THE BROOKINGS INSTITUTION

CENTRAL BANKING AFTER THE GREAT RECESSION: LESSONS LEARNED AND CHALLENGES AHEAD

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Welcome:

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Introduction:

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PANEL DISCUSSION: CENTRAL BANKING AFTER THE GREAT RECESSION:

Moderator:

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Part One - Monetary Policy When Rates Fall to Zero: Putting Theory into Practice

Presenter:

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Discussant:

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P R O C E E D I N G S

MR. TALBOTT: Good morning everybody. I'm Strobe Talbott, and along with my colleagues here at the Brookings Institution, I want to thank all of you for joining us today. It's a special honor, obviously, to have Leader Pelosi with us. You, Nancy, have been a friend to this institution for a long time. You've found your way down from the Hill to help contribute to events here in the Falk Auditorium, and it's terrific you could be with us this morning.

We have got a full program ahead of us with a lot of vitally important ground that we need to cover. But first, I want to make sure that everybody here appreciates the role that Glenn Hutchins has played as a leader of this institution, and as a valued friend and counselor to those of us who are lucky enough to work here under his leadership.

Glenn is not just a trustee and vice chair of our board, he is a thinking and doer in the realm of public policy. The center that bears his names, which we're launching today, is a case and point. The idea of an institutionalized, concentrated, disciplined, long-term, high impact effort dedicated to fiscal and monetary policy has been germinating for a number of years in Glenn's fertile mind, and in brainstorming sessions that he has held with our scholars.

Now that idea has become a reality, which by the way, is exactly what we at Brookings aspire to for ideas that are generated on this small campus on Think Tank Road.

The seriousness of this new venture, the Hutchins Center on Fiscal and Monetary Policy, is reflected in the distinction of the panel of experts, many of whom are right here in the front rows, that we will be hearing from shortly. And, of course, we will be joined during the course of the proceedings by Ben Bernanke.

Chairman Bernanke has been at the helm of the Fed for eight years, though I suspect it seems like a lot longer to him. His extraordinary service to the Nation at a time of extraordinary difficulty comes to an end just as the Fed reaches its centenary, which means it's two years older than the Brookings Institution.

As these two institutions head into their second centuries, one thing is clear, the important of designing and implementing measures that promote sustainable, widely shared prosperity, and that that has never been more important as a goal and a challenge for our country.

Monetary and fiscal policies are, of course, the purview of different parts of the federal government, but they have in common two goals. Easing our economic woes, particularly the persistence of high unemployment while at the same time ensuring that decisions that we make today on spending, taxes, interest rates, and financial regulation lay the foundations for a better life for our children and grandchildren.

That means fiscal and monetary policies need to be consistent and compatible if we are to accelerate our recovery from the recent crisis and ensure a healthy economic future. This is a classic challenge to the Brookings' mission which is contributing to the improvement of our system of governance.

It's also an opportunity to apply the Brookings' method which is to convene the best experts, pose the right questions, marshal irrelevant facts and make sure that they're facts, generate innovative, pragmatic, actionable ideas, debate their merits in a civil, constructive, nonpartisan fashion, engage the public, the private sector, and the policy community, and then advocate for sound policy.

That's how the Hutchins Center will proceed under the leadership of its inaugural director, David Wessel, here in the front row as well, who is already working with the scholars of our economic studies program led by Ted Gayer, who's appropriately sitting next to David.

It was with this agenda, with these values, and with this quality of leadership in mind that the Center was conceived by its founder from whom we will now hear. Glenn, the podium is yours, and so is our gratitude to you, and to Debbie, and to the Hutchins Family Foundation.

MR. HUTCHINS: Strobe, thank you for those kind words. As the saying goes, my father would have enjoyed them, and my mother would have believed them.

Today, as you know, we're launching a new center on fiscal and monetary policy here at Brookings, and I'm very pleased and more than a little flattered that so many of you have joined us here today. Thank you.

I'm also flattered that such a distinguished group of presenters will grace this stage today. Thank you, everybody, for making the effort. And I'm especially gratified that such important intellectual content has been generated for this event. That's emblematic of what we're trying to do.

Today, I think, as I thought about this event, I think today is a microcosm of what the Hutchins Center will do in the coming years, and reflects why we situated it at Brookings. Let me explain.

First, this event, like the center, was conceived and produced by my partners in this undertaking, Ted Gayer. There's a joke in there about Ted and David's glorious adventure somewhere. We'll leave that for a later time.

During the design phase of the Center, Ted and I had a dialogue stretching out over a couple years trying to determine how we can make a unique and tangible contribution to economic policymaking. We concluded that there was as surprising gap among think tanks in the monetary policy area. We could identify no research institution that was a leader or even a sustaining meaningful contributor in the domain.

Further, we observed that most monetary policy research is conducted inside central banks around the world. For quite appropriate reasons, they impose material institutional constraints on what can be discussed and debated in public.

