

**EXAMINING FEDERAL RESERVE REFORM
PROPOSALS**

HEARING
BEFORE THE
SUBCOMMITTEE ON MONETARY
POLICY AND TRADE
OF THE
COMMITTEE ON FINANCIAL SERVICES
U.S. HOUSE OF REPRESENTATIVES
ONE HUNDRED FIFTEENTH CONGRESS
FIRST SESSION

NOVEMBER 7, 2017

Printed for the use of the Committee on Financial Services

Serial No. 115-56



U.S. GOVERNMENT PUBLISHING OFFICE
WASHINGTON : 2018

30-775 PDF

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EXAMINING FEDERAL RESERVE REFORM PROPOSALS

Tuesday, November 7, 2017

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

The subcommittee met, pursuant to notice, at 2:19 p.m., in room 2128, Rayburn House Office Building, Hon. Andy Barr [chairman of the subcommittee] presiding.

Present: Representatives Barr, Williams, Huizenga, Pittenger, Love, Hill, Emmer, Mooney, Davidson, Tenney, Hollingsworth, Moore, Foster, Sherman, Green, Kildee, Vargas, and Crist.

Chairman BARR. The chair is authorized to declare a recess of the committee at any time, and all members will have 5 legislative days within which to submit extraneous materials to the Chair for inclusion in the record.

This hearing is entitled “Examining Federal Reserve Reform Proposals.” I now recognize myself for 5 minutes to give an opening statement.

Some see the last decade of monetary policy as a failure, while others see it as a success. Wherever we stand on this debate, I hope we can all agree that stronger economic growth over recent quarters is promising and American economic opportunities can expand even faster with reforms that build on the best ideas from both sides of our aisle.

The legislation we will consider today does just that. Monetary policy can appear complicated, but whether you work in the Fed’s Eccles Building or in any of our districts, monetary policy supports a stronger economy when it is communicated simply and clearly. Recent Fed research finds that uncertainty about monetary policy slows our economy and reduces credit availability. In other words, simple and clear policy communications improve American economic opportunities.

Both Democratic and Republican witnesses have testified before us on the importance of a simple and clear communication of monetary policy. For example, during our last Humphrey-Hawkins hearing, Federal Reserve Board Chair Yellen expressed interest in working with our committee to codify a simple and effective strategy for a more transparent monetary policy.

In addition, former Vice Chair of the Federal Reserve Board Dr. Donald Kohn offered the following advice in a recent Brookings Institution report. The Federal Reserve should use the semi-annual monetary policy report to better explain and focus on its broad

strategy. For some time, the Fed's Open Market Committee has been shown the results of a number of policy rules, and this material has been accompanied by explanations of why the current and expected settings of monetary policy might deviate from the rules.

The Monetary Policy Transparency and Accountability Act that we will consider today provides for exactly this type of framework. Indeed, this bill reflects the very generous advice of both Chair Yellen and Dr. Kohn. Our draft legislation also addresses what Members of Congress and experts from both sides of the aisle see as an opportunity to better manage our fiscal house and increase our financial resiliency by protecting households from bailouts and holding Congress to account for tough decisions that can easily be punted to the Fed. Our congressional Accountability for Emergency Lending Act takes an important step in this direction by embracing this bipartisan Warren-Vitter framework for congressional approval of emergency lending.

At the same time, our Independence from Credit Policy Act maintains the Fed's role as an originator of emergency loans while insulating our monetary authority from compromising political pressures to overreach into credit policy. Authoritative economists of different stripes share a common concern about these pressures. Testifying as a witness for my Democratic friends, MIT Professor Simon Johnson emphasized this bipartisan agreement.

I think we are all agreeing that this fiscal policy infrastructure is the responsibility of the fiscal authority, which is that of the Congress and the United States acting through the Executive Branch. It is not the responsibility and should not become the responsibility of the Federal Reserve.

Recently, Brandeis Professor Stephen Cecchetti shared the same concern as a minority witness for our Joint FI-MPT Subcommittee hearing. And even the New York Times' Paul Krugman joined this chorus, highlighting how the Fed's unconventional balance sheet blurs the lines between monetary and fiscal policies.

Acknowledging such concerns during our last Humphrey-Hawkins hearing, Federal Reserve Board Chair Janet Yellen committed the FOMC (Federal Open Market Committee) to re-establishing a bright line between monetary and credit policy. She said the FOMC has clearly indicated that it intends to return over time to a primarily Treasury-only portfolio. And that is in order not to influence the allocation of credit in the economy.

Coupled with our congressional Accountability for Emergency Lending Act, the Independence from Credit Policy Act does precisely what Chair Yellen has advocated—a return to a primarily Treasury-only portfolio while maintaining the Fed's role as an originator of emergency loans.

Greater transparency, independence, and accountability for monetary policy coupled with greater fiscal accountability for Congress, that is a solid bipartisan recipe for what we all want, and that is greater economic opportunity for all Americans. I look forward to our witnesses' testimony and working with my friends on both sides of the aisle to realize the considerable benefits that this legislative package will deliver to each of our diverse constituents.

The Chair now recognizes the ranking member of the subcommittee, the gentlelady from Wisconsin, Gwen Moore, for 3 minutes for an opening statement.

Ms. MOORE. Thank you so much, Mr. Chairman. And I want to thank our witnesses for coming in today. I look forward to your testimony.

As for the bills we are considering, on one hand, I think that they are better than the other Audit the Fed bills we have seen, but overall they seem like problems foisted into a functioning system. I am glad that the majority has abandoned the so-called Taylor rule, but a watered-down Taylor rule is probably as unworkable if the Taylor rule is flawed.

The 13(3) authority, I have my own questions about it, but I have spent some time with the Fed understanding the importance of 13(3). Dodd-Frank made the right amount of reforms to the Fed in this regard, and I sure hope that the new Fed chair would really sit down with Chair Yellen and really let her explain the benefits that 13(3) has had.

At this point, I think the one thing that frightens me the most—and I would appreciate more clarity from this panel on—is the restriction of what the Fed holds, this Treasury-only schemata. It seems to me that this would be very problematic—this would have been problematic had it been in place during our crisis. So like I said, I don't see the problem that these bills are designed to solve, but I can see plenty of problems this legislation might cause.

I would like to yield the rest of my time to Mr. Sherman.

Mr. SHERMAN. The Fed should be restructured in part because it is so highly undemocratic. It is the only governmental institution where at least some of the leaders are selected by the notion one bank, one vote. All Fed Governors at all levels should be Presidential appointees.

Second, it is undemocratic because the California bank does not have a permanent seat on the Fed committee, whereas the New York bank does, whereas far more people live in the California region. The allocation of seats should reflect population, not political power.

If there has been a failure of Fed policy, it is because they were too timid with quantitative easing. And now they are too hawkish when it comes to raising the interest rate. Our inflation rate is not only below their target, it is below the target they should have, which would be closer to 2.5 percent.

We continue to have low wages. What Americans demand is the kind of labor shortage that will cause much faster growing wages. That cannot be achieved with the Fed's current timid policy of caving in to those who just, for historical reasons, believe we should have higher interest rates and abolish quantitative easing.

Finally, it is only because Fed policy is the domain of people who live in the Fed world that we ignore the \$75 billion to \$100 billion the Fed has been able to transfer to the U.S. Treasury. In my district, that is real money, and yet it doesn't get the—we pay far more attention on the cost of building one bridge in Alaska than we have in \$75 billion to \$100 billion transferred to the U.S. Treasury for several years in a row because nobody pays attention to the

Fed except the Fed community, and the Fed community is embarrassed by its profit.

I yield back.

Chairman BARR. The gentlelady's time has expired. Would the gentlelady yield back?

Ms. MOORE. I yield back.

Chairman BARR. Gentlelady yields back. At this time, we would like to welcome the testimony of our witnesses. First, Dr. Mickey Levy, the Chief Economist for the Americas and Asia at Berenberg Capital Markets. He conducts research on a variety of U.S. and global economic and macroeconomic topics and is an adviser to several Federal Reserve banks, including the Federal Reserve Bank of New York. Prior to his current position, Dr. Levy was Chief Economist at Bank of America and Blenheim Capital Management. He also has been analyst at both the Congressional Budget Office and the American Enterprise Institute. Since 1983, he has served as a member of the Shadow Open Market Committee.

Dr. Andrew Levin, a Professor of economics at Dartmouth College. He was an economist at the Federal Reserve Board for 2 decades, including 2 years as a special adviser to Chairman Bernanke and then Vice Chair Yellen on monetary policy strategy and communications. He subsequently served as an adviser at the International Monetary Fund. Professor Levin is currently an external adviser to the Bank of Korea and a regular scholar at the Bank of Canada. He has also served as a consultant to the European Central Bank and as a visiting scholar at the Bank of Japan and the Dutch National Bank. And he has provided technical assistance to the National Banks of Albania, Argentina, Ghana, Macedonia, and Ukraine. He received his PhD in economics from Stanford University in 1989.

Jared Bernstein is the Senior Fellow at the Center on Budget and Policy Priorities. From 2009 to 2011, Bernstein was the Chief Economist and Economic Adviser to Vice President Joe Biden; Executive Director of the White House Task Force on the Middle Class; and a member of President Obama's economic team. Bernstein's areas of expertise include Federal and State economic and fiscal policies, income inequality and mobility, trends in employment and earnings, international comparisons, and the analysis of financial and housing markets.

Prior to joining the Obama Administration, Bernstein was a Senior Economist and the Director of the Living Standards Program at the Economic Policy Institute in Washington, D.C. Between 1995 and 1996, he held the post of Deputy Chief Economist at the U.S. Department of Labor. Bernstein holds a PhD in social welfare from Columbia University.

Finally, Dr. Charles Plosser is a Visiting Fellow at the Hoover Institution at Stanford University. Plosser served as the President and CEO of the Federal Reserve Bank of Philadelphia from 2006 until his retirement in 2015. In his position, he served as a member of the Federal Open Market Committee. Prior to joining the Federal Reserve, Plosser was the John M. Olin Distinguished Professor of Economics and Public Policy and Director of the Bradley Policy Research Center at the University of Rochester's William E.

Simon Graduate School of Business Administration, where he served as Dean from 1999 to 2003.

In 2004, he was a visiting scholar at the Bank of England. Since January 2016, Plosser has served as a Public Governor for FINRA, where he serves on the Investment Committee and the Financial Operations and Technology Committee. Plosser earned his PhD and MBA degrees from the University of Chicago.

Each of you will be recognized for 5 minutes to give an oral presentation of your testimony. Without objection, each of your written statements will be made part of the record. Dr. Plosser, we will start with you. You are now recognized for 5 minutes. And if you could just push the button to turn on your microphone.

STATEMENT OF CHARLES PLOSSER

Dr. PLOSSER. I am technologically challenged at times.

Chairman BARR. Thank you, sir.

Dr. PLOSSER. Chair Barr, members of the committee, thank you very much for the opportunity to share some thoughts with you today on the Federal Reserve. I have been talking about the Federal Reserve for the last 20 years at various times, and so I have given a lot of thought to many of its issues.

It is simplified but helpful to think of Fed actions in terms of its balance sheet, liabilities, predominantly currency, and the reserves of the balance sheet. Increasing the liabilities is typically associated with monetary policy. However, the Fed can also manage the asset side of its balance sheet. Changes in composition of those assets are typically referenced to as credit policy.

