. I think only one thing has happened in global oil markets—two things, maybe—since 1988. There was an equilibrium price of about $30 in 2009 dollars from 1988 to 2003. As an analyst at the St. Louis Fed, a staff person, I used to always put this chart up, and I would argue that the global oil market was in equilibrium. And then something happened in 2003, and I'd like to hear speculation about what it might have been, but prices almost tripled, [to] $85 in 2009 dollars—tripled in real terms—and stayed at this high level, even through the financial crisis, which is the big blip here, and then the most recent data, circled over here on the right-hand side. So something else [has been] going on in global oil markets recently, but this is a major move, and it looks like it's going to be very persistent. So this is a bullish factor for the US economy.

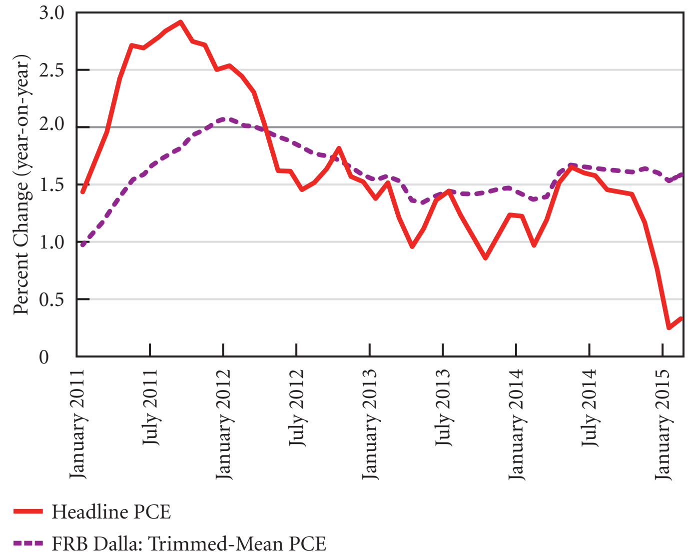
Let me talk about exchange rates for just a minute. The specter of ECB sovereign debt quantitative easing has tended to weaken the euro and strengthen the dollar. This is exactly what you'd expect as a natural consequence of the change in the relative monetary policy stance of the Fed versus the ECB. However, I think real exchange rate movements are not reliably associated with future GDP growth in the US data since 1983, as shown in the following chart (Figure 8). This chart, I think, is convincing, at least for me. It is just one chart, obviously, but you can go read the literature on exchange rate movements and subsequent movements in real GDP, and what you'll find is that

Figure 8 **Change in the Real Value of the Dollar and the Growth of Real GDP over the Following Four Quarters (1983–2013)**



Sources: FRB; Bureau of Economic Analysis (BEA); author's calculations. Last observation: 2013Q4

Figure 9 **PCE Inflation Rates**



Sources: BEA; Federal Reserve Bank of Dallas. Last observation: February 2015

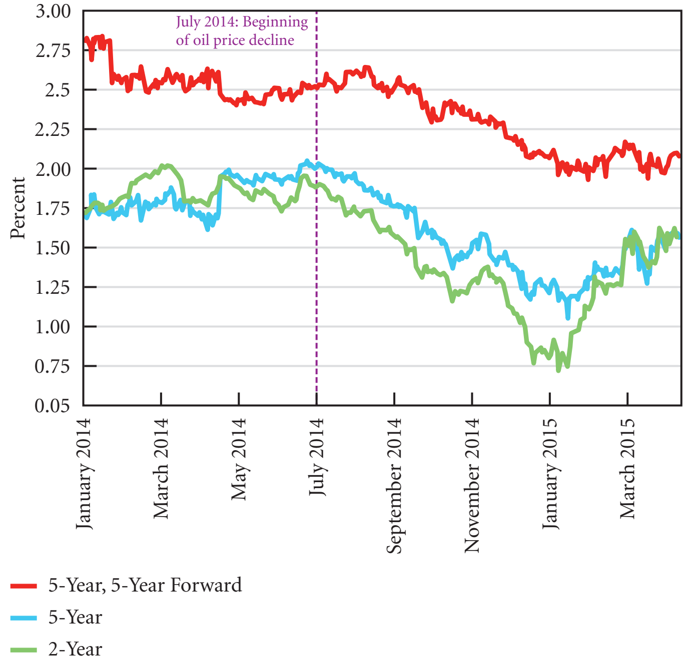
effects are limited, confidence bands are wide, and effects tend to occur with a very long lag and in some cases don't seem to be significantly different from zero at all.

Here's the picture. On the horizontal axis is the four-quarter percent change in the real broad value of the US dollar exchange rate—that's a trade-weighted exchange rate. That's in one year. Then, on the vertical axis, is the future growth of GDP—the following year's growth in real GDP in percent. What do you get out of this? You get a cloud of points that don't seem to be correlated at all. And if you try to force a correlation in there with a regression line, you actually get an upward slope, which would say [that] an appreciating dollar is associated with positive GDP growth, not negative effects on GDP growth.

So at least on a bivariate basis, it's not easy to see these effects in the data, and a lot of the conversation, on CNBC and elsewhere, is, like, "Oh, this is killing the US, it's obviously going to hurt us very badly." I don't see it in the data, and I think there's a broad literature that supports this. So I think it's being overplayed. For big multinational companies, of course the dollar's a big issue; but on the other hand, they can have hedging strategies and they can produce in different countries. So if you're going to run a big multinational . . . corporation, you've got to think about how you're going to handle currency risk; and they certainly have done that over the last two decades. Toyota would be the champion example, which relocated a lot of production.

Okay, let's get to US inflation, which is temporarily low (Figure 9). FOMC does have an inflation target of 2 percent. Inflation was actually above target in 2012—don't let anybody tell you that inflation has not been above target in the US in recent years—but since then it's been down. In 2013–14, [it was] running below. The red line is headline inflation—PCE, which is the FOMC's preferred measure—and you can see a lot of movement down over here on the right part of this chart.

Figure 10 **Breakeven Inflation Rates**



Sources: FRB; Haver Analytics. Last observation: April 10, 2015

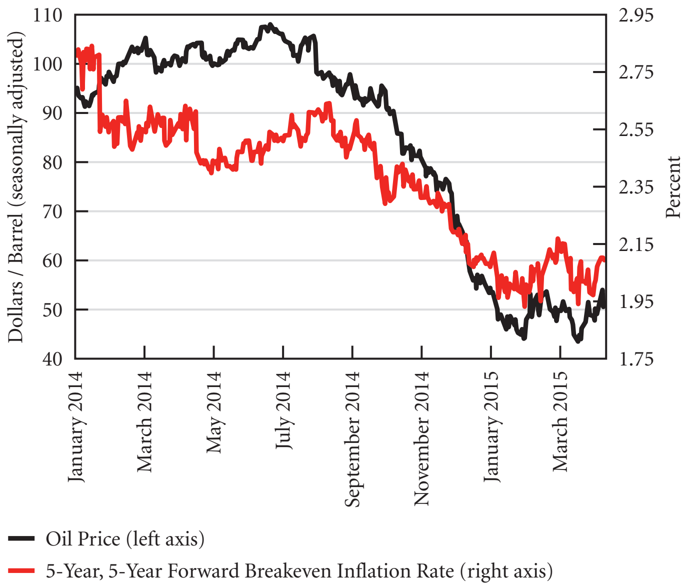
That's mostly temporary factors, mostly energy prices. This huge oil drop, which is a 50 percent drop in oil, does feed through to inflation, and it has a big effect.

If you want to look at something that is more filtered, do not look at core inflation, because that's a bad measure from the 1970s; look at something that's got some more statistical basis to it. That is the Dallas Fed's trimmed-mean inflation rate—that's the dotted line in this picture. That's been holding steady a little above 1.5 percent on a year-over-year basis. I expect both these numbers to go back toward 2 percent as the oil shock goes away.

Inflation expectations are critically important, according to modern macroeconomic theory, as to what drives actual inflation, and market-based measures of inflation expectations have declined to low levels in recent months. I think those are going to come back toward the FOMC's inflation target in the coming months and quarters as the effects of the oil shock go away. However, this bears careful watching, because inflation and inflation expectations moving away from target is a concern.

Here is the market-based expected inflation measure—breakeven, TIPS-based inflation measures (Figure 10). The [vertical] line in the middle of this chart is the beginning of the oil price decline; the top line in this picture is the five-year, five-year-forward inflation rate; the middle line is the five-year expected inflation rate; and the bottom is the two-year expected inflation rate. The thing about this picture is that [the] five-year, five-year-forward [rate], this top line here—this thing should not be moving in response to the oil price shock, because whatever's going on with oil prices might affect inflation today, it might effect inflation over the next five years, but surely is not going to affect inflation from five to 10 years in the future.

Figure 11 **Oil Price (WTI) and Inflation Expectations**



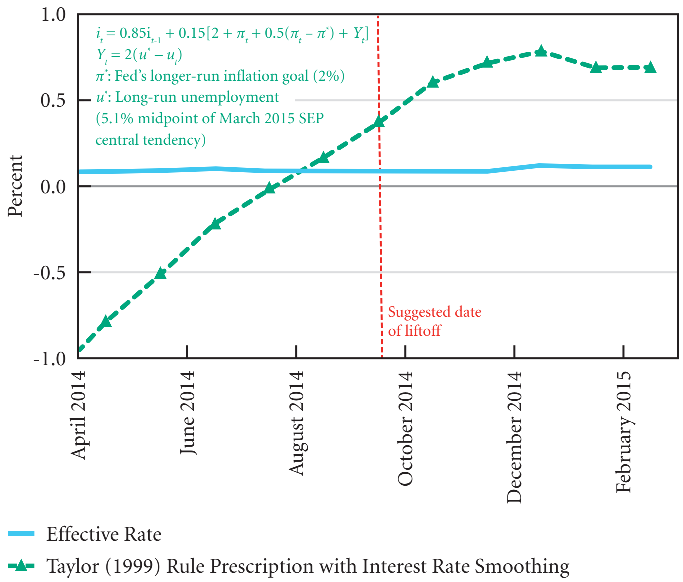
Sources: Energy Information Administration; CME Group; FRB. Last observation: April 10, 2015

So why is this thing so highly correlated with oil price movements? I'm going to reserve judgment on this until oil prices stabilize and we see what happens to inflation expectations. But here's the picture: the oil prices [are] on the left axis and the five-year, five-year-forward is on the right axis, and they look like they're basically 100 percent correlated here (Figure 11). They're not supposed to be correlated, but they're, like, 100 percent correlated. This is the traders doing crazy things here, so I'm not quite sure why this is. But it bears watching, because inflation expectations are quite important. The FOMC, to be fair, has cited survey-based measures of inflation expectations, which haven't moved nearly as much as these market-based measures.

A lot of people talk about nominal wage growth as being really important as we go forward. I think there are a couple of things to note here. One is that nominal wages tend to be a lagging indicator of inflation, and so it's not that helpful to look at the wage changes if you're trying to get a handle on where inflation is going. Secondly, nominal wages have a productivity component to them. Productivity is notoriously hard to measure and has been quite low in recent years, so, while I'd like to see everyone in America get a huge increase in wages, and I'm certainly for that, I'm not sure that you can look to wages when you're trying to think about how to make monetary policy over this two-year time horizon coming forward, because it's a lagging indicator of what's going on with inflation.

Let's look at the Taylor-type rules for just a minute here. Taylor-type rules have been out of fashion. While the policy rate's at zero, they're kind of useless. But now that we're talking about normalization, it's interesting to look at the prescriptions of Taylor-type policy rules. In a Taylor-type rule, the short-term nominal interest rate should respond to deviations of inflation from target and actual unemployment from its long-run level. The particular rule that I'm going to plot here also has

Figure 12 **Federal Funds Rate**



Sources: FRB; BLS; BEA; author's calculations. Last observation: February 2015

a lagged interest rate in it, an inertial component that keeps everything a lot smoother than it would otherwise be. . . . This is a rule that's been used around policy circles in the last decade or more, and this rule suggests that we should have already lifted off.

The picture here (Figure 12) goes back to April of 2014 on the left-hand side of the picture up to the present on the right-hand side. The actual policy rate is this superflat blue line—that's the ZIRP policy—and the triangles are the policy recommendation. The suggested date of liftoff was not 2015, not 2016—oh no. [It was] 2014—September 2014. That's the vertical dotted line here [that] suggests a date of liftoff. So in this sense, the Committee obviously has not moved off zero year, but we're already being quite patient in not having moved so far despite standard policy rule recommendations.

Now, you don't have to be a slave to the policy rule. You can, of course, cite other things; but the question is, this policy rule has described policy well in the past during the periods when the US economy has performed fairly well and monetary policy has worked fairly well. Why aren't we doing that? If you want to deviate from it, that's fine, but you've got to give explanations about why you're deviating from it.

Some recent Taylor rules bring up a so-called time-varying *R-star* [*r**]. This is the intercept term in that Taylor rule. People like to say, well, this thing is moving around a lot all of a sudden. That is not how Taylor-type rules were implemented in the past. In the past, you did not have *R-star* moving around a lot. It was a fixed value, it was a long-run value. All the empirical work on Taylor rules had this thing fixed, and so all the literature that has built up, that supports Taylor rules and the use of Taylor rules, was based on *R-star* being fixed. So the empirical properties of Taylor rules with time varying *R-star* intercept terms are largely unknown. There hasn't been a lot of literature on that, and so I wouldn't switch to that all of a sudden. I think you just want to take Taylor rules for what they are and for how they've been estimated in the past in the literature.

Finally, let me talk about financial stability risks, which I think are asymmetric toward remaining too long at zero. Then I think we'll have a few minutes for questions here.

A risk of remaining at the zero lower bound too long is that an asset market bubble will develop. The US [was] plagued by bubbles in the 1990s and the 2000s, not to mention Japan in the late '80s and early '90s. Each of these bubbles eventually burst, and the aftermath included a recession. The 2001 recession was relatively mild, but the 2007–2009 [recession] was a global macroeconomic disaster. So would something similar develop over the next several years as the US economy continues to improve, while monetary policy remains exceptionally accommodative?

This is almost separate from the debate about liftoff, because the Committee has already committed to saying that interest rates are going to be low—we're only going to raise interest rates at a slow pace. If I'm right that you've got a coming boom in the US economy and you're going to keep interest rates that low through that boom, that sounds like a recipe for asset market bubbles, and they've been a killer for the US economy in the last 20 years. Our models are not good at capturing these effects, so it doesn't do any good to pull out your model. Your model doesn't have any bubbles in it. Your model says bubbles can't ever happen. Well, we've got two decades of experience with that.

Such an outcome would certainly be unwelcome and, I think, constitutes a significant risk for US monetary policy, much larger—much, much larger—than the risks associated with the zero bound itself. Some people are saying, well, maybe if you raised rates a little bit, maybe a shock would come, and then you'd have to go back to zero. *No.* What? You're no worse off, if that happens. And if the shocks drive you back to zero, shocks drive you back to zero. I'm sorry: that's what happens. That's data-dependent monetary policy. But this risk of a bubble is far larger, and I think history has shown that we have little ability to contain these bubbles if they do develop. We have little ability. You can talk about things you could do, but I don't think we can probably contain it. We don't even understand them all that well.

I think a gradual normalization would help mitigate this risk while still providing significant monetary policy accommodation for the US economy. What you should be doing is shading slightly to little bit higher interest rates to mitigate the risk of a bubble. What you can get out of that is possibly a longer expansion—you can make the expansion go for a longer period of time. You'll continue to get reasonable GDP growth, good performance in labor markets, and you'll delay the next recession longer. So you can extend the expected length of the current economic expansion by mitigating this bubble risk slightly by raising rates a little bit.

Finally, there is a theoretical issue I wanted to bring up, and that is that there are models that say zero interest rate policy might be the worst policy. If you read the New Keynesian literature, on which most of modern monetary policy is based, it actually has a worse policy. The worse policy is an interest rate peg, which means that no matter what happens in the economy, you never change the interest rate—that's the interest rate peg. So the economy zigs and zags around, but you just keep the interest rate the same all the time. That's actually the worst policy in the theory. And the consequence of the interest rate peg is that many different equilibria are possible, including some that may have wide asset price swings that look like bubbles. So what the model is saying is that if you follow an interest-rate-peg type of policy, lots of things can happen that are consistent with market clearing and with rational expectations. It doesn't say those things have to happen; it says lots of things *can* happen in that environment.

Now look at actual policy over the last six-and-a-half years: we haven't moved the interest rate once. That sure looks like the interest-rate-peg-policy. And if we keep with that kind of policy, we may be unwittingly following this interest-rate-peg policy and therefore risking asset price bubbles.

In summary, I considered five factors weighing on the decision to normalize monetary policy. I think the five factors go like this: Labor markets are likely to continue to improve. Real GDP growth is likely to continue apace despite the first-quarter slowdown. Current low inflation is likely temporary and will return to target. If you look at Taylor-type-rule recommendations, standard ones, they tend to tell you that you should [have been] off the zero lower bound last year. And finally, the risks [of] remaining [at] zero too long are substantial.

I appreciate the opportunity to talk to you all, and I'm looking forward to your questions. Thanks very much.

Q&A

Q: I'm curious about how the Fed views investment spending in the United States. It's been subpar. Investors are rewarding companies for generating free cash flow and distributing it in share repurchases or special dividends as opposed to reinvesting it in tangible capital. It looks like the net result of that is we've got low productivity growth rates, which may be leading to higher unit labor costs than we might expect in this phase of the business cycle. So, for example, as of Q4, nonfarm business unit labor costs are about the same as compensation costs at 2.5, because there's no productivity growth. How are you guys thinking about the dearth of investment and the low investment-to-GDP shares, and is this a risk in terms of lowering potential GDP and possibly requiring more aggressive activity than the markets currently expect?

JB: I think we'd certainly like to see more investment in the US, but I think as far as monetary policy is concerned, we're doing all we can to try to stimulate investment. We certainly had a very aggressive policy response. And, as I say, we've already been pretty patient about remaining with zero interest rate policy even when some of our rules and stuff have told us to move off that. So I think we're doing all we can to try to encourage this. You might have to look to other types of policies that might encourage more investment in the US. Firms returning cash to shareholders—I always have to smile a little bit. Well, what's the shareholder going to do now? Now you've got cash, he's got to look for another investment somewhere else. So we'd certainly like to see more investment, no question about it. . . .

There is an upside to normalization, which is, you attract capital from around the world and that comes to the US, and you might see more investment from that channel.

Q: After the discussion of the interest rate policy, is the Fed considering the size of the balance sheet as a monetary policy change coming? Any offloading of any of the assets on the balance sheet of the Fed?

JB: That's a great question. I talked all day today all interest rates—nothing about the balance sheet except the first slide. . . . I'm kind of the wrong guy to ask about this because I was the guy that said we should manage the balance sheet more carefully. But the Committee has definitely made a decision that, in trying to normalize, we're going to go interest rates first, and we're going to put the balance sheet in the background. I think at some point after we get going on normalizing interest rates, that will allow some runoff of the balance sheet, but it's unclear exactly when that decision will be made. And I haven't heard too much enthusiasm for anything more aggressive than that.

Q: . . . I read a lot of literature on how income inequality is sort of slowing down—it has impact on the economy in terms of slowing it down. Does the Federal Reserve Bank—your committee—take into account that particular aspect?

JB: Of course income inequality is a big issue, but it's traditionally been viewed as not closely connected to monetary policy. However, we've received plenty of criticism from all sides, as we always do, on this issue because people think that the quantitative easing in particular tends to enhance equity market valuations, and that this goes to the top end of the income distribution; so this has increased income inequality. I actually gave an entire speech on this, if you need some bedtime reading, at the Council on Foreign Relations last year.

On the issue of whether QE increased income inequality, my view of the equity markets is that they were at a very low level in 2009 and they have moved back up, in broad terms, mostly to normal levels. So in some sense it was just a restoration of the old equilibrium as opposed to increasing income inequality. Otherwise, you get in the position of saying, "I wish equity markets would go down because this would make income more equal in the US," and that doesn't seem like the right way to think about the US economy. You want the US corporate sector to be very competitive in the global environment; you want equity valuations to be high in the sense that people have a lot of confidence in the companies that are leading the US economy. So this is basically a good thing.

The other thing is, in my speech I emphasized a lot about the life-cycle aspects of income inequality, which I think are underappreciated in this discussion. In a life-cycle model, you've got young people, middle-aged people, and old people. The middle-aged people are peak income earners and the young and old have relatively lower incomes, so this by itself generates income inequality—perhaps as high as 75 percent of the income inequality that you observe is that. Then these guys are lending to each other, so credit markets are smoothing life-cycle consumption. So credit markets have a lot to do with helping us mitigate the uneven levels of income that we enjoy over our lifetimes. Credit markets are pretty tightly interconnected, and in that sense I think there's more of a connection with monetary policy than people appreciate. But we've got a long way to go to understand all the connections between income inequality and monetary policy.

Q: Related to that, if the equity markets aren't already [heading] toward bubbles, what are you looking for, as the Fed, for the risk of bubbles as you go forward?

JB: My story about bubbles is that most of the risk lies ahead of us, because what's going to happen with unemployment coming down to these normal levels and going into the boom range, and the

FOMC already committed to a very low interest rate environment, that's a witch's brew of factors that sounds like a bubble. I think that's the risk ahead. It doesn't mean it has to happen, but it means it's a risk. Does that make sense?

Q: Good morning. Thank you for your comments. You mentioned something in one of the slides, and if I remember correctly it was "sovereign debt quantitative easing." If you could please clarify? Was that a reference to the US economy?

JB: The main development in the last year in global monetary policy is that the ECB, which had resisted unconventional monetary policy for five or six years, threw in the towel and said, "We're going to go ahead." There were good reasons why the ECB resisted this. They're a multinational institution. They came together by treaty. The leadership was not sure that the treaty really authorized them to do something as unconventional, and that was not envisioned at the time that the treaty was ratified, as unconventional monetary policy. So they took a strategy of wait and see. They wanted to see if the economy would recover on its own without unconventional monetary policy.

But during 2014, their hand was forced. Inflation kept coming down, inflation expectations kept coming down, and so they had to undertake a major effort. Now the question was, "What are they going to buy?" So quantitative easing is bond buying. The reason there was so much resistance in Europe is that buying country debt was the thing that people didn't want to allow when they ratified the Maastricht Treaty. So sovereign debt quantitative easing means that you're somehow going to purchase the debt of a lot of different sovereign nations across Europe, the government-issued debt—sovereign-debt QE—and the issue about it was, how do you decide whose debt to buy? Should you buy more Portuguese debt and less Irish debt, or something like that? They did that by capital key weights, which is almost like GDP weights, so a lot of the purchases are German debt.

These were tough issues for the ECB, but they went ahead and made this decision. I think it was a momentous one—a trillion-euro program. It has an open-ended aspect. And, by the way, some of you that know me know that I was in Europe in the summer of 2013 advocating exactly this policy. So they did come around to my position, but only about 18 months too late.

Q: In one of your first charts, your red line made me think of two things. One is in terms of your confidence in that line and the history of the FOMC's predictions in terms of the economy and questions around that—how good that history is. The other thing was the disagreement amongst the FOMC as well. What keeps you up at night the most in terms of achieving that line? Where do you think you might be wrong?

JB: I think you're pointing out that the forecast record is not great of the FOMC, which I would not want to admit in public, but it's probably true. Forecasting is not that hard, in a way, because of course it's hard to forecast the US economy, but it's easy to say, based on historical experience and based on the statistics, if you're growing at 3 percent or you're growing near trend, you're going to continue to grow above trend, and then you're going to go back to this trend pace. So I think that's the simplest kind of prediction to make, and that's where to place your bets; but you should do that understanding that shocks are big and they can come at any time either to the high side or the low side. And so you'll ultimately be wrong; every time you write down a forecast you should remind yourself you're ultimately going to be wrong.

Again, I don't think that the private sector has really all that different a forecast from what the FOMC has, at least when I look at the private sector forecasts that are available publicly; so I don't think the mismatch between the FOMC and the markets is due to the idea that the private sector believes in secular stagnation, and the Fed does not. Instead I think something else is going on, and that's why I think those two lines need to be reconciled.

Q: I very much appreciate the concern that you've raised about potential bubbles, given what you've outlined today. And as you know, a lot of seasoned investors, the Wall Street guys, are saying if you start to normalize rates, they're concerned about the risk of what kind of correction there might be, that risk of correction; so you have these two views. And I'm just wondering how sensitive would the FOMC be to whatever correction may be out there in terms of its impact on the economy.

JB: Well, my hope is that we're talking about this so much that, by the time we actually get around to actually doing anything, I presume that it will be anticlimactic. But I do worry about this mismatch between market expectations and the Committee because then I think if the Committee actually moved soon, let's say, then the markets would have to reprice a lot. So hopefully we can get a better match between expectations as we go forward.

Look at the taper tantrum, which was essentially that, in the summer of 2013, ... Chairman Bernanke said before Congress that he thought we might taper our asset purchases over the next couple of meetings. But that was very different from what markets were expecting, which was that we would continue the same pace of purchases through the end of 2013. So when those two things collided, boom, you got 100 basis points on long-term rates globally, which is a huge move. So we would be concerned about something like that. But hopefully we can get better aligned before we make the move.

When we actually tapered in December of 2013, markets actually rallied because, by the time we got to that point, we had very good data. We had complete agreement between markets and the Fed about the next steps, and so when we actually made the move, it was an anticlimactic event. Hopefully we can get to that kind of situation with a rate increase.

The other thing is, we're talking about tiny increases in interest rates. I'm certainly also committed to a very slow pace of increases and very data-dependent; take it slow, take it easy. I'm fully cognizant that this is a special situation for the US economy. I just don't think that you can continue to rationalize this zero interest rate policy in an environment where the economy is just a little bit away from what you'd think of as normal economic performance. You can justify lower than normal interest rates; but you can't say it should be all the way at zero and have the huge balance sheet, which are really emergency policy measures, in a situation that's no longer the emergency. So I think we'll go slow, we'll be data-dependent, and I think it will be anticlimactic when we actually move.

Well, thanks very much. I appreciate all your questions. There [were] a lot of great questions. Always a great audience. I can't be here all day, but I'll be here for a little while. So thanks a lot.

THOMAS M. HOENIG
Vice Chairman, Federal Deposit Insurance Corporation
A Conversation about Regulatory Relief and the Community Bank

Introduction

I have always found it insightful that Senator Richard Shelby, at confirmation hearings for bank regulatory posts, often asks the nominees if they know of any failed bank that was well capitalized, well managed, and well supervised. The answer is always wisely "No."

As the effects of the financial crisis of 2008 are receding, this is a useful question for all policymakers to contemplate as they consider issues of regulatory burden and relief. Reducing unnecessary regulatory burden is a legitimate goal. However, such relief can only follow if we are confident in the durability of the financial industry.

In my remarks this morning I will share my perspective on what led to the regulatory burden from which the industry is now seeking relief. I will suggest a set of criteria that would strengthen the industry's case for such relief, which will emphasize the importance of strong equity capital and the core commercial banking model. Finally, I will suggest that regulatory relief for the community bank should not be given as a reason for abandoning the Volcker rule.

Regulatory Landscape

In addressing the issue of regulatory burden, it is important to recognize that by necessity, the largest, most systemically important banks have had access to the safety net for decades, as they conduct intermediation and operate the payments system. However, more recently they have been permitted to engage in extended activities previously reserved for investment banks, insurance companies, commercial and industrial firms, and other types of businesses. When these activities take place inside a bank, they are directly subsidized by the taxpayer. This situation has shown itself to be unstable, contributing to the financial crisis and leading to the Dodd-Frank Act.

To be clear, I am not a critic of these activities, all of which are important components of the financial system. My concern lies with the distortions to the financial system that follow when these activities are conducted by commercial banks, resulting in creditors becoming protected and markets no longer disciplining firms' behavior. The public subsidy allows the commercial bank that engages in this extended set of activities to obtain funding on favorable terms, operate with less capital demanded by creditors, and profit from the upside of investments while pushing the downside onto the taxpayer.

To illustrate this point, a colleague and I at the FDIC have constructed the Global Capital Index (Index),[1] which shows the tangible capital levels for each of the largest global banking firms and the average levels for different size groups of US banks. The Index shows that the largest global banks—those with the broadest range of activities beyond traditional commercial banking—hold the least amount of capital of any group of banks. In other words, management has chosen to retain a business model in which the firms engage in expanded trading and related on- and off-balance-sheet activities subsidized by government backstops. For example, column 8 of the Index shows that when balance sheet assets and off-balance-sheet activities are fully accounted for under international accounting standards, the largest firms on average hold less than five cents of capital for every dollar of assets held. This is not safe; it invites uncertainty when the system is under stress and undermines financial stability. It is hard to justify regulatory relief for the handful of such firms when too little is different today than in 2007.

However, the Index also illustrates that at the approximately 6,400 other commercial banks in the United States, capital levels far exceed those of the largest firms. The average capital positions held by the remainder of the industry, shown in the last three rows of the Index, are much stronger. For example, the largest non G-SIBs have tangible capital exceeding 8 percent, a level similar to other, smaller bank groups listed. There is, from a capital perspective, a case to be made for regulatory relief for the vast majority of commercial banks.

A Proposal for Discussion

With this in mind, I suggest focusing the regulatory relief discussion on activity and complexity, not strictly size. As such, I suggest defining eligibility for regulatory relief around the following criteria:

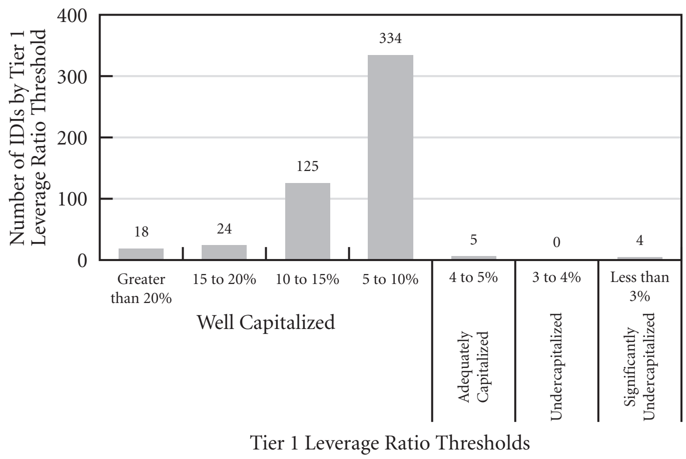
- banks that hold, effectively, zero trading assets or liabilities;
- banks that hold no derivative positions other than interest rate swaps and foreign exchange derivatives; and
- banks whose total notional value of all their derivatives exposures—including cleared and non-cleared derivatives—is less than $3 billion.