We quickly understood that Brookings could fill this vacuum. But after thinking about that for a minutes, we recognize that Brookings is also uniquely positioned to engage in the fiscal policy debate.

We have experts in every major line item of the government budget, entitlements, defense, and the like. As well as a tax policy center which is without peer in Washington. Being able to pool those resources, plus perhaps adding some capability, we're debating that to score legislation, struck us as uniquely available here at Brookings.

We concluded that having an authoritative, I'm going to come back to some of these points in just a minute, nonpartisan and independent voice in the fiscal debate was a real opportunity and our calling.

And once we started to think on this track it became plain as day to us that the interaction between fiscal and monetary policy is powerful, as we all know and have experienced in recent years. And with the resources we have assembled here, understanding that that interaction is the logical and third vital role that we can play.

And then we stuck the motherload. After Ted and I had charted a rough course for the Center we began to test our hypothesis with subject matter experts, including many of you here today.

One of the first people I approached was the widely recognized leader in the world of economic commentary, the legendary, David Wessel. I was pleased that David thought it was a good idea, but I was thrilled that he wanted to lead it. I felt like I had struck gold.

By the way, as I was writing this today I thought I might ask some of you economists here today finally to explain to me why gold is so valuable, but that's a different point.

David, thank you for taking all this on. Well done. For the vote of confidence for me, and in Ted, and in Brookings. We appreciate it and look forward to it.

Today's program is both David's creation, and an example of what David and the team can accomplish at the Center in the future.

Now a word about Brookings which I think, and I've said several times from this podium, is a national treasure. Brookings has three core values: independence, quality, and impact. All of which you'll see on parade here today, and which make it the ideal home for what Ted, David, and I want to do.

At Brookings we are uncompromising in our zeal to protect and promote the independence of our scholars. This is because we are committed to producing only the very highest quality, most data drive, most rigorous research humanly possible. And we fundamentally believe that can only be accomplished when our scholars are absolutely free to pursue their research to its logical conclusion without ideological or financial fear or favor.

As some of you know I served in a democratic administration during a brief sabbatical from my career in business. Not unlike Brookings' scholars who go in and out of government. But as a capitalist, and the people ask me if I'm a Democrat or Republican, I say I'm a capitalist. But as a capitalist and citizen, something I admire about Brookings is its commitment to being nonpartisan. Not bipartisan, but emphatically nonpartisan.

David spent his career at the Wall Street Journal which has never been mistaken as a proxy for the left, I think. Ted Gayer performed distinguished service in Republican administrations. They're joined here at Brookings by a team of accomplished Republicans, Democrats, Independents. From Ron Haskins who worked for Speaker Gingrich and President Bush to Alice Rivlin who served so well in President Clinton's administration.

I've chosen Brookings in part because Strobe has made it a priority to recruit scholars from both sides of the aisle, as well as those with no political identification. His only criteria has been the quality of their work.

I challenge anyone in this room to name another research institution in Washington where as many Republicans, Democrats, and Independents work under the same roof. And where as many Republican and Democratic elected officials are pleased to come speak. Given the polarization in Washington that's one of the many things we all have to learn from Brookings.

By creating an atmosphere of intellectual freedom, and by insisting on exacting standards of quality, Brookings creates the conditions for the best minds in economics, and other disciplines, to devise practical solutions to real world problems. And that is how we can have impact which, in the end, is what we're trying to do.

One last thought, my work at Brookings over the years has been gratifying to me in large part as Strobe alluded to in his remarks because the scholars have embraced and engaged with me as their peer, which has been very gratifying for me.

Professional I study markets in the economy from the practical perspective of how to allocate capital and build business. They bring a perspective deeply informed by scholarship and the policy process. Together we have found strength and insight in marrying scholarship and practice in a manner that insures the real world relevance and impact of our work. This is a collaboration that we plan to put at the very heart of our undertaking here.

As everybody in this room knows, the recovery from the great recession has been muted and uneven. There are real and growing concerns about rising in equality, secular stagnation, and perils associated with unwinding of unconventional monetary policies.

The intended need for insights and tools to ensure a future of shared prosperity for our country has never been greater, and that's what we intend to do. Thank you. Ted.

MR. GAYER: Thank you, Glenn, for those inspiring words, and thank you even more so for your leadership and commitment to dispassionate, high quality, nonpartisan analysis of fiscal and monetary policy which will now be the hallmark of the Hutchins Center.

We launched the Hutchins Center today with a terrific agenda, examining the lessons learned, and challenges ahead for the Federal Reserve.

We'll start by hearing from John Williams and Martin Feldstein on the Fed's policies of quantitative easing and forward guidance. Then from Paul Tucker and Rodgin Cohen on regulation. And then finally from Don Cohn, Christy Romer, and Ken Rogoff, and central bank independence. So it's just a fabulous lineup.

Moderating these discussions will be David Wessel. I equally think we share with Glenn that we struck gold in having David here. I'm thrilled to have him as our newest senior fellow in the economic studies program, and as the founding director of the Hutchins Center on Fiscal and Monetary Policy.