Historically, the Fed has conducted monetary policy through the purchase or sale of Treasury securities. Indeed, the vast bulk of the Federal Reserve assets have been U.S. Treasuries since the modern Fed began in the 1950's. Credit policy simply did not play a role.

Moreover, for most of the post-World War II era, the Fed's portfolio of Treasuries was purposefully designed to be neutral vis-a-vis the private sector. It only held Treasuries, and the distribution among bills, notes, and bonds was managed to roughly match the distribution of the Treasury's issuances. In other words, it was felt that the Fed's portfolio should not try to alter the relative prices determined in the marketplace.

Now, during the financial crisis and subsequent recession, the Fed altered both the size and composition of its balance sheet. In early 2008, the Fed sold Treasuries to fund the purchase of approximately \$30 billion of mostly private-sector high-risk assets to support the acquisition of Bear Stearns by JPMorgan. Credit was also extended through various other lending programs that targeted specific industries, asset classes, and creditors.

Now, whether you can consider these as justified because of the credit or not, they were, in effect, debt-financed fiscal policy without explicit authorization of Congress. Now, given the distributional effects of such interventions, it is not surprising they became somewhat controversial.

The major form of—another major form of credit policy was the result of quantitative easing. QE was unconventional, but it was also unprecedented in that a significant portion of the assets purchased were in the form of mortgage-backed securities, not U.S.

Treasuries. This action was explicitly intended to provide credit support for the housing sector.

So why should the Fed have the authority to allocate credit within the economy in support of one industry, one company, or one individual? What are the risks and dangers of such a framework? The major risk is that it invites political interference and undermines the integrity of fiscal policy. History suggests that central banks that remain independent of the political environment and the fiscal authorities do better at controlling both inflation and promoting economic stability. Do we really want the Fed being lobbied by Congress or the public to manage the assets on its balance sheet to promote various political or fiscal agendas?

The current trends I believe are not encouraging. For example, some Members of Congress approached the Fed to lend money to the automobile companies in 2008. In 2010, Congress required the Fed to fund a Federal agency over which it had no authority. And in 2015, Congress funded part of a transportation bill off the Fed's balance sheet.

I believe these actions are bad policy. They undermine the independence of our central bank monetary policymaking by confusing the roles and responsibilities of monetary and fiscal policy. Fed independence is fragile, and it is eroding. The Fed itself is contributing to this erosion of independence by engaging in off-budget fiscal policy through credit allocations.

A policy that restricts the Fed to own only Treasuries would go a long way toward limiting the Fed's ability to engage in credit allocation and limit the potential for abuse or political abuse in particular of its balance sheet. It would also help maintain a clear distinction between the role of the Fed and the role of the fiscal authorities, and thus help protect it from political interference.

Some say an all-Treasury portfolio was dangerous and would limit the Fed's ability to respond in a fiscal crisis. But since 2009, I have been arguing that there is a better way. And it is to recognize and clarify who has the decision rights when it comes to fiscal decisions and who should be held accountable. The idea is to make clear that such emergencies is—it is the fiscal authorities that have the power and the authority to conduct fiscal actions, who should own both the decision rights and the accountability.

The role of the Fed should be limited to helping the government execute those policies, but the Treasury would then be responsible for obtaining approval of Congress for the interventions and then required to swap Treasuries for non-Treasury securities acquired by the Fed, thus restoring the all-Treasury character of the Fed's balance sheet.

This Fed Treasury accord would enable emergencies to be addressed in a timely manner while protecting the integrity, accountability of fiscal policy decisionmaking.

[The prepared statement of Dr. Plosser can be found on page 120 of the Appendix.]

Chairman BARR. The gentleman's time is expired. And we look forward to continuing this discussion in the Q&A. So we will now have to move on to Dr. Levin. You are recognized for 5 minutes for your opening statement.

STATEMENT OF ANDREW LEVIN

Dr. LEVIN, Chairman Barr, Ranking Member Moore, and members of the Subcommittee on Monetary Policy and Trade, thank you for inviting me to testify at this hearing.

The Federal Reserve is America's central bank. Its monetary policy decisions affect every American. Given the Fed's crucial role, it is important to ask, to whom is the Federal Reserve accountable? Who is the Fed's boss?

Of course, the answer is Congress. The Fed reports directly to Congress, not to the President or anyone else. Now, I have intentionally used the term "boss" because we can draw on basic management principles to shed light on the issues being considered here today.

Turning to exhibit one, here are three principles that are followed by every well-run business or nonprofit organization. One, the boss must stay well informed about the employee strategy. Those consultations take place in annual reviews and occasional status updates, which are essential for maintaining accountability and avoiding micromanagement. After all, an employee can't be productive if the boss is constantly second-guessing their decisions. And that is the basic rationale for preserving the Fed's operational independence, but requiring the Fed to explain its policy strategy in terms of simple benchmarks, which I will return to in a moment.

Two, extraordinary budget items require prompt approval. An employee should have authority to incur routine expenses, but the boss has to approve extraordinary items. And that principle is the essential rationale for preserving the Fed's operational independence, again, but establishing procedures to facilitate prompt congressional approval for its emergency lending facilities.

Three, extraneous tasks should be re-assigned elsewhere. Effective delegation requires a clear delineation of responsibilities. If a work assignment evolves into a task that doesn't fit within the employee's job description, then the boss should re-assign that task to someone else.

Following the same logic, private assets shouldn't stay indefinitely on the Fed's balance sheet. Those assets should be swapped for U.S. Treasury securities, again, preserving the Fed's operational independence and its designated scope of responsibility.

Now I would like to focus on the rationale for establishing simple policy benchmarks. Turning to exhibit two, you can see that as of last June, investors saw roughly 50/50 odds, just like a coin flip, that the Fed would hike interest rates in December. Those odds edged down during the summer, but then skyrocketed into early autumn, not because of some sterling new economic data, but simply because Fed officials started signaling a rate hike through their speeches and interviews.

In fact, as you see in the exhibit, investors now see the rate hike in December as a practical certainty, even though the FOMC won't be meeting until mid-December, almost 6 weeks from now. Evidently, the strategy underlying the Fed's decisions is not very well understood, even by investors who sift through every tidbit of Fed communications, and much less so by members of the general public.

By contrast, simple benchmarks can provide a transparent means for the Fed to communicate its strategy. It is really important to note here such benchmarks are not intrinsically hawkish or dovish. For example, Janet Yellen, when she was Vice Chair in 2012, referred to one such benchmark as the balanced approach rule because of its effectiveness in fostering the Fed's dual mandate of maximum employment and price stability.

Turning now to exhibit three, you can see here that a balanced approach benchmark provides a remarkably good approximation to the Fed's actual policy path over the last few years. In fact, this benchmark is essentially the same as one I presented at a conference on full employment that my colleague, Jared Bernstein, organized back in 2015. This exhibit shows, it confirms that simple benchmarks can be helpful in clarifying the Fed's monetary policy strategy. That will contribute to its overall transparency and accountability to the Congress, its boss, and to its effectiveness in serving the American public.

Thank you for your consideration. I will be glad to answer any questions.

[The prepared statement of Dr. Levin can be found on page 53 of the Appendix.]

Chairman BARR. Thank you, Dr. Levin. And, Dr. Bernstein, you are now recognized for 5 minutes.

STATEMENT OF JARED BERNSTEIN

Dr. BERNSTEIN. Well, thank you very much. Great to be here. And my testimony conveys a simple message. The independence of the central bank is an essential ingredient to its functioning. Of course, that independence exists within the legal context set forth by Congress and it is essential for this committee to continuously revisit this context.

But maintaining the central bank's independence must always be an elevated consideration. In this context, some of the ideas and the proposals under discussions are worthy of consideration, but some are too restrictive. They threaten the Fed's independence and add unnecessary and potentially damaging process requirements that could do more harm than good to the U.S. and even the global economy.

Before commenting on the proposals, I would like to suggest that in an all-too-often dysfunctional and highly partisan environment, the Federal Reserve is one institution that has been highly effective in carrying out its mission. Though the Fed failed to identify the housing bubble, it quickly moved into emergency mode when the bubble burst and the downturn ensued.

The bank deployed its significant weaponry against the downturn, including its first line of defense, reductions of the policy rate and emergency lending, and later when the policy rate got stuck at its lower bound of zero, the Fed turned to alternative forms of monetary stimulus.

While some of these actions are behind the motivations for today's hearing, my assessment is that they were effective in offsetting the historically large demand contraction that followed the crisis. I cite research that tries to isolate the impact of quantitative

easing, including bond purchases that would not be permissible, agency MBS (mortgage-backed security), under one of the proposals considered today. These actions were effective in thawing credit markets in hard-hit sectors of the market, noticeably housing finance.

Post-recession, the Fed continued to promote the recovery and the unemployment rate recently fell to what is now the lowest jobless rate in 17 years. In other words, if I were looking around Washington for an institution that fits the adage “if it ain’t broke, don’t fix it,” my first thought would be the Federal Reserve.

Among the three proposals under review today, I find the proposal to limit the Fed’s independence regarding its emergency lender of last resort function potentially most problematic. Though I recognize the motivation for the proposal, I see two major drawbacks.

First, since the crisis, Congress legislated the Dodd-Frank financial reforms, key sections of which were designed specifically to reduce the need for Fed intervention in this space, including a vice chair position for the Fed, for financial supervision, numerous restrictions to 13(3) lending authorization, and liquidation authority.

Dodd-Frank, along with recent international accords under Basel III, also increased the first line of defense against illiquidity and solvency crises, capital requirements that disallow excessive leverage. I see no reason to add new complexities into this system until we give the Dodd-Frank measures a chance.

Second, and this is a profound concern with this proposal, it takes the authority for emergency lending outside of the Fed and requires both chambers of Congress to provide a timely 30-day approval of the Fed’s emergency loans. I believe this adds unnecessary risk to credit markets and the broader economy. It is an imprudent departure from the lending authority established in 13(3) of the Fed’s charter, one that undermines both the independence of the institution and its role of, quote, lender of last resort. With this change, the 535 Members of Congress all become lenders of last resort, a possibility I strongly urge this committee to avoid.

If Congress fails to approve an emergency lending program within 30 days, the borrower, who by definition is facing a balance sheet crisis, must pay the loan back to the Fed. Moreover, Members of Congress and their staffs must quickly engage in highly technical analysis of whether lending institutions are illiquid or insolvent, the quality of their collateral. Such analysis is standard practice at the Fed, but by insisting Congress engage in it as well, the proposal introduces the possibility of politicizing the analysis—and if Congress fails to act in a timely manner—triggering significant market disruptions.

I do think the bar should be high for approval of emergency lending, but my bottom line is that clearing that bar should be the purview of the Fed, not Congress. Thus, should the committee consider raising the internal bar within the Fed, inside the Fed, while this should be done carefully and with great attention to potential unintended consequences, it is consistent with prudent congressional regulation.

Conversely, raising the external bar by requiring congressional approval goes way beyond this benchmark. The best way to avoid

emergency lending by the Fed is to avoid credit bubbles, systematically underpriced risk, and the crises that followed these financial pathologies. And the way to achieve that is through market oversight and regulation.