Such banks are consistently better capitalized than less traditional banks, as the Global Capital Index shows, and they have a lower rate of failing or requiring government assistance, as shown in Chart 1.

Of the approximately 6,400 commercial banks, only about 400 do not meet these three criteria. None of the banks with more than $100 billion in total assets meet these criteria, and only 90 of the more than 4,000 banks with less than $250 million in total assets fail to meet these criteria.

The right level of capital is a discussion worth having. I suggest opening the conversation by recommending a fourth criterion to be eligible for regulatory relief: a bank should have a ratio of GAAP equity-to-assets of at least 10 percent. The substantial majority of community banks already have equity-to-asset ratios of 10 percent or higher, and the number is in reach for those that do not.

Chart 1 **510 Insured Depository Institutions That Have Failed since 2008 by Tier 1 Leverage Ratio, Reported as of 12/31/2007**



Source: FDIC Call Report Data as of 12/31/2007

Once conditions for eligibility are established, the dialogue with community banks could turn to areas that they consistently highlight as sources of regulatory burden. These areas include:

- the new risk-based capital rules,
- an ever-expanding Call Report, many fields of which aren't relevant for traditional banks,
- some elements of consumer compliance regulation,
- appraisal requirements, and the frequency of the examination cycle.

Given that activities of the more traditional banks pose less risk to the public, I suggest that meaningful regulatory relief for traditional banks—those that meet the criteria above—can be provided in a manner that is entirely consistent with safety and soundness. Such relief could include:

- Exempting traditional banks from all Basel capital standards and associated capital amount calculations and risk-weighted asset calculations.
- Exempting such banks from several entire schedules on the Call Report, including schedules related to trading assets and liabilities, regulatory capital requirement calculations, and derivatives.
- Allowing for examiner judgment and eliminating requirements to refer "all possible or apparent fair lending violations to Justice" if judged to be de-minimis or inadvertent.
- Establishing criteria that would exempt traditional banks from appraisal requirements.[2]
- Exempting traditional banks, if applicable, from stress testing requirements under section 165(i)(2) of the Dodd-Frank Act.
- Where judged appropriate, allowing for an 18-month examination cycle as opposed to the current required 12-month cycle for traditional banks.

Volcker Rule Exemptions

Finally, on this list you will not find a recommendation to exempt traditional banks from the Volcker rule as some have suggested, even for community banks. The Volcker rule represents a modest step toward limiting insured banks from proprietary trading in derivatives, thus moderating the incentives for speculation with subsidized funding from the FDIC and the Federal Reserve using insured deposits and ready access to central bank liquidity. Weakening the Volcker rule would be contrary to moving the largest financial firms toward self-sufficiency, where they can return to serving as a shock absorber rather than as an amplifier for shocks to the economy, as they were in the last financial crisis and remain today.

Some say that the Volcker rule poses onerous and costly operational compliance burdens on community banks. The reality is that the vast majority of community banks have virtually no compliance burden associated with implementing the Volcker rule. Not only do these banks not have proprietary trading operations, but they generally have no trading positions of any kind. In addition, community banks do not invest in any private-label securitizations, let alone more complicated hedge funds or private equity funds.

I cannot state more directly, as existing guidance[3] already details, that community banks with less than $10 billion in total assets are already exempt from all of the Volcker rule compliance requirements if they do not engage in any of the covered activities other than trading in certain government, agency, state, and municipal obligations. This is the case for most community banks.

For community banks that are receiving conflicting information from consultants, regulators should clarify or expand the current guidance to eliminate the confusion.

For the banks under $10 billion that do engage in traditional hedging activities, existing guidance should be updated to clarify that Volcker rule compliance requirements can be met by simply having clear policies and procedures that place appropriate controls on the activities—and which are required regardless of the Volcker rule. The existence and appropriateness of such policies and procedures can be verified by examiners as part of the regular exam process, and would not require extra compliance assistance from consultants.

Finally, some banks under $10 billion do engage in less-traditional activities that may be restricted by the Volcker rule. For these banks, there would be some initial compliance requirements to determine their status. These banks represent less than 400 of a total of approximately 6,400 smaller banks in the US. And of these 400, most will find that their trading-like activities are already exempt from the Volcker rule. If the remainder of these banks have the expertise to engage in complex trading, they should also have the expertise to comply with the Volcker rule.

On balance, therefore, a blanket exemption for smaller institutions to engage in proprietary trading and yet be exempt from the Volcker rule is unwise. A blanket exemption would provide no meaningful regulatory burden relief for the vast majority of community banks that do not engage at all in the activities that the Volcker rule restricts. However, a blanket exemption for this subset of banks would invite the group to use taxpayer-subsidized funds to engage in proprietary trading and investment activities that should be conducted in the marketplace, outside of the safety net.

Conclusion

Defining an approach to regulatory relief by complexity and activity, not strictly size, would provide a beneficial and prudent trade-off for firms protected by the safety net by acknowledging that banks that engage in traditional banking activities are sufficiently supervised, and by appropriately bringing riskier activities under greater scrutiny.

For the vast majority of commercial banks that stick to traditional banking activities, and conduct their activities in a safe and sound manner with sufficient capital reserves, the regulatory burden should be eased. For the small handful of firms that have elected to expand their activities beyond commercial banking, supported with the subsidies that arise from the bank's access to the safety net, the additional regulatory burden is theirs to bear.

The views expressed are those of the author and not necessarily those of the FDIC.

Notes

1. Global Capital Index: https://www.fdic.gov/about/learn/board/hoenig/capitalizationratios4q14.pdf.
2. Research would be required to determine the exemption criteria based on an appropriate number or dollar threshold of loans against real estate collateral.
3. Volcker rule guidance for banks with less than $10 billion of assets: https://www.fdic.gov/regulations/reform/volcker/summary.html.

Q&A

Q: Thank you very much, Dr. Hoenig. Eric Garcia at *National Journal.* I'm curious if you had any comment about the fact that the recent congressional budget eliminated Orderly Liquidation Authority for the FDIC. This is both in the House budget and Senate budget. I know this is something that both Chairman Bernanke and Hank Paulson were concerned about during the crisis. What are your thoughts on the fact that they're trying to get rid of OLA?

TH: Well, I understand where they're coming from, from the following. [Under] the Dodd-Frank Act, the preferred method for resolution is Title 1, which is bankruptcy. The effort should be on assuring that these companies structure themselves in such a manner as to be able to be brought through bankruptcy without bringing the entire economy down. That's the goal. That's the objective. Title 2 is the so-called backstop to that, and I would like to see that not have to be used.

Now the question will become, are we ready for Title 1? And if not, if we have a crisis, will we have a mechanism? That's going to be the argument over Title 2. My own view is, we ought to focus on Title 1 and then we can talk about eliminating Title 2, once we're confident that Title 1 works.

But one way or the other, if we have a crisis, here's the issue: with all that we've done so far, we still have too-big-to-fail. I don't think we have solved that problem yet. That's the issue. So if we have a crisis, then we're going to have to face the fact of whether the government steps in or not again. We can say, as we did in 1994 and 2000 and 2006, that we've taken care of too-big-to-fail, but I'm not sure that we have. That's really where our attention should be.

Q: Would there be any kind of firewall between these 400 institutions and the other 6,000? It would grant relief to the smaller institutions and create supervision for the larger ones, but wouldn't there be some arbitrage there?

TH: Well, how would the arbitrage come about? . . . If they don't engage in trading and they don't engage in nonbank activities, they don't engage in anything but lending, primarily. What's the arbitrage?

Q: They could borrow funds.

TH: Yes, they could borrow funds. . . . How do you think that would be arbitrage, I guess is the question.

Q: I guess I'm thinking more in terms of the interconnectedness between the large and the small.

TH: Okay, so interconnected, but in what way?

Q: To borrow funds.

TH: You mean the smaller banks have funds borrowed from the larger, or the larger banks borrowing from the smaller?

Look, my proposal does not propose to take . . . complete risk out of the banking system. Banking is about risk. Making loans, they have risk. There's no risk-free business. My concern is that you subsidize the risks. So when you minimize the subsidy of the risk, that's really the goal, so that the market better prices it and so forth.

So now you have 6,100 banks [that] are traditional banks. Actually, of the 6,500, you probably have 6,400 [that] are traditional, so you have 100 banks that are on the other side of that. Unless you can somehow arbitrage the derivative business to arbitrage these other businesses, unless you're going to blow up the balance sheet of the small institutions, how do you get the funds into the larger institutions? And if you blow the balance sheet up, then I would think we would be examining those institutions for concentrated risk, especially the smaller institutions. They will have twice as much capital as the larger [ones], they're better able to take and absorb shocks, so I don't think there's a serious arbitrage [issue]. There's always *some* arbitrage, but I don't see it as keeping the regulatory burden off these banks who are not in this broad base of activities.

Q: Thank you very much. The heads of all the G-SIBS [global systemically important banks] are up there talking about how all the great regulatory stuff that you've been talking about—all of which is, of course, very necessary—is going to destroy secondary market liquidity. Obviously, you saw the press last week and Jamie Dimon's shareholder letter. The argument that they're advancing now—and I saw a presentation recently—is, they're going to shrink their assets, take their marbles, and go home. I'd like to hear your response to that.

TH: I've been hearing various iterations of that for some time, and I think the first one was, if you require us to hold more capital, lending will go down. And I think what we've shown, at least what I've shown, is that, actually, in the crisis the banks that saw the greatest decline in lending were the high-leveraged institutions. So now . . . we won't be able to fund. Well, that's another dimension of that same story, and given what I've seen in terms of the market activity, which I'm very supportive of, . . . I'm having difficulty, if you will, understanding their point, given the data—given the information that's out there that suggests otherwise. . . . They're saying they're increasing the fees, but sometimes they're then reducing what they are receiving in terms of passed-on earnings and so forth to the depositors, and so forth. So I just don't understand the point, other than asserting something to get what you really are trying to seek, and that's less restrictions on how much risk you bring into your organization. I'm happy to listen to them, but I don't see anything right now that convinces me. It's really broad generalities, and I don't see hedge funds starving for funds—I just don't see it.

In fact, the world is awash in liquidity. I'm very sensitive to the fact that people say there's not enough liquidity, and I say, well, wait a minute: are you talking about liquidity, or leverage? Sometimes it's pretty hard to distinguish the two because you always have greater access to funding when the market is in a boom period and leverage is growing. It's in the downside where the real issue of liquidity comes in, as the world has to deleverage. My point is, there has to be, obviously, a reasonable amount of leverage in the system. Before you had the safety net—the safety nets—the capital ratios were around 10 to 12 percent on average. And perhaps that's where we ought to start the discussion. That's my view. Thank you.

Q: You mentioned that you could likely apply your 1994 speech today. So, outside of too-big-to-fail, I was curious where are the edits in that, and where do you feel like you could pull verbatim.

TH: One of the things I remember most, and I think it's somewhere on the web—every speech I have is—but I remember at that point there was a great deal of discussion about models. That was maybe the early period where you could use models for lending, and you'd feed [your data] through this wonderful, sophisticated model and you would judge your risk, and therefore you'd make the loans. So everyone was using loans and growing their balance sheet through a good part of the late '80s and the '90s—till we have the crisis. And then the models—all the coefficients were wrong, we found, because the models, of course, looked backward, and risk is something that goes forward. So when the risks change and the model doesn't, you get really bad outcomes. I remember commenting on that at the time, but of course the only thing that's happened since then is, models become more prominent and judgment has become less prominent, as shown by the crisis.

Q: Bart Naylor, *Public Citizen*—nice to see you. A couple of companies are breaking up or in discussions about breaking up. As you mentioned, we still have a situation where there are some firms that are too big to fail. Can you comment on GE Capital's plans. . . ? Also, the Bank of America shareholders will vote on May 6 at the annual meeting on a breakup plan. Comments on that are welcome.

TH: Well, I can't comment on the plan, and not because I wouldn't, but I'm not briefed on it. I haven't gone through every proposal that they have, so I don't know what all the consequences are. But as a concept, and that's kind of the point to my speech, if you in fact move yourself toward a more traditional bank—or in the case of GE, you're breaking out your banking financials from your industrial company—I think then you should be able to simplify the regulation. Simplify the institution, simplify the regulation.

In the case of GE, there's another issue, and that is mixing banking and commerce. . . . In this country, for decades, for the most part, for commercial banking, with the safety net we kept apart banking and commerce for all very good reasons—conflicts of interest, competitive advantage, and so forth--that I think still hold true. So I think there's benefit from doing that—from, number one, a policy position, and number two, just from safety and soundness—of having those separated out. We can simplify the regulation. And I think if I read the material on GE, the news articles, they want to de-bank. If they do that, I think they should have an opportunity to be supervised far less, from a financial regulator point of view.

Q: And the Bank of America?

TH: I don't know about that. I'm not going to comment. . . .

Q: I was hoping you could comment on how the rise of peer-to-peer lending platforms is impacting your organization's ability to supervise the commercial banking sector.

TH: I'm not sure I can answer your question because I haven't studied that. I don't know what the impact is. It's small enough now that I can probably safely say [there's] not much impact at this point. It depends on how it grows, how the Internet evolves, and whether or not it's sponsored by a party that would lead the public into kind of not quite knowing. . . . It's kind of like day trading—a do-you-really-know-what-you're-doing sort of thing. That's part of the market. If people are willing to take their risk and assume their loss, then I'm much more agreeable. If we were to say, now, on person-to-person trading, we want to subsidize one side, then I'd have a different answer for you.

Q: One aspect of regulatory relief that's being discussed that you didn't mention is the $50 billion threshold in Dodd-Frank. Can you give us your views on that and whether it ought to be raised or reworked in some way?

TH: You know, I know it's under discussion right now, so I don't really want to get too much into it, but again, that's part of my speech. Thresholds are by nature arbitrary. Even my 10 percent capital [threshold] is a starting point for discussions. That has some basis in history and some research. But $50 billion, $100 billion—if they're not indexed, of course, that changes. There are all kinds of issues with thresholds, so I prefer to go by activity and by size. Looking ahead, long term, I find myself saying, $50 billion isn't what it used to be, which is ironic and disturbing at the same time because that's part of my views on monetary policy. But I don't know—pick a number. As soon as you pick a different number, it will come under pressure to raise it, right? So we move from $50 [billion] to whatever, and then that'll come, and then that's too low. We're going to have this discussion from today to heaven knows when. If they change the number, I'm not going to lose sleep over it. I'd rather they focus on the activities that are in the safety net, that are subject to the risk that subsidizes, and deal with that. That's the real issue in my mind.

Q: As you know, back in December, Congress partially rolled back the swaps pushout provision, and there was a lot of concern about that. But don't you think to some extent it's better for this activity to remain in the banking system, where it's subject to oversight by prudential regulators, as opposed to outside, where the SEC and CFTC don't have the same supervisory resources?

TH: I've heard that argument for a long time. I don't agree with it. Part of the reason that they say that they want it in the bank is not that it's supervised, just that they think it's better supervised—although, depending on who you ask, they'll debate that, the SEC and so forth. But the other reason is, you want it in the bank because they can get access to liquidity, and you can staunch the crisis. If we're going to do that, then the safety net isn't big enough. Let's open it up, and then we will have a real, shall we say, GSCC [Government Securities Clearing Corporation] and an incredible consequence in size; and I don't think that's what a capitalist system builds success around. So I don't buy that argument in the first place.

Second of all, this idea that, because it's going to go into this shadow bank—this is in a sense a trite comparison—it's like saying you're going to get eaten by the bogeyman. What is this shadow bank that they're so worried about? It goes out, and let's say you put it in a hedge fund that has 50 percent equity. I mean, is that better, or worse? Let's say you put it in the nonbank, where it isn't subsidized, and they say, "We want more capital because we know you're less likely to be bailed out," so you have to put more capital into it; and that controls and makes it more, shall we say, market responsive rather than subsidy responsive. I don't know that those are bad outcomes by themselves.

Now, they say, what about Bear Stearns and what about Lehman? But my point there is that Bear Stearns, when it was an investment bank and, in a sense, controlled its own activities, there were no real, significant, major crises. But what happened was, when we extended the safety net to commercial banks, it was an enormous competitive advantage, because you have the subsidy with you so you can engage in access to lower-cost funds. So you're now the investment bank over *here*. You've got to become more like that.

So what [are] some of the things they did? Well, you got the capital rules eased; you got the bankruptcy rule eased so that you could use long-term assets to securitize overnight repos. Well, that's long-term intermediation—that's what the commercial banks do at high risk. Then they grew, and then the market assumed, because [they] were large size and they could have an impact, it would be bailed out. And we validated that. So that's what happens when you move the subsidy in rather than withdraw it. So I'm for pushing it out and letting the market discipline, and I think we'll have in the long run better outcomes.

Now, we're always going to have cycles, we're always going to have some degree of financial crisis, as we've had in the past. But when these things were clearly separated I think the crises were less traumatic in the end, and that's my view today. And really, the thing about the repeal of the push-out [rule in the Dodd-Frank Act], [the rule] wasn't eliminating it [swaps trading] from the holding companies [but moving it to] the broker-dealers. So why didn't they want to move it to the broker-dealers? "Because it will take more capital—it will cost more." Is that a good reason for this? Not in my mind.

Q: With regard to off-balance-sheet activity, I guess my question is, how is that either tolerated or regulated or dealt with in terms of trying to come up with some stability in the whole banking and finance system? How do you look at that?

TH: That's a very good question on balance sheet items. A couple of things are going on. One is, you should look at it through the examination process and debate whether that's adequate, number one.

Number two, for those most-complicated institutions under the Basel rules, we are in the process of developing a supplemental leverage ratio that takes [an] off-balance-sheet [item] and converts it into an off-balance-sheet item for capital purposes.

And then thirdly, I prefer IFRS [international financial reporting standards]... because it does it in a systematic way with an outside accounting firm that then makes it comparable across countries, across firms, and so forth; brings it onto the balance sheet; and then at least you know what the real, shall we say, fair value or gross value of most of those off-balance-sheet items are, so you can at least insist on a more, shall we say, lower-risk profile through more capital. The public can see it more readily than they can when it's not reported on the balance sheet. So if it's not a $2 trillion institution, it's $3.5 trillion, and $1.5 trillion of that is off-balance-sheet in terms of derivatives and so forth. I think that serves a very useful purpose; and that is how I would take it forward. . . .

Q: There's this perception out there that a lot of the bigger banks are using a lot of the smaller banks and community banks as sort of a front man for their lobbying push, and I wonder, in your dealings with the various community banks, do you get a sense that they've started to realize that their interests are not necessarily aligned with the biggest banks in the US, that there's been sort of a separation and a divorce there and they've started working on separate tracks?

TH: I don't have an answer to that. I just don't know—I really don't know. The one thing I will tell you is, in my conversations, the items that I listed today in terms of their concerns for regulatory relief are fairly consistent. I've not had any individual—now, there may be those out there—but I've not had any individual community bank that doesn't have derivatives on their book ask me for regulatory relief for that. So I think they do know what's in their best interests. I do think they do feel it every day when they're trying to do a Basel capital calculation, and they're wondering why because "I've got *X* capital." . . . I guess they know it also because they are arguing to be somehow separated from and have their own kind of special charter category, so I'd say they know that as well. My view is, a traditional commercial bank, whether it's less than $10 billion or over, is a traditional commercial bank that still has risks, still should be examined, and so forth, but is a simpler model that doesn't take the complexity of supervision that the largest, most complex require.

Q: In the rollout of Dodd-Frank there was the cross-border resolution mechanism, and I'd just like to get your thoughts on . . . that. I believe that Dodd-Frank was the first national legislation to implement that kind of cross-border resolution mechanism, but do you have concerns that such a mechanism could put the United States on the hook for foreign bank and nonbank activities?

TH: First of all, I'm not sure I know exactly what you mean by Dodd-Frank and cross-border. There is an issue. Cross-border is an issue. It's complicated. The interconnections, as we learned, can be dramatic. And what I think you're referring to is under Title 2, which is not the preferred [resolution] method—Title 1 is. I'm going to say that every time I talk about anything: bankruptcy is first. But the question on cross-border is a difficult question, because if you have an operating broker-dealer or a branch in a foreign country, and you have a crisis, there's a tendency to ring-fence and it freezes capital up; or you get a major collapse in one area and it starts to force what I'd call maybe irrational actions. So it is a legitimate [concern]. So what the issue in Title 2 was, if you do a so-called single point of entry, then what you do is, you assume that the operating units can continue to operate and that there's enough capital and debt that can be converted to capital that you can move that out and leave those downstream to operate—and that would be including your foreign operations.

The problem is, if the losses are so severe that you don't have enough at the top to downstream it, then the government has to come in under the liquidity arrangements and provide it, and that, in fact, could flow out. So you have people worried about that, and someone will have a tremendously difficult decision to make. Because if you don't, you may worsen a global crisis, and if you do, you're going to bail out parties that aren't domestic. So therein lies the conundrum: cross-border activities.

How that's going to be resolved I'm not sure. In the bankruptcy proceedings, that's what Title 1 is all about, and that's what these banks are being asked to show—that they can do this, that . . . their structure can be such, that their liquidity combination can be such, that they in fact can manage through the crisis with their foreign entities, and do it in an orderly fashion. One of the most delicate conversations coming forward will be around the idea of prepositioning or . . . subsidiarization, because then you have separate organizations completely. . . It's called pre-ring-fencing. I don't know [how] the firms are going . . . to pursue that in terms of their Title 1s at all, but it's a legitimate question that has to be asked and answered and dealt with.

Q: Would your safety net apply—the firewall you talked about? . . .

TH: For most banks, that won't be an issue. For the largest, most complex, that *is* an issue, because the firewall you're talking about is whether you stop the capital flows at the crisis point, which is not wise; or whether you have separate subsidiaries where they can be dealt with within individual countries. That's really going to be, I think, a future debate.

Q: As everyone knows, it's widely believed that [the] market determines the size of businesses—except for Cuba, of course. They have said the size of restaurants cannot be over 50; but in the United States, we don't have a restaurant that serves 2,000 people. The fact that economies are scaled for banking stops at a certain level. The fact that you're saying that economies of scope, which means dealing with different things, will be punished by forcing the banks to hold more capital—

TH: Not punished.

Q: Well, just penalized. It's not punished, but it becomes less profitable for the banks—

TH: Not necessarily. One of the best-capitalized banks in the country has the largest market cap. I want to make sure your premise is something I can agree with.

Q: I'm just saying that different things might create economies of scope, but at the same time [banks] have to hold more capital. The leverage ratio will go down, right? [Under] the Basel Act and other acts—they have to have more capital.

TH: Under a market, or under a subsidized arrangement?

Q: Well, right now, because you say that regulation is going to make them hold more capital if they are involved in different activities. Isn't it true?

TH: If they're involved in more activities and they weren't subsidized, the market would determine the capital, and it would be higher. . . . I've got to agree with your premise.

Q: My question is, why do banks get bigger and bigger? If diseconomy of scale doesn't exist, why do they get bigger and bigger? Why don't we see any kind of shrinkage in the *size* of banks?

TH: One of the early principles of economics is, if you want something to grow, what do you do? You subsidize it, past the diseconomies. If it's too big to fail, you're subsidizing past the diseconomies, right?

Q: That's my point.

TH: My point too. [*Laughter*]

Q: Moral hazard.

TH: Yes, moral hazard. So that's the problem. If you want something to grow, you subsidize it. And if you want it not to, and you want to subject it to the market, you'll get different outcomes. Sorry, but I thought you were leading me down the primrose path there, so I had to be careful. [*Laughter*] That's happened to me one or two times at the podium, so thank you.

Thank you very much.

PAUL MCCULLEY

Formerly, Chief Economist, PIMCO

Escape Fandango

Thank *you* very much, my friend. It's absolutely wonderful to be back here at the home of Minsky. It's also a great honor to follow the first two speakers today, Jim as well as Tom. I've known both for a number of years. It was particularly good to see Tom. I hadn't seen him in quite some time, and he's truly a national treasure from the standpoint of his insights into the essence of the fact that banking is inherently a joint venture between the public sector and the private sector.

That has always been a key tenet of Minsky, and Tom, wonderfully, over many, many years, has started out with the premise that there is a subsidy involved. There has to be a subsidy involved, and therefore we should regulate and firewall activities such that the subsidy is not abused. That moral hazard, by definition, cannot be eliminated from the system—it simply cannot. Because banking is inherently a joint venture between the private and public sector, moral hazard will always exist; but we should not allow it to run amok. And Minsky told us a long time ago that it *will* run amok. That is called human nature. We cannot repeal human nature. We will never get regulation that is settled for all time because that would mean that we repealed human nature. Any regulation will be arbitraged, and over time you will have to have adjustments in order to keep the regulatory arbitrage within limits such that the taxpayer is not always the stooge in the game. But we will not eliminate it.

I think the proposals that Tom made today and has been making are incredibly sound, particularly the focus on activities. He's obviously a huge fan of the Volcker rule, and "the Volcker rule" is a nice bumper sticker for essentially the notion that activities matter. Historically, particularly for the period prior to rapid deregulation, we had separation between traditional banking and a lot of the modern-day activities. We can't go back to that stage of the game but we can learn from history, from when we did have what Gary Gorton called the "quiet period," where finance was a veil on the real economy as opposed to the real economy frequently being a veil on finance.

So it was absolutely wonderful to hear Tom. And actually, as I was listening to him, he was talking about the fact that it was 1994 that he had spoken here. . . . I've spoken a number of times over the years, and another distinguished person who's spoken a number of times besides Jim here is Jim's boss—I guess I can call her your boss—Janet Yellen; she spoke here and gave the keynote in 2009. But she also spoke 13 years earlier, in 1996, which I guess would be two years after Tom did, and her 2009 speech was "A Minsky Meltdown"—not "A Minsky Moment" but "A Minsky Meltdown: Lessons for Central Bankers." Did you speak that year, in 2009? Do you remember? She and I have spoken several times here on the same platform, but this was in 2009. And in her speech, which I just glanced through quickly again, she commented on her speech of 1996; and, irony or ironies, it was about what Tom was mentioning back during the day, the notion that you could do all credit allocation through some type of model. And Janet noted the irony of her speech title in 1996, when she spoke here in 2009. The speech title from '96 was "The New Science of Credit Risk Management at Financial Institutions." Showing Chair Yellen's wonderful wit, she noted the irony that she was talking about a "Minsky meltdown" after 13 years earlier talking about the new science associated with credit scoring.

At the end of the day—and this gets back to what Tom was talking about in many respects—there is no substitute for what J. P. Morgan told us, over 100 years ago, is the essence of good banking: cash flow, collateral, and character. That was what J. P. Morgan said banking was all about: the three *C*s. You lend to people with cash flow, collateral, and character. And of those three, J. P. Morgan said, the last *C* mattered most: character. It is really difficult to model character. In some respects, you know it when you see it. And the bankers who see it the most, who are at the forefront, are community bankers. What Vice Chair Hoenig was speaking about is allowing the community banks to do that which they do, which is profoundly important for our real economy, which is to make loans—well capitalized, because they have access to the safety nets—but to make loans using models to evaluate cash flow and collateral, but also to use judgment. And judgment involves making an assessment of a potential borrower's character.

When we moved to credit scoring models that included the provision of stated income from mortgages I think we had moved a long, long way from a character loan. Should you tell a borrower, "Write down your income for whatever loan you want"? Human beings will tend to write a number that is not necessarily what they would confess to their priest or their wife. So it was wonderful to hear Tom speak in his eloquent fashion. I went to college in Iowa and he's an Iowa boy, so we have a connection back to Iowa.

Let me turn next to my friend Jim Bullard's comments. He's known as a hawk; I'm known as a dove. But that doesn't mean that we always disagree, and we don't. And right up front I want to say, I agree wholeheartedly with two propositions that Jim put on the table. Number one, I think we're going to go to the mid-4s on the unemployment rate over the next couple or three years. I think that is an absolutely glorious outcome. I think it's also a good forecast—*it is a good forecast*. Whether I would use the word *boom* or not is a semantic issue. We don't have to worry about semantics when we're talking about handles. A 4 handle on the unemployment rate, we're going to go there; and I think it will be an absolutely marvelous thing, and I think it will be associated with an increase in real wages. I wish I could make that forecast with greater conviction. There's an element of hope in that forecast, but I think we're going to have a 4 handle on the unemployment rate and that wages are going to go up, and also that an increase in wages is not ipso facto an inflation problem. We're on the same page here, Jim, on a lot of fronts. So we fully agree on the forecast from the standpoint of the outlook for the labor market. And it's not just a forecast. I have a normative perspective: it's going to be a good outcome. It's not a problem to be solved but a *solution* to be rejoiced. So we agree on that front.

Number two: we agree the Fed needs to get off of zero. It doesn't mean that I think zero has been the wrong number for the last six years, and that's going to be the bulk of what I want to talk about today is the last six years. But there reaches a time when you need to get off of zero. I will consider the Fed getting off of zero to be a valedictory. Everyone's been to a graduation where someone gives the valedictory speech. I never gave one, but I'm sure there are people in this room who have. My brother did, actually, in high school. I got to watch him give his, and a valedictory is a celebration of achievements. I look at getting off of zero as a celebration of an achievement, and the achievement is getting out of a liquidity trap using monetary policy alone. I'm going to say that again because that's hugely important: escaping a liquidity trap with monetary policy alone defies the textbooks. But the Federal Reserve has achieved that glorious outcome. And there will come a time in the months immediately ahead, perhaps—certainly in the quarters immediately ahead—when it will be time for the valedictory, which is, "We did it! We graduated from a liquidity trap!"— which Tom Sargent had told us a long time ago we're not supposed to have but we did, and graduating from it certainly deserves a quiet, or not so quiet, celebration.