David joins Brookings after 30 years at the *Wall Street Journal* where most recently he was the economics editor and wrote the weekly capital column. He's all the best-selling author of *In FED We Trust: Ben Bernanke's War on the Great Panic*, and of *Red Ink: Inside the High Stakes Politics of the Federal Budget*.

So with that, David, I just want to say again, welcome to Brookings, and I'll turn it over to you and first round of panelists. So thank you everybody for being here.

MR. WESSEL: Thank you, Strobe, Ted, and Glenn for those kind words, and for making this possible. But I want to particular thank the panelists up here and those who will speak later. They put a lot of work into writing papers into this thing, and then we tell them, okay, can you talk about it in 10 minutes.

So I want to make sure that everybody's aware that we do have copies of these both outside and on our website because -- though we'll try to do them justice in the short time that we have, we won't succeed. So there's much more to do.

Our first paper is about really the extraordinary period of monetary policy we've been through. It was inconceivable if we'd been sitting here 10 years ago that anybody would have thought that the Fed cut interest rates to zero in 2008, and now the discussion is, will it be zero in 2015 or will it be 2016?

And I don't think there's anybody better suited to talk about these policies than John Williams, the President of the San Francisco Fed, who did some of the fundamental research that the Fed relied on when it discovered that we were going to be faced with a threat as bad as the Great Depression, so John, will you start?

MR. WILLIAMS: Great. Thanks, David. It's great to be here. It's a wonderful event, and I'm very honored to be part of this.

So I was given the task to talk about monetary policy, the Federal Reserve, and specifically around the issue of the zero lower bound. I will say that the zero lower bound, basically the constraint that you can't lower nominal interest rates much below zero was an issue that economists, academic, Federal Reserve, and other Central Bank economists have studied quite extensively back in the 1990s and before the global financial crisis.

One of the things that spurred that research was the experience of the Lost Decade in Japan, and obviously the experience of the Great Depression in the United States. So economists fought hard and studies what -- you know, how big of a threat is zero lower bound, how to analyze it, what are the implications for monetary policy. Despite the fact that at the time interest rates were well above zero and quite a few people thought that that wasn't -- viewed as more of an academic concern rather than a real world problem.

But that research which identified a number of issues, and came to a number of conclusions, in my paper I highlighted three of them. And the first one which I thought was very important was the fact that the zero lower bound is a very real, practical concern. It's not just an abstract concern, it's not Japan being special or unique or that something from the Great Depression. It's really an issue that we should take very seriously.

In a paper I did with Dave Reifschneider of the Board of Governors, for example, we said if you follow the Taylor rule with a 2 percent inflation objective, you would hit the zero lower bound about 5 percent of the time. Some other estimates were a little higher, some others were lower, so this is obviously an issue that's a very real, practical concern.

One thing we also identified in that research is that most of the time, and others that have worked on this, that most of the time episodes of the zero lower bound would be relatively mild, relatively short lived in our stimulations that we looked at economies. You would be at the zero lower bound typically for about one year. And the effects of the zero lower bound typically would be relatively mild, as I said.

We did find that about once a century, a hundred year flood situations you could have much more sever recessions that where the zero lower bound would be a bigger issue.

But the first conclusion from that research, was yes, it's a real issue. Probably most of the time, not a dramatic life changing, say issue.

The second part of the research program -- conclusion from that period, was that conventional monetary policy can and should be modified away from say, a Taylor rule, a standard way of thinking about the Feds reaction function, to something that took into account the zero lower bound. And there were two really strong, and I think very important conclusions from that research.

One was don't keep your powder dry. If you think you're in danger of a recession or a deflation cut interest rates quickly, aggressively, get as much monetary stimulus in as fast as possible.

The second was this lower for longer. And that is even after the economy starts to recover and things start to improve somewhat, instead of kind of being in a race to raise interest rates again in a normal way, keep interest rates low. And that commitment for longer than you normally would, continue to add stimulus, basically reduce the risks of deflation, add more stimulus to help the economy grow faster because of the zero lower bound constraining policy during the time when interest rates were zero.

So there are these two strong conclusions. One is act aggressively going in, and act slowly coming out about raising interest rates.

Now, the third conclusion from the research before the crisis was really around truly unconventional monetary policies, and that's a quantitative easing or for some reason the Federal Reserve, we still hold to the name large scale asset purchases or LSAPs. So just thinking of having, you know, a translator in your mind, when I say LSAPs you think QE.

So one of the things that was studied was could we use asset purchase, expand the balance sheet, intervene in foreign exchange markets? Did a lot of research on that. Again, very academic, analytical about how that might help lower interest rates, improve financial conditions when the short term interest rate is zero. And there was a number of research papers on how that could be done in a useful compliment to conventional policies.

Well, obviously, over the last seven or eight years we've gained enormous experience both with these policies and with the lessons from that research. And so the paper, my paper, goes through and says, well, what have we learned relative to what we thought in 2006 from this research? What have we learned? Well, and what did we also observe down there?