I would also caution the committee against further restrictions on the Fed as to the type of debt they can purchase in their open market regulations. The Banks of England, Japan, Canada, and Europe all have few restrictions on the type of assets they can purchase, and this creates a flexibility for their central banks to bring the water to the specific sources of the fire.

I thank you, and I look forward to your questions.

[The prepared statement of Dr. Bernstein can be found on page 42 of the Appendix.]

Chairman BARR. Thank you, Dr. Bernstein. And, Dr. Levy, you are now recognized for 5 minutes for an opening statement.

STATEMENT OF MICKEY LEVY

Dr. LEVY. Chairman Barr, Ranking Member Moore, and members of the committee, I sincerely appreciate this opportunity.

The ultimate objective is healthy, sustained economic growth and rising standards of living. The challenge is identifying the proper policies and the proper mix of policies—fiscal and tax, regulatory and monetary—to achieve desired outcomes. The Fed’s emergency measures during the 2008–2009 crisis certainly helped stabilize financial markets and avert an even deeper recession. But we have to distinguish between the conduct of policy during a crisis and during normal times.

The efficacy of the Fed’s sustained artificially low interest rates and massive asset purchases once the recovery took hold are questionable and have been the source of undesired distortions and pose very large risks. The Fed’s QE3 asset purchases policy to reinvest all the maturing assets, artificially low interest rates, all of these stimulated financial markets. But they failed to stimulate faster growth. Nominal GDP growth has actually decelerated.

The economy would have grown along its modest pace and job gains would have occurred even if the Fed had not engaged in QE3 and even if it had normalized rates quicker. History shows conclusively that once an economic recovery takes hold, raising rates back to neutral does not harm the economy.

But the Fed’s extension of monetary policy through uneven discretionary approaches has given a false sense or a false impression that the mandate of the Fed is to manage the real economy and fine-tune it, and that more and more monetary stimulus was needed to prop up the economy. In reality, the frustrating underperformance of the economy reflected the growing web of regulatory policies, government-mandated expenses, and tax burdens.

The Fed’s extended easy policies has created many distortions and burdens. Let me mention a few. Tens of millions of primarily older people face low yields on their savings. Tens of millions of renters face higher rental costs as real estate prices have moved up, stimulated by the Fed. Moreover, the Fed’s \$4.5 trillion portfolio involves enormous risks. The CBO estimates that a 1 percent-

age point increase in interest rates would increase budget deficits by \$1.6 trillion over 10 years. Take this risk seriously.

My recommendations are, the Fed must continue to normalize interest rates as it has been. With regard to inflation, the factors that have brought down inflation recently below the Fed's 2 percent target are good for the economy and increased purchasing power. The Fed should not express so much public angst about a non-problem of low inflation.

In fact, economic growth, business investment, and real wages are picking up momentum and confidence is elevated despite the Fed hiking rates. The reason for this is largely the government's recent changes to ease the burdensome regulations and tax reform prospects.

Second, the Fed and Congress are really too complacent about the Fed's massive balance sheet, particularly amid improving economies. And I urge the Fed to gradually eliminate its entire mortgage-backed securities holdings. With the mortgage market healthy, and housing doing quite well, why is the Fed holding any MBS? Why is it allocating credit to a sector that doesn't need it?

The Fed should aim to reduce its balance sheet much more than it is currently aiming for. Some Fed members are talking about lowering it from its current level to about \$3 trillion, which would still leave \$1 trillion in excess reserves in the banking system. We need to assess the costs as well as the potential benefits of that. What might be the costs? Its involvement in fiscal policy, paying interest on excess reserves, the Fed's expanded footprint in financial markets.

Third, the Fed and Congress should adopt a rule to establish and prevent the Fed from ever purchasing equities under any circumstances.

Finally, and most importantly for the future, the Fed really needs to reset monetary policy. It should have a flexible rules-based approach. And by flexible, what I mean is, follow a rule as a guideline that will improve transparency and your committee's ability to supervise the Congress while at the same time giving the Fed substantial or any types of discretion it needs during emergency situations.

Thank you.

[The prepared statement of Dr. Levy can be found on page 112 of the Appendix.]

Chairman BARR. Thank you all for your testimony. And the Chair now recognized himself for questions for 5 minutes.

So last year, a research team from the University of Chicago, Northwestern, and Stanford published an article in the highly regarded *Quarterly Journal of Economics*. And that article found that uncertainty about economic policy in general reduces American investment, output, and employment.

And just last month, a team at the Federal Reserve, researchers at the Fed found the same problem with monetary policy. According to their study, quote, "uncertainty about monetary policy increases credit spreads and reduces output."

Dr. Plosser, you have served on the Fed's Monetary Policy Committee. You are an accomplished economic researcher. Do these findings from both the Fed and from the various academics—do

these findings seem reasonable to you that uncertainty about where monetary policy is going can, in fact, slow our economy and constrain credit availability?

Dr. PLOSSER. Thank you. I think the answer is yes. They certainly make sense. I think there is a challenge in how you quantify those effects, but you can see the uncertainty showing up in a number of different situations.

Think about the uncertainty of credit policy, about how much MBS was going to be bought and how much not. Were they going to rescue Lehman Brothers like they rescued Bear Stearns? Without articulating a policy that—strategy that guided those decisions, it resulted in uncertainty. The taper tantrum, as they said, that occurred.

All those are examples of effects in the markets that came about through some uncertainty or through doubt about whether the Fed was going to follow through on some of its pronouncements. So I think it is very important that, yes, I think that uncertainty can matter. How and when it shows up is a bit of a challenge. But that just says that the Fed needs to be more strategic in articulating a strategy about how it is going to behave if certain things happen.

Chairman BARR. Thank you. And, Dr. Levin, you, too, are an accomplished economic researcher. You have advised both Fed Chairman Bernanke and then Vice Chair Yellen. And in addition, you coauthored an article last year with the FED UP! Coalition's campaign manager calling attention to the importance of transparency for our monetary policy authority, and acknowledgements for that article included Dr. Bernstein, who joins our panel today.

The article called for the Fed to include in its Monetary Policy Report a discussion of any economic models and benchmark rules that are used in setting the course of monetary policy. Dr. Levin, does the discussion draft that you have before you today, the Monetary Policy Transparency and Accountability Act, does that bill as currently drafted as you see it effectively achieve that goal without mandating the FOMC to follow any particular mechanical rule?

Dr. LEVIN. Well, thank you, Mr. Chairman. So, first of all, I just want to go back to something that Congressman Sherman mentioned before. The Fed serves the American public, and I think it is appropriate for Congress to think carefully about how to make sure the Fed is a fully public institution. That was the key point of the paper that we wrote last year. It is critical for the Fed to be diverse, regionally diverse, diverse in respect to the policy-makers and the staff who are working at the Fed. Those are all critical issues that were in that paper.

But on the specific issue, I think that—as I said before—clarity of a benchmark rule would help serve the public. It is related to your question to Dr. Plosser. It would help alleviate uncertainty in financial markets, and more generally businesses and consumers, the strategy the Fed is following. So I think it is appropriate in your draft legislation that the Fed have a simple strategy that it can explain to Congress and the public.

Ideally, it would choose that strategy at the beginning of each calendar year. And of course, during the year, things might—unexpected things might come up, and then the Fed officials would explain if they need to change the strategy or deviate from the strat-

egy. So in that sense, I agree with you that this is a reasonably flexible approach that would help improve the Fed's transparency.

The Fed needs to have discussions among experts like Dr. Plosser was, with different points of view. Some people think that the Fed should continue to normalize. The policy rule that I showed you on the chart, it is not so clear, because if inflation stays around 1.3 percent where it is today, and output is just growing at a sustainable pace, then that rule would say that there isn't necessarily such a strong case for the Fed to raise interest rates further at this point.

But again, that is the sort of debate that should happen at the Fed. The Federal Reserve would choose the benchmark under your legislation. And it would be able to change the benchmark, but it could use that as a point of reference. And so I think this would be a very constructive way forward.

Chairman BARR. Thank you. And I would like to ask the same question to the other two witnesses, but my time has expired, so we now move to the distinguished gentlelady from Wisconsin, the ranking member, Ms. Moore, for 5 minutes.

Ms. MOORE. Thank you so much, Mr. Chairman. If I have understood the testimony we have had here today, it seems like there is not that much disagreement with regard to the Fed having taken the appropriate emergency lending authority. But then it seems to differ after that point.

Dr. Bernstein, let me start with you. I am not trying to pick on you, Dr. Levy, but I just underlined some stuff in your testimony that I thought was very interesting. You thought that the economy's lackluster response to the Fed's stimulus highlights the important influences of other policies and factors, and you talked again about Dodd-Frank, the government tax and regulatory policies at both the State and local levels, in both the financial and non-financial sectors, the Fed paying interest on reserves, and saying that the banks just can't lend, because they are just so burdened by regulations.

Now, the banks are doing great, last time I checked. They are very profitable. And, Dr. Bernstein, I think we heard you say and talk about in your written testimony that we saw unemployment fall to 4.1 percent. What am I not getting here between the two of you?

Dr. BERNSTEIN. Well, I think you raise some great points, and these thoughts came to mind listening to Charles Plosser also talk about the impact of Fed-induced uncertainty. In fact, unemployment is historically low. We are creating something like between 150,000 and 200,000 jobs per month. That is a strong clip of job creation at this point in the cycle. I suspect all of my colleagues would agree with that.

The GDP is growing slower than we might like. That is a function of low productivity growth. And I haven't heard any convincing arguments that would connect Federal Reserve policy to that. So I think that if you are looking at economic conditions and you are trying to make a case that the Fed is somehow doing the wrong thing, you have a very high bar to cross.

As far as the crisis goes, many of the policies that are taking a bit of a hit from my colleagues up here have been shown not only

to be effective in pulling the recovery forward, but as I dictate in my testimony, looking at a wide spate of research, are associated with much quicker GDP growth, much lower unemployment, and including some of the bond purchases and emergency spending programs are associated with significantly lower interest rates in those sectors that clearly were important to growth.

If anything, it is my view that is what has held back faster growth in terms of a policy setting was austere fiscal policy, not monetary stimulus.

Ms. MOORE. Right, right, right. OK, so you talked about the—what if the Fed had been prohibited, as this legislation suggests, from purchasing Treasuries in response to the 2008 crisis, if we had the policy that would limit its purchases? What do you think would have happened?

Dr. BERNSTEIN. Well, John Williams of the San Francisco Fed is I think a very highly respected empirical macroeconomist. He argued that the MBS purchases were, quote, the most effective part of the Fed's asset purchase programs and that they, quote, ended up having kind of a bigger bang for the buck than the Treasury purchases.

I quote research by Alan Blinder, former Vice Chair of the Fed, and Mark Zandi, highly respected economic researcher, that underscores Williams' finding. Within a short time, they write, the MBS purchases by the Fed meant that, quote, homebuyers with good jobs and high credit scores could obtain mortgages at record low rates which helped end the housing crash.

And in my testimony, I not only underscore those results, but I urge the committee to look at the potential for other asset classes that the Fed might be able to purchase, depending on the nature of the crisis. And I suggest municipal bonds might be one area to look at.

Ms. MOORE. Well, the heart of the financial crisis was in the housing sector, so do you agree that that was good for the Fed to target that sector?

Dr. BERNSTEIN. In a sense, we were, quote—and these are very big air quotes “lucky,” because the Fed, within its charter, was able to purchase assets from the very sector that took the hit, the housing sector. That might not be the case next time.