Number three point of agreement: if the Fed does its job right in its fandango with the market and market expectations, the day of liftoff should not only be a valedictory for the Fed but a nonevent in a certain city north of here called New York and Wall Street. *It should be a nonevent.* [It] should be a huge headline, because it is a momentous occasion, but it should not inherently be a market-moving event like the "taper tantrum" was. I look back on that time in 2013, and I think in terms of how could the Fed have avoided it, and I don't think the Fed should beat up on itself at all about it. It was pretty much unavoidable. There had to be a moment when that happened. And I think one of the big lessons we learned from 2013 is that a central banker can preach all day long that QE—or large-scale asset purchases, I guess, as they're officially called—and interest rate policy are distinctly two different tools, but convincing Wall Street to think that way is impossible. Actually, it's not irrational for Wall Street to combine the concept of QE and interest rate policy, because I believe—and here I'm just speaking for me—that the dominant impact of QE is actually as a commitment device for borrower guidance. Borrower guidance is what you say you're going to do with the interest rate policy, and QE is putting your money where your mouth is. Because as long as you're doing QE, the notion you're going to get off of zero is null and void—just ain't gonna happen. So I look at QE predominantly as a commitment device for zero interest rate policy.

Now, it's also true that QE has a direct impact on the term premium, so I'm not saying it's immaterial because it has an impact on the term premium. But the bond market essentially is a forward curve on expected short rates and a term premium. Borrower guidance is all about expected short rates, and so QE actually works twice. It is a commitment device that you mean what you say with respect to borrower guidance, which will tend to lower the forward expected short rate; and it also has the effect of reducing the term premium, because it creates an asymmetric risk distribution for shorter-dated holding periods for bonds sometimes known as a "Fed put," which is a term that I really don't like because it just conjures up all sorts of nasty things. But as a practical matter, if you want to use that terminology, a Fed put should reduce the term premium—and, in fact, it actually did.

The way we implemented QE in the United States also had an impact on a particular risk premium, given the fact that QE involved a great deal of mortgage-backed securities. It directly reduced, essentially, the basis relationship, or the spread, between sovereign debt and mortgages—agency mortgages. In fact, there's no difference in the credit risk; it's just mortgages are inherently negatively convex, and therefore should have a spread relative to sovereign [debt]. And given the fact that

QE was buying—literally, sheer force of money—buying mortgages and simultaneously creating a one-tailed vol [volatility] spectrum, it reduced the term premium as well as tightened the basis on mortgages. So I'm not minimizing the market impact on two risk premiums—the term premium and also the mortgage vol premium—but I think the big impact of QE was a commitment device for borrower guidance. And I think the taper tantrum is empirical data supporting that general thesis, because the Fed had to do a great deal of massaging of the marketplace in the months immediately after, saying, "Just because we uttered the word 'taper' does not mean that the next thing we're going to do is tighten short-term interest rates immediately." I think the Fed learned from that experience, and I think the marketplace has learned from that experience as well for the United States.

Now, interestingly enough, for Europe I think the marketplace has looked at QE, in a profound way, as buying, and it's actually a much bigger program there than it was here in the United States in the direct sort of horsepower and tightening of all the peripheral spreads, which are a risk premium. But also it's a commitment device that Mario Draghi is not going to get off of zero on any time frame relevant to anybody that I know [*laughs*]. He's going to live at zero, not until the last dog dies but until that dog is very, very old—*until that dog is very, very old.*

So actually I pointed out three different and I think hugely important areas where I have full agreement with President Bullard, and that we are going to a 4 handle on the [unemployment] rate—that's a glorious outcome. The Fed needs to get off of zero as a valedictory for escape from the liquidity trap. Also, from the standpoint of risk premiums, I think we fully agree on the impact of the QE program in Europe. So that's where we have broad agreement.

Now I want to get into areas of disagreement, but actually in telling my own story; and it starts with the notion of the phrase "liquidity trap." I have been using that phrase not just for Japan for the last 20 years, but using it privately and publicly ever since the "Minsky moment," or the "Minsky meltdown," of 2008—of what the United States entered into over a half a decade ago. "Liquidity trap" is not just a nerdy or wonky [phrase]—and I love wearing a wonky hat. "Liquidity trap" has profound theoretical implications. Let me give you my definition of a liquidity trap, and I also will distinguish it [from] secular stagnation, a phrase that Larry [Summers] borrowed from Professor Hansen of '37–'38.

A liquidity trap—I'm going to be very wonky here for a second, and then I will back off from it—is when you get a massive shift left in the IS curve and the LM curve goes to zero. Put differently, a liquidity trap happens when you get a massive shift inward in aggregate demand for the economy such that you cannot reach full employment even with monetary policy pegged against zero; that the central bank can go to zero but the interest elasticity of demand for credit becomes nonexistent. Put differently, the IS curve becomes vertical to the left. Everyone with me here? Everyone remember this—? My friend Paul Krugman tells me that no one teaches the IS-LM model anymore and he may be right, because I'm not seeing any dawns of recognition here. But essentially, it's when the aggregate demand for credit becomes interest inelastic—that you go to zero and there is not an increase in the demand for credit. And it's a very simple reason why it happens. A Minsky moment means that the private sector—and I want to stress, *the private sector*—goes into either forced or voluntary deleveraging; where the price of credit doesn't determine the demand for credit. The existing stock of credit or debt is the binding constraint. The *stock* is too big. Therefore, you can reduce the interest rate on new credit to zero and nobody wants it, because they still have too much debt and they are deleveraging. So you enter a liquidity trap when you have a shock such that the private sector wants to deleverage away from the price of credit.

An example that you can use for a liquidity trap you can trace all the way back to your college days and the difference in the demand for beer on Saturday night and on Sunday morning. The price doesn't matter on Saturday night. They can double the price and the boys are still lined up. On Sunday morning, the price can be zero, ain't nobody at the bar. That's a liquidity trap. The price is zero—where are the boys? They're in bed, sir. They're in forced deleveraging, otherwise known as they've got wicked hangovers. They were paying $6 a glass for a beer last night, and they wanted it; they don't want any at $0 this morning. Financial markets can do the same thing. That's called a Minsky moment: the difference between Saturday night and Sunday morning. The Fed's in charge of the price of beer. It gives you quite the dilemma on Sunday morning. It gives you quite the dilemma following a Minsky moment. You go to zero, and the private sector is a no-show.

Now, in the textbooks that I studied in college and graduate school—granted, that was a very, very long time ago—we actually learned the IS-LM model, and the right answer to what to do in a liquidity trap was for the public sector to go the opposite direction of the private sector; that if the IS curve has been made vertical and shifted to the left, then the public sector should push it back out to the right. Yes, that's called Keynesian; yes, it's called fiscal expansion; yes, it's called deficit expenditures. It's called *purposefully leveraging up the public sector*. The private sector's going to deleverage; the public sector should go [in] the opposite direction. That got me an A answer in college. It didn't get me an A answer in forecasting in 2010.

We actually did get some of the right Keynesian spirit in 2009 when the new president implemented what Larry Summers called the "three-T" fiscal stimulus package. Remember the three *T*s of Larry's fiscal stimulus package? It should be *timely*, absolutely; *targeted*—yup, that makes sense because you want to have a high multiplier on it; and his third *T*—remember the third *T*?—*temporary*. But we actually got all three *T*s, particularly that *temporary* one. And in 2010, the Republican Party was captured by the Tea Party, and Keynes and Minsky (neither with us, I'm sure) were not happy campers at the bar in heaven, because we decided we would have fiscal austerity.

So in a liquidity trap, pinned against zero, when the textbooks said you should use fiscal policy in an expansionary direction and you actually get austerity, it's a mess. That was only four years ago. It puts an extraordinary burden on your central bank. They don't have the fiscal policy tool, and the fiscal policy tool is going in the wrong direction and they're pinned against zero. So that's why I use the word *valedictory* now. It is truly an amazing journey. Four years from now I can talk about, and we can talk about, and the Fed can talk about, and the FOMC can talk about that we're going to get out of the liquidity trap. And again, my definition of a liquidity trap is when you're pinned against zero and you can't get to full employment.

We're going to get to full employment. That's a miracle. That's a glorious event. But once you get there, you need to have a valedictory and get off of zero. So actually, I guess I'm agreeing with you again, Jim. . . .

However, now we're going to get into the disagreement. How did the Fed do it? How did it work? How did the Fed achieve the notionally unachievable? The answer is multifold, but most importantly, getting out of a liquidity trap with monetary policy alone requires huge asset price reflation. I'm not a Fed official, so I can actually say that. [*Laughter*] *Huge asset price reflation.*

Because the Minsky moment is a debt problem, but it's not a debt problem in absolute terms; it's a debt problem relative to collateral.

Remember the three *C*s—cash flow, collateral, and character? Well, we took the character one out of that, so we can just deal with cash flow and collateral. You have a debt problem when you have too much debt relative to collateral and cash flow—it's a ratio problem. Now, as a practical matter, as a matter of arithmetic, you can do one of two things: you can reduce the debt, or increase the value of the collateral. There were those who, five years ago, said let's just reduce the debt. Mr. Mellon had said that to the president in 1931 in his famous "Liquidate, liquidate, liquidate" speech, in which case Mr. Mellon said assets would pass to "more moral hands." That was not enlightened social justice in 1931.

So you can reduce the debt or you can make the value of the collateral and the cash flow go up. But actually, in many respects, they are one and the same, because the collateral value of any asset is the net present value of a cash flow. A stock is the net present value, presumably, of a perpetual cash flow. A bond is the net present value of a finite cash flow, which obviously both assets have what we wonks call *duration*. So assets, collateral values, are not distinct from cash flow. And as a practical matter, the magic of getting out of a liquidity trap with monetary policy is not so much increasing cash flow, increasing aggregate demand, and all those wonderful sorts of things in the economy, though that works—that's a wonderful sort of thing. But the real issue of getting out of a liquidity trap is to drive up the NPV [net present value] of existing cash flows—not so much growing the cash flows, it's just increasing their net present value, which means you need to reduce the long-term real interest rate.

Another thing I learned—this was more in graduate school than in college—was a very simple formula for valuing any cash flow, known as the Gordon model. I don't have handouts because I don't use handouts—my dad was a Baptist preacher, and he never used PowerPoints as a Baptist preacher, so I've never learned how to. In fact, as a sidebar, my dad once told me—my dad passed away at 88 last year, and it was a glorious life so it wasn't a sad occasion—he told me after he retired a number of years ago, because he knows I do some public speaking, and he said, "Son, preaching's the easiest thing I ever did. Pastoring is very difficult, but preaching was very, very easy." I said, "What do you mean, Pops?" And he says, "Real simple: I only gave one sermon for 40 years." I said, "Okay, Dad, I've taken the bait. Tell me more." He says, "Every good sermon has only three points. You lose 'em if you have more than three points." That was actually something important. He says, "My sermon only had three points, and it was always the same three points." "Okay, Dad." And he says, "Very simple: every sermon I ever gave can be translated to three points: stop your sinning, do more good, and give more money." [*Laughter*] When you think about it, when you've been to services, ain't pretty much every sermon a variant on those three points? But I have known ministers to go directly to point three [*laughter*]—have you? So anyway, enough stories about my dad on this.

But getting back to the Gordon rule for valuing assets, think in terms of NPV equals one dollar—up on the numerator, just put a dollar up there—one dollar NPV. I've got a dollar. Let's assume it's a perpetual dollar. It could be a shorter-dated dollar, but just a dollar up there on the top half of the fraction. On the bottom half of the fraction you've got three variables. The first one is obvious: your risk-free long-term interest rate. We actually don't have a perpetual in the United States. You used to have them in the UK—I think they were called consols, is that right? But you can get out 30 years or whatever. So your first is one dollar—NPV equals one dollar—divided by *I*. So if you reduce *I*, NPV goes up. The dollar doesn't have to go up. The NPV will go up. Now, what's the second term on the bottom half of the fraction? Minus *G*, because the dollar may not be just a dollar forever. So in the bottom half of the fraction you have *I*—you could also call that *I-star*, or *R-star*, if you will (that's a long-dated *R-star*)—minus *G* plus a risk premium. So if I want asset prices to go up, it's very simple, asset prices being the NPV of a cash flow. I need to take down *I*, drive up expectations of *G*—because, remember, it's *I* minus *G*—and also I need to make everybody feel warm and fuzzy. Everyone knows what that means, "feel warm and fuzzy"? That means more risk seeking, less risk averse, and therefore reduce the "required" risk premium. When we're talking about stocks, it's obviously the equity risk premium.

What does a monetary policy that goes to zero and commits to staying at zero, credibly, via QE do? Well, it reduces forward-expected interest rates, it reduces the term premium; so it reduces long-term interest rates. So I got my *I* down. It also increases expectations of growth, particularly when the central bank says, "I'm going to stay at zero until growth goes up, dammit"—which is essentially what Charlie Evans's rule was. "We're going to stay at zero until the unemployment rate at least hits 6.5, dammit." And 6.5, logically you should assume, would be associated with more *G*. And remember, *G* enters my NPV as a minus—*I* minus *G*. So your central bank says, "I'm going to reduce *I,* and I'm going to keep it there until *G* goes up." Assuming any degree of logical behavior by human beings, they should become more risk seeking, which should reduce your equity risk premium. So essentially, you get out of a liquidity trap using monetary policy by reflating assets, by working simultaneously on all three factors in the denominator of a Gordon model. And it endogenously delevers the system, because, as Alan Greenspan is fond of saying, equity capital gains are the one asset without an offsetting liability—they are. So effectively, you endogenously delever the system. You endogenously get away from your Minsky moment by driving up the value of collateral. Now, once you've done that long enough so that the memory of the Minsky Moment has moved into the background and *people are making money*, then life goes on, and it's time for the valedictory.

Now, that process of getting out of a liquidity trap using the monetary policy lever, working through a Gordon valuation model—as an analytical matter, as an empirical matter—in the first instance is going to disproportionately benefit those who own the assets. I'm not saying that subjectively, or normatively, or approvingly, or religiously; just as a fact that some people own assets and other people don't. As a fact of the matter, rich people tend to own the most risky of assets, notably stocks. And stocks are the perpetual asset, so therefore they should benefit the most, because they're the longest-duration asset. So the impact of getting out of a liquidity trap on wealth distribution in our country, and income distribution—or to put another wonky term on the table, the impact on the Gini ratio—is not, from a societal perspective or a social justice perspective, going to be fair. That does not mean—let me repeat that—*that does not mean* that the Fed should not have done it. The Fed absolutely, unambiguously, fists on table, should have done it, because the alternative would have been worse. The best alternative would have been properly used fiscal policy, but we didn't do that. In the absence of proper fiscal policy, the Fed did the only rational thing to do in a civilized society. It has a collateral impact of actually skewing your Gini ratio in a direction that if you are—you don't have to be a progressive; you can just be an observer—you don't particularly like. But that doesn't mean the Fed should be embarrassed about it at all. So actually, I would be more straightforward than President Bullard was about the issue of impact on wealth and income generation, but not apologetically so.

Now, let's come to my conclusion. I'm actually going to conclude, Dimitri—I can do that. I haven't asked for the money yet so we've still got point three yet: give more money. [*Laughter*] We're talking about doing more good and stopping our sinning. I think Tom [Hoenig] was talking about stopping the sinning more than anything else. President Bullard mentioned in a very noteworthy way the Taylor rule, and I will actually hat-tip one aspect of those comments, in that the operating variables in a Taylor rule—everyone know the operating variables?—are your gap relative to the inflation target and your gap relative to full employment. The operating variables in a Taylor rule are also known as the Phillips curve. And when you're at the sweet spot on a Phillips curve, meaning that you're at the unemployment rate—*U* is equal to NAIRU [nonaccelerating inflation rate of unemployment], *I* is equal to *I-star*, meaning that you have reached what you will never reach, but absolute perfection, that you have totally achieved your mandate, the operating variables fall out of a Taylor rule. There is no unemployment gap, there is no gap relative to your inflation target; so the coefficients out there become kind of irrelevant because they're being [multiplied by] something that's a zero. So if you reach nirvana in a Taylor rule, then you revert back to the constants in a Taylor rule.

I agree with Jim wholeheartedly that the Phillips curve is embedded in the Taylor rule, and that when you escape a liquidity trap—that you have finished this interregnum where you had to do something unusual, which is not worked through a Taylor rule but worked through a Gordon rule on asset reflation—you need to shift from Gordon back to Phillips, which is switching back to Taylor. So we agree: we're getting back to fine-tuning the Phillips curve. Some would consider that to be immoral in itself, but I don't. And actually, if you believe in the Taylor rule, it's not immoral, because that's what the Taylor rule has got embedded in it, is a Phillips curve. The big issue, then, gets back to what are your constants.

Well, one constant in Taylor I fully agree with: you take out the operating variables, take out the Phillips curve, a Taylor rule reverts to *R-star* plus your inflation target. The inflation target in the United States is 2, so therefore conceptually you should have a nominal interest rate, if you are at your sweet spot on your Phillips curve, of at least 2. That money should not lose its value versus inflation. So we're at a sweet spot on a Phillips curve, the operating variables fall out; so your nominal fed funds rate, which is the anchor for the entire term structure, should be at least 2. I think President Bullard and I would agree on that front as well.

Where we *profoundly* disagree is *R-star*. Taylor, when he specified his rule, put in 2 for *R-star*, meaning that in nirvana on the Phillips curve your nominal fed funds rate should be your inflation target of 2 plus a 2 percent real rate, and therefore 4 should be the equilibrium level in nirvana land for the fed funds rate. I've got to hand it to John Taylor, and I did, in my most recent, and my last, piece at PIMCO, called "Escape Fandango"—I hat-tipped him. It's amazing: he did this in 1993, and almost a quarter-century later it has been canonized everywhere, including in the long-term "dot" [forecast] in the Fed plot, in the FOMC plot, that in the long run the fed funds rate should be the 2 percent inflation target plus 2 percent real. I do not take that as a religious matter of faith whatsoever. I am and have been for over 10 years a fervent believer in a time-varying *R-star*. And I also—not just in my religious system but in observing the marketplace, the bond market, and the stock market (particularly the stock market)—do not believe in John Taylor's 2 percent *R-star*. Because if you believe in that, that's 4 percent for your short rate, put a term premium on, and you can have a really skinny term premium if you want; but you're not going to have a 1 or a 2 or a 3 handle on your 10-year. You're going to have at least a 4 handle on your 10-year, and you put a 4 handle back into a Gordon rule for valuing the stock market, and the *PE* multiple on the stock market right now is screaming a bubble. So if you actually believe in that *R-star* being 2, it's not a question of whether or not we're going to have a bubble; we're in one right now. If you actually believe that 2 is *R-star*, you should sell everything that you own—*everything that you own*.

In contrast, if you believe *R-star* is around zero, then the equity market and the bond market are in a fair range evaluation. I think they're on the rich side of fair; but again, I get back to Gordon. There is a model by which you can figure out what fair valuation is, and the most important variable in that—well, the growth rate matters, obviously, because it's a minus—but the most important number is *R-star*. In a Gordon rule, the *R-star* is a long-term *R-star*; but finance tells us that long-term *R-star* is nothing more than overnight *R-star* plus a term premium. So you back out of both the bond market and the stock market right now, *R-star* is zero more or less; and actually, I think that is the new *R-star*. I don't think that means that John Taylor was necessarily wrong in 1993. In 1993, it was at the cusp of the massive global deregulation of finance. I think one of the huge variables involved in the determination of *R-star* is your regulatory regime for finance; that, as you're deregulating—or some people call that "democratizing credit"—it will tend to lift *R-star*. When you're doing the reverse, it will tend to reduce *R-star*. Put differently, in a world of liar loans, *R-star* goes up, maybe to infinity—I'm not sure. You can't stop a bubble if it's based on liar loans, but it will pull up *R-star*. And . . . when you have the financial sector delevering, either voluntarily or because of market forces or regulation—or all three—in contrast, it will tend to reduce *R-star*. It all relates to the degree of leverage and credit availability and speculation as it transmits to the ultimate variables that matter, which is aggregate demand, unemployment, and inflation.

So I'm actually pretty sanguine about the valuation for markets right now, because I believe that *R-star* is around zero. But if I'm wrong on that, and ultimately the destination for the Fed, once it begins its slow, beginning process of tightening—remember, I'm not against tightening whatsoever. I look forward to the day of that valedictory speech; it is going to be a glorious day. But the trajectory thereafter, and its ending point, is what really, really matters from the standpoint, I think, of asset valuation—says an old Wall Street man, that matters. I also think it matters from the standpoint of the real economy, because I want for this to be—and here I'm getting into the normative world again—to be an incredibly long expansion, with increases in real wages. If it comes at [the price of] contraction and [lower] profit margins in the economy, that's okay by me as well. Because I think the Fed nurturing a very long-lived expansion—which Jim and I agree on, is a wonderful sort of objective function—nurturing a very long-lived expansion would be a *just* ex post settling up for the income inequality that was the collateral damage, for us as a society, of giving the Fed the incredible mission of doing that which it didn't have the full set of tools [needed]. But the Fed did it. The Fed did it, and it worked. And I congratulate the Fed and Jim and his colleagues, and I look forward to the valedictory.

Thank you very much.

Q&A

Q: Thank you for your discussion. My question is that, regarding the liquidity trap in the eurozone and Japan, do you think, practically, would monetary policy be able to get out of it, or do you think monetary policy is not going to be sufficient? Your thoughts on that would be very useful. . . .

PM: I don't know if Super Mario is going to be able to do it in Europe, and I can't forecast now even the year of a likely valedictory. What I can tell you is that you should be seeing very long European equities hedged back into the dollar.

Q: Thank you so much for your presentation. I'm not an economist; I'm actually a Baptist pastor. I took your comments from your father with great interest.

I had a question, and you may actually have answered it toward the end, but my lack of facility with some of the technical language may have caused me to miss it. So my question is, in your opening statement you said wage increases are not ipso facto inflationary. I was just wondering if you could explain that for me from a layperson's perspective, because I always thought just the opposite.

PM: Wages and inflation over time will tend to move together, but real wage increases are about the fact that our economy has productivity growth in the long run. Therefore, in order for productivity growth to be shared within our society, you need to have wages grow faster than inflation sometimes. That's how you get an increase in real wages. And, in fact, that need not be inflation, because productivity conceptually should be shared in some broad sort of way between the factors of production: labor and capital. So, over time, in our economy real wages can go up and profits can go up. If you're seeing wages in our economy rising faster than inflation, that's a good outcome. That means that labor is participating in the fruits of our economy's productivity.

Now, you can, at the end of expansions—particularly if you have an indexed economy, which we really don't—end up in a situation of a wage-price spiral, but that's not a relevant issue right now in the economy. So real wages can go up and it doesn't necessarily mean that prices have to go up, because productivity can be the difference.

As a practical matter, productivity growth has not been robust recently. What has been robust is corporate profit margins. Corporate profit margins have gone up, and are at the highest time since I was in college in the '70s, I think. Looking out at the years immediately ahead, I think that it's reasonable to think in terms of the Fed underwriting a long economic expansion, including allowing wages to grow faster than inflation, and not getting wrapped around the axel about it if we were to have a 3 percent growth in wages and a 2 percent inflation environment. I don't think that's a problem; I think that's a solution for our society. One of the implications of that is that corporate profit margins can be squeezed, and Wall Street will scream to the high heavens that it is an inflation problem because wages are moving up, and therefore the Fed should throw somebody out of work to stop this. I hope and pray and forecast [that] the Fed will resist those calls, and [if] some settling up in our economy, ex post settling up of real wages moving up and real profit margins contracting, is an outcome over the next three to five years, I'll take it.

Q: You referred to 5.5 percent unemployment as if that is the same as in the historical past. But there have been arguments about 5.5 percent being an overstatement of slack because of so many long-term unemployed; or the people who said 5.5 percent unemployment is an understatement of slack because of so many people that have withdrawn from the labor force or taken part-time [work] for economic reasons. But do you really think that 5.5 is consistent with 5.5 as we've experienced it in macroeconomics in the past?

PM: I agree with Jim: there's nothing magical about 5.5 at all. . . . Remember, NAIRU stands for nonaccelerating inflation rate of unemployment. That's called the full-employment unemployment rate. It's called, in our business, NAIRU. Right now, core inflation is not accelerating. The Fed wants a positive second derivative because we want to get back up to 2 [percent], which is why Jim's colleague, Bill Dudley, talks about [letting] it run a little bit hot in order to get back up to the 2. So I think the proof of the pudding is in the eating thereof. I don't see anything that says that our labor market is dangerously hot at 5.5. I don't necessarily think that we would [be] at 5.2 or 4.8. I don't know what the right number is that has got a large confidence range around it. But on this whole issue of slack because of the labor force participation, I hear the argument all the time that if the labor force participation rate hadn't gone down, we would be at 7, 8, or 9 percent unemployment. Therefore, we have a whole lot more slack in the economy than we think.

I'm a dove, but I don't buy that argument, and I can give you two data points. Number one, if we had massive slack that was reflective of a shadow 8 or 9 percent unemployment rate, you wouldn't find the low-end retail sector finally getting a raise and then spreading in that sort of sector. So that's your macro data point. Then I will give you a very, very micro data point: I'm part of the decline in the participation rate, so I take it very personally, and I don't consider myself to be unemployed looking for a job. I'm just, at the immediate moment, out of the labor force. Now, I may be back in for a dollar a year somewhere teaching, I hope and anticipate, which is not going to put a lot of pressure on professors' wages if I'm working for a buck a year. That's my price tag, by the way, Dimitri. [*Laughter*] And I'm 58 years old. I was born in 1957, which was the peak of the baby boom at 2.2, 2.3 million live births. I'm really at the middle of the distribution. So actually, the demographics are such that it would be stunning if the labor force participation rate was where it was when I was 48, because we are moving through the snake. And I'm at the middle of the distribution, so that means we've had a lot in front of me, because the baby boom lasted for about 11, 12 years, and I'm in the middle of the distribution, being born in 1957. So I think, looking for a cue, we may see some increase in the labor force participation rate when we get the boom. As people say, "Man, I should really try to get a job because my mother's beating the crap out of me about it all the time"; but in general I don't think that we should see a return to the labor force participation rate that we saw five years ago or seven years ago. And it has nothing to do with the liquidity trap or anything else; it's just that my cohort is getting older. And if you're waiting for us to go back to where we were when we were 48, you put out the landing lights for Amelia Earhart: I ain't going back to work.

Q: Would you go so far as to say that our *R-star* is a function of a fiscal stance? In other words, that cash flow part of your Gordon growth model could be going up if fiscal policy was a little bit looser, and you wouldn't need to take *R-star* so low? And as a follow-up, would Hy Minsky say you're a nut job? Because to get a boom you need investment spending to pick up, and companies are too busy paying out that free cash flow to their shareholders as they maximize shareholder value for that to ever happen. So how are you going to get to a boom if you short-circuit the golden goose and stuff up the eggs?

PM: You asked two different questions there. I don't know if Minsky would call me a nut or not. I think sometimes he was called that, so therefore I think he would be cautious about calling me one. The investment issue is of concern. I don't know exactly how to grapple with that. We don't have a cash flow issue in the corporate sector; we've got cash coming out of the woodwork. It's the deployment of the cash. And it may be such that our modern-day capitalist society is so short-dated that it's basically incentivizing exactly what you have, and I can't argue with that, necessarily, from a standpoint of being a rational capitalist response. It has implications for the economy, but I can't say that it is irrational. It could be one of the things behind the incredibly tepid productivity growth [that] I find worrying.

But the answer to that question feeds back into your first question. If we could see—and let me use a normative word—an *enlightened* fiscal policy in this country, which would be more expansionary but also directed to public investment—which is not an oxymoron, by the way; public investment is not an oxymoron—if we could see proper fiscal expansion through proper public investment, I think it would mean that *R-star* is higher than what I think it is right now. And there, if Larry Summers were sitting here, I think you'd probably get an *Amen!* from him. . . .

Q: Thank you very much for this lecture and this sermon. I'm just curious: you mentioned early on, in the beginning of your sermon—your speech—

PM: I'm going to live to regret this. [*Laughter*]

Q: You said at the beginning of your speech that we probably couldn't go back to the time where the separation of investment and commercial banking—which is, of course, something Senator Elizabeth Warren has talked about a lot; a lot of people on the left have talked about—but that we can't get back to the time where investment avails the general economy. What things have changed to make that different, and would separating commercial and investment banking even solve a lot of the problems going on, or would there have to be some kind of new mechanism to prevent that?

PM: It's a complicated question. I think we're doing a pretty good job of reregulation. I have a very strong, powerful litmus test of whether or not we're being successful on that front. It is the decibel level of bankers complaining. If they're not complaining, then regulation is clearly way, way too lax. Actually, I certainly agree with Tom Hoenig that the complaints of the community bankers are very legitimate; but with the big boys, I kind of like to hear them complaining. I really do. So I don't really think that we have inherently a bad sort of situation now versus what we had before the Minsky moment. Prior to the Minsky moment, the general belief was that Wall Street was populated with wise, moral people with the long-term interests of the economy and the country at heart. That turned out to be less than a robust assumption. So I think that we're probably okay on that front.

Interestingly enough, from the standpoint of Main Street taking more of a role and Wall Street less of a role as the driving force in our economy, I think that's going to happen for a couple of reasons. Number one is, asset prices don't have much to go on the upside—they really don't from here. It has been a five-year, six-year run of working through Gordon, but it's coming to an end. I don't think that Wall Street having 30 percent gains in the Dow and all that sort of thing will be part of the news anymore. And it also is not going to be the favorite child or the targeted instrument—let me take that back: I did not say "favorite child"—the targeted instrument of monetary policy. Please don't say "favorite child"; say "targeted instrument." But also, I think that this town, right here, right now, is shifting in a direction that I like to call *principled populism.* I think we actually are going to see the concept of public investment be taken out of the bin called OXYMORONS and back into REALITY. I think that will help make for a better economy, and an economy that is less tethered to Wall Street. I think that will be a good thing.

Let me just finish with a last comment on that. My dad went to college on the GI Bill, and the home I grew up in was bought with a GI loan. That was called public investment. My generation became part of the middle class because of public investment, and it was good. I envision a day when maybe just a touch of what my parents' generation felt about public investment will come back in our country.

Thank you very much.

ELIZABETH WARREN

US Senator (D-MA)

The Unfinished Business of Financial Reform

Thank you all for being here today.