The first part of the paper that I analyze is this issue of is a zero lower bound really a big problem. Now, looking at the world outside today where all the major central banks have had interest rates at zero for five years straight. I mean, it's clearly a much larger problem then we identified in that research.

So what I'm interested in in the paper is why? What did we miss? Why is it the case that we thought the zero lower bound was going to be a relatively modest constraint most of the time, and in fact, it's shown to be globally a huge issue.

And one of the lessons that I tried to emphasize in the paper is that I think we were fooled by the post-war U.S. data, especially the great moderation which was relatively small sample of data where we really didn't have large shocks. We had a financial system probably due to the, you know, lasting effects of the reforms after the Great Depression, the financial reforms from the 1930s. We had a financial system that was pretty strong. We had an economy that we behaving itself extraordinarily well, and when you analyze what are the tail risks in an economy where nothing bad happens, somewhat surprisingly come to the conclusion that nothing bad ever can happen.

And so one of the lessons of this, and Ken Rogoff here will, you know, obviously, you know, written quite a lot about this with Carmen Reinhart, is you need to study history. You can't just think that what happened in the 1930s or what happened in other countries is irrelevant for the United States.

Obviously, there's an issue of how do you weigh the evidence from 100 years ago and from other countries, and that's a hard issue, but one of the things I show in the paper which I thought was illuminating was that if you look at the data from the post-war period, the probability, the real GDP per capita would fall as much as it did in 2008 was basically, it would happen once every 400 years, if you just took the data from post-World War II.

By the way, real GDP per capita never fell more than 3 percent in the -- 50 years before the great recession. In 2008 it fell by 3.7 percent.

If you look at the broad historical experience, if you look at the 140 years of data from 17 advanced economies you actually come to a very different conclusion. Real GDP per capita fell by more than 3.7 percent in a given year more than 5 percent of the time. So it's about once every 20 years you would expect to see a major recession like we saw in 2008.

So I think that, again, the lesson here is you can't just be looking at 25 years of the great modern age, or even 50 years of the post-war period in drawing conclusions. So that was one of the conclusions I came from this. A lot of our macroeconomic research, a lot of the DSGE models, if I can use the jargon that we use, really don't help us think about tail risks or things such as what we've experienced in the last seven years, and we really need to think that seriously.

The other two parts of the paper as I look at forward guidance and quantitative easing, and as I mentioned in the opening remarks, one of the lessons from the research was is that if you cut aggressively and you keep lower for longer you can actually offset a lot of the effects of the zero lower bound. And in practice we did see central banks across the globe cut aggressively. I mean, I think I list off maybe 10 countries that cut interest rates very aggressively 2008, 2009.

What we saw a lot more to -- much more challenging was in doing this lower for longer and somehow convincing financial markets that we're going to keep interest rates lower for longer. And in the U.S., for example, I talk about this in the paper, up until the August 2011 FOMC decision to put out this date that we're going to keep interest rates at zero until mid-2013, until that date market expectations really were that the Fed was just ready and raring to go to raise interest rates within, say three-quarters or four-quarters.

And really the forward guidance that we finally institute -- or we institute at that point and have expanded upon since then, fundamentally shifted expectations about monetary policy. Moved out expectations of when we're going to raise rates by at least a year, and since then has fundamentally shifted how markets perceive what the Fed's reaction function in.

Since August of 2011 interest rate expectations -- interest rate behavior has been much more consistent with I think what our expectations are. You're not seeing the market expecting us to raise interest rates in the next year or so, and you can see this in terms of how the markets respond to news. You can see this in terms of surveys in market prices.

So what we did find is it took quite a while for the Fed to go to explicit forward guidance. When we did, it did seem to have a major effect in changing expectations, major improvement in easing the financial conditions and helping the economy improve economic conditions.

Finally on QE, that was one of the most interesting issues because we really had very little knowledge on what the effects of QE would be on financial conditions of the economy when we went into this. There are a few papers going back to the 60s, theories about this, but this was really, in a way, flying blind. We had some analysis based on some specific circumstance. Since then I think I list off, you know, maybe two dozen papers that have been written based on what's happened to the U.S. the UK, and other countries.

We've learned an enormous amount of how asset purchases affect the economy, but my point in the paper is we still don't understand a lot of it. Clearly the evidence is when the Fed and other central banks do asset purchase programs it affects long-term yields. It lowers interest rates. $600 billion dollars for the U.S. Fed balance sheet seems to lower long-term treasuries by about 15 to 25 basis points which is a lot for monetary policy.

That said, there's a lot of uncertainty about how it works. Is it really a signaling of future policy actions? Is it really through some kind of imperfections in the financial markets that allows the Fed to buy assets so therefore affect the price. We also have a lot of uncertainty about the size of these affects, and we just have to recognize that.