Ms. MOORE. OK. Thank you. I think I will yield back the balance of my time, since we went over last time.

Chairman BARR. The gentlelady yields back. The Chair now recognizes the Vice Chair of the subcommittee, Mr. Williams from Texas.

Mr. WILLIAMS. Thank you, Mr. Chairman. And thank all of you for being here today.

This subcommittee is grateful to have the testimony of so many of you, and we appreciate it, on a very important topic. As Vice Chairman of this subcommittee, I have been privileged to work with my colleagues and industry experts to ensure the Federal Reserve does not step beyond its intended purpose and authority and continues to play an independent role in monetary policy. I consider today's discussion a pivotal step in the right direction. I look forward to working with the Chairman and distinguished members on these issues.

So, Mr. Plosser, my question to you is, in March, you stated during an interview that you are concerned about preserving the fragility of independence as Congress considers reforms to the Fed. Now, based upon your previous role as president and CEO of the Federal Reserve of Philadelphia, do you feel that the reforms being considered today would help to maintain that independence?

Dr. PLOSSER. Thank you, sir. I do. I think—as I talked about Treasuries and about political interference or political involvement of Fed and its own decisionmaking and pressures, both politically and by the public, I think it is very important that we separate clearly the responsibilities of the fiscal authorities from those of the monetary authorities.

The more those responsibilities are blurred and overlap in some ways or have dual responsibilities, the harder it is to hold either party, Congress or the Fed, accountable for the decisions that they make. So it is really important, I think, to keep a line between monetary and fiscal policy.

And one of the things I have argued is rather than undermine independence of Fed's monetary policymaking, it would be better to narrow the scope of their responsibilities in a way that helped them focus on things that they can control and ultimately Congress wants them to do. So this separation between monetary and fiscal policy I think is an important aspect, and I think the way the bills are written and go to a Treasuries-only policy and to provide mechanisms for emergencies should they arise, it holds the right parties accountable at the right time.

Mr. WILLIAMS. OK. Do you think there are any areas where you feel that the Fed is currently acting beyond its jurisdiction?

Dr. PLOSSER. I can't think of any right at the moment. I mean, they are beginning to unwind their balance sheet, as was said. I think—I wish they could do it a little faster, I think, because I think that is—

Mr. WILLIAMS. Could you talk closer to the mic, please? Thank you.

Dr. PLOSSER. Sorry. I think they are not doing anything immediately that is not appropriate. They are unwinding their balance sheet. I wish they would focus more on unwinding from the MBS and shrinking their balance sheet a little bit faster. In fact, I think that is actually more important right now than raising interest rates.

Mr. WILLIAMS. OK. Mr. Levy, thank you for being here today. In your testimony, you acknowledged—rightfully so—that the actions of the Fed following the economic crisis have, in your words, extended the role of monetary policy beyond its normal scope. You say that the Fed's position that QE3 was responsible for increases in employment and economic expansion reflect a great deal of hubris.

I would tend to agree with you. Do you agree with the characterization that the purchase of mortgage-backed securities by the Fed is a dangerous long-term strategy?

Dr. LEVY. Yes, I agree. Particularly we have—once again, the Fed's original purchases of MBS, November 2008, was as Chairman Bernanke said, an absolute emergency. The MBS market was frozen and really threatened the global financial system.

We are no longer in an emergency. Financial markets are normal. Mortgage markets are normal. Housing market is doing just fine. Why is the Fed the largest holder of MBS in the world? It just absolutely doesn't make any sense, and it is not a good long-run strategy.

So once again, I think we need to distinguish between the proper role of the central bank during an emergency and the proper role during normal times. And we are certainly in normal times now.

Mr. WILLIAMS. OK, let me ask you another question. Will the proposals before us help to successfully unwind the excessively large balance sheet of the Fed, do you think?

Dr. LEVY. Excuse me, sir. I didn't—maybe I didn't hear—

Mr. WILLIAMS. Yes, will the proposals before us help to successfully unwind the excessively large balance sheet of the Fed?

Dr. LEVY. It won't hurt it, but it doesn't directly address it. I mean, so right now, the Fed's strategy for unwinding its balance sheet ever so gradually and passively effectively involves reinvesting all but about 97 percent of MBS and Treasury holdings, this very gradual unwind.

And it is a step in the right direction, but I think it should be more aggressive, because once again, I don't think the Congress or the Fed are really considering some of the risks involved, but not just the Fed stepping over the bounds into fiscal policy, but there are just massive risks, including the risk that Congress thinks of this as risk-free money to spend. And that is very dangerous.

Chairman BARR. The gentleman's time has expired.

Mr. WILLIAMS. Thank you, Mr. Chairman.

Chairman BARR. Thank you. The gentleman's time has expired. The Chair now recognizes the gentleman from California, Mr. Sherman.

Mr. SHERMAN. Mr. Chairman, I want to thank you for putting up a quote from Congressman Brad Sherman when it was your time. I can think of no more credible analyst. And you quote me to say that Section 13(3) is still a dangerous code section.

Dr. Bernstein points out that because of the other provisions of Dodd-Frank, it is less likely to be needed, which means it is less likely to be abused, but it is also less likely to be necessary. So the question then is, how can we make it even less likely to be necessary? And first thing we should do is break up the too-big-to-fail.

Too-big-to-fail is too big to exist. And we should never have a circumstance where the Fed is tempted to use 13(3) or to come to us for emergency legislation, as they did successfully in terms of passing their legislation, by saying, look, if this one entity goes under, it is taking the entire economy with us.

I would point out that one thing that 13(3) does not have is a dollar limit. I remember when the chair of the Fed was here and I proposed either a \$4 trillion or an \$8 trillion limit, and the Fed chair would not go along with that, that was at a time when it wasn't being used at all. So it is—clearly Congress should be consulted at some stage.

Mr. Plosser, you point out that we should not use 13(3) to help any one individual or company. There is a constant debate in our society between democracy and rule of the philosopher-king ex-

perts. You would think that democracy had won that debate. I am by no means sure.

I think that there is general agreement that the people of the country can elect politicians, so long as those politicians don't control anything that is thought to be really important, and that if politicians do, that process is known as politicization of what actually the philosopher-kings should control.

Mr. Levin, you point out that the Fed shouldn't suffer from second-guessing. Welcome to Washington, D.C. I don't think there is a member of this committee who is not second-guessed on everything they do at all times. And the financial press seems to exist for the sole purpose of second-guessing the Fed.

Speaking of whether the Fed is predictable or not, they are absolutely and totally predictable within one quarter of 1 percent. That is pretty good. Reasonable minds on the Fed can differ to the extent of one quarter of 1 percent. They are far more predictable than anything else I am aware of.

The problem with the Fed balance sheet is that they are shrinking it when they should be growing it. You can say there is no crisis, but wages remain stagnant. That leads to divorce. It leads to drug abuse and opioid abuse. It leads to broken families. It leads to a host of problems that we would not have otherwise. And so it may not be a crisis for the whole country, but it is a crisis for millions of families.

Let's see. So I want to focus—since I have Dr. Bernstein here, on the tax provisions. We were talking about those earlier. Oh, and I do want to thank, as long as the—I mean, the majority has put my quote up on the board knowing that I should follow their lead. I have also put my own material up on the board.

And I want to point out that the abandonment of quantitative easing is going to cost our Treasury between \$80 billion and \$100 billion a year. And we live in this strange world where almost everyone except our witnesses are unaware—and maybe some of our members are unaware—that this money is coming into the Treasury. And then our witnesses live in a world where that is shameful, because it is unintended, because that isn't the purpose of the entity. I would say that if you were in the private sector and your byproduct starts making you huge amounts of money, that creating the byproduct becomes one of the purposes of the company.

But, Dr. Bernstein, did the models on the effect of this tax law, do they deal at all with the increase in the trade deficit due to the strengthening of the dollar due to the increase in Federal borrowing?

Dr. BERNSTEIN. I know my time is up. I will answer you with one sentence. The theory of the case on the tax cuts is that the cut in the corporate rate will draw in capital flows from abroad, and those will increase the trade deficit.

Chairman BARR. Gentleman's time is expired. The Chair now recognizes the gentlelady from Utah, Mrs. Love.

Mrs. LOVE. Thank you. Thank you all for being here. In previous hearings regarding the Fed and monetary policy, we had discussions about the Fed being just as bad as everyone else at economic and financial forecasting, despite having an army of PhD economists running complex computer models.

Why do you think the Fed is so bad at forecasting? And I was wondering if I can get your thoughts on that, Dr. Plosser.

Dr. PLOSSER. I think that economists in general are not that great of forecasters. That is just the reality of it. Many of the things that go wrong with forecasts are the things that—are events that occur that weren't forecastable and therefore cause problems.

I also think that actually raises the importance of the distinction between what we might call a rules-based strategy and a discretionary strategy. Discretionary strategy says the Fed will do what it wants to do when it wants to do it for reasons that it feels it wants to, OK? That is very unpredictable as to how that is going to respond.

Mrs. LOVE. Right.

Dr. PLOSSER. But the future is uncertain. Always has been uncertain and will continue to be uncertain. The value of many of the rules-based strategies and the strategies where you articulate, well, what will the Fed do if this or this happens? Right?

Mrs. LOVE. Right.

Dr. PLOSSER. That reduces uncertainty. You don't have to guess what the Fed will do. It won't make up new reasons for doing the thing it is doing. It will be a bit more predictable.

Mrs. LOVE. OK.

Dr. PLOSSER. Because the future is predictable.

Mrs. LOVE. Right.

Dr. PLOSSER. So I think that we have to just accept the fact that the future is unpredictable and think about strategies that allows the Fed to operate in an unpredictable world in a predictable way.

Mrs. LOVE. OK, I am glad you said that, because I am trying to figure out a way to do that. So according to former Federal Reserve Board Governor Kevin Warsh, currency stability is one of growth's best friends. He also worried that the Fed's extraordinary tools encouraging businesses to favor financial engineering over capital investment and consequently weakened growth in business investments is providing to be an opportunity killer for workers.

Do you agree with that assessment or disagree with that assessment? Yes, I am still sticking with you. Yes.

Dr. PLOSSER. I apologize. I am sorry. I thought you were talking to Dr. Levin.

I agree with most of it. I do think that many of us said during both very low interest rate period when we reached zero and during quantitative easing that much of the effects of those efforts were absorbed in financial re-engineering by companies, restructuring corporate debt policies, and one of the big puzzles for the recovery and one of the reasons it was slow was the fact that real business investment didn't grow like it had in previous recoveries. It wasn't as responsive to the typical tools of monetary policy.

We saw this effect in financial re-engineering, restructuring of debt, so forth and so on. So I think there is—I share a lot of the concerns in that statement.

Mrs. LOVE. OK, I want to get to Dr. Levy, because we have had an opportunity to discuss this before. You and I have talked in previous hearings about the relationship between monetary policy and employment. And why do you think that the Fed's policies have been such a boom for what Kevin Warsh has referred to as finan-

cial engineering, while leaving too many Americans underemployed and barely able to make ends meet?

Dr. LEVY. This is a great question. So getting back to Dr. Plosser's comment, and Kevin Warsh's comment, it is critically important to point out that while the Fed was very successful in lowering the real cost of capital, businesses didn't respond. And they didn't respond for a host of non-monetary reasons, including tax and regulatory policies.