We're here to ask a critical question at a critical time: what are we to make of Dodd-Frank five years later? To answer that question, I think we should start by looking at how the government responded to the last major financial crisis—the Wall Street Crash of 1929.

After the 1929 crash, policymakers diagnosed what had gone wrong and changed the laws to make sure that excessive speculation and risk taking on Wall Street couldn't push the economy over a cliff. The new rules were creative and unprecedented:

- First, a new agency—the SEC—charged with enforcing basic marketplace rules. In other words, a cop for Wall Street just like the cops for Main Street;
- Second, a targeted government safety net—FDIC insurance—to make it safe to put money in banks, creating security for depositors and stability for the banking system; and
- Third, a clear division between deposit-taking institutions and investment banks—the Glass-Steagall Act—so that banks couldn't use government-guaranteed deposits for high-risk speculation.

And for half a century, those creative new rules worked. There wasn't a single serious financial crisis. No crises, and the financial sector did its part to help produce sustained, broad-based economic growth that benefited millions of people across the country.

Then, in the 1980s, a new political wind swept across the country. "Deregulation" became the watchword of the day—or, to put it more bluntly, "Fire the cops." Not the cops on Main Street, but the cops on Wall Street. The Fed and other bank regulators looked the other way as big financial institutions found new ways to trick their customers, first through credit cards and then through mortgages, home equity lines of credit, and a raft of new financial products. The SEC was badly outgunned. Regulators were clueless as banks developed creative new trading strategies outside the old rules. Credit rating agencies signed off on the safety of pools of mortgages that were more like boxes full of grenades with the pins already pulled out. The wall between high-risk trading and boring banking was knocked down, and Glass-Steagall was eventually repealed.

Washington turned a blind eye as risks were packaged and repackaged, magnified, and then sold to unsuspecting pension funds, municipal governments, and many others who believed the markets were honest.

Not long after the cops were blindfolded and the big banks were turned loose, the worst crash since the 1930s hit the American economy—a crash that the Dallas Fed estimates has cost a collective $14 trillion.[1]

The moral of this story is simple: without basic government regulation, financial markets don't work.

That's worth repeating: without some basic rules and accountability, financial markets don't work. People get ripped off, risk taking explodes, and the markets blow up. That's just an empirical fact—clearly observable in 1929 and again in 2008.

The point is worth repeating because, for too long, the opponents of financial reform have cast this debate as an argument between the pro-regulation camp and the pro-market camp, generally putting Democrats in the first camp and Republicans in the second. But that so-called choice gets it wrong. Rules are not the enemy of markets. Rules are a necessary ingredient for healthy markets, for markets that create competition and innovation. And rolling back the rules or firing the cops can be profoundly anti-market.

Right now the Republicans are pushing an anti-market agenda. They are trying to hamstring the CFPB by slashing its funding, reducing its jurisdiction, and restricting its enforcement authority—steps that would undermine the market by taking financial cops off the beat. With no cops, companies could out-compete one another not by creating value, but by cheating their customers.

Or look at what they did last December: when Republicans rammed through a repeal of Dodd-Frank's swaps pushout provision, they undermined the market again by handing out taxpayer subsidies to a handful of the biggest banks on the planet and giving those banks a tremendous advantage over their smaller competitors who just don't get that kind of subsidy.

Republicans claim—loudly and repeatedly—that they support competitive markets, but their approach to financial regulation is pure crony capitalism that helps the rich and the powerful protect and expand their wealth and their power—and leaves everyone else behind.

We need rules—but not all rules promote innovative and competitive markets. So what tests should we use to make sure the rules promote healthy competition and innovation? We can start with the two principles that worked so well for more than 50 years after the 1929 crash:

- First, financial institutions shouldn't be allowed to cheat people. Markets work only if people can see and understand the products they are buying, only if people can reasonably compare one product to another, only if people can't get fooled into taking on far more risk than they realize just so that some fly-by-night company can turn a quick profit and move on. That's true for families buying mortgages and for pension plans buying complex financial instruments.
- Second, financial institutions shouldn't be allowed to get the taxpayers to pick up their risks. That's true for using insured deposits for high-risk trading (and the reason we had Glass-Steagall) and it's true for letting too-big-to-fail banks get a wink-and-a-nod guarantee of a government bailout.

Judged against these two principles, Dodd-Frank made some real progress—and Barney Frank and Chris Dodd deserve an enormous amount of credit for their leadership. But there is more work to be done.

Consider the goal of "no more cheating people." Dodd-Frank took a powerful step toward honest markets with the establishment of the Consumer Financial Protection Bureau. Instead of a grab bag of consumer protection laws scattered among seven different agencies, none of whom had any real skill or any real interest in enforcing them, Congress created a new agency that had the tools, the expertise, and the responsibility for making sure that consumer financial markets worked fairly. This was a real, structural change.

Is it working? Yes. Mortgages have gotten clearer and easier to read. Some of the sleaziest—and most dangerous—terms have been banned. And work on credit cards, student loans, checking accounts, small-dollar loans, and other products is headed in the right direction. The little consumer agency has been operating for just four years, but one measure of its success is that it has already forced financial services companies to return more than $5 billion directly to consumers that they cheated.[2]

Five billion dollars for the companies that got caught—and a powerful demonstration to every other company that there's now a cop on the beat, a cop who is paying attention.

In addition, the agency has handled over half a million consumer complaints since it opened its doors—making public which banks have been naughty and which have been nice—and reports are coming in that some banks are changing their practices so they don't get called out in public for shoddy behavior.[3]

That's minimal regulation—but it is making the market work.

The big banks, payday lenders, and their many Republican friends are working hard to undermine the new consumer agency, but the CFPB has continued to do what it does best—level the playing field for consumers and hold financial institutions accountable when they break the law.

The consumer agency's early results have been good for consumers and good for the economy as a whole, but there's more to be done. Right now, the auto loan market looks increasingly like the precrisis housing market, with good actors and bad actors mixed together. The market is now thick with loose underwriting standards, predatory and discriminatory lending practices, and increasing repossessions.[4]

One study estimates that these auto dealer markups cost consumers $26 billion a year.[5]

Auto dealers got a specific exemption from CFPB oversight, and it is no coincidence that auto loans are now the most troubled consumer financial product. Congress should give the CFPB the authority it needs to supervise car loans—and keep that $26 billion a year in the pockets of consumers, where it belongs.

The CFPB is a tough cop on the beat, but what about the other cops? What are they doing to hold those who break the law accountable? Today, the Department of Justice doesn't take big financial institutions to trial—ever—even when financial institutions engage in blatantly criminal activity. Instead, DOJ uses what it calls deferred prosecution agreements and nonprosecution agreements, in which it asks the offending firm to pay a fine and to work with the government to come up with a plan for doing better in the future.[6]

These kinds of agreements were originally created to deal with low-level, nonviolent individual offenders, but they have now been transformed beyond recognition to create get-out-of-jail-free cards for the biggest corporations in the world.[7]

The SEC is even worse. The SEC rarely takes any big institutions to trial, and it also fails to use other tools in its enforcement toolbox. For example, the SEC grants the status of "Well-Known Seasoned Issuer" [WKSI] to certain companies that it believes are uniquely trustworthy. That status allows these companies to access the capital markets more easily. By law, the SEC is supposed to revoke this privilege if a company receives a criminal conviction or violates the anti-fraud provisions of the federal securities laws.[8]

But more often than not, the SEC waives this automatic revocation,[9] and passes up yet another opportunity to meaningfully deter future misconduct.

When small banks break the law, their regulators do not hesitate to shut down the banks, toss their executives in jail, and put their employees out of work.[10] But not so for the biggest financial institutions. The DOJ and SEC sit by while the same giant financial institutions keep breaking the law—and time after time, the government just says, "Please don't do it again."[11]

It's time to stop recidivism in financial crimes and to end the "slap on the wrist" culture that exists at the Justice Department and the SEC.

Recently, a Justice Department official suggested that the Department would change its policy and hold firms accountable if they violate these agreements not to break the law.[12] But good grief, this is a timid step. We need to go further: No firm should be allowed to enter into a deferred prosecution or nonprosecution agreement if it is already operating under such an agreement—period. Any firm that enters one of these agreements should have to pay—as a mandatory minimum—fines at least equal to every dime of profit generated as a result of their illegal activity. And we should change the legal standards so that there is some meaningful judicial review of whether these agreements are appropriate.

Real accountability also requires big changes within our regulatory agencies. In 2013, the Fed and the OCC entered into a $9.3 billion settlement with more than a dozen mortgage servicers who had improperly foreclosed on thousands of homes across the country.[13] Congressman Cummings and I started asking some questions about this, and we stumbled onto a pretty amazing fact. The Fed's Board of Governors—the ones who were nominated by the president and confirmed by the Senate—didn't even vote on whether to accept the settlement. A record-breaking $9.3 billion on the table, and the settlement decision was left to the Fed's staff.[14]

The Fed needs a rule change: it should require Board votes on all major enforcement and supervisory decisions, and each member of the Board should have his or her own staff, so they can come to independent conclusions on important matters. It's past time for the Fed to make enforcement a top priority.

Let me underline why this is so powerfully important. When big financial institutions are not deterred from breaking the law—when, in fact, they have a financial incentive to break the law—then that's what they will do. Just look at what's come to light in the years since Dodd-Frank was passed:

- In 2012, the London Whale blew a $6 billion hole in JPMorgan's balance sheet—allegedly without the CEO or anyone in senior management even knowing it was there.[15]
- Also in 2012, the LIBOR scandal came to light, exposing the big banks' multiyear practices of fixing exchange rates to boost their own trading profits.[16]

- That same year, HSBC was finally called out publicly for years—years—of laundering drug money.[17]
- And between 2009 and 2014, three giant banks, Credit Suisse, UBS, and Wegelin, were identified as helping people around the world hide billions of dollars from taxing authorities, spouses, and business partners—just so the banks could boost their profits a bit more.[18]

The bottom line is that the culture of cheating on Wall Street didn't stop with the 2008 crash. When cops don't do their job, cheaters prosper and honest businesses lose out. Small banks and credit unions trying to do the right thing are unfairly disadvantaged. Part one of the unfinished business of financial reform is to help markets work better by doubling down to stop the cheating—extending the jurisdiction of the consumer agency and demanding some real accountability from the cops on the beat at the SEC, the Fed, and the Justice Department.

What about the second goal, making sure that financial institutions can't push their risks off to taxpayers—that no institution is too big to fail? Again, Dodd-Frank changed the landscape. It helped bring back some level of market discipline through the living wills process and the creation of orderly liquidation authority. And it reduced system-wide risk by imposing more demanding capital and leverage standards.

Those are important steps and well worth defending. But let's get real: Dodd-Frank did not end too-big-to-fail. Last summer, both the Fed and the FDIC reported publicly that 11—11—of the big banks were still so risky that if any one of them started to fail, they would need a government bailout or they would risk taking down the American economy—again.[19] That's not a statistic that should make anyone sleep well tonight.

So what should we do about too-big-to-fail? End it, once and for all. Not talk about ending it—truly end it.

How? First, break up the biggest banks. There are two structural ways to do this: we can cap the size of the biggest financial institutions, as Senator Sherrod Brown and former Senator Ted Kaufman proposed during the Dodd-Frank debates. And we can adopt a 21st-century Glass-Steagall Act that rebuilds the wall between commercial banking and investment banking. I've worked with Senators McCain, King, and Cantwell to advance just such a bill. If banks want access to government-provided deposit insurance, they should be limited to boring banking. If banks want to engage in high-risk trading, they can go for it—but they can't get access to insured deposits and put the taxpayer on the hook for some of that risk. It's that simple.

Second, Congress must carefully limit the Fed's ability to provide emergency lending to a giant bank that gets into trouble. A report from right here at the Levy Institute shows that, in the 2008 crisis, the Fed provided trillions of dollars in low-cost loans to a handful of too-big-to-fail banks.[20] The prospect of receiving low-cost loans from the Fed completely undermines market discipline—big banks are free to take big risks, knowing full well that the Fed will be there to bail them out if things go south. The Fed's proposed rule on emergency lending was so weak that it might as well not exist. Congress should step in to make clear that the Fed isn't the personal piggy bank for the biggest financial institutions.

Why use a structural approach—break up the banks and limit emergency lending—rather than just relying on a more technocratic approach that just layers on more rules to limit risk-taking? Think about the interplay between risk and regulation. When 11 banks are big enough to threaten to bring down the whole economy, heavy layers of regulations are needed to oversee them. But when those banks are broken up and forced to bear the consequences of the risks they take on—when the banking portion of their business model is easy to see and far easier to evaluate for both regulators and investors—regulatory oversight can be lighter and clearer as well.

Too much reliance on a technocratic approach also plays right into the hands of the big banks. Regulatory solutions that pit the government against giant banks too often get diluted over time with loopholes, carve-outs, and rollbacks, each of which favor a few well-connected firms over everyone else. The big banks can always throw more lawyers at a problem than the government can, and the financial incentives for the megabanks are so strong that even the most diligent and well-meaning regulators struggle to keep pace.

And a technocratic, rather than structural, approach often causes a bad side effect: it raises the regulatory burden for community banks and credit unions, and distracts regulators from supervising the banks that can really threaten the system.

What's needed are smarter and simpler regulations, the kind of regulations that give smaller institutions a fighting chance to meet their compliance obligations without going bankrupt. The goal is to make markets more competitive, and that means a simple, structural solution: break up the biggest banks so that no bank is too big to fail. That would let us cut the tangle of the regulations that are intended to stop a too-big-to-fail bank from taking on too much risk and bringing down the economy.

Holding cheaters accountable and cutting the banks down to size are critical. But those steps can only do so much when they are at odds with basic tax laws that encourage the very kinds of excessive risk taking and cutting corners that we want to eliminate. Reforming our tax laws is also part of the unfinished business of financial reform.

For example, Dodd-Frank recognized that CEO pay should be aligned with the long-term interests of the stability of the corporation and, eventually, the economy. To accomplish this, Dodd-Frank relied on new rules for corporate disclosures, transparency, and incentives.[21] Five years later, the SEC still can't seem to figure out how to write those rules.

The SEC needs to get its act together—in all sorts of ways, and on all sorts of issues, ranging from credit rating agencies to corporate political contributions—but we can't sit on our hands on this issue any longer. Congress should change the tax code so that executive compensation is aligned with the long-term health of these companies and the economy. Currently, corporations are taxed for any executive compensation over $1 million, unless that compensation is in the form of a performance-based bonus.[22]

This tax incentive has encouraged financial firms to compensate executives with massive bonuses—bonuses that too often reward short-term risk taking instead of sustained, long-term growth.[23] We can close that loophole and stop pushing companies to reward short-term thinking. And we can put in place strong, enforceable securities rules that don't create incentives for CEOs to use stock buybacks as a way to manipulate prices in the short term, rather than investing in the long-term health of their companies.[24]

Another glaring problem in our tax code is its massive bias in favor of debt financing over equity financing.[25] Financial firms can write off every dollar of interest they pay on their debts, but financing themselves through equity requires them to pay taxes on dividends. The natural result—particularly for too-big-to-fail firms that can borrow huge sums of money at low rates—is to borrow, borrow, borrow.[26] After the crisis, there was near-universal agreement that big banks needed to be more capitalized and less leveraged—but our tax code pushes these banks in the exact opposite direction.

The amount of interest a financial firm can deduct annually should be based on the relative amount of capital that firm holds—and the risk it poses. If, for example, a firm is well capitalized, it should be able to deduct its interest without limitation. But if it is not well capitalized, it should either have to raise more capital, reduce its debt levels, or pay additional taxes to compensate taxpayers for the risk it introduces into the financial system.

We also need to think broadly about the way volatility threatens the economy. High-frequency traders, for example, introduce greater instability into our financial markets through arbitraging gimmicks that add no value to the economy.[27] We can address this problem by instituting a targeted financial transactions tax designed to have no impact on regular mom-and-pop investors. Such a tax would push sophisticated trading firms to invest in companies for the long haul and strengthen our markets.[28]

And there's one last thing that should be on the reform list: tackle the shadow banking sector. Shadow banking was a significant part of the crash in 2008, creating runs and panics in short-term debt markets that spread the contagion across the financial system.[29] The financial sector's short-term debts function much like bank deposits—they can disappear tomorrow, which means that using those deposits for longer-term investments or loans involves substantial risks. But unlike bank deposits, which are on balance sheets that are carefully scrutinized by banking regulators for safety and soundness, short-term debt for shadow banks are outside the basic regulatory framework. Despite the central role of shadow banking in the financial crisis, Dodd-Frank did little to address the problem. We need to tackle this issue, and we need to do it before the next Bear Stearns or Lehman Brothers starts a chain reaction that takes down the financial system.

Together, changes like these can make a real difference. They can help protect hardworking families from cheats and liars. They can help rein in the lawless practices that are still too common on Wall Street. They can end too-big-to-fail. But most of all, these changes will make our financial markets stronger, more competitive, and more innovative. The secret to better markets isn't turning loose the biggest banks to do whatever they want. The secret is smarter, more structural regulation that forces everyone to play by the same rules and doesn't let anyone put the entire economy at risk.

This is an economic fight, but this is also a political fight. The biggest financial institutions aren't just big—they wield enormous political power. Last December, Citibank lobbyists wrote an amendment to Dodd-Frank and persuaded their friends in Washington to attach it to a bill that had to pass or the government would have been shut down. And when there was pushback over the amendment, the CEO of JPMorgan, Jamie Dimon, personally got on the phone with members of Congress to secure their votes. How many individuals who are looking for a mortgage or a credit card could make that call? How many small banks could have their lobbyists write an amendment and threaten to shut down the US government if they didn't get it? None. Keep in mind that the big banks aren't trying to make the market more competitive; they just want rules that create more advantages for themselves. The system is rigged, and those who rigged it want to keep it that way.

When that other Roosevelt—Teddy Roosevelt—broke up the monopolies, he did it in large part because those giant companies threatened our democracy. Big corporations, Roosevelt said, should not have the power "to interfere in politics in order to secure privileges to which [they are] not entitled."[30] Our economy suffers when those who can hire armies of lobbyists and make huge political contributions can decide what the financial cops can and cannot do. Our democracy suffers when Congress puts the interests of a handful of giant banks ahead of the needs of 320 million American citizens. If the big banks keep calling the shots, they will own both our economy and our democracy.

We know what changes we need to make financial markets work better. Strengthen the rules to prevent cheating. Make the cops do their jobs. Cut the banks down to size. Change the tax code to promote more long-term investment. Tackle shadow banking. The key steps aren't hard. It just takes political courage and a strong demand from the public to complete the unfinished business of financial reform.

Thank you.

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VÍTOR CONSTÂNCIO

Vice President, European Central Bank (ECB)

Financial Regulation and Economic Recovery

Good morning, ladies and gentlemen. Thank you very much, Dimitri, for your welcoming words. And it is indeed for me a pleasure to be here again, and I am grateful to the Institute for again inviting me to this conference that I have joined now quite a few times.

This year's theme is quite topical and opens the door to a lively debate about the role of finance and regulation, both in the crisis period and in the moderate recovery that is under way. The recovery is, however, still to achieve the closing of negative output gaps on both sides of the Atlantic, with the United States somewhat ahead of Europe, but not by much right now. It could then be expected that different views emerged about the regulatory reform efforts that are not yet concluded. Let me mention some of the views about the issue raised by the subject of this conference.

According to one view, the crisis and its recessionary effects result from the excesses of finance and insufficient regulation. This implies that the main effort should be to tame finance in order to avoid future crises of the same type. In this vein, it could be justified to expect that deep reforms of international financial regulation would follow the acknowledged failure of the legal framework that was then in place. Two well-known specialists in the field, Barry Eichengreen and Eric Helleiner, very recently published two books explaining why a transformative reform of the international system has indeed not occurred. Eichengreen explains it in the following way, and I quote: "Depression and financial collapse were avoided, if barely. This fostered the belief that the flaws of the prevailing system were less. It weakened the argument for radical action. Success thus became the mother of failure."

This sounds perhaps too harsh because some good work has been done in adopting measures in the domains of capital liquidity and resolution of banks in order to increase the resilience of the banking sector within the financial system. Much less has been achieved beyond banks, notably in what regards OTC derivatives or nonbank entities, including activities of the so-called shadow banking, or as it is now more fashionable [to say], the market-based finance sector.

However, as remarked by Helleiner, financial reforms saw the emergence of a promising innovation in the form of macroprudential policy, a policy that uses regulatory measures to deal with system-wide financial risk and the smoothing of the financial cycle, meaning the fluctuations of credit, financing, leverage, and asset prices. This goal is essential. Nevertheless, it continues to be viewed with skepticism by some economists, especially here in this country, and some policymakers.

Nevertheless, monetary policy cannot cope simultaneously with two different objectives, and the need for macroprudential policy has become more acute with the realization that advanced economies are very likely to face a prolonged period of low real and nominal growth. In such an environment, monetary policy has to remain accommodative, with low interest rates, which fosters the search for yield and froth in asset markets, making the use of macroprudential policy to strengthen institutions, to smooth the financial cycle, and to preempt asset bubbles more necessary than ever. Without an effective macroprudential policy, advanced economies will not be able to avoid financial instability and crisis.

This means that regulatory reform has to continue until appropriate instruments are put in place to deal with the nonbank financial sector that more and more is taking on the role of credit intermediation previously performed by banks. The concentration of reform measures in the banking sector has led to an expansion of shadow banking, or the market-based financing sector. The investment funds industry doubled in size in the last five years in Europe. The financial system is expanding in new dimensions, and new risks are being developed in terms of maturity transformation and leverage, especially synthetic leverage.

Another view on regulatory reform is rooted in a skeptical perspective about the possibility of taming finance, accepting that booms and busts are simply unavoidable. After adopting some measures to increase the resilience of financial institutions in terms of capital and liquidity, the policy concern is, or should be according to this view, that all macroeconomic policy should be used to mitigate the effects on the real economy stemming from endogenous financial crisis. Monetary policy would mop up via a liquidity provision after the bust and would help the recovery. For more Keynesian-inclined minds, this should extend to the use of fiscal policy, especially in an environment of low interest rates near the zero lower bound.

It is true that monetary policy is nowadays considered the most powerful of the macro policies to stabilize the economy; but it is important to be aware of its limitations, especially near the zero lower bound. It is sometimes said the world avoided the worst in 2008 only because central banks made bold use of their tools, notably cutting rates and providing abundant liquidity. But the truth is that without the significant use of fiscal policy in 2008 and '09, stimulating our economies and supporting the banking sector, the meltdown of the financial system would not, perhaps, have been avoided.

At the meeting in Toronto in 2010, the G20 decided to reverse this policy and embarked on fiscal consolidation to different degrees, leaving monetary policy alone to deal with macroeconomic stabilization. In this context, for instance, it is easier to explain [in terms of] fiscal policy the short-term effects of the double dip suffered by the euro-area economy after 2011 than by the behavior of monetary policy. Jan Veld, in a European Commission working paper of 2013, using the Commission's QUEST model, finds that the cumulative impact from simultaneous fiscal consolidation in seven euro-area countries from 2011 to 2013 can account for the effects on the deviation of growth from the baseline scenario, ranging from 8.1 percent for Germany during the three years to 9.7 for Spain and 18 percent for Greece. More recently, Rannenberg and Strasky find a cumulative negative impact of consolidation in those three years of 14 percent using a variant of the QUEST model, and of 15 percent using a variant of the ECB's new area-wide model. Despite the fact that several European countries had to implement deficit reductions, these model-based calculations, with all their caveats, illustrate the importance of macroeconomic policy in determining the outcome of financial crisis for the real economy.

Coming back to the conference theme, a third view about regulatory reform is to answer yes to the question being asked, and conclude that regulatory reform has gone too far, and that by constraining finance it is hampering the recovery. To be valid, however, one would have to prove that investment and growth are being significantly affected by financing supply constraints. This does not seem to be the case. Evidence points more in the direction of a general lack of demand and weak growth prospects to explain low investment and the modest recovery. The desperate search for growth in jobs by governments and policymakers following seven years of gradual reforms could give some credence to this view amidst feelings of reform fatigue. However, I argue that it would be wrong to ignore these opinions. The pace of the recovery is not being affected by lack of finance. Finance would be abundant if there were investment projects with prospects of good returns.

A fourth possible answer to the conference question relates to a somewhat liquidationist view that has reemerged. Its defenders claim that macroeconomic policies aimed at mitigating the recessionary consequences of the crisis do more harm than good in the medium term, even if some can accept that reforms to strengthen capital and liquidity in credit institutions are warranted. According to this view, this crisis stemmed from excessive credit, excessive debt, and bad investments, and that deleveraging and liquidation of bad capital has to happen. Trying to apply a very accommodative monetary policy to fight recession would risk inflation or, in the more modern guise of the doctrine, lead to asset price bubbles and future crises. Consequently, monetary policy, in view of the alleged ineffectiveness of macroprudential policy, should have become restrictive since 2011 or '12. According to this reasoning, precedence should be given to the financial cycle over the stabilization of the business cycle; or, in more telling terms, precedence should be given to the risk of asset price bubbles over the risks of deflation and unemployment.

Acknowledging that my description of these four different opinions has been, perhaps, oddly neutral, it emerges that, in my view, a combination of the first and second approaches is the appropriate response to the question setting the conference theme. Nevertheless, I want to state clearly that financial regulatory reform has to be completed and extended to contain risks in the so-called shadow banking sector and to strengthen macroprudential policies. Believing that advanced economies face a protracted period of low growth that requires accommodative monetary policy, I see no alternative to regulatory macroprudential instruments to mitigate financial instability and prices by smoothening the financial cycle.

Naturally, we should be aware that taming finance is very challenging, if ever achievable. As Hyman Minsky put it in the last sentence of his book, *Stabilizing an Unstable Economy*: "There is no possibility that we can ever set things right once and for all. Instability put to rest by a set of reforms will, after time, emerge in a new guise." Nevertheless, our countries have experienced long periods of rest without financial crisis in the past, and we should now aim to return to that.

I argued already that reregulating finance is, in my view, not an obstacle to the ongoing recovery. In last year's conference I also argued that fixing finance was not enough to ensure higher economic growth. This does not mean that I do not consider finance vital for a healthy economy. A well-functioning financial system is essential to foster long-term economic growth. In this respect, last autumn was characterized by two milestones in Europe: the completion of the asset-quality review and stress tests; and the start of the Single Supervisory Mechanism, which went live in November. Repairing banks' balance sheets together with the advancement in the design of a new resolution framework, the regulatory reforms improving capital and liquidity standards as well as those concerning the shadow banking system, constitute clear evidence of the commitment of the ECB and other EU policymakers to restoring a well-functioning financial sector and creating the conditions for the adequate flow of credit to the real economy. These successes occurred against the background of slow growth and subdued inflation. Despite recent encouraging signs, the recovery in Europe remains gradual and moderate. In the European context, the subject of this conference is therefore very pertinent.

I already gave my general answer in favor of completing the regulatory reform; so in the rest of my remarks I will further substantiate my argumentation in favor of that position and will express my concern with the insufficient attention being given so far to the growing risks in the shadow banking sector.

Financial institutions support and foster economic growth by intermediating savings and allocating them to productive activities; we all know that. These functions are also the inherent sources of financial fragility. Regulation plays a key role in reducing the scope of financial fragility and limiting the costs of financial instability. Hence, a well-designed regulatory framework can actually lead to faster average economic growth over time. There is a large academic literature that tries to identify empirically the impact of financial deepening, measured mostly by the ratio of credit to GDP, on long-term economic growth. The precrisis evidence largely pointed to a positive relationship between financial deepening and long-term economic growth. However, recent evidence has cast doubt on such a simple, monotone relationship. Several studies have shown that at a high level of financial development, the effect of finance on growth becomes negative or insignificant. Cecchetti and Kharroubi, in 2012, put the peak of the effect of credit on GDP growth per worker at a 100 percent ratio of private credit to GDP. In other words, letting the financial system grow too much may harm economic growth prospects. Correspondingly, regulating finance may stimulate rather than retard economic development. Financial regulation is meant to correct financial institutions' incentives toward risk, to induce them to internalize the costs and the externalities associated with their failures, thus reducing both the occurrence of crises and the associated costs.

Limiting the occurrence of crises has a positive effect on growth for several reasons. Crises affect growth asymmetrically. Activity falls much more sharply during a crisis than it increases during credit booms. Their negative effect on growth is very long lasting. An empirical investigation focusing on a large cross-section of countries shows that output losses associated with financial crises are highly persistent and may range from 4 to 16 percent. When the financial sector is in distress, entrepreneurs' access to credit is impaired, with negative effects on the investment of existing firms as well as on new business creation. Recoveries from financial crises tend to be slow, creditless, and jobless. And you can find in the paper [see link below] quotes of these recent studies that illustrate these conclusions. Even if regulation reduces economic growth in normal times, its impact on average economic growth over time can still be positive.

But there is a further argument why regulation may have a positive effect on growth. Without regulation, the financial sector may become excessively large and displace other, more productive activities. Recent growth in the financial system has not necessarily led to more credit availability for innovative business. In the last two decades, banks in developed economies have channeled an increasing amount of funds to households rather than firms. More and more savings have flowed into low- productivity growth sectors like real estate rather than into growth-enhancing activities such as technology. In addition, the growth of the financial sector and the high remuneration it offers may have drawn talented individuals away from other productive sectors in the economy, since financial and nonfinancial sectors compete for the same scarce supply of human capital.

In summary, the longtime relationship between finance and growth is complex and nonlinear; but the theory and evidence suggest that effective regulation is likely to be beneficial in the long run.

What about the short-term impact of regulation? Well, there are good theoretical reasons to believe that capital ratios' effects on growth should not be overly large. The famous Modigliani–Miller irrelevance result states that firms' and the banks' business decisions are independent of their capital structure. Of course, the Modigliani–Miller insight is developed in a very highly idealized setting that bears little relationship with the real world. For example, the tax advantages of debt and liquidity services performed by short-term bank liabilities do drive a wedge between the cost of debt and equity for banks; but the empirical papers that recently have tried to estimate this wedge have found it to be small.