Finally, again, macroeconomists have ignored this whole aspect of imperfect financial markets, and these aspects of imperfect information in a lot of our models. So our macro models we rely on to understand what are the effects of policies, what are the appropriate calibration of our policies?

Really have very little to tell us right now about quantitative easing policies, you know, a number of economists over the last few years, and clearly if you're a PhD student this is a great topic to work on, have been working on developing models that allow us to think about QE and estimate its affects, and think about policy with that. But that's still in its infancy, and we are having to use the models that we have now. But I just want to emphasize the one thing is clearly it works, but it's a very blunt tool, and a lot of uncertainty around that.

Now, to close, do I have one more minute? So to close, I think we've, you know, we came into this crisis or into the global financial crisis with having studied these issues about what should monetary policy do at the zero lower bound. I think we actually learned a lot from that about what's a good policy approach, what are the unconventional tools we could try to use. We've learned a lot about how effective they are, and they've proven to be effective.

We've also learned a lot about, you know, some of the challenges with using them. Forward guidance is great in textbooks. Michael Woodford is always telling us exactly we could to. If we did forward guidance exactly like in his book we would be golden. But in practice explaining to the public and markets what monetary policy may or may not do in the next few years is very complicated, and often prone to misinterpretation.

Quantitative easing, similarly, has a lot of issues, not only about the uncertainty of its effects, but also just the concerns about unintended consequences. So that leaves us with some pretty big, important open issues I think we need to think about for the next several years, many years.

One is, importantly, is that 2 percent inflation buffer that pretty much every major central bank decided on to give you a little bit of cushion in a deep recession, is that really sufficient or appropriate or properly calibrated given the lessons we've learned about the zero lower bound, and the severity of the recent recession.

At the same time I think we understand that we have to understand financial markets much better in our models, and think seriously about how the financial market reforms will change things.

And finally, I think the most interesting issue for monetary economics is was this whole inflation targeting regime that we've all agreed on which has a lot of very positive benefits, really not as well suited for the zero lower bound condition as some alternatives such as nominal GDP targeting and price level targeting.

Now, I'm not taking a stand on any of those issues. I will tell you that changing the inflation target it the electric third rail of monetary economics. So I'm just laying them out as issues that I think we should seriously think about. And I think we need a lot of research, and a lot of work on these over the next few years.

MR. WESSEL: Thank you. We'll poll the audience, answers to each of those questions. So when we thought about who could reasonably comment on John's paper, Marty Feldstein immediately came to mind because he has been one of the few economists that's walked so seamlessly between policy and academic circles, and is respected in both, and has some views on whether the Fed did exactly the right thing. Take it away, Marty.

MR. FELDSTEIN: Thank you very much, David. Well, as you heard, John, has given us a very rich paper which is worth careful reading, and I'm very impressed in how well he was able to summarize it in the 10 minutes that David gave him.

I didn't get 10 minutes though to comment on, and I realize that trying to comment in seven minutes which was David's assignment to me, I better write it down or I'd go on much too long. So let me read what I wrote after I read John's very insightful paper which deals with the proper conduct of monetary policy under the protracted adverse conditions of the kind that we have experienced since 2006.

Although we might hope that such conditions won't happen again, John presents persuasive historic evidence that such declines in aggregate demand are indeed likely to recur, so it's important that we learn from recent experience and consider alternative policies.

The 2007 downturn was not only deeper and longer than the usual recession, but also differed in its origin and structure. It was not caused by temporarily high real interest rates, and therefore couldn't be reversed by the Fed's usual rate reduction. Even at a near zero federal funds rate the recession persisted.

The downturn was caused by mispricing the risks of a wide range of assets. Individuals bought over-priced homes, and banks came high loan to value mortgages to individuals who were unable to repay them. House prices began to collapse in the summer of 2006 causing a massive fall in household wealth and in residential construction.

Banks and other investors bought overpriced tranches of securitized subprime mortgages that then collapsed in value signaling the general overpricing of risky securities. In many cases, banks and other financial institutions couldn't even determine the value of their portfolio assets because of the lack of willing buyers and sellers. Banks therefore, couldn't know the value of their own capital, and couldn't judge the solvency of potential counterparties. The financial markets became dysfunctional and credit dried up.

The Federal Reserve and the Treasury together acted very boldly to revive financial markets with a combination of assets purchases and guarantees that went far beyond monetary policy. Although these actions succeeded in reversing the financial collapse, they didn't reverse the economic downturn.

The Federal Reserve also cut the Fed funds rate to near zero in late 2008. Too late, I think, to satisfy, John's suggestion, and I quote, to act aggressively in cutting rates when a sharp decline in output threatens. That would have implied cutting rates in 2006 when house prices began to collapse, but the Fed funds rate was still nearly 5 percent in the fall of 2007.

In analyzing the challenges in 2007 and 2008 it's important to go beyond simulations using the fat tails implied by historic data. I think traditional macro econometric models cannot begin to capture the problems in 2007 because they lack well specified financial sectors, let alone the tranche securitization of mortgages, and the wide spread presence of off balance sheets special investment vehicles. Moreover, financial crisis may not share the same features.