Now, to your point on employment, there are so many factors affecting employment and wages that go so far beyond monetary policy. Productivity has been slow. This should be a subcommittee on education, because let me give you an important statistic. Eighty-five million people, working-age population, have a high school degree or less. Wages tend to be low. Monetary policy can't do anything about it.

OK, so—and you could go through a host of other government regulations. So this is why I am emphasizing that we all want higher standards of living. The issue is, what is the proper role of monetary policy? So the Fed could add on QE3 and QE4 and up to a zillion, and it is just not going to create the type of employment gains and wage gains that we all really want.

Chairman BARR. The gentelady's time has expired.

Mrs. LOVE. Thank you.

Chairman BARR. Gentelady's time has expired. The Chair now recognizes the gentleman from Arkansas—the Chair recognizes the gentelady from Wisconsin?

Ms. MOORE. Yes, thank you so much, Mr. Chairman. Excuse this interruption. I would like to ask unanimous consent to place a statement in the record from Better Markets. There was a quote attributed to them taken from a release issued in 2015 when the Warren-Vitter bill was introduced. And they just want to clarify the differences in that bill and what is being offered here today, just for the record.

Chairman BARR. Without objection. So the statement will be entered into the record. And the Chair now recognizes the gentleman from Arkansas for 5 minutes.

Mr. HILL. I thank the Chairman. Appreciate you and Ms. Moore convening this hearing. And thank our excellent panel. Appreciate all of your participation, as well.

This subject of Federal Reserve independence from credit policy is not new to this subcommittee, and so I am glad we are continuing this discussion. As Marvin Goodfriend, a professor of economics at Carnegie Mellon, said in 2014, I think it was—he summarized it nicely, said flexibility and decisiveness are essential for effective central banking. Independence enables the central bank to react promptly to macroeconomic or financial shocks without the approval of the Treasury or the legislature. Central bank initiatives must be regarded as legitimate by the legislature and the public. Otherwise, such initiatives will lack credibility essential for their effectiveness.

The problem is—which is what we are talking about today—to identify the limits of independence on monetary policy and credit policy to preserve a workable, sustainable division of responsibilities between the central bank and between the fiscal authority.

And I think that is really at the heart of what we are talking about today.

And if we have an efficient monetary policy, then it helps our private markets allocate goods and services, most readily—finding their most promising opportunity. And if we engage in what we have done over the past 10 years, we really skew the price mechanism and skew investment. So I really appreciate your testimony, all of your testimony.

We have seen around the world unprecedented accommodation, not only here in the United States, but in central banks around the world, where I think Japan now is somewhere approaching 100 percent of GDP with the size of its balance sheet, and we are at about a quarter of our GDP. And in Europe and in Japan particularly, we have \$12 trillion, \$13 trillion of sovereign debt at negative interest rates. And we have some of those central banks buying corporate debt and equity obligations, something that we have certainly been concerned about here.

So I do think, as the Ranking Member noted, that there are concrete reasons why we are having this testimony and thinking about why those distorted price signals and the mixing of credit and monetary policy are not a good thing for our country.

Dr. Plosser, in talking about Treasury-only, I want you to emphasize that we have 40 percent of the new issue MBS owned by the Federal Reserve right now. We have about 15 percent of the Treasury market, more or less, since the crisis. And I think—last time I looked at their statement, they own 4 percent of other, which includes Maiden Lane, which I guess is the residual detritus of Bear Stearns.

Your concept is that we just simply—whether it is a 13-D action or any other action, if we the Fed take on a non-Treasury asset that in some reasonable amount of time we ask the ultimate fiscal authority of the Treasury to take that and swap Treasuries back to the Fed, isn't that what we are talking about?

Dr. PLOSSER. That is the essence of it, yes, Congressman.

Mr. HILL. So that doesn't—it doesn't per se that—and I agree with Dr. Bernstein. We have to be very careful in how that is done and the timeframes and we don't want in a crisis to make things more difficult. But the ultimate issue is that the Treasury, just like if it hadn't done a very effective job in getting rid of their final TARP assets, they would be liquidating Maiden Lane and not leave that over at the Fed. Isn't that an example of what you are talking about?

Dr. PLOSSER. That is essentially what I have been arguing, exactly that.

Mr. HILL. And—

Dr. PLOSSER. And by the way, there was a memo written between the Treasury and the Fed back in—it was in 2009, where there was an understanding that the Treasury would do everything—because this discussion started way back then—that the Treasury would do everything it could to relieve the Fed of those private-sector assets, recognizing that they were really the responsibility of the fiscal authorities.

That never happened, obviously. And so I think this is really about the process of restoring the Fed so it can continue to conduct

monetary policy in a manner that is appropriate without—with Treasuries, rather than trying to deal with the Maiden Lanes of the world.

Mr. HILL. Well, not only be neutral between the private markets on that credit allocation and monetary policy, but also put the fiscal authority, which is under the purview of the Congress, into whether we are going to spend money on one thing or another to, quote, intervene in markets in the time of a crisis. I think you make a good point. I yield back, Mr. Chairman.

Chairman BARR. Gentleman yields back. The Chair now recognizes the gentleman from Minnesota, Mr. Emmer.

Mr. EMMER. Thanks to the Chair. And thank you to this great panel for being here today.

I want to followup on Mrs. Love's questions relating to Kevin Warsh's quote about financial engineering. And, Dr. Levy, since you were on this when the time ran out, can you give me some examples of the types of financial engineering that Mr. Warsh was referring to?

Dr. LEVY. Quite simply, by keeping rates at zero, so the cost of capital is zero, that gives companies the flexibility to alter their liability structure, alter their capital structure in any way. And the problem you run into is when you are running a company, and your Treasury Department starts making too much money, and your basic business isn't, things aren't good.

I hate to say this in such lay terms, but if it becomes so financially advantageous to take advantage of the current financial system to generate profits, then you take your eye off your basic business ball. And I think a lot of that happened.

So once again, if we go back to what the Fed tried to do and was very articulate about in—say, its QE3, Chairman Bernanke when he rolled it out says, OK, QE3, we want to pump a huge amount of excess liquidity into the economy, keep rates very low, and through forward guidance convince markets we are going to keep rates really, really low for a really long time. We want to encourage risk-taking and push up asset prices, and all of that is going to stimulate aggregate demand.

It did all of that, but it didn't stimulate aggregate demand. Once again, I will emphasize, I understand employment went up, but nominal spending growth in the economy didn't accelerate. And so when economists talk about distortions, you can drill down to what it means for household decisionmaking and business decisionmaking.

Mr. EMMER. So what do you think the Fed should be doing to encourage capital investment and job creation instead of this financial engineering? Instead of making too much money through the Treasury? What would a better approach be?

Dr. LEVY. Well, I think the Fed should proceed to normalize interest rates, and that means raising rates right now toward 3 percent. I don't think it should—which would mean 1 percent real rate. I don't think it should be sidetracked from that due to low inflation or any international whatever should come up.

And I think on its balance sheet, the Fed should, once again, proceed with a strategy to unwind all of its mortgage-backed holdings over, say, a period of 5 years, which is reasonable. You could do

most of it passively. You wouldn't have to sell any. And to basically normalize policy and set the record straight about what the proper scope of monetary policy is, and I think that would reduce uncertainty and build confidence in the private sector.

Mr. EMMER. Well, that is interesting, your last statement, because my next question was, in your opinion, has the Federal Reserve done a sufficient job of announcing to the American people a clear and consistent strategy on how it plans to spur economic growth?

Dr. LEVY. The Fed's tried to be transparent, but because it has not had a strategy, it is very difficult to be clear. And so while they talk about transparency, their message oftentimes gets muddled without a strategy. And so once again, I think the Fed should—during a healthy economic period, it should stick to its monetary knitting and not try to get itself involved in fine-tuning the economy and giving mixed signals to markets.

And I do think the Fed's forward guidance during parts of this economic expansion, expressing worries that even a 25 basis point hike in rates could generate the next recession, it is certainly not a positive for confidence.

Mr. EMMER. It is not helpful. Thank you. I yield back.

Chairman BARR. Gentleman yields back. The Chair recognizes the gentleman from Indiana, Mr. Hollingsworth.

Mr. HOLLINGSWORTH. Well, good afternoon. I appreciate everybody being here. It is a rare day when you face four doctors sitting across from you. Consider it a pleasant experience, right?

But I wanted to talk a little bit more about what has been discussed already. And I think that one of the challenges here is—on both sides of the aisle is confusing the counterfactual a little bit. We say, oh, growth is non-zero, thus things are going great. Bank profits are greater than zero, thus things are going great.

But I think the literature looking back on this shows how loan growth has been severely constrained compared to coming out of previous recessions. And so one of the things that I wanted to talk about was interest on excess reserves and how that may be slowing banks' willingness to make loans to other creditworthy borrowers and to mobilize those loans into capital investment loans.

As you well said, Dr. Levy, that investment has certainly been sub-par compared to previous expansions. And I guess in my view, and maybe this has gone out of fashion, but in the super long run, it is productivity that generates economic growth. And monetary policy has the ability to move things around on a temporary basis or on a short-term basis, but ensuring that we ultimately create a more productive work force, so we create more productive uses for capital is hugely important. I wonder if you could talk a little bit about how interest on excess reserves may be constraining those investments.

Dr. LEVY. OK, so the Fed pays interest on excess reserves, and for—they put this in place in October 2008. And for a large portion of the period recently, that interest they pay on excess reserves has been above the effective funds rate, and therefore that is—it is one factor but not the only factor that has probably constrained bank lending.

I would also note another factor here is that the Fed stress tests, while they have been successful in leading particularly large banks to raise their capital adequacy standards, I can tell you when bank executives deal with stress tests all day long—

Mr. HOLLINGSWORTH. Their stress goes up.

Dr. LEVY. —they are in no mood to make a loan. And the lenders down the hall say I don't want to make this loan because the risk of making a mistake is very, very large. So I think it all adds up to—

Mr. HOLLINGSWORTH. If you have a regulatory environment that dampens loan growth, and then you have the ability with no counterparty risk whatsoever to earn above market rates at the Fed, why take on risk without any apparent gain? Right? And, Dr. Levin, I was hoping that you might comment on that, as well.

Dr. LEVIN. Well, I think I agree with you that the interest on reserves was, you know, granted by the Congress to the Federal Reserve at a time when banks were earning zero interest. And that was viewed as a distortionary cost that was discouraging banks, and effectively disintermediating funds from the banking system elsewhere, because banks are required to hold some reserves at the Federal Reserve.

This is a crucial question. I think that a part of the solution to this in my view is that Congress should authorize the GAO to do comprehensive annual reviews of all aspects of the Fed, including in the monetary policy—including interest on reserves. I think there is a real question in my mind why the Federal Reserve is paying a significantly higher rate on interest on excess reserves compared to, say, the rate in the repo market or the Treasury bill market.

Mr. HOLLINGSWORTH. It is certainly something on our minds, as well, as we continue to focus on that. Obviously, what we want is capital mobilized in the real economy to make investments, private-sector investments such that productivity will grow over the long run so that we can realize those benefits as Solow predicted.

Anything that you wanted to add to that, Dr. Plosser?