The European Commission has published a comprehensive study that aims to estimate the joint economic impact of many regulatory initiatives. This study comes to the conclusion that the expected costs of the reforms will be compensated by the wider economic benefits. Moreover, specific assessments have been made with regard to the macroeconomic impact of stronger capital liquidity requirements and over-the-counter derivative reforms. In the European context, the European Banking Authority and the Commission have assessed the macroeconomic impact of the regulatory reform for insurance companies, for instance, and broadened the assessment with regard to the liquidity-to-capital ratio and currently with regard to the net stable funding ratio. Overall, the available evidence from these studies demonstrates a positive or, at maximum, neutral impact on GDP growth.

So, what is the cause of slow economic growth if not regulation? GDP growth comes from three main sources, quite well known: the decomposition in total factor productivity [TFP] and increases in both labor and capital. The contribution of all three factors has been declining over time and across countries as part of what has been termed *secular stagnation*. The main reason why labor force growth has declined is population aging. As the number of older retired people grows, the labor force in Europe is expected to decline at the rate of around 0.6 per annum by 2030. TFP growth has remained subdued at the rate of expansion of around 1 percent per annum. The determinants of TFP growth are not fully understood, but Robert Gordon, among others, has argued that TFP growth occurs in waves, driven by major innovations.

Finally, the rate of capital deepening has been weak in recent years, reflecting low aggregate demand, financing constraints and uncertainties, and weak business confidence. The contribution of this growth driver is expected to return to more normal levels as the economic recovery takes hold.

Compared to these structural reasons for the slowdown of growth, the impact of financial regulation has been modest at best. Another related consequence of secular stagnation may be that the natural—so-called natural—real interest rate has fallen. Population aging has shifted the balance between older householders, who are likely to save, and younger householders, who are likely to borrow. As a result, real interest rates have declined substantially in the last few decades. Nominal interest rates have also fallen in this respect, in line with the real rates, leaving the normal central bank policy rate much closer to the zero lower bound, thus increasing the likelihood of hitting it during deep recessions.

Without getting into a discussion about the merits and risks of unconventional monetary policy, it is probably fair to say that the zero lower bound on nominal interest rates complicates the task of monetary policy in trying to stabilize large shocks. Financial crises are some of the largest peacetime negative shocks to hit market economies, and our ability to use monetary policy in order to deal with them ex post would be impaired in a secular-stagnation world. This makes the task of regulation in avoiding financial crisis more important than ever. When it comes to dealing with financial crisis, prevention is always better than cure, but especially so when mopping up after the crash is complicated by the inability to cut short-term interest rates sufficiently to below zero.

Well, we have seen that, far from damaging growth, a strong regulatory framework is essential in ensuring strong long-term economic performance. Let me now briefly touch upon some key achievements of the efforts to reform that are ongoing and still to be completed. These reforms were necessary changes to the regulatory framework but are in my view not yet sufficient for completion of the reform. In view of the current rhetoric of reform fatigue, it is important to stress that we still need to finalize several important initiatives that are currently under way. They are all needed in order to correct market failures in an effective way and with the minimum of cost to the real economy. I'm referring to the Total Loss-Absorbtion Capacity initiative, to the leverage ratio, and to the review of risk weights that are now being considered and close to finalization. The attempts to broaden nonbank funding sources in Europe via improved and safer securitization practices, as well as a Capital Markets Union, should reduce the negative consequences of bank deleveraging, now as well as in the future.

Let me begin, then, with TLAC, the Total Loss-Absorbtion Capacity initiative, targeting the most systemically important banks. Too-big-to-fail is a very important source of market failures, and I consider TLAC as an important element in tackling this distortion. Allow me to highlight a few elements of the proposal in particular. First of all, the FSB [Financial Stability Board] is right in proposing a global Pillar 1 requirement, with the possibility [of applying] additional Pillar 2 requirements. A Pillar 1 requirement delivers a robust international standard for global systemically important banks. Second, I agree that a Total Loss-Absorption Capacity [approach] should be implemented with the already regulated capital buffers on top of it, which is essential not to complicate the use of the fluctuations of these buffers when the conjuncture changes. Third, I agree with benchmarking TLAC-eligible liabilities against a non-risk-weighted measure like the leverage ratio or in addition to risk-weighted assets. Under the assumption that TLAC is appropriately calibrated, this ensures that, for a failing bank, when risks have materialized and risk weights do not matter anymore, the actual loss can be compensated and the bank successfully resolved and, if needed, recapitalized.

Having said this, all regulatory reform, and TLAC in particular, has an impact on the cost of doing business for banks. And insofar as the increase in funding cost is the result of the effective removal of the implicit state guarantee, this is in principle to be welcomed. The benefits for society as a whole of the removal of the implicit guarantee outweigh the individual increase in costs. Taxpayers and their elected representatives have no appetite for another general bailout. TLAC will significantly reduce the externalities of a failure of systemically important institutions that are imposed on the real economy.

The leverage ratio: the finalization of the leverage-ratio framework should also be a priority on the global regulatory reform agenda. Leverage was undoubtedly one of the root causes of the financial crisis. Hence, a comprehensive and well-calibrated leverage ratio is an important tool for addressing such risks that might be circumvented or not captured by the risk-weighted framework. I therefore strongly support the migration of the leverage ratio to a Pillar 1 requirement, as foreseen by the Basel Committee [on Banking Supervision]. I also see a need to complement the microprudential minimum leverage requirement by a macroprudential leverage requirement framework. In particular, further work should be undertaken on the pros and cons of adding a buffer for systemically important banks for the leverage-ratio framework. Large banks contribute most of the excessive leverage with their greater costs of failure and their greater reliance on internal models. Further work should also be undertaken that would look at the relationship between the leverage-ratio and the risk-based framework. For example, as the Bank of England voiced some time ago, policymakers could consider adding a time-varying buffer. Such a buffer could help to maintain the relative role of the leverage ratio in the capital framework once the countercyclical buffer is activated in the risk-based framework.

As I already mentioned, there are many reasons to believe that the impact of the higher capital requirements on growth in normal times should not be overly large. In any case, the latest Basel QIS [Quantitative Impact Study] shows that the large majority of banks already satisfy the currently envisaged 3 percent minimum requirement, so any additional impact would be modest.

On risk weights: let me now turn to another key lesson we learned in the aftermath of the financial crisis. The Basel Committee has shown that significant differences exist in the way banks estimate probabilities of default and loss-given default, resulting in the reported capital ratios varying by as much as two percentage points for banks with similar exposures. We must address this variability of risk weights and banks' overreliance on internal models that produce them. Variability of risk weights may arise because of data scarcity and the complexity of models, but it may also be a consequence of banks gaming the risk weights. There is academic literature providing examples of recent empirical work that clearly reveals these gaming strategies within banks' use of internal models.

Fortunately, the Basel Committee has now stepped up its effort in this area. First, it has recently published a consultation paper on its new capital-floor framework based on standardized approaches. These floors will limit the extent to which internal models can lower capital requirements relative to the standardized approach, and therefore ensure that the level of capital across the banking system does not fall below a certain level.

Second, the Basel Committee has recently established a high-level task force on simplicity and compatibility, mandated to undertake a strategic review of the capital framework in order to reduce reliance on models for some risks and portfolios. I expect both threads of [this] work not only to improve the resilience of financial institutions but also to have a positive impact on lending to the real economy.

Finally, let me briefly touch upon a very recent initiative in Europe that also aims at improving financing to the real economy by broadening access to nonbank funding sources. This initiative follows the fashionable title of Capital Markets Union. Its objectives are very broad, and the benefits may only materialize over the long term. However, in a recently published green paper, the European Commission has highlighted a number of reforms that can improve enterprises' funding excess also in the short term; for example, lowering barriers to capital market access, as well as the development of a European private placement market can make a difference in providing financing to the real economy.

This shift in financing of the real economy from the banking system to markets and nonbank entities is already taking place, as I mentioned before. The role of the Capital Markets Union is to foster the effective and efficient allocation of financial resources at the European level.

But—and that will be the last part of my remarks—it is true that we have to make the banking system safer, and I believe that's subject to the successful implementation of the measures being discussed in the previous part of my remarks. We are close to achieving part of this goal, although not completely, of course.

But does this make the financial system as a whole less crisis prone and more conducive to sustainable economic growth? Have we eliminated the market failures that make financial crises so costly for the real economy? So far, the regulatory reform has largely focused on the banking sector, with the effect of pushing activities to less-regulated and less-supervised parts of the financial system. Going forward, we need more information, and we need to develop a monitoring framework and macroprudential tools for the rest of the financial system. Nonbanks can also exert costs on the wider financial system and can just as easily as normal banks become excessively risky and too big to fail. Our regulatory framework must evolve in two key aspects. First, we need to have permanent tools for the more systemic players in place. Second, we also need a toolbox for the less-significant financial firms whose joint actions can destabilize the financial system.

This mirrors, essentially, the macroprudential approach that we have followed for the banking system. In this respect, the current work of the Financial Stability Board on the methodology for identifying systemic nonbank noninsurers, in my view, addresses the first aspect of the remaining challenges. Let me highlight in this regard the importance of developing a framework capturing a wide set of entities with this methodology. This is, in my view necessary for two reasons. First, it provides a signal to the industry where we see potential systemic risks that we stand ready to apply macroprudential tools. Second, we still do not have a very good understanding of the risks emanating from the variety of different entities. The work of the FSB, for instance, has identified 36 different types of nonbank noninsurers in this whole sector.

We thus need to think ahead and have a broad set of policy tools ready to address the risks of different institutions. In contrast, starting with a limited set of entities will not allow us to fully understand what we need in terms of our toolbox. Going beyond systemic financial firms is also necessary to develop appropriate macroprudential tools. Financial Stability Board work on asset management goes in this direction and shows the road ahead. The buildup of leverage and the growing exposure to illiquid assets in the asset management sector are clearly relevant developments for macroprudential supervisors, which need to be carefully monitored and assessed.

However, macroprudential policy cannot stop at this point. It is well known that the liabilities of asset managers are subject to short-term redemption. Moreover, some asset managers hold a significant share of their assets in illiquid securities, and use derivatives and short-term financing transactions to increase leverage and returns. And there is not enough information to really calculate correctly the synthetic leverage of these institutions. The combination of these factors makes asset managers more prone to runs and asset fire sales, which may spill over to other parts of the financial system.

A comprehensive tool kit targeting these risks is therefore needed. More specifically, additional liquidity requirements, stress tests, minimum loads, and redemption fees are potential tools that should be a part of the tool kit of supervisors.

Second, haircuts for securities financing transactions are a further tool that could prove to be effective. With countercyclical haircuts as compared to a regime with flat minimum requirements, which was put in place for some type of transactions recently, the effects on volatility and leverage in financial markets may turn out to be stronger. Competent authorities should therefore consider using the haircuts as a macroprudential tool, meaning by raising the numerical haircut floors and varying them over time in a countercyclical manner. Macroprudential haircuts for securities financing transactions could be complemented by similar tools that allow competent authorities to set countercyclical add-ons to margin requirements; for instance, applied by CCPs [central counterparties] as well as for OTC derivatives. I would encourage further work to understand the effects of these tools and how they could be applied in practice.

So let me conclude. Getting Europe growing again is one of the most important challenges facing us at present. I believe that the enhanced regulatory framework we have put in place since the crisis can play a positive role in achieving this goal. We want a healthy and competitive financial system that supports sustainable long-term economic development rather than a return to deregulation and boom-bust cycles. A strong regulatory framework is essential in dealing with these challenges and avoiding future financial crises. However, an effective regulatory framework requires continued vigilance. We are currently experiencing a significant shift away from bank-intermediated finance, and this process would continue in the future. This requires a broadened tool kit, the ability of taking decisive and intrusive macroprudential policy decisions, and a framework that is capable of expanding to capture relevant systemic institutions and activities. This becomes even more critical when monetary policy needs to be accommodative, as I expect to be the case for the foreseeable future in the euro area.

Thank you very much.

This is an edited transcript of the speech as delivered in Washington. For the unabridged speech, see https://www.ecb.europa.eu/press/key/date/2015/html/sp150416.en.html.

Q&A

Q: Have you considered the possibility that financial instability may be . . . introduced by the asset purchase program? In other words, when you look at what's happening to bank net interest margins as you lower interest rates, there is a zero lower bound that appears on deposits, and your own bank lending survey suggests that banks themselves expect interest margins to fall in the future. With insurance companies, we saw the Dutch central bank warning about possible negative effects on the solvency of life insurance companies. And, of course, with pension funds, as interest rates come down, the liabilities go up, and you have the possibility of more unfunded pension funds. . . . Have you looked at that set of sequences, the perhaps unintended consequences of the asset purchase program, and tried to get your hands around quantifying those effects?

VC: Yes, we do not ignore the collateral effects of what we are doing, and we are indeed analyzing these and trying to develop and conceive of some instruments that are not yet available to deal with those problems. But according to what I said in my remarks, the [issue] is that there is no policy without tradeoffs, and to consider just those risks as the predominant aspects would mean that we would, as I said, give precedence to the financial cycle over the business cycle. Indeed, in Europe we have been facing the situation of very low inflation. It is now being reduced, but there were in the recent past some risks of deflation. We don't see it as really being materialized at all—on the contrary. But there was that very low inflation and very low growth. So, according to our mandate and the role of monetary policy, we had to give precedence to those objectives and those concerns. But we don't ignore, of course, the spillovers—the collateral effects—that this has.

Nevertheless, down the road, if indeed we can consolidate the recovery—for instance, according to our staff projections that were recently published and predict that growth and inflation would start to go up, and that by 2017 we would [have] an inflation rate, according to those projections, of 1.8 [percent] and growth of 2.1 [percent], so nominal growth around 4 [percent]—that would be a totally different environment from all the preceding years. And in that environment, with the consolidated recovery, then credit volumes would start to increase again, and other sources of revenue for the banks would stream [in].

Regarding insurance, there is a concern going forward, but let me remind [you] that in the past three years the earnings per share growth of insurance companies in Europe has been much higher than the earnings per share growth of banks. That is, of course, the result of the fact that they use a lot of mark-to-market and then they have had capital gains as a result of the drop in yields and increase in prices; but that has been the result. One can perhaps speculate that going forward those capital gains will not be present on the same scale, and that the low-interest-rate environment would then have a bigger impact.

But everything has to be considered. We have created working groups to analyze precisely these sorts of effects and problems, but we have to respect our mandate and the priorities it implies.

Q: This is a little off-topic. It's going to be a little different. We've seen the development in the US and in Europe of financing tools for businesses that respond to the lack of small-business financing. I'm specifically talking about a tool called crowdfunding. Are you familiar with crowdfunding?

VC: Yes.

Q: It's bigger in Europe than it is actually in the US, although the SEC [Securities and Exchange Commission] recently allowed Reg A Title 4 crowdfunding, raising up to $50 million in equity and debt in the US. What's the bank's position on crowdfunding, or does the bank have a position on crowdfunding in Europe?

VC: Well, no formal position has been taken. This activity is still small considering everything, but at least in Europe no obstacles have been created to the possible development of such activity. Banks are, of course, concerned, and they will try to respond, I'm sure, with their own products and innovations to this development; but it's still not something that is in any way a concern for regulators, let's say, right now.

Q: I just want to follow up on some of the things you said about the regulation of the market-based credit system, some of the tools that you're considering. You had a list. It seems—and correct me if I'm wrong—that you're a little bit in early days in thinking about this, and I'm wondering also, because of the international arbitrage issues here—regulatory arbitrage—to what extent are you coordinating this discussion with other countries?

VC: Yes, work is being done under the umbrella of the Financial Stability Board [FSB], so it's an international, coordinated endeavor. Indeed, already some measures [have been] taken as a result of that work. I mention two: there were very specific recommendations coming from the FSB about mutual market funds—MMFs—and there have also been very concrete recommendations regarding minimum haircuts with regard to security financing transactions. So these are two examples. Other things are under study now. The MMFs were the first example, but it is foreseen in the work streams that are in place that other types of institutions belonging to this sector will also be subject to specific recommendations by the FSB; so the work is ongoing on those others. And in particular right now, asset managers are in the forefront of those reflections. So there will indeed be some international standards that in the end will come up, because, as you say, this cannot be done just at the level of some jurisdictions—although some of the things, for instance, are, in my view, more regulated already in Europe than in the US or other parts of the world. We have the UCITS [undertakings for collective investment in transferable securities] requirements; we also have a directive for alternative investment managers of different types. So there are indeed regulations already in place. But what I think will be necessary is that the rules about liquidity buffers, about levels of concentration on the asset side of their balance sheet, the more widespread use of stress testing of those institutions, and the possibility of also regulating minimum load and redemption fees are a set of instruments that I would see as more likely to be more deeply reflected upon in the present situation.

Q: The banking union you talked about—you know that the ECB has become the supervisor of most of the biggest banks. Have you seen any benefits of the union so far in, for example, cross-border lending, et cetera? Because the numbers that we get publicly are really late—they're before the ECB really became the central supervisor. But the anecdotal evidence suggests that . . . Italian banks cannot really shift funds between Germany and Italy, things like this—these are the things that we heard before the banking union was implemented. Are you seeing changes in this sense? And, for example, Greek banks and the connection between Greek banks and the Greek sovereign—is that really severed? Or when the Greek government defaults—if they do, let's say—will the Greek banks be able to go a different way, or are they really stuck together?

VC: Well—many questions. Of course, it's early days. The task of the single supervisory started last November. So first, a very big benefit was, of course, the comprehensive assessment, meaning the stress test and the asset-quality review that was quite deep and wide and very important.

After that followed the further requirements put on banks as a result of the supervisory review that has now been concluded, or is about to be concluded. But there are other things that have been identified but not yet solved. And this, for instance, has to do with the great heterogeneous situation in what regards the regulation of capital and liquidity in different countries. That was the situation before. So, recently, the SSM [Single Supervisory Mechanism] disclosed that they have identified around 100 differences among different member-states that they intend to harmonize over time. So, indeed, it's a big task, but it has started, and all the things that you mentioned are, of course, in that list. But one can say that, so far, we don't see that yet as very significant in terms of things being done with significant reflection on, say, cross-border lending activities or things like that. The situation is no doubt improving, but the work has indeed started, and has started in a good way and in the right direction.

Q: About Greece?

VC: Ah, about Greece—the bank–sovereign feedback. Well, the situation has not [been] aggravated in any way in that sense. First, as a result of the previous PSI, the amount of securities of the Greek government held by Greek banks has been very much reduced; so the exposure of the Greek banking sector to the sovereign compared with what it was before the PSI is now much smaller, and in fact is much smaller than the exposure of the banking sectors of other countries that have been in the past under pressure as a result of that. So that already has reduced that link, and that link is not being increased, because, as you know, the SSM, precisely for supervisory reasons, took a decision that the Greek banks should not increase their exposure to the Greek government; and that is putting a limit to aggravation of that and is keeping the situation as it is, in view of the risks that now surround Greece and the Greek banks. So the supervisor has taken decisions regarding that.

Q: Any discussion at the ECB regarding the possibility of regulating underwriting in the sense of trying to make sure that banks do proper underwriting and also securities are properly underwritten, and limiting access to that government safety net from that proper underwriting?

VC: That is totally outside the remit of the ECB. It is in the hands of securities regulators and ESMA [European Securities and Markets Authority] at the European level, so we cannot really interfere in that.

Thank you very much.

PAUL TUCKER
Senior Fellow, Harvard Business School

Thank you for inviting me back. It's fun speaking at conferences, but it's much more fun being invited back, because even after a couple of years you discover that you did okay the first time, which is worth quite a lot. And I was still in office then [as deputy governor of the Bank of England], I think, and so in truth I'm flattered that you've invited me back now.

You've been talking about all sorts of aspects of the reregulation of the financial system and its effects over the last day or so. And plainly, the financial system needed reregulating in some way. The catastrophe and the social cost across the world, not only in this country and in mine and the rest of continental Europe but across the world, we created a problem that has hurt human lives more or less everywhere on the planet.

So the system needs to be put back together again. Will it be exactly right? Of course it won't be, and one of the things that we need to get to is to make it easier to change the regime in a kind of structured way and to sustain an interest in the regime between crises. Because what tends to happen in this field is, everyone loses interest eventually, and they don't regain interest until something goes horribly wrong. That's very different to the other side of central banking, monetary policy, where each month or six weeks, depending on the jurisdiction, an interest rate decision is announced, and there's huge coverage of it and testimony and everything else.

The other thing I would say by way of introduction is that of course the system would have been redesigned better—I don't know how much better, but better—if we could have waited years to find out whether the macroeconomic policy tools of the official sector worked, or how well they worked, in restoring demand and activity. Because the real costs of the financial crisis depend not on that initial collapse, although that in itself had costs, but how quickly you can get back to normal.

We already know enough to be sure that I and my peers were sensible not to wait. We were sensible to get on and reregulate the financial system. And I thought I would try and address reregulation under five headings. The first one is, will it damage lending? The second one is, will it damage the availability of safe assets to households and businesses and investment institutions? The third one is, will it damage the liquidity of capital markets? The fourth one, and a big one which I'll try to develop a bit, is, will it unleash regulatory arbitrage on a scale that we've never seen before, and if we were to address that, what would the world look like? I think that raises some really deep questions and some institutional questions for this country. And finally, will what's been done so far give rise to new risk singularities in the financial system?

The answers, by the way, are broadly no; broadly no; yes in the short run but not in the long run; yes, very; and yes unless something is done. But I don't expect you to remember the headings. I'm trying to answer the questions, is my point.

So, will reregulation, particularly of the banking sector, affect the availability of credit to businesses and households, and therefore the rate of growth and living standards in our societies? That, of course, is something that the banks have said that it will do, and there are lobbying efforts against reregulation. I don't think it will. I think, big picture. Big picture: so I'm averaging now over five, 10 years, which is, I think, how we have to think about the welfare of the people the official sector tries to serve.

I'm going to make some assertions: Well-capitalized, strong banks are able to lend. Weak banks that are not recognized as being weak lend a lot. Weak banks that are recognized as being weak do not lend. When banks are recognized as being weak, as they were doing in 2007 and 2008, not only do they not lend but everybody gets pretty scared, whether or not they are themselves demanding credit in the short run. It makes people much more uncertain about bad things happening in the economy because they know there isn't a banking sector there to smooth the adjustment, and that tends to drive up precautionary saving. It tends to cause businesses to pause, to delay, before they invest. And those two things in themselves tend to put the economy on a lower path. Weak banks are a really, really bad thing, and that the crisis was as deep as it was owes an awful lot to the banking systems of this continent and the continent that I'm from being precariously weak.

The units don't matter terribly much, but the relativities do. The cap on leverage for big banks, at least, but also more or less for medium-size banks, is going to be around 25 times—still quite a lot. De facto, before the crisis, it was about 100 times. If you take a bank's balance sheet and calculate its tangible common equity—by which I mean ignoring preferreds and subordinated bonds and all those things, take its common equity and deduct goodwill and deduct deferred tax assets for some of the biggest banks in the world—you get to a number which is preciously small.

Now, why should you deduct those things? Think about what goodwill is. Goodwill is, you've bought my business because you think you can run it better. And imagine that that's absolutely true; that if we survive—the merged entity survives—you really will run it better and it will produce a higher stream of earnings. But if we go bust in the meantime, that net worth is only out there in the future as a possibility. It doesn't exist today as net worth that can absorb losses at all. That was a problem in this country. It was a problem for either the biggest or second-biggest commercial bank in this country. I'm not talking about dealers—*commercial banks.*

Another variant of the same conceptual flaw in the preexisting regime was deferred-tax assets. So, what are deferred-tax assets? I've been running my business, and unfortunately I've made some losses. But the losses didn't kill me. I can take those losses forward into the future, and if I survive to make profits, I can put those losses against my profits and pay lower tax. That's worth something. It's worth something times the probability of my surviving to make those profits. If ex post I don't survive to make any profits—in fact, I'm wiped out today—those deferred-tax assets are worth nothing. They cannot absorb losses to keep me out of bankruptcy today. That's a problem in continental Europe. That's part of the debate that is going on in a number of continental European countries at the moment.

And I would say for those of you that follow these debates, the things I'm mentioning now, focusing on common equity and tangible common equity, by definition matter hugely more than getting risk-weighted assets right; although getting risk-weighted assets right matters. Why does it matter hugely more? Because by definition it's the base on which the leverage occurs. Someone once said to me when I made this presentation a few years ago, or this particular point a few years ago, "Well, why haven't you talked about risk weighting?" And I said, "Because what I'm talking about you can multiply by 25 or 30 or 50 times." You have to have a risk-weighting problem that is absolutely massive to outweigh this description.

So we have terribly weak banks, and although the deep causes were global imbalances and the ideology of perfect markets and plenty of other things—problems of ideas and international relations—that the crisis was so very deep owed something to a very, very fragile banking system. And I think circumstantial evidence for this is, so the world banking system gets blown down by US subprime? Your subprime's tiny, absolutely tiny! But if you've got a tiny amount of equity, it only takes a tiny thing to blow the world down. If the world has then bolted itself together in every imaginable way, it ricochets absolutely through the world. So I think that if we want to have credit supply that is sustainable, we need soundly capitalized banks.

If we're happy to live in a world where we have Minsky-type booms, where credit is oversupplied, and then the music stops and credit supply is cut off completely, then we should get back to having weakly capitalized banks. Weakly capitalized banks don't cause Minsky's cycles, but they make them a damn sight worse than they would otherwise be. And you can see this in one other way as well, which is who, so far, has started to come out of the crisis period better than others? So I'm making a relative term: no one's come out of it *well*. We should be, I think, reasonably grateful as citizens that we didn't fall into a repeat of the Great Depression; but it plainly hasn't been a good period. But the US has come out fastest and was probably toughest on its banks first. The UK is coming out second, and it was probably toughest on its banks second. When I was in office, when the Bank of England finally got back prudential supervision, Mervyn King and I were pretty tough on some of the banks and made them raise equity with the support of our colleagues. I thought of ourselves as operating a Keynesian monetary policy and a Hayekian banking policy. [*Laughter*] When I said that in London, it didn't work; I'm pleased to get some resonance. Even if you hate what I've said, you at least know what I'm saying.

In continental Europe they've been slower, and I think there was a degree of capture of bank supervisors in some capitals. And I don't mean through the revolving door, and I certainly don't mean through corruption: *I* think, through cohesive elites, and everyone thinking in the same way and identifying their interests as broadly shared. And I think one of the great things about banking supervision moving to the ECB is, crudely, it will mean that a Frenchwoman is supervising German banks, and an Italian man is supervising Spanish banks, and obviously this will depend upon more of that mix of nationalities; but I think it does take a step away from cohesive elites. My country, believe it or not, is blessed by not having cohesive elites, contrary to the popular opinion that I have been baffled by. We used to have one. We *used* to have one. We haven't had one since Churchill lost the election in 1945. Actually, that's more or less true as well.

The second theme is reregulation and safe assets. There is this debate going on. It's a very interesting debate, and if you haven't tuned in to it, I think Ricardo Caballero of IMF is the best guy to tune in to on this. The argument goes that we've got not just the usual liquidity trap thing, but a different kind of trap; which is, the world has become a dangerous place, so people perceive it to be a dangerous place—people want to insure themselves against those risks financially. In order to do so, they want to hold safe assets. What is the safest asset? Treasury bills, Treasury bonds, UK government gilts, German bunds. And yet those are being hoovered up by the central banks of the world—in Asia because they've been running current account surpluses and so buy bunds and US Treasuries; and, of course, quantitative easing [in the US] has largely bought Treasury bonds, and in the UK, pretty well exclusively UK gilts. And this takes these things out of the market, and there [are fewer] safe assets for anyone other than a household to hold.

Now here's the bit where it meets banks. So there is an argument that—I'm not going to address those two macro things; they're really important, but they're just part of the backdrop for the next statement that's made, which is that . . . the liquidity coverage ratio for banks is exacerbating this. Because now, when they're making banks hold government bonds as well against their liquidity risk, that means there are even fewer government bonds to be held by pension funds, or insurance companies, or mutual funds, and, indirectly, by households. This is an argument advanced by people, particularly within banking, who want to argue that reregulation is having perverse effects. I think this is a really bad argument for the following reason, which is, in what circumstances . . . does a bank . . . have to hold more of these bonds? Why don't we turn it the other way around? If it funds itself beyond 31 days, it doesn't; if it funds itself with insured retail deposits, the requirement is a lot lower. The requirement to hold government bonds or very liquid bonds is basically only demanding when banks are choosing to fund themselves with short-term, one-week, overnight, one-month, wholesale liabilities from money market mutual funds or elsewhere. Well, it's that that makes—one of the things that makes—banking fragile.

So we get that these two issues are related. So we could say to banks, "Don't hold any liquidity. There will be more safe assets for everybody else." But then we would make the banking sector more fragile, which means the taxpayer being at greater risk. . . .

These arguments that I'm kind of knocking down, I'm not saying they have zero merit; but they're a bit more nuanced than some of the lobbying organizations recognize. (By the way, it is very interesting being based here now much of the time. Lobbying certainly is different here from in London and in Europe. It's a different kind of thing here.)

The third issue, then: reregulation and the liquidity of capital markets. So the argument goes, and I think this is a good argument up to a point, that the new leverage restriction on bank balance sheets—combined with, over here, the Volcker rule—means that dealers and banks are going to be much less active as market makers than in the past. They're going to be much less willing—either not able to take on inventory because it could get bashed as proprietary trading, which is against the law; or, [since] balance sheets just can't be as elastic as they were in the past, they won't be able to bear the inventory risk in the most basic sense.

This is where I think it's really important to separate the short run from the long run, and I'm going to start with the long run. So, big picture: I think that policymakers knew this in advance. I mean, I guess I haven't seen too many of them come out and say it, but I've said it on the record in recent months. Why? Because it sounds perverse, which is that if you have liquidity in capital markets, which obviously matters enormously, . . . that is based on infinite elasticity in dealer balance sheets—and I talked about them being levered maybe 100 times; actually, you can get to a calculation that says 200 times—then what that means is . . . (and it's exactly analogous to credit supply), you have liquidity during the good times, and then suddenly it stops. There was no liquidity in many markets from the summer of 2007 onward. When the great historians get to write about the crisis, the most puzzling periods will be summer '07 through to spring '08, when Bear failed, and then especially Bear through to Lehman. But this old regime that people are now saying we should get back to somehow, this was completely illusory liquidity. It was switched off not quite overnight, but almost overnight.