Now, although this meeting is about monetary policy, I think it's wrong to ignore the role of fiscal policy at the zero lower bound. Conventional wisdom before 2007 was that cyclical fluctuations should be managed by monetary policy alone because countercyclical fiscal policy is generally too slow to react within the typical recession downturn.

But in 2007 several of us concluded that current conditions implied that a fiscal stimulus was needed. Unfortunately the Bush tax cut of 2008 was totally ineffective. A small one-time rebate that households almost entirely saved. The Obama stimulus plan of 2009 probably dampened the downturn, but was too small and not concentrated enough on increasing government spending.

So with an inadequate fiscal policy the Fed was the only hope for stimulating the economy. With the Fed funds rate at the ZLB the Fed shifted to unconventional monetary policy, a future guidance of the short rate, and large scale asset purchases, the LSAPs of government bounds and mortgage backed securities.

John provides a very useful review of the evaluation of the short-rate guidance. And he concludes from it, and I quote, explicit forward guidance can effectively anchor interest rate expectations out two years. But I ask myself, why is a two year anchoring economically significant? The usefulness of forward guidance would be persuasive if it reduced the longer term rates that are relevant for mortgages and equity prices.

John reminds us that the standard textbook theory implies that LSAPs cannot affect asset prices and interest rates. We now know that that theory is wrong. The Feds massive purchases of Treasury Bonds and mortgage backed securities drove the yield on 10-year treasuries to just 1.7 percent in May of 2013.The announced plan to end the purchase program was enough to drive that rate back to 3 percent.

John quotes research showing that the $600 billion dollar bond purchase in QE2 lowered the unemployment rate by one quarter of one percent, but he's candid in concluding, as he said in his remarks, and I quote from the paper, a great deal of uncertainty about the magnitude of these affects, and their impact on the overall economy.

But missing in all of this analysis is a balancing of the potential output gains of LSAPs against the risks generated by sustaining abnormally lower long-term interest rates. Those risks include one, potential price bubbles in equities, land, and other assets. Two, portfolio risks as investors reach for yield with junk bonds, immerging market debt, uncovered options, and the like. Three, creditor risks as lenders make loans to less qualified borrowers, covenant light loans and bonds, long-term mortgages at insufficient interest rates and so on. And four, long-term inflation risk as commercial banks acquire a large portfolio of low-yielding assets at the Federal Reserve that could be converted to commercial loans.

In his conclusion paper and in his remarks, John asks whether LSAPs should be a standard tool when short rates are at the zero lower bound. I think it is, at best, too soon to tell. We will know more when we see the outcomes of the risks that the LSAPs created. And if the economy now expands at a healthy pace, which I think we've got a good shot at, we won't know what those risk outcomes would have been in a weaker economy.

What is clear to me is that a balanced fiscal policy should be part of the response when the economy is stuck with excess capacity at the zero lower bound.

Finally, John, also asks whether it would be better to target nominal GDP or the price level, or an inflation rate higher than 2 percent. I think any of those would be a mistake.

Although inflation is not a problem now, the time will come when the Fed will want to limit or reverse inflationary pressures. Experience and theory both teach us that it is easier to do that if the public understands that the Federal Reserve is committed to a consistent policy of low inflation. Flirting now with other more ambiguous goals can only weaken future public support when the Fed needs it most. Thank you.

MR. WESSEL: Thank you, Marty. John, let me ask you to respond to two of the several interesting points that Marty made. When you describe the history of monetary policy in this crisis you didn't mention fiscal policy. But we know that fiscal policy was a big player, and to quote Ben Bernanke, was counterproductive.

So when we get to this stage, an episode like this, what is the right thing for the monetary policy authority to do? Do you compensate for lousy fiscal policy, do more? Or do you say to the fiscal authorities, the Congress and the President, look, we're doing this, and publicly indict them for not doing the right thing? How do you think about that?

MR. WILLIAMS: Well, first of all, I don't think fiscal policy was lousy. We actually had pretty sizeable fiscal stimulus. I would agree with Marty that more would be better.

MR. WESSEL: I'm thinking more recently.

MR. WILLIAMS: Well, a lot of what we're seeing -- okay, but I would say that in the depths of the recession, 2008, 2009, 2010, there was quite a bit of extraordinary fiscal stimulus which I think was very helpful. Now the fact that it's turned the other way obviously is more of a negative.

So the way I think about this, obviously, is from the point of view of monetary policy. You have to take fiscal policy realties as given, and the political realities around that. So we have to take -- essentially it's given that fiscal policy is doing what it is and we have to have monetary policy as best calibrated as we can to achieve our mandated goals from Congress, maximum employment and stable prices.

That said, I agree completely that we should -- the leadership of the Federal Reserve can and should speak clearly and forcefully about the effects or the beneficial effects of countercyclical fiscal policy, especially at the zero lower bound. I do think that that's a message that I think most economists would agree on, and I think is obviously logically and makes a lot of sense.