Dr. PLOSSER. So I agree with what is been said, but I would like to go back to the beginning of your statement and remind everybody that one of the dangers that we slipped into during this period—and oftentimes do—is relying on the Fed to be the solution to all our economic problems. And it is not, and it can't be.

The real key to economic growth is productivity. Productivity of the work force—

Mr. HOLLINGSWORTH. Productivity generated by private capital making investments, continuing to grow the economy.

Dr. PLOSSER. And the Federal Reserve cannot determine that.

Mr. HOLLINGSWORTH. I think that is well said.

Dr. PLOSSER. And I think—well, you said it. I was just reiterating how important I think it is.

Mr. HOLLINGSWORTH. You know what? I like that even better. And I think the addiction to Federal Reserve intervention, especially as you well said during positive times of economic growth, continues to endanger their ability to come to any sort of help during periods of great acute stress.

Dr. PLOSSER. This is the most interventionist Fed in private markets, even today, than it has been in the last 50 years, at least.

Mr. HOLLINGSWORTH. Thank you, Dr. Plosser. I yield back.

Chairman BARR. The gentleman's time has expired. The Chair now recognizes the gentleman from Ohio, Mr. Davidson.

Mr. DAVIDSON. Thank you, Mr. Chairman. And I want to thank our guests. I really appreciate your testimony here and in writing. And I have learned a lot from some of your other writings.

So, Dr. Plosser, could you elaborate on some of the real economic opportunities for American households and businesses should they benefit from monetary policy framework that drew a brighter line between accountability for fiscal and monetary policy?

Dr. PLOSSER. Well, I think there are a couple of ways to think about that. One, it is separating roles and responsibilities and accountability. I think in many cases, households are worried a lot about what the Fed's going to do next and what it is going to do to interest rates. And frankly, I believe the Fed is not as powerful over interest rates and the real economy as people seem to believe.

If you remember, when the Fed began tapering and stopped buying assets, it was because it was concerned about interest rates, long-term interest rates were going to rise. They didn't. They fell for about a year. So I think that this fixation on the Fed's ability to control productivity growth, real wages, lots of other things is overblown and that we need to scale back those expectations and look for things that focus on productivity that can make the economy grow. And that is what is going to make the real lives.

The contribution of the Fed is going to be mainly keeping inflation low and stable. Alan Greenspan used to say that is—when inflation becomes a non-issue for people's lives, then we are doing OK.

Mr. DAVIDSON. Terrific. One of the things that have made inflation such a constraint thing hasn't really been monetary policy, but it has been the strength of the dollar and the power of trade. Some of those dynamics that have taken place—of course, some of that has led to challenges to the U.S. as the de facto reserve currency.

Dr. Levin, I was wondering if you could comment on that, as a future challenge, and what role the central banks—in this case, the Fed in particular—could play?

Dr. LEVIN. Well, I think that the Federal Reserve is the most important central bank in the world for sure. And it is not just Americans who want to understand better what the Federal Reserve does. It is true all over the world. Other central banks are also trying to understand what the Fed's decision is and what its strategy is.

So I just—I want to come back to this question about strategy for a second. I think one way to think about this—the purpose of the legislation you are adopting today is maybe relatively innocuous during normal times. Some of it is specifically directed toward emergency credit and toward actions that would happen in an emergency.

Even the benchmarks—I think during normal times it is true that the—for example, the Federal Reserve barely changed the Federal funds rate for a number of years in the 1990's when the

economy was on a steady course. I think the purpose of this legislation is to have it in place the next time around.

What are the contingency plans the Federal Reserve is going to follow? Those should be clarified in advance. I remember, I was at the Fed at the time. People referred to it as throwing spaghetti at the wall to see what sticks. And that is not an appropriate thing to do. It is important for Congress to understand ahead of time what the Federal Reserve is going to do in an emergency.

The strategy for monetary policy I think of as a little bit like a patient who is a child, and you are the patient's family in some sense who needs to consult with a team of doctors that you respect and trust, but you want to consult with them and understand the strategy that is being followed. The strategy. It has to be one strategy.

And it is absolutely true, the economy has lots of uncertainty. Someone asked earlier about forecasting. But a good team of doctors are going to say, look, here are some risks, we have to take seriously those risks. If this materializes, here is the action plan we are going to take. And so those are the sort of things I think you are asking the Federal Reserve to start doing.

Again, it is not hawkish or dovish. It is good governance here and accountability and transparency. It will help the world economy—

Mr. DAVIDSON. Correct. And so I agree. And I think the challenge, when you talk about the Emergency Lending Act, when you look back, so this was forward-looking. Now, if you say—well, let's say there is this accountability and we have to check. What do you see the implications of a potential reversal with the congressional accountability to say, you have done emergency lending, we think that was a bit of an overreach. What do you see as the implications for that level of accountability?

Dr. LEVIN. OK, so the critical thing, again, just use this analogy with the patient and the patient's family and the doctors. Try to consult ahead of time so that by the time when the operation—again, I strongly believe you can't micromanage the Fed. It has to be able to make decisions on a day-to-day basis. But what the Federal Reserve should be doing is consulting in advance to say if this happens, we may need to carry out this emergency procedure. And the patient's family gives a directive to say, OK, we can live with that.

So the up-or-down vote that this legislation is proposing hopefully what would not happen is a panic, but what would hopefully be happening is, oh, OK, the risks are increasing, we need to launch this emergency facility, and Congress says, yes, you have been explaining that to us for a number of months or years, and we are comfortable with your going ahead.

Mr. DAVIDSON. Thank you. My time has expired. I yield back.

Chairman BARR. The gentleman's time has expired. The Chair recognizes the gentleman from West Virginia, Mr. Mooney.

Mr. MOONEY. Thank you. My question is primarily aimed at Dr. Levin. And first, go big green, Dartmouth class of 1993 here. I will be heading back for my 25th reunion this summer. Maybe I will see you up there.

But you have touched a theme that has been of concern to me for a while of Congress delegating, giving up, just receding its authority to Federal administrative branches. I see that in a lot of places, not just with monetary policy. I see it with environmental policy in my State of West Virginia. I have seen it with—gosh, even declaring war on foreign countries, going to war in foreign countries. I mean, we are seeing it a lot of places. And I think Congress needs to reassert itself.

In the written testimony, I want to reference the written testimony from Mr. Bernstein, where he emphasized the importance for Congress to maintain central bank—for Congress to maintain central bank independence and, quote, efficient functionality, close quote. So, Dr. Levin, does the draft legislation that you reviewed for the hearing—do you believe it compromises monetary policy independence or compromise efficient functionality, as your colleague has expressed a concern about?

Dr. LEVIN. OK, look, there is the broader picture and then there are the details. Let's just start with the broader picture. That is why I started with the exhibit. Basic management principles. The Congress has to be the boss. The Federal Reserve is not an independent branch of government. It reports to you. And it is absolutely essential for you who are elected officials by the public—I agree with what Congressman Sherman said before. You are the ones who are elected by the public to oversee the Federal Reserve. It cannot be truly absolutely independent. It has to be conditionally, operationally independent.

Now, I think this draft legislation at a fundamental level is consistent with the operational independence. In fact, I think, as Dr. Plosser said, I think it would strengthen in some ways the operational independence of the Fed.

There are details of some of these things about how many days, for example, before the congressional approval has to be given, which exact types of securities under which conditions can be purchased. I hope that—I understand that your committee is going to be marking up this legislation next week. It seems to me that there may be some room for consultations and compromises, as you always do. But, again, this seems to me as a matter of good governance and transparency and accountability, and I hope there is a way forward to enact this.

Mr. MOONEY. OK, thank you. Mr. Chairman, I will yield back. Give my time back to the Chair.

Chairman BARR. The gentleman yields back. The Chair recognizes the gentleman from North Carolina, Mr. Pittenger.

Mr. PITTENGER. Thank you, Mr. Chairman. And thank each of you for being with us today. It is an honor to have you join this committee.

I would like to follow up, if I could, on some of Mr. Williams' questioning. Mr. Levy, if you could just expand further on what you believe to be the economic risks that are created by maintaining a balance sheet of the current size?

Dr. LEVY. There is economic and interest rate risk, and there is also political risk. As far as the economic risks go, the Fed at its peak remitted about \$115 billion, I think in Fiscal Year 2015. Now

it is remitting about \$85 billion. It is paying IOER, and bond yields have come down some.

This crosses the monetary boundary of policy into fiscal policy. If it sounds OK because it reduces the budget deficit, but that is temporary, and it is very risky, because as I noted, if interest rates rise by 1 percent, which is very consistent with the Fed's expectation that rates are going to rise, and inflation is going to go to 2 percent, then that is going to add \$1.6 trillion to the deficits. And so that is a risk.

The other risk is political. And that is it is too easy for Congress to look at this as risk-free money and to spend it, and to look at the Fed as a source of risk-free money. And doesn't this jeopardize the independence of the Fed? And Dr. Plosser pointed out that in December 2015, the Fed—in order to pass the FAST Act, the Congress actually borrowed some of the—took some of the Fed's assets. And this is just inappropriate. It is an inappropriate use of monetary policy.

And so the Fed by doing what it is doing has these political and economic risks. And it is kind of egging on the Congress to take advantage of it in bad ways.

Dr. PLOSSER. Excuse me, can I—

Mr. PITTEMBER. Please, Dr. Plosser.

Dr. PLOSSER. —elaborate a little bit as an example? The danger is—with the last time I testified here last year one time, I got asked, well, why shouldn't the Fed fund our infrastructure projects by blowing up their balance sheet some more? There is a real problem in many central banks around the world with exactly that.

The Bank of Switzerland, for example, has a very large balance sheet. It is mostly made up of foreign reserves, currency reserves. They are in a deep political battle because some parties within Switzerland want to use that balance sheet to invest in green energy, Swiss companies, other types of activities in the name of diversifying the Swiss National Bank's balance sheet.

If the Fed maintains a large balance sheet that is not tied to monetary policy, the use of that balance sheet can—the temptation to use that for other purposes is going to be great. And I think the idea of shrinking the balance sheet and tying it to monetary policy will constrain that activity and actually protect the Fed from abuses and prevent it from undertaking its own abuses of its balance sheet.

Mr. PITTEMBER. Yes, as a follow up, would you say, then, that it is time for the Federal Reserve to get out of the business of engaging in credit policy?

Dr. LEVY. Yes. The Fed should set out a strategy to wind down its MBS holdings. There is no reason at all for the Fed to hold MBS, unless in an emergency situation. And it can do so over, say, a 5-year period through passively unwinding the portfolio in order to give the mortgage market time to adjust. It need not sell any to do that.

Dr. BERNSTEIN. Can I make a quick comment, if that is OK?

Mr. PITTEMBER. You can.

Dr. BERNSTEIN. Any time the Federal Reserve engages in monetary policy, it is raising or lowering interest rates, and that is credit policy. So I am not sure I understand this distinction at all.

Chairman BARR. The time is—I am sorry.

Mr. PITTENGER. Quickly.

Chairman BARR. Quick answer. The time of the gentleman has expired. So quick answer.

Dr. LEVY. OK. The quick answer is the Fed by holding MBS securities is specifically biasing the mortgage market at the expense of other credit markets.

Mr. PITTENGER. Thank you. My time is expired.

Chairman BARR. The gentleman yields back. The Chair now recognizes the Chairman of the Capital Markets Subcommittee, the gentleman from Michigan, Mr. Huizenga.