But there's something deeper as well, which is, circumstances in which . . . the rules of the game allowed the liquidity of capital markets to be entirely reliant on almost infinitely elastic dealer balance sheets. That's an environment where people underinvest in the infrastructure in bond markets and trading markets—and I mean invest in every sense of investment. I don't just mean the dollars and pounds and euros invested in physical and technological infrastructure; I mean in ideas as well. I think what we will see, and I think we're beginning to see it already, . . . over the coming years is the so-called buy side—the asset managers in various shapes and sizes in different parts of the world thinking much more energetically about what kind of infrastructure do these trading markets want. It's not easy to have exchange-based trading in the way we've had in equities for 100, 200 years. But we don't need to be quite so reliant on dealers holding inventory to bring buyers and sellers together. I do think this will turn out okay in the long run. I think market structures, in other words, are endogenous. It's not a given that people will trade bonds in the way they have, forever. And that's a reason for not being deflected from the policy that the official sector has pursued.

In the short run, it could be bumpy. There is no doubt about that. Mark Carney has talked about that, and others; and I think they're right. But in any case, they're close to it, and well placed to judge. What I think it means for them, and this is quite a big point, is that they, the central banks, may need to find themselves acting as market makers of last resort. Perry [Mehrling] has written about that, and actually I've written about it in the past. My preferred mode is that the official sector would act as a market maker of last resort only *as* a last resort, rather than as a kind of permanent [thing], wherein they're substituting for something that the private sector could do. But it may well be—and I hope this isn't too convoluted a thought—that over the next year or so the last resort is reached rather sooner than it would be in the long-run equilibrium.

I think this puts them under a bit of a burden or responsibility to say what kind of framework they would have for market maker of last resort, which is something I said while I was in office, and I repeated it. Perry and I were at a fantastic seminar in the BIS [Bank for International Settlements] last summer about lender of last resort, and both of us talked about market maker of last resort. So I think there's a responsibility on the official sector there to say in advance what they would do. And even if they don't say it, which I wish they would, they certainly need to think about it, whether or not they tell us what they've thought.

All those issues, of course, are kind of low-level trivial issues. Now let me get to the really big stuff: reregulation and regulatory arbitrage. Regulatory arbitrage is absolutely endemic in all sectors, but particularly so in finance. Finance is a shape shifter. You can build an insurance business as a book of derivatives. You could actually build a banking business from an insurance business. So anyone that owns—*anybody* that owns—a sizable portfolio of Treasury bonds can build themselves a shadow bank. You loan out the Treasury bonds for cash on call, and you then employ the cash in buying corporate bonds or asset-backed securities. And what have you got? You started off owning a Treasury bond, and you still do somewhere; but now you've got this second-stage balance sheet where your liabilities are at sight and can be called, and your asset is a credit portfolio, which used to be known as a bank. Actually, AIG did that. I think part of AIG did that. Everyone talks about the derivatives crisis in AIG, but in some respects the more interesting bit was the SunAmerica crisis, because that's what their insurance [arm]—I think California Domicile Insurance Company was doing it. Maybe it wasn't AIG; maybe it was somebody else. But I think someone did that.

What does all this mean? Well, it means that as de jure banks get reregulated—more capital, more liquidity, more this, less of that—the economic substance of banking is going to crop up elsewhere. And yet we're interested in banking in terms of social welfare; we're interested in the economic substance of banking, not as things that are encased in something that is called a bank under the law, and I'm pretty sure that Minsky would have agreed with that.

This has a number of implications. It has a number of implications for how the official sector is organized. . . . If the only regulators were the financial stability mandate, or central banks and bank regulators—I'm setting that up quite carefully—then actually we're going to end up with a great deal of de facto banking under the jurisdiction of securities regulators or under the jurisdiction of no one. And it is a fact that securities regulators across the world have very different views as to whether or not they should have any responsibility for stability. Actually, in this country, my perception is that different commissioners of the SEC [Securities and Exchange Commission] have different views on that. I think that's something Congress should sort out one way or the other, since . . . in democracies I think mandates should come from elected people rather than people sitting around the table and deciding what they want to do. That's a pretty serious issue, and what I'm touching on here, this bothers people across the planet. They don't know what to do about it.

But there's a deeper issue, which I think is very difficult, which is, if you think about how most financial regulation works, but particularly securities regulation, particularly regulation that would apply to this shadow banking sector, it's based on rules. I don't mean rules in the economic sense of rules, but legal rules, very detailed rules, rules that go on for hundreds of pages. And that's for good reason in democracies. We, as citizens, don't want to live in a country where Congress or Parliament delegates arbitrary powers to people like me, or my former self. We want the unelected people to be boxed in, and making them write rules is a good way of doing that. That's part of the history of this country over the last 100 years, and of other countries as well. But these detailed rule books are absolutely the meat and drink of regulatory arbitrage. So I'm going to say something about the Volcker rule, and in saying this about the Volcker rule, there's no criticism implied of Paul Volcker, who I think is actually a truly, truly great man.

But this rule that, unfortunately, is named after him, the document is 800 pages long. I'm going to put this in a slightly frivolous way, and you have to remember, I'm English. So it's 800 pages long. Actually, we don't have many books that are that long. So there was no length constraint. They said everything they meant to say. If they'd had more to say, it would have been 900 pages long, or 1,200 pages long. They really did say everything they meant to say, and they consulted on it four times, and there were five agencies involved; so one is entitled to infer that they have not said anything that they didn't mean to say. That means that when the lawyers find the holes in it, it is completely legitimate to go through those holes. And if only because of original sin, there will be holes in that 800-page package. So it is doomed to fail, and I know that without reading it. And I'm completely serious.

What's to be done about this? If we give regulators the discretion to say, well, that's now a threat to stability, that's within scope, here's a policy for you—that feels like arbitrary power. If we write detailed rule books, then they will fail. I'm not going to offer an answer to that question.

One final thing and then a wrap-up: is reregulation creating new singularities, new things that are systemically important—potentially, too big to fail? Yes. Banks became too big to fail by accident, by which I mean, no one in Parliament or Congress or a central bank or regulator said, "Oh, if we do X and Y, it will be great—we can have banks [that] are too big to fail." It was never a plan. It kind of happened by tragic accident.

Clearinghouses are not like that. Clearinghouses are fascinating in all sorts of ways, in that the G20 leaders, enacted through Dodd-Frank here and legislation in Europe and elsewhere around the world, were mandating certain types of derivatives. Repo transactions go through clearinghouses, and if they fail, there will be mayhem. Three clearinghouses have failed since the Second World War: one in Kuala Lampur, one in France, one in Hong Kong in 1987—I was sent out to Hong Kong afterward to help reconstruct their financial system.

Now, eventually, everything happens. Eventually, a big clearinghouse is going to fail. And when it fails, the politicians are going to say, "Why on earth was this a for-profit function in the private sector?" So there are three options: have it in the public sector, have it in the public-private sector as a utility, or have it in the private sector for profit. We've got them in the private sector for profit. They're typically owned by exchanges; actually, they're typically cash cows for the exchanges. I think this is a big deal. I think one of the most pressing issues—and America has been behind Europe in focusing on this, but it's now happening—is, we have to sort out how we will handle the failure of clearinghouses without them causing systemic distress. It's perfectly possible, just as it's possible for Goldman Sachs and Barclays. Virtually all technical policy problems can be solved; you just have to recognize that it is a really serious problem, which you should prioritize and put your best people on. So this is being grappled with, but it's pressing.

Two final thoughts, which go somewhat broader. One thing that has not been addressed—and while I'm here in Washington I've been encouraging some of my former colleagues to step back a bit, if only behind the scenes, and think about this—one of the underlying problems that we face, again on both sides of the Atlantic, is that vast swaths of our population want to buy financial instruments that are safe, liquid, and offer them a yield. This is alchemy. *This is alchemy*. We've lived with alchemy like that for a number of years. How on earth did we do it? We need to start debating that. It is impossible for our people to have that. They can have safety and liquidity or they can have yield, which compensates them for the risk, but they cannot have safety and liquidity *and* yield.

A final point—which I'm just going to assert but I am more optimistic about—which is, an awful lot of what this reform program is about is making banks part of capitalism again. The one really troubling thing about the lobbying, which when I was in office I was able to lean against in London and in Europe, is, too many bankers don't realize that they are in the residual socialist part of the American economy or of the European economy. The first time I said this in public, which was about five years ago, [to] a vast hall of bankers, I said, "Hands up, everyone who believes in capitalism." A roomful of hands. And I said, "Well, you know, I'm just trying to get you to rejoin it.

I'd really like you to be part of capitalism. Capitalism's good. But it really doesn't work so well when banking is kind of one foot in the public sector, the risk bit, and one foot in the private sector, the rewards bit."

Thank you very much. I'd be glad to take questions, but no one should feel obliged to ask questions at this time.

Q&A

Q: In this debate that's going on now that we have a new Republican Congress with a two-year deal, one of the issues they've decided to focus on is the unfairness of designating nonbank SIFIs [systemically important financial institutions]. And the insurance industry is saying, "Who, us? We're not banks. We don't do what banks do. We shouldn't be subjected to bank-like regulation." And then the asset managers—who I think everyone should know were one of the first trip wires of the 2008 episode of the 50-year financial crisis—they're in deep denial. Is there anything to their assertion . . . that they haven't exerted great efforts over many years to achieve the status of too-big-to-fail, but they don't want what comes with it?

PT: The official sector should listen to what they say, and they should do the analysis carefully, and they should not be deflected one iota from serving the long-term public good. That's what it is to be a public official. And arguments that are really bad you have to expose as really bad.

I'll give you one: a couple of Washingtons ago, when I was still in office, I walked into a meeting between the public sector and the private sector, and I was a bit late because I'd been with people in the official sector at this time of year and they just bounced from meeting to meeting. I walk in, and as I'm sitting down someone from the private sector, from the asset management industry, is saying, "It would be a real mistake to put minimum requirements on initial margin—variation margin, fine, but initial margin, you really don't need to do that." And as I'm sitting down I say, "Sorry, chap, can you just remind me how much leverage you get with zero initial margin?" I could feel the oxygen drain out of this man's body, because the answer is, "Infinite." I then said, "Don't bullshit the public sector. It's too important for that."

But sadly, we can't rely on that. But equally, just as there are market failures, there can be government failures, and there can be failures of incentives, and there can be failures of human frailty, of tiredness, or of being stupid. So they do truly need to listen to the arguments. My perception from a distance is that in asset management they're focusing more on activities rather than on the managers themselves—which, first order, I think is probably sensible. But we know from the insurance case I alluded to, whether or not I got the firm right, that there are insurance companies that build themselves banks. It's very technical, probably beyond me these days—the variable annuity business in this country is a fantastically complicated options business, and there are insurance companies in this country that do a lot of it.

I chaired a meeting related to this question about insurance companies and, actually, where I think is the right place to start these questions—which is, if an insurance company failed, is that something that can be worked out in an orderly way, or are Yellen and Draghi and Kuroda and the president and others all going to be involved? If they're going to be involved, there's something going on that is systemic. You then just have to trace it through. And to the extent that insurance companies have big derivative books on either side of their balance sheet, they're going to get closeout that can flow to the rest of the system. I think it's absolutely the official sector's right—indeed, I think it's their duty—to think that through. I just wish they'd frame the question that way—that it's about failure. Because then, when someone opposes the official sector policy, the essay that they have to write or speak is, "Demonstrate to me that if you fail there won't be a problem."

I faced this in the Bank of England with senior staff, and they were saying, "We don't think insurers can be systemic"—some of the senior staff, not all of them—and what I'm going to say is a story that relies on the culture of the institution. I said, "Okay, a note has just come in telling us that X"—I'm not going to name the firm—"X has failed, a big UK insurance company. Does anyone need to leave the room?" And this is the bit about the culture: two of the guys that had been opposing me put a hand up and said, "Yeah, I do." And I said, "Well, I don't need to leave a meeting with Mervyn [King, then governor of the Bank of England] if we hear that X has failed. And until we know, you can stay in this room." Then we have to keep on trying to think this through, because the consequences of being wrong are so serious—that's what the asset management industry doesn't get.

It's not that people want to persecute them, and it's not that they know they're definitely systemic; but it's like a massive social due-diligence exercise that's going on, which is that the consequences of being wrong again would be terrible. And I say *again*, because there was a report, which hasn't been published but it is known about, in the early 2000s that addressed the question to the G10: could we wind down a large and complex financial institution in an orderly way? I was part of that group; I didn't chair it. I was part of that group, and the answer we gave was no. And it wasn't acted on. That's a terrible, terrible thing. . . .

PERRY MEHRLING: So this is carrying on from where you were talking about insurance companies: clearinghouses, which you raised in your fourth point about new singularities. One way to think about a clearinghouse is that it's a matched-book dealer, and as such it basically has mainly liquidity risk, not capital risk, and as such, de facto, the central bank is going to be involved. If there's a clearinghouse problem, it's a liquidity problem more than anything else. So the fact that these things are in the private sector being run for profit, and that they're cash cows, suggests that somebody is underpaying for liquidity insurance.

PT: This is a great point. It's a great point but missing a point, if I may say so, as well. So they start off with a matched book—that's absolutely true. I read in the papers the other day, "Oh, we're not risky because we have matched books." They are just like a securities dealer in this respect: they have a matched book until one of their clearing members fails. A securities dealer can have a matched book, but if one of their counterparties fails, they've no longer got a matched book. So clearinghouses have two things: they have counterparty credit risk and they have liquidity risk. And I really believe we should always start with thinking about solvency risk, because whether it's within central bank mandates or not, on the whole they will find a way of lending to solvent entities; that if the entity is manifestly insolvent, then it is wrong to lend to them—it's also illegal in most countries—but instead you need equity support, and that's fiscal and rightly political. I'm going to come back to liquidity.

Then the big question is, okay, so if a big counterparty fails—and a big counterparty's *going* to fail—they're going to be ricocheting everywhere. It's not going to be that a counterparty fails, the clearinghouse fails, and everyone else is carrying on around their business. There's *mayhem*, because one of the biggest firms in the world has failed and one of the most significant clearinghouses in the world has failed. And the question is, so who's going to push the equity into it?

I'm going to start off with the Old World and then bridge to the New World. The Old World—the world in Chicago where all these clearinghouses began, and to some extent in London as well—these are mutual. And they're *literally* mutual—they're clubs. And they're clubs where everyone knows quite a lot about each other, and they are mutually insuring and standing behind the clearinghouse. And if they realize that their next-door neighbor is no longer as strong as they were, they kick them out of the club. That's how Chicago works, and that's how London banking worked for about 100 years, and Chicago seemingly embodied that in a rule, down to the last drop. This was a formal rule. You contributed, you put up initial margin, you contributed to the default fund; but when the default fund was exhausted, you had to put more in—you could be called to put more in—and that could go on and on and on until either everyone was bust or the thing was whole gain. That stopped a while ago. It doesn't actually matter why, the proximate reason for it stopping. Because the deep reason for it stopping was the communities of clearing members and clearinghouses were no longer homogenous; the world had become a more expansive, freer place, and it's much harder to make that a true mutual.

But nevertheless, they should still stand behind the clearinghouse to a very large degree, because what the clearinghouses do—you're all the clearing members. You take all the risk into me, and so you're deciding how much risk to take—Perry's right about that—and then I want to redistribute it to you so that you'll internalize the risk, so I shed back to you the risk and you start to internalize the externalities. So there has to be a mutual element in this, and the question is, how much. That's always been true.

The new bit, I think, is if our societies are going to allow these things to be for profit, then the people who get the profits need to stand to lose more than their equity—again, because of the social externalities. So at this point it's exactly analogous to the debate in the banking sphere—and I did lead the international effort on this—this TLAC [total loss-absorbing capacity] thing, this gone concern loss-absorbing capacity, which is essentially big banks and dealers issuing bonds which would absorb losses after equity. The exchanges need to be made to do something like that as well—that I'm clear about. The difficult bit is how much of this catastrophe insurance should be provided by the exchanges that own it, how much should be provided by the clearing members, and how much actually should you try and get externally from the insurance markets? But they need to get on and decide. Thankfully, in this country some senators are now asking questions about this. They need to, because in this country it's split across agencies who—I can't be sure, I'm outside the game now—seem to be leaving it to each other, whereas they have a social responsibility to grab it.

Q: At one point I think you said something to the effect that too-big-to-fail came about in some kind of a random way.

PT: I said it wasn't planned.

Q: It wasn't planned. But I do remember that the American banks had gone to Congress complaining about how European banks were getting too big. Actually, I'd read in the European papers that European banks were complaining about American banks getting too big. So there seemed to be a process at play, it was even competitive in some sense. My question, though, is—

PT: I think the bigness—sorry to interrupt for the second time—but I think the bigness is to be distinguished from how much equity they had. I mean, being big in itself carries certain hazards for society, but not nearly as many hazards if they'd actually had a decent equity cushion, all of them, which none of them did have. Anyway, sorry.

Q: Actually, that was just the lead-up to my question, which is, the differences between regulation in, say, the City in London, and regulation in the United States—could you give any insight or highlight one or two big differences that could create arbitrage or problems?

PT: It's completely changed in the City of London in the banking sphere, because supervision of banks has returned to the Bank of England. And there's a difference in style in one respect, which is, as you know, the US employs a lot of examiners in the offices of banks. I don't think that's particularly effective. The people who brought me up in the Bank of England didn't think that was particularly effective. One of the minor tragedies—very, very minor—of the crisis is that a question that had been debated amongst bank supervisors for 50 years didn't get tested by the crisis, because the old UK methods of supervision weren't being employed, because the then regulator had a third method of supervision which was distinct in its own way.

But I think what is now shared—and I think this is massive—is this emphasis on stress testing, and I think this is a breakthrough technically, and I think it's a breakthrough in political economy terms, and the two are connected.

The feeling about what monetary policy's like—you know what interest rate the Fed has set, you read the minutes of their meetings, you can go onto the website and look at their main econometric models. They hold conferences on all of these things, and they get criticized and sometimes praised, and people can see what the inflation outturn is and people have got models as to whether that was luck or it was skill or whatever. Basically, there are rich public debates about how well monetary policymakers are doing, and that makes them do better. This is . . . a huge change from the world of monetary targeting in the '70s and before, which was completely opaque.

Now think about supervision until the last few years. The outputs were invisible and the outturns were hard to judge until it was too late. And yet this was a delegated function. Stress testing changes that completely. It happens on a schedule, once a year. The scenarios are published, which means that you, Congress, journalists can say that was a pretty gentle scenario, or a ridiculously stiff scenario, or somewhere in between. The results are published. Not all the models are published, which I think is a very difficult issue to get right, because in one sense they ought to be published but in another sense we can be confident the banks will game them—it's not like monetary policy can't be gamed in the same way. I think the US Treasury and Federal Reserve innovated and did this in the spring of 2009, and the rest of the world has gradually been picking it up. I wanted that to be done very much by the Bank of England, and it was agreed that they would before I retired. And they are doing it, and because they have some very global banks, they're not just going to set UK scenarios. Next year they've said they're going to set a national downturn scenario, I guess because of the Hong Kong bank and Standard Chartered. I would say that is, for now, the future of bank supervision, and the methodology techniques are the same.

Securities regulation, which I'm not inexpert in but I haven't spent as much of my career . . . on that, I think they're similar in the sense which I've already discussed; which is, they're entirely rules based, and I think that's good for conduct. Rather like criminal law or administrative fines and punishments, I think citizens and businesses are entitled to know in advance where the lines are. I don't think it's very good for what we're talking about, whether the ceiling can fall in; because if you try and draw hard lines for safety, your hard lines will just be burrowed under or drilled through. And on that, I think everyone has pretty much the same problem at the moment.

Q: Are they different?

PT: Not very. A bit. I mean, . . . for example, somewhere in between there is a debate going on at the moment, and it's mentioned in passing in *The Wall Street Journal* this morning about whether margining should be based on a two-day horizon or a one-day horizon. Europe wants a two-day horizon—that's more demanding; the United States wants a one-day horizon. I give that example first because, sitting over here, the examples I'm always given are, "Oh, Europe's being softer than the United States." I chaired three-and-a-half international committees—the half is one I cochaired with someone from the securities industry. For every example that goes one way, there's one that goes the other way; but both of those things are dominated . . . by a desire to get to a common minimum standard.

Now, there is one big argument against this, which was run by Commissioner Gallagher of the SEC, in the speech yesterday or the day before, which is, this harmonization is tremendously dangerous, because if regulators don't get everything right, everybody's going to have the same problem. I think Daniel's a serious person and I think this is a serious point. But I think as long as it's agreement on *minimum* standards rather than on the kind of maximum standard—a minimum standard I think each of our nations is entitled to expect of the other, and this is something that you particularly end up feeling in London. Such is the scale of the entrepôt in London, the idea that my successors at the UK Treasury can make the UK safe just through UK regulation is laughable. Anything happens anywhere in the world, it blows through the streets of London and through to the people of the UK.

What is probably not so appreciated here is, the US authorities can't make the US people safe if regulatory standards elsewhere in the world are very weak. The only way you could do that would be to erect capital controls. That would be a bit tricky at the moment, given the United States is a massive external debtor; but the implication of open capital borders is, we really are all in it together. As economists have put it, this is a "common pool" problem. It's a very interesting thing, financial stability. It's slightly different from monetary stability. Financial stability is not excludable, but it is rivaled in that, imagine if we start off with financial stability, and so I decide to take more risk than I would do if I thought the world was a risky place. And you do, too, and you do, too, and you do, too, and we've eaten all the grass on the common. What this means is that with open capital borders, the common pool problem presents collective action problems, and they can only be sorted out in international fora.

Now, Dan's bothered about how that affects democracy, and so am I. But actually, what it does is, it puts domestic officials—everyone on those committees is a domestic official—it puts them under a duty to come back home and talk about the international discussions, and (and this isn't the easiest thing in the world to do) get parliaments to listen, get Congress to listen, because congresses and parliaments, national legislatures, tend to be more interested in their domestic initiatives than in the international initiatives. I can tell you, most of your financial reforms came from international fora.

Q: Pedro da Costa from *The Wall Street Journal.* Speaking of internationally relevant—

PT: Sorry, from where?

Q: From *The Wall Street Journal.*

PT: Ah, that one. *[Laughter]*

Q: Speaking of internationally relevant problems, . . . it's hard to find a global market these days that hasn't been systematically manipulated—whether it's foreign exchange, Libor, metals, electricity, oil, markets have been suspected of being manipulated. Do you see that as a systemic threat to trust in the financial sector, and if so, how does this reregulation agenda apply to those sectors?

PT: I think it's a great question, if I may say so. I don't know whether there'll be more, but there plainly could be, and if not now, in the future, as the tide went out, it revealed detritus. There needs to be a massive cultural change in the industry. I've increasingly thought about this as connected with regulatory arbitrage, and I don't mean to suggest that regulatory arbitrage is illegal. But if you have a culture where people are finding their way around the rules—what follows is with a question mark, because I don't know—is, do you slip into a culture where people don't know the difference between rules that they're getting around and laws that they're breaking? And the cultural issues are going to take a long time to repair, but they just must be. Because, as you say, it goes to trust, and these institutions—well, they are meant to be repositories of trust, and that's what they must be again. The law is changing in lots of countries, and that's a necessary thing, but there's more than that as well. It really requires leadership at every level in these firms, and I think it requires them to try and get to a culture where people don't come in in the morning and see what set of rules they can get around—I'm repeating myself—because how, then, will they know the difference between a regulatory rule about safety and a barrier that is meant to be a prohibition on a certain type of conduct.

Thank you. Paul, it's nice to see you over there.

PAUL MCCULLEY: It's good to see *you.* Let me ask you a question that may be a bit of a riddle; it certainly is to me. You point out very logically that after the "Minsky moment" of 2008, that the private sector, seeing a dodgy banking system, decided to take out some self-insurance against uncertainty—so, therefore the precautionary demand for liquidity. And there's an increased demand, essentially, for sovereign debt, as the private sector was protecting itself as opposed to relying on the banking system. So that's one increase in the demand for sovereign debt.

And then you had reregulation, which had the impact of increased demand for sovereign debt from the banking system, and also from all sorts of clearinghouses and so forth, and margin and all that. So reregulation increases demand for sovereign debt. Precautionary self-protection by the private sector increases the demand for Treasury debt.

And then, three, you have central banks implementing QE, hoovering up Treasury debt. So you get three huge forces on the demand side for sovereign debt, and we're in a liquidity trap. Yet fiscal austerity becomes the coin of the realm in fiscal policy, and we actually constrict the size of deficits relative to GDP. Why don't fiscal authorities increase the supply of that which the private sector wants?

PT: This is a deep set of issues. The only weaker—I won't say *weak*—weaker step in your argument is the one about banks demanding more government bonds because of regulation. Because, in a sense, they can avoid that—and this isn't regulatory arbitrage—by having longer liabilities or relying more on insured deposits. And, of course, in that sense the LCR [liquidity coverage ratio] has an element of a Pigovian tax, where they're incented to do things that are less dangerous.

You then ask a really deep question, which is essentially about the monetary-fiscal mix; and I'm going to edge toward this because these are the questions that we ended up with at the IMF conference over the last couple of days.

So the first step would be, you've got these central banks buying government bonds. Why don't they buy risky bonds instead, leaving the riskless bonds out there? Then they're starting to allocate credit and they're starting to take risk. So they're doing something quasi-fiscal, and do we really want unelected people to do that? The answer to that may be yes, in which case that should be in their mandate; or the answer may be no, in which case, uh-oh, do we set up a hybrid structure to do that, and do we set one up in advance, or do we innovate? So there's that question.

Then the next question—you didn't bring in the whole debate about international spillovers, but lots of people in emerging markets are worried about spillovers from easy monetary policy in the US and the euro area and my own country. And, of course, because the yield curves have come down and term premia are negative, and had there been fiscal stimulus, yield curves, if anything, would have moved the other way. I don't want to stand here and say I know what the optimal monetary-fiscal mix is, but I do think it is something which people hadn't thought about for a very long time ahead of the crisis. Fiscal policy had been essentially dropped as a demand-management tool because of the lags involved. I mean, there are famous cases, I think, in this country, of people planning a fiscal stimulus, and by the time the law had passed and been implemented, demand had revived; so then you had excess demand and a monetary tightening. These are good arguments, even in countries where fiscal policy is quicker.

Because of that good argument, out of debate and analysis and policy institutions, which, in a way, had dropped the question, are there any circumstances in which fiscal policy might be the right way of addressing things, at least in combination with monetary policy? It's a very difficult question, because if the question of credible commitment in monetary policy is hard enough, the question of credible commitment in fiscal policy is much harder. So there are plenty of people who say—and I understand why—that this country should have had easier fiscal policy during the crisis but tighter fiscal policy in the future, given all of the demographics and so on. But can anyone commit to having tighter fiscal policy in the future? These are really, really deep questions, but there's no option other than to think them through again, to go back to those questions that were put aside probably a quarter of a century ago and say, are there any circumstances in which fiscal policy should be supporting monetary policy, and how do we design our institutions to make that possible?

On which note—thank you.

Sessions

SESSION 1

Central Bank Deleveraging and Financial Sector Regulation

Jim Tankersley, Scott Fullwiler, Perry G. Mehrling, Michael Greenberger

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FULLWILER focused on central bank deleveraging and aimed to debunk the view that the Federal Reserve's expansion of its reserve balances (a result of its unconventional policies in response to the 2008 crisis) necessarily leads to inflation. He noted that the Fed's reserve balances stood at $2.8 trillion in April 2015, and that in 2007, by way of comparison, they were around $15 billion (with the "normal" range being around $15billion to $30 billion).

Fullwiler began with a discussion of the federal funds market and Fed operations. As the central bank is the "banks' bank," individual banks' reserve balances—essentially the deposit accounts they hold with the Fed—are a liability on the Fed's balance sheet. Individually, Fullwiler emphasized, banks can borrow and lend and get rid of reserve balances they hold at the Fed, but this activity cannot change the total quantity of reserves in the system. The entire system of reserve balances is on the Fed's balance sheet; unless the latter changes, the total quantity of reserves does not change.

The Fed's first goal in the federal funds market is to accommodate payment settlements between banks, Fullwiler said. He noted that, on a daily basis, an average of 20 percent of annual GDP is settled on the federal funds market using reserve accounts. As banks need more reserves to settle payments, the Fed meets this demand; to do otherwise, he continued, would threaten the payments system. The Fed tries to accommodate the quantity of reserves the banks need at the target interest rate the central bank is setting.

Despite the outsize role they play in many textbooks, reserve requirements are a very small part of this story, Fullwiler added. Reserve requirements do not necessarily change the fact that the Fed must protect the payments system; they do not change the "accommodative nature," as he put it, of the Fed's operations in that system. The upshot, Fullwiler pointed out, is that the Fed is necessarily setting an interest rate target whether it wants to or not: the Fed supplies the balances being used to settle payments (intraday and overnight), and it cannot refrain from setting the terms on which banks acquire those balances.

Fullwiler critiqued the traditional "money multiplier" story, in which excess reserves allow banks to create more loans. The system, he argued, does not work that way: loans are demand driven and they create deposits. Banks obtain additional reserves as needed in the money markets, and the Fed, since it sets a target interest rate, accommodates that demand for reserves. Loans, Fullwiler stated, are not constrained by the quantity of reserves but by profitability.

Fullwiler addressed the argument that excess reserves are not creating hyperinflation because the Federal Reserve is paying 0.25 percent interest on reserves. He countered that banks will not be profitable enough if they merely hold reserves and do not lend. Second, he emphasized that loans create deposits and banks are not reserve constrained. Finally, Fullwiler pointed out that, under normal circumstances, banks can more or less accomplish the same thing as holding reserves that pay interest by holding Treasury bills, which earn about the same as interest on reserves. However, he said, it is revealing that banks do not do so under normal circumstances (that is, hold T-bills instead of making loans), and the reason they do not do so, once again, is that it is not profitable enough.