That said, I think that there is the reality that, you know, Washington does what it does and we have to try our best given the hand we're dealt.

MR. WESSEL: What about the risk that what you're doing now is just sowing the seeds of the next bout of financial instability?

MR. WILLIAM: In terms of these issues of greater risks in the future?

MR. WESSEL: Yeah, so how much do you worry that what you're doing now, because we're clearly missing both the inflation and the unemployment target that we've set or the mandate, is risks creating financial instability that'll give Janet Yellen a lot of headaches in her term?

MR. WILLIAM: Well, you know, we take this very seriously. Obviously, you know, we've all learned the lessons of the past decade or so. We follow very carefully what's happening in financial markets both in the banking part of the financial system, but most importantly, and Paul is going to talk about this some, this is a capital markets based economy, so it's not just the banks. You have to think about the shadow banking system and the rest of the system.

So we're clearly studying this. We clearly have really increased our monitoring and our analysis around this. You know, my argument would be the first line of defense regarding issues of growing financial risks is really around micro and macro prudential policies, developing both, having the right policies and implementing them.

You know, I think the stress test -- I'm going off onto the next subject a little bit, but I think we've made incredibly important strides in terms of financial stability, in terms of the stress test, in terms of our implementation of Dodd-Frank.

So to my mind we are on the job on that. We are studying that carefully. And we are balancing the costs and benefits around our QE policies. And, you know, I view very strongly that the macroeconomic benefits far outweigh some of these issues right now.

Risk aversion today in the markets generally, you can find specific examples, you know, of farmland prices or leveraged-loan prices, but, you know, broadly defined, our financial system is still in a risk adverse mode, not a risk loving mode. So I think that these concerns today are still perhaps not as prevalent as some people think.

MR. WESSEL: I'm going to offer Paul Tucker a chance to ask a question before we turn to the audience briefly.

MR. TUCKER: A comment and a question.

MR. WESSEL: Please.

MR. TUCKER: First of all, I very much agree with Marty's conclusion that, don't give up on inflation targeting. That battle is hard won, and it constantly needs to be reaffirmed.

My question is, I think central bank elsewhere in the world are puzzled by the Fed's flow approach to quantitative easing. Rather than deciding on a stock of money, base money or broad money, if you like, you want to put out there, and then review after a while whether you've done enough. Just as you would set an interest rate and leave it, and then decide after a while whether you've done enough.

Instead you've had this policy of we'll trickle it out there on a flow basis. I think that the central bank has found that interesting.

MR. WILLIAMS: I've never heard $85 billion a month called a trickle, but. So, you know, we've obviously been trying different approaches on that. You know, the QE1, QE2, in terms of QE2 was a concrete example of a $600 billion dollar purchase over a certain specific period of time.

It provides a lot of certainty in markets. Markets like that. It provides a lot of, you know, bang for the buck in the sense that when you make the announcement the market reaction occurs immediately. So there are positives to that. There's definitely clarity around it.

The problem is that that's now how monetary policy should be conducted. Monetary policy should be conducted by adjusting your instruments as the economic conditions, economic outlook evolve.

So one of the lessons I think we've learned from those earlier episodes was we were surprised that the economy did not do as well as we thought. We needed to introduce a new program, you know, QE2, then Operation Twist, and then Standing Twist.

So by having this more open-ended policy which, of course, markets come to conclusions or their own analysis about how big the policy eventually will be. By having it open-ended it had the advantage that it automatically can be adjusted both in size, compensation, and duration as economic conditions change.

And I think that's what we laid out this substantial improvement in the outlook for the labor market. The economy didn't do as well as we thought. We've been doing these purchases longer than people originally thought. I remember the question when we started this program that I was asked, would you do $600 billion on this?

Well, now obviously we -- because of a change in economic conditions and the outlook, we're obviously doing far more than that. And that's exactly what we should be doing given what's happened with the economy. As with the taper, we're adjusting that based on changes in economic conditions, the improvement.

So I think there, you know, it's a natural thing to do is to adjust your policy instrument as the economic outlook changes. That said, I do recognize that it creates quite a bit of uncertainty. When will the Fed stop its purchases? When will it taper? We had the famous taper tantrum last year. And I think we do -- it's something we've learned.

We learned that when you have a $600 billion dollar policy you don't have the flexibility to adjust that as economic conditions change. And that's a weakness of that. We've also learned that there's a lot of communication challenges, and I think confusion when you have it simply open-ended with a relatively vague condition for bringing it to an end. So I think this is something we need to think more about.

MR. WESSEL: We have time for a couple questions. If you have one raise your hand and wait for a mic. Tell us who you are, and remember that a question ends with a question mark because we are on a tight schedule. Greg, up there in the middle. Greg, stand up.