Mr. HUIZENGA. Thank you so much. Sorry, I was a bit late earlier. I was—actually had a couple of bills on the floor that we were moving forward with. And those duties kept me there.

Before I launch into it, I thought it was interesting, the Ranking Member submitting a statement from Better Markets rebutting themselves, basically a situation where they believe found themselves inadvertently supporting us and what we are doing. And heaven forbid. We wouldn't want to actually come to consensus and move forward on something.

So whether it is Warren-Vitter or Barr-Moore, I don't care. Whatever the title and label might be, let's get some of these things done that have broad, wide consensus, and not be political about it. So off of my soapbox on that.

Dr. Levy, just want to touch base. Obviously, you watch financial markets around the world and on a regular basis and see the real effects, how monetary policy increases those spreads and decreases economic growth. You have talked about this in the past, and I am curious if you could just comment how important it is for this legislation to sustain or even improve upon the stronger economic data, which we have seen over the last couple of quarters.

Dr. LEVY. I think by normalizing monetary policy it would take away the monetary crutch from the economy and financial markets. It would not harm the economy, and it would lead financial markets to be much healthier. The other point I would add is by—and here I just applaud what Dr. Levin has emphasized—if the Fed actually had a single, understandable, and cogent strategy, it would certainly make it easier for the Fed to convey that message. It would build confidence.

And once again, the proper role of the Fed, we have seen it go far beyond its scope. Its discretionary policy has created uncertainty. And I would really like to see more of a strategic approach that lays that foundation for the economy to grow at a healthy rate. And financial markets adjust.

Mr. HUIZENGA. I think many of us are looking forward to just the strategy as you just laid out. Dr. Plosser, good to see you again. And I want to talk a little bit about your article you wrote for the Hoover Institute entitled "Why the Fed Should Only Own Treasuries." And that article, I want to quote you, if that is all right. "History teaches us unless governments are constrained constitutionally or by statute, they often resort to the 'printing press' to avoid making tough fiscal decisions. But in a democracy, independence must come with limitations on the central bank's authorities and discretionary powers. Otherwise, central bankers can use their

powers to venture into policy realms unrelated to monetary policy, especially fiscal policy, which more appropriately rests with elected officials.”

And as you know, obviously those Fed balance sheets not only increased in size during the financial crisis, they added large quantities of non-Treasury securities, I think as you put it. Your article highlights that the more troubling loans under Section 13(3) that, quote, “amounted to debt-financed fiscal policy without the explicit authorization of Congress.”

So, Dr. Plosser, in your opinion, what are the downside risks of blurring these lines of accountability for monetary policy and fiscal policies?

Dr. PLOSSER. Well, I think as we have been talking off and on this afternoon, it is that blurring that is dangerous. Because what that does is confuses both in the eyes of the fiscal authorities and the monetary authorities and the public who is responsible for what. And who do we hold accountable for what?

And when you put taxpayer money at risk and you buy portfolios of private assets on the banks’ part, you are, in fact, putting taxpayer money at risk. And you are investing in whatever it happens to be, MBS mortgage portfolios or whatever happened to be on the balance sheet that the Fed chose to buy, you are taking fiscal actions.

Mr. HUIZENGA. Is your concern sort of a winners versus losers? And these governments kind of picking it? Or just in general, and I am a huge fan of the Swiss normally, but I hope that they don’t head in the direction that you described.

Dr. PLOSSER. Well, they are getting pressure to head in that direction. That is absolutely true.

Mr. HUIZENGA. Yes, and we have had that. And the downside of that seems—we are allowing a central bank to venture into some waters that it just has no business going. Is that your opinion?

Dr. PLOSSER. Yes, it is. And it is a bit of a slippery slope, because it is very tempting on the part of both parties to let that—but then it is—again, it is hard to hold the Fed to make it transparent and to hold it accountable for the kind of things that you actually want them to be focused on. And the same thing for the fiscal authorities, by the way.

Mr. HUIZENGA. Thank you. Thank you, Mr. Chairman.

Chairman BARR. The gentleman’s time has expired. And the members have requested a brief second round of questions, if the witnesses will indulge us with their considerable expertise. This has been a lively discussion. We appreciate your expertise so much that members would like to ask you a second round of questions.

So I will start that second round by yielding myself an additional 5 minutes. Picking up where Chairman Huizenga was going right there, on the downside risk of blurring the lines of accountability for monetary and fiscal policies, Dr. Plosser, let’s talk about the legislation that is before you right now. And the Independence from Credit Policy Act, which is one of the three bills there, how well does that legislation help the Fed avoid that downside risk of blurring the lines of accountability between monetary policy and fiscal policy?

Dr. PLOSSER. This is a topic I have been talking about actually since 2009, was when I first raised this question and asked for a new accord. And the problem is that what I see in the legislation and what I have advocated in the past has been this idea that, look, 13(3) had never been used since the Great Depression. It is not something you are going to rely on very frequently.

But my view is that it shouldn't be the authority of the Fed to lend money for the purchase of Bear Stearns and buy assets, private-sector assets. That belongs to the fiscal authorities. And so I actually think that the treasury secretary needs to instruct the Fed to carry out such an action. Maybe it was all decided in consultation with the Fed and other regulators about what needed to be done. But it needs to instruct the Fed so that this is not—the Fed can't take this on its own.

Chairman BARR. And, Dr. Plosser, is it an appropriate solution to require the swap of Treasuries for mortgage-backed securities?

Dr. PLOSSER. The Fed is the fiscal agent in many cases for the government, in most cases it is, and so it is appropriate for the Treasury to instruct the Fed to do something on behalf of the government as their fiscal agent, but then to keep the Fed whole, you would engage in a swap of those private-sector securities for Treasuries, and then the Fed is back to where it was before, and it is not responsible for that. It is in the Treasury that makes it—

Chairman BARR. So the fiscal responsibilities remain with Treasury.

Dr. PLOSSER. Exactly.

Chairman BARR. The agency responsibilities, the monetary policy responsibilities remain at the Fed. Let me also allow you to respond to the typical criticism of Fed reform initiatives, and that is that when Congress intervenes in this way and proposes reform, that, in fact, Congress is compromising the independence of the Fed. Could you elaborate on your argument that no, in fact, this legislation preserves the independence of the Fed?

Dr. PLOSSER. So that is exactly right. I think it helps the Fed, because what it does is when Congress, for example, comes to the Fed and say, we want you to pay for part of this transportation bill or infrastructure bill or what have you, would you buy some municipal bonds or something from—to help bail them out, the Fed has a basis for saying no, that is not in our purview.

Chairman BARR. OK, so now, Dr. Bernstein and Dr. Levy had an exchange there. Dr. Bernstein made the point that productivity levels are not the result of unconventional Fed policy or discretionary Fed policy. Dr. Levy—perhaps productivity—low productivity is a function of a lot of things other than monetary policy. I think there is an agreement on the panel that that is the case.

But could you address the issue of what unconventional monetary policy does to impede maximum economic outcomes?

Dr. LEVY. OK, so unconventional monetary policies during emergencies don't impede. During normal periods, they distort financial markets by keeping rates too low, having excess liquidity in the economy, and this leads to a misallocation of resources.

But I would say as long as inflation stays low, it doesn't have a significant depressing impact on productivity. Productivity is a function of a whole host of other issues. I would say there is the

long-run risk of being excessively easy. It catches up with you, and it could lead to undesired increases in inflation and interest rates.

Chairman BARR. And so what I have heard here today from the witnesses is that the principal contribution that monetary policy can make—however limited that contribution can be—is primarily that it can provide—it transmits price signals, clear price signals to actors in the private economy, which in turn can provide a level of certainty for households, investors, and small businesses.

Dr. LEVY. Yes.

Chairman BARR. And I think that is what we are trying to get at with the strategy-based monetary policy. My time is expired on my second round. And I would like to now recognize the Ranking Member for an additional 5 minutes.

Ms. MOORE. Thank you so much. Let me just open up by asking Dr. Levin a question. You are a former staffer at the Federal Reserve, so I think what you might have to tell us is very instructive. You attached to your written testimony a paper that you coauthored with several other people stressing the importance of diversity at the Federal Reserve. What was the essence of that, just very briefly? Why do you think that that is important? And what were you talking about in terms of diversity?

Dr. LEVIN. OK, well, there are a couple of dimensions of this that are important. Jordan Haedtler, who is one of the coauthors, is actually sitting here. Valerie Wilson, from Economic Policy Institute, was the other coauthor. The three of us wrote this together.

But let me just give you a couple of kind of key points. First, as I said in my statement, the Fed is America's central bank. It serves the whole public. Its decisions affect everyone. So there is a kind of chain of accountability here. The Federal Reserve reports to Congress. But the Federal Reserve serves the public.

And so it is critical for the Congress to ensure that the Federal Reserve is serving the public as well as possible. A key part of our report is that the regional Federal Reserve banks are legally private institutions. Now, it was set up that way for good reasons in 1913, but you should understand that as of today, the Federal Reserve is the only major central bank in the entire world, the only one, that has such a significant private component to it. And so I think it is important for Congress over time to revisit this issue.

One possibility is to appoint a centennial commission, some people have raised this idea, and that could be, I think, a bipartisan initiative to say that we need to reconsider this. Some of the rationale for what the Fed did 100 years ago, it was banker to the banks. That was its primary role.

Ms. MOORE. OK. Thank you. That is very helpful.

Dr. LEVIN. Yes, OK.

Ms. MOORE. Dr. Bernstein, outgoing Fed Chair Yellen has shared with us many times that she thinks—she believes that inequality is very dangerous. And so as I have thought about the testimony here today and an assessment and evaluation of what the Fed did do or didn't do, one of the things I know is our dual mandate to look out for those who are unemployed.

Can you share with us whether or not you think some of these analyses are the way they are because there is sort of not a def-

erence to that other dual mandate? And what is your view on inequality and the danger to our role?

Dr. BERNSTEIN. Well, I am glad you raised that, because I think that those kinds of concerns have been really conspicuously absent from this discussion so far. And it is a glaring absence.

So much of the discussion has focused on credit markets, on how the financial sector is doing, on messages and signals and certainty to the financial markets. That is all critically important, no question. But, in fact, if you look at the sector the economy that has really been doing great in recent years, it is precisely that side. The share of national income going to profitability, the equity prices of the financial markets have been extremely strong.

Where we have problems—even at 4.1 percent unemployment—is pockets of weakness in labor demand, pockets of severe weakness in income growth. And it is that reason that the Federal Reserve has engaged in lots of the initiatives that have taken a hit here today from my colleagues, because interest rates are stuck at zero, the Federal funds rate has been stuck at zero, and so they needed to engage in other techniques in order to try to further stimulate the economy to reach those who have been left behind.

If you listen to Janet Yellen talking about either this problem, the employment side of the mandate, or inequality, you will very clearly hear those concerns. And so we have to acknowledge that there are a lot of people who are missing in this room today from this discussion, and they are the people who are helped most by the employment side of the dual mandate. It has been a critical omission, I think, for much of our discussion.

Ms. MOORE. Anybody dying to say anything up there?

Dr. LEVIN. Well, I just want to reinforce what you said about diversity. It is critical for the members of the FOMC and the Federal Reserve Board, but all the regional Fed presidents, to have geographical diversity. That is why it was created as a regional system. That is really important. They need professional diversity, background, different educational backgrounds. It is great to have a Congressman—

Ms. MOORE. You need any black people on the—

Dr. LEVIN. Absolutely. Of course.