Fullwiler observed that there are internal inconsistencies in mainstream attempts to preserve the belief in a pure quantity effect. There are, he noted, two mainstream stories about why an increase in reserve balances would not cause inflation—why quantitative easing (QE) would be "stopped in its tracks," as he put it. The first corresponds to the story about interest on reserves (where interest on reserves is equal to the target rate) and the second is a story about the "liquidity trap" at the zero lower bound. However, Fullwiler argued that the sets of conditions implied by these two stories are the only sets of conditions under which QE is operationally possible—that is, QE is only possible under the two cases in which we are told that QE does not cause inflation.

Given that the Federal Reserve targets the interest rate and banks are not reserve constrained, he concluded, central bank leveraging is about asset prices, not the size of the leverage. Banks have the same ability to create loans with $2.8 trillion in reserve balances as they do at $15 billion or $10 billion, Fullwiler said. Central bank operations, he emphasized, are about asset prices and interest rates, not quantity effects. Unfortunately, this is not taught in the textbooks, Fullwiler noted.

As background to the discussion of central bank deleveraging, **MEHRLING** offered an account of why economists find it difficult to think about central banks. He focused on four relevant factors. First, central banks are essentially hybrid organizations in that they are both the bankers' bank and the government's bank, which raises questions about whom they are ultimately responsible to: Wall Street or the government. Second, Mehrling described an inherent hierarchy of money, with the world reserve currency on top; central bank currency as a promise to pay the reserve currency; bank deposits as a promise to pay central bank currency; and domestic credit as a promise to pay bank deposits. Not all central banks are equal, he added, in the sense that they occupy different places in the hierarchy, with the US dollar and the C6 swap line linking the "big six" central banks (the Fed, the Bank of Japan, the Bank of England, the European Central Bank, the Bank of Canada, and the Swiss National Bank) at the top. The third factor he identified is the inherent instability of credit, which results from the risk inherent in making promises to pay in the future. Bad promises build up in the system, eventually leading to crises. According to Mehrling, the new market-based credit system (or shadow banking system) differs from the context Hyman Minsky was writing about. The new system, as represented by the recent global financial crisis, was about household mortgage credit, not business credit; capital market securitization, not bank lending; and global wholesale money market funding, not domestic deposit funding. But despite these differences, he added, the broader point about the instability of credit remains.

These three factors, Mehrling said, are constants. What makes central banking more difficult to think about than it was before is the fourth factor: financial globalization. Financial instability, in other words, is a global phenomenon. Although the financial crisis appeared as though it was about US mortgages, it was really about the global money market, Mehrling suggested. He argued that orthodox economics, and the Keynesian-versus-monetarist framework, has not been of much help in understanding the globalized instability of credit.

Mehrling divided the Fed's crisis response into three phases. Before Bear Stearns, he said, the Fed was responding to systemic stresses by lowering the federal funds rate. After Bear Stearns, it moved into its lender-of-last-resort function, selling Treasury bills and lending them to broker-dealers. Then, after Lehman Brothers, the Fed expanded its balance sheet: it entered what Mehrling called its "dealer of last resort" phase. The latter phase requires some rethinking about how central banks operate, he noted. Moreover, the global financial crisis was not just a "Bagehot moment," as he put it (that is, not just about rethinking the role of the central bank); it was also a "Bretton Woods moment," because of the troubles in the international monetary system.

The transformation of the Fed's balance sheet involved two stages, according to Mehrling. When the Fed expanded its own balance sheet, it acted as the counterparty to those who did not want to lend to and borrow from each other; in other words, he said, the interbank money market was moved onto the Fed's balance sheet. And as the Fed accumulated a trillion dollars' worth of mortgage-backed securities, it moved the collapsing shadow banking system onto its balance sheet. With QE, Mehrling stressed, the Fed was not setting a floor under a collapsing system but deliberately distorting private asset prices.

Analyzing the Fed's balance sheet, Mehrling noted that although the Fed is not allowed to have swap exposures, it effectively has synthetic swap exposures due to the expansion of its balance sheet (specifically, an overnight index swap, an interest rate swap, and a credit default swap). The Fed, when it moved into its new dealer-of-last-resort function, took on the activities of money market and derivatives dealers; it made these markets when the dealers were no longer able to, he pointed out. Against this background, Mehrling asked, what does central bank "deleveraging" mean? What would it look like if the Fed transitioned from making these markets to merely supporting or backstopping them? The answer, he said, is that the Fed would be focused on stabilization rather than stimulus, tapering to allow normalization of both capital market and money market prices. Markets would be made by private dealers again, rather than the Fed, with dealers' positions no longer merely a function of attempting to "game" the Fed (taking positions on the basis of anticipating the Fed's moves). This is ultimately a transition from a system in which the Fed is setting prices to an actual market system. Short-term volatility, Mehrling acknowledged, would be inevitable in this process. There will be no public deleveraging, he concluded, until there is a global dealer system that is prepared to replace central bank leveraging with private leveraging.

According to **GREENBERGER**, there continues to be a deficit of knowledge, both among the public and members of Congress, about the implications of the 2010 Dodd-Frank Act. Greenberger focused his attention on Title 7 of Dodd-Frank, which pertains to derivatives, and lamented that there are too few who both understand and can explain its benefits, and too many who have a financial interest in undermining the regulations and skewing how the statute is read or implemented.

Noting that Senator Elizabeth Warren, in her conference speech earlier that day, had identified car loans as the next problem area with respect to predatory practices and potential sources of financial instability, Greenberger added that student debt is an even more serious problem in those respects. Moreover, he emphasized that the issue is not just the auto or student debt per se, but the bets placed on whether those debts will be paid—the financial layering. Student debt, he pointed out, has been commoditized into collateralized debt obligations (CDOs) and credit defaults swaps guaranteeing the stability of the CDOs. This is, he said, the same structure that was built around mortgages. Naked credit default swaps—in which one can place a bet on whether a financial instrument will fail without owning said instrument—were key to the mortgage debt crisis.

Greenberger faulted Senator Warren for not mentioning the Commodity Futures Trading Commission (CFTC), which Dodd-Frank has raised to a level of significance equal to that of the Securities and Exchange Commission (SEC), he said. Greenberger noted that 90 percent of the swaps that are supposed to be regulated in Dodd-Frank are within the jurisdiction of the CFTC. Unfortunately, he pointed out, the CFTC has far fewer staff and a far smaller budget than the SEC, and opponents of Dodd-Frank have adopted the strategy of further squeezing the CFTC's funding. Greenberger lamented that little attention is being paid to CFTC nominations, despite its newly elevated role in the regulatory system, and that the current CFTC commissioners know less about derivatives than ever.

Greenberger seconded Warren's complaint regarding the absence of prosecutions for financial sector wrongdoing, much of which has occurred *post* crisis, he stressed, and may still be going on. Among such examples, he cited the fixing of indices for things like commodities prices—"bid rigging in its most classic, fundamental sense," as he put it. What punishments were meted out have been meager: Greenberger noted that HSBC, which had engaged in both bid rigging and the money laundering of drug cartel money, paid a settlement that amounted to two months' profit (and that some of the fines are tax deductible). Dealing out prison sentences would have an immediate positive impact via a deterrent effect, he suggested, while weak fines create no such effect. The perception that the banks were engaged in unethical but not illegal activity is mistaken, Greenberger stressed. He echoed Senator Warren's argument that structural reforms of the financial system would make rule writing less important, but added that criminal prosecutions are a necessary condition for successful structural reform.

Greenberger discussed the repeal of Dodd-Frank's swaps "push-out rule" as an important (and unfortunate) structural change. In the spirit of Glass-Steagall, he observed, the original version of the push-out rule was supposed to prevent banks from dealing in commodities (either for their own book or to make markets in such transactions). There was evidence, Greenberger noted, of banks sending tankers around the world to drive up the price of oil. Fear of being prevented from dealing in commodities, he maintained, led to a drop in the worldwide price of commodities, including oil, for a period of time. Unfortunately, the rule was first severely weakened in conference committee, with the final version of the rule applying only to agricultural commodities, and then ultimately repealed. Oil prices are now going back up, Greenberger said, and although there are other possible explanations, he suggested the repeal of the push-out rule is partly causing this. Greenberger expressed concern that the per-barrel price of oil would rise to $75 or $80 shortly, in part because banks can control, through futures contracts, 13 times the amount of oil that is in the world's supply.

Dodd-Frank has been "taking a beating" in the regulatory process due to the superior resources and influence of banks, he pointed out, and rules have been weakened. He identified the emergence of a consensus around a regulatory format that says if a US bank holding company executes a derivative outside the United States, it will not be regulated by Dodd-Frank. In that context, Greenberger noted that AIG's financial products subsidiary was based in London.

SESSION 2

Can Better Regulation Prevent the Next Crisis?

Jan Kregel, Bruce C. N. Greenwald, Deborah Solomon

MODERATOR:
DEBORAH SOLOMON
The Wall Street Journal

BRUCE C. N. GREENWALD
Columbia University

JAN KREGEL
Levy Institute and Tallinn University of Technology

GREENWALD argued that the proper way to interpret the recent global financial crisis was as a symptom of a deeper crisis in the real sector of the economy. From that perspective, the question of whether or when the next crisis will strike is somewhat off base—since, he said, we have yet to emerge from the underlying crisis in the real economy.

Much like the Great Depression, the current global crisis, with its long-lived contraction and slow (to nonexistent) recovery, is not a self-correcting balance sheet cycle. In both instances, Greenwald argued, the underlying problem is the collapse of a key sector of the economy. In the Great Depression, that sector was agriculture. The 1929 collapse in agricultural prices occurred as productivity growth in the agricultural sector far outpaced the growth in global demand. This destroyed the balance sheets of agricultural families and, as a result, out-migration did not occur; families were trapped on the farms, producing more and more as prices continued to fall further. The drop in demand due to the impoverishment of one-third of the population, Greenwald noted, outweighed any positive effect from the decline in prices of agricultural goods. The reaction at the time from some countries was to go off the gold standard, devalue, and attempt to export their way out of the crisis (though as Greenwald pointed out, it is not possible for all countries to pursue this strategy simultaneously). World War II ultimately put an end to the crisis by acting as "fabulous industrial policy," as he put it; essentially by moving people at government expense from the farms to the cities.

In the current crisis, the sector in question is manufacturing. Just as with agriculture during the Depression, productivity growth in manufacturing is outstripping global demand growth, with a great deal of capacity added in Asia and the formerly socialist countries. This has led to attempts to sustain manufacturing sectors through exports, and once again the problem is that not all countries can have export surpluses at the same time. Ultimately, it is the United States, with its chronic current account deficits, that ends up "eating" the surpluses, as Greenwald put it.

Greenwald identified a resulting problem in financial markets: chronic surplus countries accumulate foreign currency assets, which they invest overseas. This is almost always "dumb money," said Greenwald. In the case of overseas money flowing into the United States, these investments generate financial instability concerns: not content with the return on government securities after the huge drop in interest rates, foreign investors increasingly looked for yield in fixed income securities, which Wall Street was all too willing to provide. Greenwald observed that before everyone else got involved, the mortgage products at the center of the financial crisis were originally produced for overseas investors. Financial instability, in other words, is being driven by these international imbalances.

The US trade deficit, which has the economy leaking demand overseas at a rate of up to 7 percent of GDP, makes it difficult to sustain full employment, and a falling US saving rate has been necessary to prop up the economy, Greenwald suggested. Historically, the saving rate was 10–12 percent of disposable income. It gradually went down to 2.6 percent in 2005. This, along with the housing boom, was what sustained something close to full employment, he argued. And when the crisis came, the saving rate jumped up again (to 6.1 percent by 2009), representing a huge loss of consumer expenditure. This drop in consumption, Greenwald observed, was inevitable. Expanding on this point, he noted that the top 20 percent of the income distribution in the United States, who control roughly 50 percent of the income, save 15 percent of their income. Thus, to get the *overall* saving rate to 3.5 or 4.5 percent of disposable income, Greenwald calculated that the bottom 80 percent of the distribution would have to spend 107 percent of their income every year. This is not sustainable, he stated, and when it stops (when the saving rate stops shrinking), we get serious recessions. The drop in demand then feeds into balance sheets, producing financial crises.

At the same time, monetary policy has been "eviscerated," as he put it. Greenwald illustrated that Federal Reserve forecasts for US GDP growth have been consistently wrong and, more specifically, biased in an upward direction. Part of the problem, he argued, is that the Fed has been systematically overestimating the impact of its own monetary policies. Greenwald noted a strong pre-1990s correlation between change in the money supply and change in nominal GDP one year later. Beginning in the 1990s, however, even though changes in the money supply became more extreme, there was no observable impact on nominal GDP. Greenwald's preferred explanation for the loss of Fed effectiveness centers on the repeal of a Depression-era rule ("Regulation Q") that prohibited banks from paying interest on demand deposits. The old prohibition, he said, acted as a tax on depositors and a subsidy to banks; in effect, it provided the government with a way of injecting a form of equity finance into the economic system. Without this prohibition, the Fed has become capable of little more than the prevention of bank runs, he concluded.

For Minsky, an economy with capitalist institutions is fundamentally flawed in the sense that financial innovations will always be emerging to create instability. One of the upshots of this view, **KREGEL** pointed out, is that regulation alone will never be sufficient to prevent serious financial crises.

Kregel laid out what he called two "Minsky maxims." The first: that regulation needs to be "dynamic," in the sense that it must be constantly adapting to the changes and innovations in the financial sector—innovations that are themselves occurring partly in reaction to regulatory changes. Instead of this dynamic approach, regulatory efforts tend to try to address the triggers and problem areas featured in the last crisis, Kregel pointed out.

The second Minsky maxim is that dynamic regulation requires coherent economic policy. Kregel related Minsky's view that the central bank should not be responsible for both financial stability and macroeconomic policy (whether inflation or any other economic indicator), and that it would be preferable for the monetary authority to be focused instead on the former. In developing this view, said Kregel, Minsky was influenced by the lead-up to the 1966 credit crunch, in which interest rate increases designed to fight inflation were contributing to financial fragility. Kregel added that interest rate cuts designed to increase too-low inflation could also generate financial instability concerns. Minsky's overriding concern was that monetary policy, undertaken in response to changes in the real sector of the economy, could alter banks' business models, transforming the financial structure in the direction of greater fragility. Kregel cited the 1970s shift from asset management to liability management and the 1990s move from originate-and-hold to originate-and-sell, which made capital markets more significant. The latter shift, Kregel observed, is part of the reason banks have become nearly irrelevant to the financing of business activity in the real economy.

Kregel argued that there is some incoherence revealed when we examine current regulatory policy, as represented by the 2010 Dodd-Frank Act, and current monetary policy—namely, the expansion of the Fed's balance sheet (quantitative easing, or QE) and zero interest rate policy (ZIRP). This incoherence is evident, he said, when we think about how these two sets of policies affect bank profits.

Kregel focused on the imposition of higher capital requirements in particular. The aim of this regulatory approach, he noted, is to reduce leverage. When combined with ZIRP and QE, however, these policies lower banks' return on equity; they make it more difficult for banks to produce a competitive return on their capital, Kregel argued. Banks, he said, will respond by trying to increase returns on bank equity through financial innovation, regulatory arbitrage, off-balance-sheet activities, and maximizing fee income—in other words, Kregel observed, by increasing financial fragility. So although these regulatory and monetary policies might increase stability for five or six years, eventually banks will be forced to resort to fragility-increasing activities to produce the returns on equity that would justify the higher capital ratios imposed on them.

The traditional justification for focusing on bank capital, Kregel explained, was that it would be conducive to internal ("skin in the game") and external ("market discipline") monitoring. However, there is no evidence that bank capital is effective at either of these functions, according to Kregel. The justification has since shifted away from the notion that higher bank capital will affect behavior to the idea that bank capital helps address catastrophic systemic risk—that it can protect banks from becoming insolvent. However, there is likewise little support for the view that capital requirements can serve as a bulwark against instability, he said (pointing to the dismissal of this view in the US discussions relating to the introduction of bank capital ratios in the 1970s). The other problem with capital ratios, Kregel noted, is that they are procyclical: banks will be able to raise more capital, for instance, when they are more risky.

If not bank capital ratios, what does provide stability? Kregel's answer, via Minsky, is that it is provided by stable bank incomes—by the stability of income flows to meet debt service. In this sense, Minsky's "big government" is key to maintaining financial stability, by setting a floor under incomes (in other words, ensuring borrowers can pay back their loans). Kregel explained that Glass-Steagall promoted stability by providing banks with a monopoly on the deposit business; in other words, by guaranteeing bank incomes, rather than through high capital ratios or other restrictions on bank activity.

"Dynamic" regulation, Kregel added, also means regulating institutions based on what they do rather than on what particular kind of institution they are. More precisely, we should be regulating institutions that create liquidity or leverage—that is, institutions that are engaged in "bank-like" activity, whether or not they are banks.

SESSION 3

Global and National Recovery Prospects

Dimitri B. Papadimitriou, Lakshman Achuthan, Robert J. Barbera, Sam Fleming, Daniel Alpert

MODERATOR:
SAM FLEMING
Financial Times

LAKSHMAN ACHUTHAN
Economic Cycle Research Institute

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DIMITRI B. PAPADIMITRIOU
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ACHUTHAN stressed the importance of distinguishing between shorter-term cyclical and longer-term structural patterns in assessing the relative performance of the current economic expansion in the United States. Failure to distinguish between these two patterns (cyclical and structural) leads to what he called "forecasting whiplash."

Looking at postwar expansions, Achuthan observed that the pace of GDP growth in these periods has been falling since at least the 1970s, with the current recovery period likewise exhibiting "feeble" growth. He also stated that while the strength of the recovery phase of the cycle is thought to be correlated to the severity of the preceding downturn, this relationship only holds in the first year of the recovery. Hence, Achuthan argued, the notion that the current US recovery is out of line with what ought to be expected is a "longstanding misunderstanding." In other words, this has not been a subpar recovery from a cyclical point of view (which is to say, looking only at the first year of the recovery) but rather is a result of what he described as a decades-long secular trend of lower and lower growth.

As for explaining the decline of GDP growth rates in successive, post-1970s economic expansions, Achuthan pointed to developments in productivity growth and growth in hours worked: during recent expansions, one or both of these two measures have lagged, he said. Although hours worked have increased from their 2009 low, productivity growth has declined, averaging 0.5 percent over the last four years—and Achuthan expressed skepticism that productivity growth would rise much above this rate going forward (let alone rebound to its postwar annual average of 2–2.5 percent, as some have been expecting). Moreover, demographic factors place constraints on the potential growth in hours worked over the next decade: Achuthan cited the Congressional Budget Office's estimate of 0.5 percent potential annual labor force growth, which tracks hours worked fairly closely. If we add these trend estimates for productivity and hours worked, he pointed out that we get a projected real GDP growth rate of 1 percent per year.

In other words, he emphasized, the weakness of the current recovery is not a subpar cyclical performance but a reflection of these longer-term structural weaknesses. Moreover, he added, these weaknesses are global. Achuthan noted that despite the $11 trillion in quantitative easing by the world's central banks since 2008, world trade growth has collapsed (after a one-year postrecession increase).

Switching to nominal gross domestic product (NGDP) growth rates, Achuthan illustrated that the trend for the developed world has been falling, and that the problem with the export-led strategies some of these countries might be considering is that NGDP trends are falling in the developing world as well. In other words, he said, the long decline in NGDP growth is global. Focusing on the United States, Achuthan pointed out that, even if the Fed achieves its inflation target of 2 percent, the previously mentioned real GDP estimate of 1 percent will only get us to an NGDP growth rate of 3 percent. Such low NGDP growth may be a concern, he observed, in a world with so much debt.

What does the low real GDP trend do to the business cycle, he asked? Achuthan suggested there are two ways to have less frequent recessions: raise the long-term growth trend or reduce cyclical volatility (the latter, he said, is what characterized the "Great Moderation" from the mid-1980s to 2007). Since the Great Recession, we have seen not only a very low growth trend (more specifically, a low rate of growth in the US coincident index, which includes measures of output, employment, income, and sales to identify official recessions) but also a remarkable period of low cyclical volatility (in the coincident index)—something Achuthan suggested we call the "Greater Moderation." The reason for the latter phenomenon, he stated, is to be found in the relatively low levels of volatility in both crude oil prices (due largely to the US oil production boom) and stock prices (due to quantitative easing). Looking ahead, Achuthan noted that the key question with respect to the frequency of future US recessions is whether oil shocks, and thereby higher cyclical volatility, will return.

BARBERA began by taking issue with Achuthan's argument regarding the prospects of a future of low economic growth. He suggested that we should not extrapolate too much from the last five years of low productivity data, and that there is no particular reason to believe that productivity growth cannot revert to the mean. On the employment side, Barbera observed that the prime-age labor force participation rate is unusually low, and submitted that this may largely be a function of a weak labor market. The potential for improved employment growth, he noted, brings us to the question of monetary policy. Barbera looked at various facets of monetary policy, including federal budget projections (the role of interest rate assumptions in predictions of fiscal crises), the Fed's control over interest rates, inflation prospects, and two issues not normally associated with monetary policy: Obamacare and the minimum wage.

Barbera disputed the notion that the United States faces a fiscal crisis, continuing his argument from the previous year's Minsky conference, which focused on the Congressional Budget Office's (CBO) three-year projection for payroll employment and the 10-year Treasury yield. He noted it is unlikely that interest rates will go as high as projected by the CBO, given the CBO's concurrent assumptions about slowing payroll growth. The entirety of the so-called "debt problem" stems from the fact that the CBO normalizes interest rates but not the growth rate, he said. If we adjust the interest rate assumption so that it is more in line with growth expectations, then the CBO's 25-year projection for a rapidly rising debt-to-GDP ratio disappears. Barbera lamented that there was no "political market" for this critique, as both Republicans and Democrats remain fixated on the notion that the United States has a deficit problem while differing only on their preferred remedies (spending cuts and upper-income tax increases, respectively).

Within the context of monetary policy and the idea of "Greenspan's conundrum"—the Federal Reserve's difficulties controlling longer-term interest rates—Barbera suggested that the US economy has recently looked more like a small open economy in which the central bank can affect its currency but its interest rates are determined globally. This helps explain, he said, the divergence between the Fed's "dot plot" and the signals from forward markets with respect to the path of interest rates. When we think about the term premium in this context, we need to "flip the sign," as he put it (that is, the term premium is negative).

On the inflation outlook, Barbera pointed out that in the days of 2 percent inflation, this broke down into 3.25–3.5 percent for services and 0 percent for goods. Over the last four years, before the fall in the price of oil, core services inflation was around 2–2.5 percent, he noted. If we do not think goods inflation will rise to 2 percent, Barbera observed, services would have to go back up to closer to 3 percent to get overall 2 percent inflation. And with global conditions moving the way they are, he argued, it is more likely that inflation is headed down rather than up.

Finally, Barbera addressed the argument that employers started hiring more part-time workers in order to avoid the Affordable Care Act's mandate to provide health insurance for employees working more than 30 hours per week. There are problems with the data on the supposed increase in part-time employment, but, as with the minimum wage, it is possible to argue that these regulations limit employment. However, Barbera suggested that with a "wildly low" unemployment rate, employers would be forced to offer the hours, wages, and health-care benefits workers desire. That is, one could argue that these regulations could affect employment in an environment in which employers "hold all the cards" in the labor negotiations, but in a tight labor market, the regulations would become nonbinding. And as for the potential of an inflationary wage–price spiral being set off by such tight labor markets, Barbera reiterated that most of the pressures are pointing in the opposite direction. With very low unemployment and no wage–price spiral, it would be possible to "enfranchise those who work at franchises," as he put it.

ALPERT observed that while QE may have calmed markets, as exhibited by movements in the volatility index at the end of each round of QE, it has had less effect on long-term interest rates than commonly believed. He noted that at the end of each round of QE, interest rates had—counterintuitively—risen. And from a broader perspective, although there is an observable downward trend in interest rates, he suggested that this trend is not necessarily related to monetary policy, but is destined to happen anyway due to the global savings glut.

Alpert argued that the US labor market is even weaker than it may appear and is suffering from serious secular problems. Much of the decline in the unemployment rate is due to a decline in the labor force participation rate, and the latter, he contested, is not primarily a function of demographics. Since the Great Recession, there has been a relatively high rate of creation of low-wage jobs, and these low-wage jobs, Alpert pointed out, also tend to be low-hours jobs. The result, he said, is that employment growth is not generating much in the way of increased spending power or GDP (Alpert noted that those who secure these low-wage, low-hours jobs are not increasing their spending power much above the level of unemployment benefits and other government transfers). Wage growth, he pointed out, has been flowing mostly to supervisory workers (who account for 17.5 percent of the workforce), but payroll growth has been occurring mostly in the lower-wage jobs categories. Finally, he argued that the monthly job creation totals have been insufficient when examined in the context of the employable population (that is, as a percentage of the civilian noninstitutional population).

Alpert observed that household debt had fallen by only 4 percent (nominal) since the peak of the credit bubble. There is a problem, he added, with looking at household debt-to-GDP ratios: when GDP increases, very little income is actually flowing to households (to labor). While debt-service ratios are lower due to interest rates having fallen, he stated that these debt levels would not be sustainable in a "normalized environment" (that is, when interest rates rise). Although the debt-to- disposable-income ratio (the best of our imperfect measures, he said) has fallen somewhat, it is still well above historical norms. Alpert illustrated the "enormous and consistent" rise in consumer credit outstanding since 2011—made up largely of auto and student loans. And while revolving credit had been falling and then remained fairly flat from 2011 on, he noted that credit card balances spiked in the last year. This is not the picture of an economy in which we would want to start normalizing interest rates, he concluded.

Alpert explained that the housing sector has been the only thing propping up inflation over the last two years. However, the recovery in housing prices has occurred despite sales of new and existing homes remaining relatively tame (cumulative sales volume expanded 17.7 percent over 2012–14), particularly when adjusted for growth in the number of households. Moreover, the number of homes for sale has not recovered. Housing prices are going up due to an artificial supply constraint, he concluded, and the source of this constraint is the large number of households with impaired mortgages: homeowners who are still underwater or who cannot get a new mortgage because of credit requirements. As a result, the homeownership rate has declined as those unable to buy are forced to rent. This has produced upward pressure on rents, he said. Alpert then raised the question of whether this process is sustainable in the face of stagnant per capita wage growth. Inflation, he emphasized, would have been "eviscerated" if it were not for this rise in rents. And monetary policymakers are missing a big part of the story if they are looking only at the U3 unemployment rate and the common inflation indicators (Personal Consumption Expenditures and the Consumer Price Index, headline or core).

Alpert concluded with an examination of what he described as the global underpinnings of secular stagnation. The global savings glut, he said, is actually an across-the-board capital glut, and this needs to be understood as a function of historically unique circumstances. An expanded global labor force that is producing far more than it is consuming is creating an era of oversupply that is blocking the flow of capital. Secular stagnation is not merely a reflection of inadequate demand, in his view. Rather, it is the outcome of "labor rich" nations attempting to find employment for their people and rich nations attempting to preserve their asset wealth.

Despite the US economy entering the seventh year of its recovery, **PAPADIMITRIOU** noted that real GDP was only 2 percent higher than its precrisis peak (December 2007). He illustrated that the last few economic recoveries have been progressively weaker, with the current phase the weakest of all postwar recoveries. And while the unemployment rate has declined (having reached 5.5 percent at the time), this has been for the wrong reasons, Papadimitriou explained. The labor force participation rate, he demonstrated, has decreased more than 3 percent from its precrisis rate and is almost at the same level as it was in the 1970s. And this declining participation rate means that unemployment can fall even if there is no improvement in the employment-to-population ratio (which is still 4 percent below its precrisis level).

In the context of continued household deleveraging, there are three factors that explain why the economic recovery has been anemic, according to Papadimitriou: weak net exports, fiscal conservatism, and high income inequality. Given the government's tight budget stance, a stronger economic recovery will depend upon household borrowing, specifically among households in the bottom 90 percent of the income distribution. Such a household-debt-driven recovery is not sustainable, said Papadimitriou.

One positive development in the US economy has been the increase in petroleum exports, largely due to advances in extraction methods (fracking). However, Papadimitriou noted two additional factors that threaten the sustainability of the recovery: the appreciation of the US dollar and the weakness of US trading partners. According to the Levy Institute's most recent (May 2015) strategic analysis of the US economy (*Fiscal Austerity, Dollar Appreciation, and Maldistribution Will Derail the US Economy*), further dollar appreciation and a slowdown in the growth rates of US trading partners will increase the foreign deficit and private borrowing in the United States.

Papadimitriou illustrated that the rate of recovery in consumption, which represents the largest share of GDP, has been well below all other previous postwar recoveries, while investment has done better than in the previous two recoveries. And despite an initial fiscal stimulus, the major drag on the economic recovery has been in government expenditures: there has been no other postwar recovery in which government expenditure has fallen this much, he noted. Finally, one of the biggest problems for the US economy has been its structural current account deficit. An improvement in the current account, he added, is a necessary condition for a sustainable recovery.

Papadimitriou then outlined three factors that might have a negative impact on the US foreign sector: weaker GDP growth among US trading partners, leading to weak demand for US exports; lower inflation among US trading partners, which increases the relative prices of US products; and appreciation of the nominal exchange rate of the dollar.

Plugging the Congressional Budget Office's (CBO) budget projections—which show a shrinking budget deficit (reaching 2.4 percent of GDP in 2018)—into the Levy Institute's stock-flow consistent macroeconometric model and using a number of additional assumptions (a mild increase in the price level and stock market, a constant real exchange rate, growth and inflation for US trading partners taken from the *World Economic Outlook*, and the assumption that nonfinancial corporations continue to accumulate debt at a constant pace) yields a baseline projection that shows real GDP growth rising from 2.8 percent in 2015 to 3 percent in 2016, before dropping to 2.1 percent in 2018. The current account deficit increases, reaching 5 percent of GDP in 2017 and '18. Given the macroeconomic identity upon which the stock-flow model is based, private sector expenditure and borrowing will also increase.

The strategic analysis then considers three scenarios diverting from the baseline: a lower growth rate among US trading partners; a 25 percent appreciation of the dollar over four years; and a combination of the first two scenarios. With every alternate scenario, the projected private sector gross-debt-to-disposable-income ratio would increase, with the third scenario showing the largest increase in the private debt ratio (by 2018 it would be almost back up to where it was at the beginning of the recovery). As for GDP growth, the third scenario shows a projected growth rate almost one percentage point below the rate in the baseline. The third scenario, Papadimitriou emphasized, would also result in an increase in the current account deficit to 7 percent of GDP, which would be even higher than that experienced in 2007.