MR. YIP: Greg Yip with The Economist. A question for both John and Marty. John, the real output effects of quantitative easing that you identified were based on models that link the decline in long-term interest rates to the output effects. As you and Marty have both said, we have vastly misunderstood the linkage between -- that the role that the financial system plays in terms of changing interest rate and what that actually does to the economy.

You could make the case that the last four or five years that that frictions the financial markets have really blocked the transmission of monetary policy in the way it normally does. So doesn't that weaken the empirical link that you've drawn between the effect of quantitative easing, and the impact on the real economy?

MR. WILLIAMS: Yes. Absolutely. I agree. We, obviously, have seen, especially after the financial crisis, you know, I think of this as if you think of the U.S. economy as an eight cylinder auto engine, you know, several of the cylinders have, especially early on, were clogged. I think they're getting less clogged now.

That said, there's no question that both our lowering through forward guidance interest rate expectations of the next couple years and through quantitative easing over the five and ten year horizon, has lowered mortgage rates, lowered auto rates, lowered corporate borrowing rates. And what parts of the economy are we seeing the biggest improvement? You know, autos and durable goods, obviously the housing market finally is turning around and improving.

So I agree with the point that the monetary transmission mechanism has been partially clogged over the last few years. At that same time, you know, the very aggressive policies have had an effect, have gotten traction, and I think are really important part of the economy improving.

MR. WESSEL: Jon Hilsenrath in the back.

MR. HILSENRATH: Jon Hilsenrath from the Wall Street Journal. John, a question for you. The Fed employed a low for longer approach after the tech bubble burst. Several years later we had a housing bubble. I wanted to ask you what is the risk that a low for longer -- specifically a low for longer policy could contribute to bubbles? Does it disturb you at all that it doesn't seem that the Woodford models upon which low for longer is based take much account for the creation of bubbles? And how should this factor into the Fed's thinking now as it employs a low for longer policy again?

MR. WILLIAMS: Well, I agree with Marty on this point. There are models that we use do not take seriously that there's a financial system, a complex financial system out there that can have endogenous changes in leverage, in risk taking. And I would also add to that, our models tend to assume highly rational agents who have a full understanding of things so bubbles never occur.

So I do think in our thinking about these issues we have to broaden our minds to more of an approach that allows for the approach that these things can happen, that asset markets can get away from fundamentals for specific periods of time, financial markets can get disrupted.

My answer to your question is, I don't think that the lower interest rates were an important contributor to the housing bubble. I think fundamentally flawed aspects of our regulatory environment were the key part of that story about the housing bubble. I think the Dodd-Frank and Basel III, and a lot of the other things we're doing are addressing those concerns in a very important way.

That said, I do think that we have to have open minds about understanding how low interest rates for a long period of time do affect risk taking leverage and asset prices as Marty said.

MR. WESSEL: The woman here in the middle.

MS. COHEN: Hi. Abby Joseph Cohen and a very proud trustee of the Brookings Institution. Pleased to be here for the opening of the Hutchins Center. Marty Feldstein made a very interesting comment before, and that was all the Fed needed to do is mention taper and financial markets adjusted.

One of the things we saw was that the biggest adjustment wasn't in the United States, it was in fact, in emerging markets, especially emerging market debt, which really raises the whole question of what is it that we don't know about the linkage not just between our financial markets and monetary policy, but also markets around the world? And specifically what do we think now about the interplay of central bank policy from different nations? And also very importantly, the regulatory difference, particularly with regard to the supervision of financial institutions?

MR. WESSEL: Yes or no on that one.

MR. WILLIAMS: I was going to say let Marty take it.

MR. WESSEL: We'll let Marty have it. You can answer it, and then Marty can answer, and then we'll move on.

MR. WILLIAMS: Well, I do think that, obviously, we saw hot money flows going to merging market countries during the last few years. We saw big swings in those flows around the -- you know, when the discussion of tapering happened.

I think that for my perspective the most important thing is that we're communicating very effectively across the globe with our Central Bank colleagues, and that communication includes understanding what our policies are and what our intentions are.

I also think that, you know, as we've seen the last few years, these countries who have been affected, no question, affected in a major important way by these flows, have adapted their policies and their approaches to better insulate them from some of those affects.

That said, in the end of the day, we live in a modern, global financial system. And this is, I think, just part of the world that we live in. In terms of monetary policy in the U.S. is obviously having affects outside the U.S., and we need to study those. We need to understand those, and we need to coordinate or communicate effectively with our colleagues around the world.

MR. WESSEL: Want to add to that, Marty?

MR. FELDSTEIN: The only thing I would add is I think the Fed doesn't take those effects on other countries into account. And so probably not.

SPEAKER: Can I add something? They should to the extent that there is a risk that it will flow back into the United States.

MR. FELDSTEIN: Yes.

SPEAKER: What you're describing is the cross-border, cross-currency carry/trade. It's been ignored in the economics profession and in central banking for far too long. And it doesn't just flow one way, it can bounce back. The concerns in this capital about the worst of the Euro area crisis demonstrated the linkages of the world don't just run from here to there, they can flow back as well.

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