SESSION 4

Regulating the Regulators

Éric Tymoigne

L. Randall Wray

MODERATOR:
PEDRO NICOLACI DA COSTA
The Wall Street Journal

ÉRIC TYMOIGNE
Levy Institute and Lewis and Clark College

L. RANDALL WRAY
Levy Institute and University of Missouri–Kansas City

TYMOIGNE offered a critique of the new Basel III framework and the theory of financial crises underlying it, and outlined an alternative approach to financial regulation. What's missing from Basel III, he argued, is a focus on underwriting—the absence of which is central to the generation of financial instability.

Tymoigne detailed Basel III's regulatory changes, focusing on the increase in the quantity and quality of capital required (including the addition of countercyclical buffers) and the introduction of two new ratios meant to help fight financial crises: the liquidity and leverage ratios. The theoretical framework behind this approach, Tymoigne commented, is one in which financial crises are regarded as resulting from random shocks to the system, and the corresponding aim of regulation to try to create "buffers" against such shocks. In this theoretical framework, he added, market discipline is supposed to help contain a crisis, and regulation ought to reflect this. The upshot of this framework, Tymoigne said, is that financial crises cannot be prevented; regulation can only help protect the system from the fallout.

Basel III's theoretical framework reflects what Tymoigne called a "banker's view" of financial fragility, in which high credit risk and low bank profitability are associated with high levels of fragility. The problem with this view, he observed, is that, prior to the 2008 financial crisis, delinquency rates were low and bank profitability was high. Further, the view that "market discipline" can contain fragility in the financial sector depends upon the belief that market participants are interested in detecting financial problems and that higher capital ratios will reduce risk taking. The problem with this view, Tymoigne stated, is that participants are interested in profits, not stability—and volatility can be a source of profits. As for capital ratios, Tymoigne pointed out that during the 1980s savings and loan crisis the firms with the most capital were the most likely to fail. Higher capital ratios convey a sense of stability, he said, which may encourage riskier behavior. Moreover, with higher capital ratios, profitability will be lower, so firms will need to take on more risk.

Tymoigne then sketched an alternative approach to regulation rooted in the work of Hyman Minsky. In this alternative vision, crises are endogenous to the financial system; they result from the increase in financial fragility that accompanies economic expansions. Tymoigne defined financial fragility as "the risk of a debt deflation that results from a number of risks, including credit risk." Fragility, in this sense, is a function of the position-making operation used to service debt—for example, trying to refinance or liquidate assets to service debt—relative to the size of the debt. The focus of regulation, in this view, should be on underwriting rather than credit risk. From this perspective, said Tymoigne, the central questions relate to what type of assets are created by banks and what are the underlying implicit assumptions regarding means of repayment. This relates to Minsky's distinction between asset-based and income-based lending, which is to say, whether repayment will be based on income or the sale of assets, with the latter representing a riskier borrower (and, system-wide, greater fragility). The difference between this vision and the one underlying the Basel III approach is that the significant question is not just *whether* the banker will get repaid but *how*. The 2008 financial crisis was not really a subprime crisis, Tymoigne stated, but an underwriting crisis.

Minsky's conception of Ponzi finance, central to his understanding of financial stability, ought to be distinguished from fraud and asset bubbles, Tymoigne explained. With bubbles, the central regulatory concern is whether assets are priced properly. With Ponzi finance, however, regulators ought to be examining what the asset is used for in the lending agreement, as Ponzi finance concerns the means by which debts are serviced. From this perspective, regulation needs to focus on the underwriting of loans and securities. Tymoigne noted that the 2010 Dodd-Frank Act has a provision relating to residential mortgages that requires lenders to examine income and ability to repay; but, he said, this principle ought to be applied to all loan and security underwriting.

Tymoigne concluded by outlining an alternative regulatory approach. Because banks have a maturity mismatch on their balance sheets, he explained, they need to have access to refinancing; in other words, they are by their nature engaged in what Minsky called speculative finance. As such, the central bank ought to provide stable low-cost refinancing. However, Tymoigne argued, it should do so through the discount window, as this allows the central bank to examine what type of assets are being used as collateral. He reemphasized that bank profitability is not a good measure of financial fragility, since institutions engaged in Ponzi finance will normally be highly profitable, at least early on. With regard to financial innovation, regulation ought to be oriented around promoting hedge financing in Minsky's sense (where debts can be serviced out of income and without refinancing operations); perhaps through the subsidization of safer financial instruments, Tymoigne suggested. Moreover, much like the Food and Drug Administration tests drugs before they go to market, regulators ought to examine whether new financial instruments promote hedge finance and what type of customers should be allowed to access them. On this latter point, Tymoigne observed that interest-only or pay-option mortgages were designed for wealthy clients with irregular incomes but ultimately ended up being extended to all borrowers, including subprime. Finally, there ought to be constant supervision in the case of new financial instruments, since their usages will often change.

WRAY reported the conclusions of the final phase of his Ford Foundation project, Improving Governance of the Government Safety Net in Financial Crisis. After examining the Federal Reserve's actions in the wake of the crisis, he determined that it would be impossible—given the existing financial system—to design a rescue program consistent with the goals of promoting transparency, accountability, and democratic governance. Ultimately, he concluded, designing a better response to a future global financial crisis requires reforming the financial system.

Wray began by reviewing the four annual reports issued since the project began. The 2012 report detailed the Fed's origination through special facilities of more than $29 trillion (cumulative) in loans, which was done by invoking section 13(3) of the Federal Reserve Act. The 2013 report examined the Fed's actions in light of Walter Bagehot's principles for the lender-of-last-resort function, and found that these actions violated the relevant principles: the Fed did not lend without limits, did not always lend against good collateral, and did not lend at penalty rates. Regarding the last of these violations, the report focused on the very low rates charged by the Fed's special facilities on loans to the top dozen global banks; loans that were continually renewed for a period of two years, and longer in some cases. The volume of lending, Wray argued, along with the low rates charged and long duration, point to a solvency crisis rather than a liquidity crisis. The 2014 report addressed the governance and independence of the Fed during financial crises. The report argued that the concept of independence is often ill defined, and that it focuses disproportionately on the idea of independence to fight inflation. And while the Fed is independent of day-to-day politics, Wray observed, in times of crisis it is not independent, operationally speaking, of the Treasury. The notion that the Federal Reserve cannot be placed under the control of elected representatives (or the Treasury) raises significant questions about democratic governance, Wray said.

Discussing the 2015 report, Wray highlighted quotations from the 2008 Federal Open Market Committee (FOMC) transcripts. He argued that they reveal a Federal Reserve that did not understand the severity of the crisis or how complex the relations were between regulated commercial banks and the shadow banking system, and that it was unprepared to deal with such a crisis. Participants had to make decisions about states of affairs they never expected to come to pass and that were not envisioned by the Federal Reserve Act, and the entire episode raises significant governance issues, Wray commented. Policymaking had to be incremental and ad hoc (although all these steps added up to a response that was "greater than the sum of its parts," as Wray put it), and as a consequence, the Fed did not—perhaps could not, Wray suggested—actively shape the course of the crisis; it was always a step behind, forced to respond to daily events, and often on the basis of limited or unreliable information. He noted that many decisions were made without involvement from the

FOMC (the transcripts reveal some complaints about this fact) and sometimes by just two people (or one): then Federal Reserve Chair Ben Bernanke and then New York Fed President Bill Dudley.

Wray delved into Hyman Minsky's conception of the rise, in the late 1980s, of a new kind of capitalism—money manager capitalism—characterized by growing financial fragility, with the financial sector increasingly dominated by unregulated shadow banks, and an inability to finance the capital development of the economy. To understand Minsky's approach to financial reform, we need to examine his views of what banks do, according to Wray. In this view, banks create money by lending their own IOUs—loans create deposits—and banks are not primarily intermediaries. Private liquidity is endogenous in that it expands in booms and shrinks in busts; bank credit, for this reason, is highly destabilizing.

Wray outlined a number of "lingering problems" in the financial system. First, he said, we still have systemically dangerous institutions (what others call "too big to fail") and worrisome off-balance-sheet activities that are not being included in capital ratios. We also have the weakest recovery on record, yet stock prices and valuations are in a "bubble zone," he noted. Finally, Wray added, we are still relying on mainstream economic theory models that ignore finance.

There is a role for government in reregulating and "resupervising" financial institutions, but, Wray qualified, capital ratios, living wills, and "skin in the game" are not sufficient. To reform the financial sector, he concluded, we need to reduce concentration, have banks retain risk, and reorient them toward relationship banking (in other words, he said, have them do good underwriting). There is also a role for government in the direct provision of financial services: Wray listed government provision of the payments system, direct lending to serve the public purpose, and guarantees for public-private partnerships.

As for reforming the Federal Reserve, Wray argued that calls for "auditing the Fed" are far too narrow, as they tend to focus largely on auditing the Fed's books, whereas we need to examine the Fed's operations more broadly. There are concerns, he noted, regarding the power of the New York Fed, regulatory capture, the revolving door, and regulators who care more about inflation fighting than supervision. Improving transparency and democratic governance ought to be a priority, Wray stated. Reducing the layering and leverage ratios in the financial sector would make it possible, he argued, for the central bank to better understand and supervise the system—and to respond to the next crisis. Wray also advocated limiting the Fed's market-maker-of-last-resort rule, imposing tougher collateral rules, and using resolution as a first response to failing institutions, rather than bailouts.

Participants


LAKSHMAN ACHUTHAN

Cofounder and chief operations officer of the Economic Cycle Research Institute (ECRI), Lakshman Achuthan is managing editor of ECRI's forecasting publications. After receiving an undergraduate degree from Fairleigh Dickenson University in 1989 and a graduate degree from Long Island University, Achuthan joined Columbia University's Center for International Business Cycle Research in 1991. At Columbia he worked closely with Geoffrey H. Moore, who the *Wall Street Journal* called "the father of leading indicators." In 2004, he coauthored *Beating the Business Cycle: How to Predict and Profit from Turning Points in the Economy*.

DANIEL ALPERT

Daniel Alpert is an American investment banker, think tank fellow, and author. He is best known for his writing on the credit bubble and the ensuing financial crisis of the 2000s, and his many articles and papers on the US housing market, banking, regulatory matters, and global macroeconomics. Alpert has been widely quoted and published in print outlets, including *The Wall Street Journal*, *The New York Times*, Reuters, The Associated Press, Bloomberg, *Forbes*, and *Fortune*. He is a frequent commentator on business news networks and is the author of *The Age of Oversupply: Confronting the Greatest Challenge to the Global Economy* (2013), on the effect of macroeconomic imbalances on advanced economies. He maintains the finance and macroeconomics blog Dan Alpert's 2 Cents, a project of Roubini Global Economics, and was featured in the Academy Award–winning documentary *Inside Job*, which tells the story of the 2008 global financial crisis. He is a founder of the World Economic Roundtable program of the New America Foundation (NAF), a think tank based in Washington and San Francisco. In 2011, he conceived of and coauthored (with N. Roubini and R. Hockett) "The Way Forward," a widely cited and debated NAF white paper that has been credited with providing a clear and concise explanation of the issues that gave rise to the global financial crisis.

Alpert is founding managing partner of the New York–based investment bank Westwood Capital, LLC, and its affiliates. He has more than 30 years of international merchant banking and investment banking experience and has been responsible for the execution of many novel debt and equity offerings in the real estate and financial services industry. His experience in providing financial advisory services and structured finance execution has extended Westwood's reach beyond the US domestic corporate finance market to East Asia, the Middle East, Latin America, and Eastern Europe. He established the firm's Tokyo office and has spent a significant portion of his professional time since 2000 in Asia. Prior to forming Westwood Capital in 1995, Alpert was a banker and partner at Oppenheimer & Co., Inc. He began his financial career in the real estate syndication industry in 1982. He is a fellow of the Century Foundation, one of the nation's oldest think tanks, and a member of the Economic Club of New York. Alpert was born, and lives, in New York City and has four children.

ROBERT J. BARBERA

Robert J. Barbera is codirector of the Johns Hopkins Center for Financial Economics (CFE) and an economics department fellow. The CFE, housed in the Johns Hopkins economics department, has as its goal embedding robust finance considerations into macroeconomic theory. Barbera's current research interests include three-asset macro models and monetary/fiscal policy interplay in the aftermath of the Great Recession. His teaching responsibilities include overseeing the introductory macroeconomics class in the fall and lecturing on economic forecasting in the spring. Since 1982, Barbera has worked with Wall Street firms, serving as chief economist at E. F. Hutton, Lehman Brothers, Investment Technology Group, and Mt. Lucas Management. His responsibilities have included both the provision of global economic forecasts and strategic assessments of asset markets. He has been a guest on CNBC and Bloomberg News and is often quoted in *The New York Times*, *The Wall Street Journal*, and *The Economist.* Prior to his Wall Street career, Bob served as an economist for US Senator Paul Tsongas, covering banking and energy issues. He also was an economist in the Natural Resources Division of the Congressional Budget Office. For two years, following his graduate education, Barbera lectured at the Massachusetts Institute of Technology. He is the author of *The Cost of Capitalism: Understanding Market Mayhem and Stabilizing Our Economic Future*, a book hailed by the *Times* as "one of the top 10 books on the 2008 global financial crisis." Barbera holds a BA and Ph.D. from the Johns Hopkins University.

JAMES BULLARD

James Bullard, as president and CEO of the Federal Reserve Bank of St. Louis, participates in the Federal Open Market Committee (FOMC) and directs the activities of the bank's head office in St. Louis and of its branches in Little Rock, Louisville, and Memphis. An economist, he joined the Bank in 1990. His research has appeared in numerous professional journals, including the *American Economic Review*, *Journal of Monetary Economics*, *Macroeconomic Dynamics*, and *Journal of Money, Credit and Banking.* A peer reviewer for many periodicals, he currently serves as coeditor of the *Journal of Economic Dynamics and Control.* Since becoming president in 2008, Bullard has called for the FOMC to adopt state-contingent policy and to give greater consideration to headline inflation than to core inflation when deciding monetary policy. In the wake of the financial crisis, he supported quantitative easing and warned about the possibility of the United States' falling into a Japanese-style deflationary trap. He has also argued that the US output gap may not be as large as many estimates suggest.

Bullard is an honorary professor of economics at Washington University in St. Louis, where he also sits on the advisory council of the economics department and the advisory boards of the Center for Dynamic Economics and the Wells Fargo Advisors Center for Finance and Accounting Research. He is a member of the University of Missouri–St. Louis Chancellor's Council, the United Way U.S.A. Board of Trustees, and the Greater St. Louis Financial Forum. Bullard also serves on the board of the St. Louis Regional Chamber. A native of Forest Lake, Minnesota, Bullard earned his doctorate in economics from Indiana University in Bloomington. He holds BS degrees in economics and in quantitative methods and information systems from St. Cloud State University.

VÍTOR CONSTÂNCIO

Vítor Constâncio was appointed vice president of the European Central Bank in June 2010. He was governor of the Banco de Portugal from 1985 to 1986 and again from 2000 to May 2010. Constâncio is a former executive director of the Banco Português de Investimento (1995–2000) and nonexecutive director of the Electricidade de Portugal, the Portuguese national power utility (1998–2000). From 1989 until June 2010, he was visiting senior professor of economics at the Instituto Superior de Economia e Gestão, culminating a long academic career. He holds a degree in economics from the Universidade Técnica de Lisboa.

PEDRO NICOLACI DA COSTA

Pedro Nicolaci da Costa reports on the Federal Reserve and economics for *The Wall Street Journal*. He was previously at Reuters, and has been covering economics and financial markets since 2001. Da Costa's coverage of the close links between the financial industry and the Fed earned him a Deadline Club Award from the Society of Professional Journalists' New York chapter in 2011. He earned a master's in international relations from the University of California, San Diego, and studied sociology and political science as an undergraduate at the University of Chicago and the London School of Economics.

SAM FLEMING

Sam Fleming is US economics editor at the *Financial Times*, based in Washington, D.C. He previously worked as the newspaper's financial policy correspondent in London, where he started in October 2013. He served as economics editor for *The Times of London* from 2010 to 2013. Between 2006 and 2010, Fleming was associate city editor and economics correspondent for the *Daily Mail*, also in London. He began his journalism career at Bloomberg in 2001, covering industry, the stock market, and, latterly, economics until 2005. Between 1997 and 2000, Fleming worked at Slaughter and May, a London-based corporate law firm, qualifying as a solicitor in 1999. He studied law at the College of Law, London, from 1994 to 1996. He took his university degree at Pembroke College, Cambridge, where he graduated in 1994. He was born in London in 1973.

SCOTT FULLWILER

Scott Fullwiler is a professor of economics and holds the James A. Leach Chair in Banking and Monetary Economics at Wartburg College. He is also an adjunct professor at Presidio Graduate School, teaching sustainable financial markets in Presidio's top-ranked sustainable MBA program, and a research scholar at the Binzagr Institute for Sustainable Prosperity. His research is primarily on interactions of banks, central banks, and governments in money markets, payments systems, and central bank operations, and has appeared in numerous journals and edited volumes. Fullwiler is also a regularly invited speaker at national and international conferences on these topics. He blogs periodically for New Economic Perspectives (neweconomicperspectives.org) and serves on the editorial board of the *Journal of Post Keynesian Economics.*

MICHAEL GREENBERGER

Michael Greenberger is the founder and director of the University of Maryland Center for Health and Homeland Security and a professor of law at the University of Maryland, Francis King Carey School of Law. He teaches a seminar at the law school titled Futures, Options, and Derivatives. From 1997 to 1999, Greenberger was the director of the division of trading and markets at the Commodity Futures Trading Commission (CFTC), where he served under CFTC Chair Brooksley Born. In that capacity, he was responsible for supervising exchange-traded futures and derivatives. He also served on the steering committee of the President's Working Group on Financial Markets, and as a member of the International Organization of Securities Commission's Hedge Fund Task Force. His and Born's work during that period on the regulation of derivatives was featured in the Peabody Award–winning *Frontline* documentary *The Warning*. In 1999, Greenberger began service as counselor to the United States attorney general, and then became the Justice Department's principal deputy associate attorney general. In the latter capacity, he assisted the US attorney general and associate attorney general in supervising the work of the Justice Department's civil, civil rights, environmental, antitrust, and tax divisions. Also within his portfolio of responsibilities were several counterterrorism projects concerning both law enforcement and public health policy, including organizing a nationwide counterterrorism war game (TOPOFF I).

Prior to entering government service, Greenberger was a partner for more than 20 years in the Washington, D.C., law firm of Shea & Gardner (now Goodwin Procter, LLP), where he served as lead litigation counsel before courts of law nationwide, including the US Supreme Court. In 2014, he became a faculty advisory board member for the University of Maryland's Center for the Study of Business Ethics, Regulation, and Crime.

BRUCE C. N. GREENWALD

Bruce C. N. Greenwald holds the Robert Heilbrunn Professorship of Finance and Asset Management at Columbia Business School and is the academic director of the Heilbrunn Center for Graham & Dodd Investing. Described by *The New York Times* as "a guru to Wall Street's gurus," Greenwald is an authority on value investing, with additional expertise in productivity and the economics of information. Greenwald has been recognized for his outstanding teaching abilities. He has been the recipient of numerous awards, including the Columbia University Presidential Teaching Award, which honors the best of Columbia's teachers for maintaining the university's longstanding reputation for educational excellence. His classes are consistently oversubscribed, with more than 650 students taking his courses every year in subjects such as value investing, economics of strategic behavior, globalization of markets, and strategic management of media.

THOMAS M. HOENIG

Thomas M. Hoenig was confirmed as vice chairman of the Federal Deposit Insurance Corporation (FDIC) on November 15, 2012. He joined the FDIC on April 16, 2012, as a member of the FDIC board of directors for a six-year term. He is a member of the executive board of the International Association of Deposit Insurers. Prior to serving on the FDIC board, Hoenig was president of the Federal Reserve Bank of Kansas City and a member of the Federal Reserve System's Federal Open Market Committee from 1991 to 2011. Hoenig was with the Federal Reserve for 38 years, beginning as an economist and then as a senior officer in banking supervision during the US banking crisis of the 1980s. In 1986, he led the Kansas City Federal Reserve Bank's division of bank supervision and structure, directing the oversight of more than 1,000 banks and bank holding companies with assets ranging from less than $100 million to $20 billion. He became president of the Federal Reserve Bank of Kansas City on October 1, 1991. Hoenig is a native of Fort Madison, Iowa. He received a doctorate in economics from Iowa State University.

JAN KREGEL

Jan Kregel is a senior scholar at the Levy Economics Institute of Bard College and director of its Monetary Policy and Financial Structure program. He also holds the position of professor of development finance at Tallinn University of Technology. In 2009, Kregel served as Rapporteur of the President of the UN General Assembly's Commission on Reform of the International Financial System. He previously directed the Policy Analysis and Development Branch of the UN Financing for Development Office and was deputy secretary of the UN Committee of Experts on International Cooperation in Tax Matters. He is a former professor of political economy at the Università degli Studi di Bologna and a past professor of international economics at Johns Hopkins University's Paul Nitze School of Advanced International Studies, where he was also associate director of its Bologna Center from 1987 to 1990. In 2010, Kregel was awarded the prestigious Veblen-Commons Award by the Association for Evolutionary Economics for his many contributions to the economics field. In 2011, he was elected to the Accademia Nazionale dei Lincei. Known as the Lincean Academy, it is the oldest honorific scientific organization in the world.

PAUL MCCULLEY

Presently weighing opportunities in academia, Paul McCulley recently retired, for the second time, from PIMCO, where he most recently served as chief economist and managing director and as a member of the investment committee in Newport Beach, and authored the publication *Macro Perspectives*. McCulley previously retired from PIMCO at the end of 2010, after a decade as managing director and portfolio manager. He also headed the firm's liquidity and funding desk, led PIMCO's Cyclical Economic Forum, and authored the monthly research publication *Global Central Bank Focus*. During his years in retirement, McCulley was chair of the Global Society of Fellows at the Global Interdependence Center, of Philadelphia. Earlier in his career, he served as chief economist for the Americas at UBS, where he was named to six seats on the Institutional Investor All-America Research Team. Known for coining the terms *shadow banking system* and *Minsky moment*, McCulley holds an MBA from Columbia Graduate School of Business and a BS from Grinnell College.

PERRY G. MEHRLING

Perry G. Mehrling, professor of economics, joined the faculty of Barnard College in 1987. He teaches courses on the economics of money and banking, the history of money and finance, and the financial dimensions of the US retirement, health, and education systems. His most recent book is *The New Lombard Street: How The Fed Became the Dealer of Last Resort* (2011). His best-known book, *Fischer Black and the Revolutionary Idea of Finance* (2005), was recently released in a revised paperback edition. Currently, Mehrling directs the educational initiatives of the Institute for New Economic Thinking, one of which is his course Economics of Money and Banking, available on Coursera (coursera.org/course/money).

DIMITRI B. PAPADIMITRIOU

Dimitri B. Papadimitriou is president of the Levy Institute, executive vice president and Jerome Levy Professor of Economics at Bard College, and managing director of Bard College Berlin. He is a research scholar and team leader in macroeconomics at the Observatory of Economic and Social Development of the Institute of Labour-GSEE (Athens). He has testified on a number of occasions in committee hearings of the US Senate and House of Representatives, was vice-chairman of the Trade Deficit Review Commission of the US Congress (1999–2001), and is a former member of the Competitiveness Policy Council's Subcouncil on Capital Allocation (1993–98). He was a Distinguished Scholar at the Shanghai Academy of Social Sciences in fall 2002. Papadimitriou's research includes financial structure reform, fiscal and monetary policy, the eurozone crisis, community development banking, and employment policy. He heads the Levy Institute's macroeconomic modeling team studying and simulating the US and European economies. In addition, he has authored and coauthored many articles in academic journals and Levy Institute publications relating to Federal Reserve policy, fiscal policy, the eurozone and Greek crises, financial structure and stability, employment growth, and Social Security reform. Papadimitriou has edited and contributed to 14 books published by Palgrave Macmillan, Edward Elgar, and McGraw-Hill, and is a member of the editorial boards of *Challenge* and the *Bulletin of Political Economy*. He is a graduate of Columbia University and received a Ph.D. in economics from The New School for Social Research.

DEBORAH SOLOMON

Deborah Solomon is a news editor in the Washington, D.C., bureau of *The Wall Street Journal*, overseeing financial regulatory and enforcement coverage. Solomon joined the *Journa*l in 2000 and led the paper's coverage of Washington's response to the 2008 financial crisis. She has covered other areas, including financial regulation, accounting, economic policy, and the telecommunications industry. In 2009, Solomon and her *WSJ* colleagues were finalists for the 2009 Pulitzer Prize for coverage of the financial crisis. She was also part of a team that won the 2009 Gerald Loeb Award for "The Day That Changed Wall Street." In 2003, Solomon was a member of a team of *Journal* reporters awarded the Pulitzer Prize in explanatory reporting for a series of stories that exposed corporate scandals, elucidated them, and brought them to life in compelling narratives. She won the Society of American Business Editors and Writers award in the spot enterprise category for a page one story she coauthored called "Uncooking the Books." She was also part of a team that won the 2003 Gerald Loeb Award for the paper's coverage of the WorldCom scandal. Solomon began her journalism career as a reporter at the *Birmingham Post-Herald* and holds a bachelor's degree from George Washington University.

JIM TANKERSLEY

Jim Tankersley is the economic policy correspondent for *The Washington Post*, where he writes about the intersection of academic research, federal policymaking, and the stories of people across the country coping with the rapidly changing economy. He previously worked for *National Journal* magazine, the Tribune Washington Bureau, the *Toledo Blade*, the *Rocky Mountain News*, and *The Oregonian*. Tankersley and a colleague at the *Blade* won the 2007 Livingston Award for Young Journalists for their "Business as Usual" series of stories revealing the true roots of Ohio's economic decline. He was also part of the "Coingate" team at the *Blade* that was a finalist for the Pulitzer Prize. Tankersley is an Oregon native, a graduate of Stanford University, and the father of a precocious third grader, Max.

PAUL TUCKER

Sir Paul Tucker is a senior fellow at the Harvard Kennedy School and the Harvard Business School. He was deputy governor of the Bank of England from 2009 to October 2013, having joined the bank in 1980. He was a member of all of the Bank of England's statutory policy committees—the monetary policy committee, financial policy committee (vice chair), and prudential regulatory authority board (vice chair)—as well as the court of directors. Internationally, Tucker served on the steering committee of the G20 Financial Stability Board, and chaired its Committee on the Resolution of Cross-Border Banks in order to solve the "too big to fail" problem. He was a member of the board of directors of the Bank for International Settlements, and was chair of the Basel Committee for Payment and Settlement Systems from April 2012. Tucker is a visiting fellow of Nuffield College, Oxford, and a governor of the Ditchley Foundation.

ÉRIC TYMOIGNE

Éric Tymoigne is an assistant professor of economics at Lewis & Clark College and a research associate at the Levy Institute. He formerly taught at California State University, Fresno. Tymoigne is a member of the Association for Evolutionary Economics, the Union of Radical Political Economy, and the French Association for the Development of Keynesian Studies. His areas of teaching and research include macroeconomics, money and banking, and monetary economics. His current research agenda includes the nature, history, and theory of money; the detection of aggregate financial fragility and its implications for central banking; and the theoretical analysis of monetary production economies. Tymoigne has published articles in refereed journals, and has contributed to several edited books. He is the author of *Central Banking, Asset Prices, and Financial Fragility* (2009) and recently coauthored a book (with L. R. Wray) titled *The Rise and Fall of Money Manager Capitalism: Minsky's Half Century* (2014).

ELIZABETH WARREN

Senator Elizabeth Warren (D-MA), a fearless consumer advocate who has made her life's work the fight for middle-class families, was elected to the United States Senate in 2012. Warren is widely credited for the original thinking, political courage, and relentless persistence that led to the creation of the Consumer Financial Protection Bureau. President Obama asked her to set up the agency to hold financial institutions accountable and to protect consumers from financial tricks and traps. In the aftermath of the 2008 financial crisis, Warren served as chair of the Congressional Oversight Panel for the Troubled Asset Relief Program. Her efforts to protect taxpayers, hold Wall Street accountable, and ensure tough oversight of the Bush and Obama administrations won praise from both sides of the aisle. The *Boston Globe* named her Bostonian of the Year, and *Time* magazine called her a "New Sheriff of Wall Street" for her efforts.

Warren was a law professor for more than 30 years, including nearly 20 years as the Leo Gottlieb Professor of Law at Harvard Law School. She taught courses on commercial law, contracts, and bankruptcy and wrote more than a hundred articles and nine books, including three national best-sellers, *A Fighting Chance*, *The Two-Income Trap*, and *All Your Worth*. Senator Warren is a graduate of the University of Houston and Rutgers School of Law. She lives with her husband Bruce Mann in Cambridge and has two children and three grandchildren.

L. RANDALL WRAY

Senior Scholar L. Randall Wray is a professor of economics at the University of Missouri–Kansas City. His current research focuses on providing a critique of orthodox monetary theory and policy, and the development of an alternative approach. He also publishes extensively in the areas of full employment policy and, more generally, fiscal policy. With President Dimitri B. Papadimitriou, he is working to publish, or republish, the work of the late financial economist Hyman P. Minsky, and is using Minsky's approach to analyze the current global financial crisis.

Wray is the author of *Money and Credit in Capitalist Economies* (1990); *Understanding Modern Money: The Key to Full Employment and Price Stability* (1998); and *Modern Money Theory: A Primer on Macroeconomics for Sovereign Monetary Systems* (2012). His most recent book is *Why Minsky Matters*, forthcoming from Princeton University Press. He is coeditor, with Jan Kregel, of the *Journal of Post Keynesian Economics*.

Wray taught for more than a decade at the University of Denver and has been a visiting professor at Bard College, the University of Bologna, the University of Paris–South, and the University of Rome (La Sapienza). He received a BA from the University of the Pacific and an MA and a Ph.D. from Washington University, where he was a student of Minsky.

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