Ms. MOORE. OK, OK. My time is expired.

Chairman BARR. The gentlelady's time has expired. The Chair recognizes the gentleman from Texas, Mr. Williams.

Mr. WILLIAMS. Thank you, Mr. Chairman and Mr. Levin. The FOMC proposal before this body today seeks to increase transparency and make clear the way that the FOMC makes its decision. In your testimony, you discussed the fact that the Fed's monetary policy strategy is not well understood.

So in what ways does the current communication policy keep the boss or Congress, as you say in your testimony, well informed about the FOMC strategy?

Dr. LEVIN. OK, so, first of all, the draft legislation requires that the Federal Reserve have a clear strategy. That would already be a significant step forward. The legislation requires that the strategy should be—identify a specific policy instrument, which could be the Federal funds rate, it could be the repo offer rate. It might be

something else over time. OK. It identifies a specific policy tool that it is going to use, identify specific indicators.

Now, as Jared said, and I agree with him on much of this, there were times in the past 5 years the unemployment rate was not a very sufficient indicator of the labor market. President Trump has emphasized that himself, that there are broader measures of unemployment. Jared has emphasized in his writings—we call it U-6—you know, that includes involuntary participation and people on the sidelines.

So, again the Federal Reserve needs to have a clear strategy or explain to the public how it is responding to these indicators. It should be a small number, simple, clear indication.

Again, I want to come back to the analogy about the patient. A child, I have a 9-year-old son, so this is—it hits home for me. When the patient is sick and you go to a team of doctors, it is a difficult illness. You want a clear strategy, and you want—the doctors have to consult with the patient’s family. Everyone understands that.

And we are talking here—as Ranking Member Moore said, we are talking—and Jared said—this affects all Americans, in the inner city, it affects small businesses, it affects large corporations, it affects people in other countries, too. And so it is really critical here that this team of doctors on the FOMC has a clear strategy that the public, the Congress, financial markets, small-business people, everyone can understand that strategy and the debate about it.

I am totally in favor of second-guessing, by the way. I second-guess the Fed myself. But if you don’t have a clear strategy, then you can’t debate about it. And it needs to be a public debate about what the Federal Reserve is doing.

Mr. WILLIAMS. OK, well, let me ask you this. If the Fed takes a data-driven approach to monetary policy, as they have said they do, does it follow that allowing a clear picture in predicting future policy direction will be beneficial to investors and the economy as a whole?

Dr. LEVIN. Yes. And again, during normal times, this may not be so complex. There may be periods when the Federal Reserve’s policy rate is more or less normal and more or less stays within a narrow range over a period of time. What we are really talking about here with strategy is times when things are not normal. How is the Federal Reserve going to respond to that?

I keep coming back here to contingency planning, because, again, this is a good business principle for a nonprofit organization, too, to be thinking about, what might go wrong? And how will the Federal Reserve respond to that? I call it stress tests for monetary policy. You are the boss. You should be asking the Federal Reserve, if we have a recession next year or 2 years from now or 5 years from now, what are the Fed’s plans? How will it respond? Is it going to do more QE? Is it going to go to negative interest rates? These are critical to the whole American public and to the global economy. You are the boss. You have to get clear answers from the Federal Reserve on these issues.

Mr. WILLIAMS. OK, Mr. Chairman, I yield my time back. Thank you.

Chairman BARR. The gentleman yields back. The Chair recognizes the gentleman from Arkansas, Mr. Hill, for another 5 minutes.

Mr. HILL. Well, I have enjoyed this discussion. Of course, when you are with the deliberative body of second-guessers, we can relate to your comment. We are experts at it.

But one of the biggest impacts of the last 10 years of Federal Reserve policy is skewing benefits to the carry trade and to stock market investors and 401(k) investors and driving down interest rates on real estate to, I would assume, non-economic type levels. So there has been a lot of beneficiaries.

And I agree that they really have not reached a lot of the working people, because we have not seen wage growth or productivity growth, to Dr. Levy's comment about aggregate demand has not reacted to this 10 years of extraordinary stimulus, unseen in history. I mean, we are—we have never seen lax monetary accommodation like we have seen now.

I want to switch bills for a minute, Mr. Chairman, and talk a bit about the emergency lending proposal that is before us. And of course, the theme that we had both in the Choice Act and here is well-collateralized loans not to insolvent entities at a penalty interest rate and at a short-term duration, but this bill limits that to financial institutions, supervised by the Fed, for example. I would be curious of the panel's view. Is that too narrow? Should 13(3) be limited only to commercial banking institutions or their holding companies, to be specific?

I would just like a view from all four of you. Dr. Plosser?

Dr. PLOSSER. I think that is a bit of a difficult question. And I do think that if you accept the notion, as the Fed has argued, that there are a lot of non-banks, for example, who are involved in financial markets heavily. And so-called shadow banking system, how far do you extend this safety net?

The problem is, I think, is—if it is a safety—the Bagehot's rule for—Walter Bagehot rule for emergency lending was, as you said, lend freely at a penalty rate to solvent institutions. So now what we really are talking about is, do you want the Fed lending to insolvent institutions? And if so, what is the reason for that? And what is the rationale for that?

That is not what lender of last resort means. So I think we have to be careful about how we do structure this.

Mr. HILL. Well, I would just—the bill before us, though, is—the borrower is affirming the borrower is not insolvent. So, I mean, the real question I have is, should 13(3) be extended to a non-banking entity?

Dr. PLOSSER. I guess, if I had to—given the way it is structured, I would say no. I don't think it is necessary.

Mr. HILL. Thank you. Dr. Levin?

Dr. LEVIN. Well, I just want to reiterate something that Dr. Bernstein said, which is most other central banks around the world do have broad authority in an emergency of what kinds of actions they can take. And it is not just about lender of last resort, and it is not just about too-big-to-fail.

What is the most important thing the central bank does? Is to keep a stable unit of account. We call it price stability. That is part

of the Fed's mandate, OK? That is the single critical thing. And in a really severe short, like we had in the Great Recession, or even going back to the Great Depression, we didn't have price stability in the Great Depression. Prices fell 25–30 percent.

So it is critical for the central bank to have enough tools so that when there is that kind of shock that it can make sure that the price level comes back to a stable level. So, again, I think there is a case for a centennial commission that would think carefully about what can we learn from history, what can we learn from other central banks, what can we learn from what worked and didn't work in the past recession? Frankly, I think the Fed itself needs to do more lessons learned and come back to you. You are the boss. And help think through—we want to be prepared for the next crisis.

Mr. HILL. I agree. Let me hear—

Dr. BERNSTEIN. I can be very brief. I can be very brief.

Mr. HILL. —from Dr. Bernstein and Dr. Levy.

Dr. BERNSTEIN. Yes, I think that is too restrictive. And I think the Fed needs to be able to lend beyond services—may well need to lend beyond financial services in emergency because we just don't know the sector from which the next emergency will hail—

Mr. HILL. Thank you, Dr. Bernstein.

Dr. BERNSTEIN. —much as Andy suggested. One quick thing. I would encourage you to read what I wrote in my testimony about the penalty rate. I actually think the penalty rate in this proposal is less well thought through than the one in the Warren-Vitter proposal.

Mr. HILL. Thank you. Quickly, Dr. Levy?

Dr. LEVY. No further comment.

Mr. HILL. OK, thank you very much. I yield back, Mr. Chairman.

Chairman BARR. Gentleman yields back. Chair recognizes the gentleman from Ohio, Mr. Davidson.

Mr. DAVIDSON. Thank you, Mr. Chairman. Thank you all for taking additional questions.

As we talk about second-guessing, I guess that is part of the whole point of this approval process or validation that Congress agrees with what the Fed has done in this emergency lending authority. And, Dr. Levy, I was just curious if you could comment on how the market might react to this period. If this becomes law, we know that it is sort of a conditional action, so it should be extraordinary. There are a lot of safeguards. It is a very high threshold that the Fed would go through to give approval. But once they do, how do you feel the market would react in this period before it is validated? And then what if Congress does say, no, we are not going to give our consent to that? Because it requires positive action.

The asset would presumably be worth even less. How do you see the market reacting to that?

Dr. LEVY. I can only have two comments in response to your question. And one is, what is the source and character of the crisis? And I would just note the next crisis is likely to be unlike the prior one.

And the second point I would make is, the markets are going to move in response to the crisis. They are not going to wait around for the Fed and the Congress to respond. It will, of course, respond

to whatever the Fed does, but the markets are going to—they sense things. They are going to front run whatever you—they are going to be way out in front of you.

Mr. DAVIDSON. Well, there will probably be indicators of what they expect Congress will react to, the new dynamic.

Dr. LEVY. Well, wait, let me qualify what I just said. The markets would take comfort if they perceived that you had thought through logical strategies in response to different types of crises. The markets would certainly take comfort in that. And also, I think communications about what you are going to do are critically important.

Mr. DAVIDSON. So I thank you for that. And, Dr. Levin, you commented a little bit about the desired goal of something clear in advance. But here it is retroactive. It is second-guessing something that has been done by the Fed. And so, Dr. Plosser, I am curious your thoughts, in terms of you are 25 days past, and the country can sense Congress isn't going to take action, isn't going to validate that. Is the timeframe important? Is it 30 days? Is it 6 months? Does it have to be paid back within 30 days? How important is this to the market function?

Dr. PLOSSER. So let me start by pointing out that one of the values of doing this is that you set out a process about, if such and such happens, this is what we are going to do. These are the steps that are going to be followed. That is known in advance, all right? So markets will build in to their own assessments—it is like a bankruptcy law. A bankruptcy law says if a firm goes insolvent, all debt is put into a holding pattern until you can sort through the assets and liabilities and figure out who gets paid. That is the law. So pricing of those assets in advance understands that step.

Well, this is kind of the same idea. Here is what is going to happen, so you—by laying it out in advance what the rules of the game are going to be, markets will price that, in effect, well before the event actually happens. So that is going to make it less stressful than it might otherwise be if this came as a surprise of some kind.

The second step, as you were getting to, well, how long should this holding period be on assets, until Congress decides? Well, again, I think that knowing this process in advance—and there is a lot in the bill about how Congress is expected to behave and how quickly they are supposed to make a decision on this, I think all of that is going to be filtered in, and the markets will make an assessment whether they think this is a good case for a rescue or not. And it is going to make the hurdle rate for the secretary of treasury to back the Fed in doing this. If he doesn't think he can—if it is not a good case and he is not going to be able to make the case to Congress, then it might not happen.

But these rescues shouldn't be made easy. They are not—you don't want to encourage them and make them so easy that it just happens. So I think, yes, it is not perfect, but I think as long as you lay out the process, things will work as we think they should. That is all.

Mr. DAVIDSON. It is a good principle. Thank you, and my time is expired.

Chairman BARR. Time is expired. The Chair now recognized for our final 5 minutes of questioning the gentleman from Indiana, Mr. Hollingsworth.

Mr. HOLLINGSWORTH. Best for last here. You know, one of the things that fascinates me about economics generally, something you guys know far more about than I do, is just kind of its reflexive nature. And one of the things I really worry about, right—it has been a long time since I took Econ 101, but permanent income hypothesis, right, and the idea that we are working down somebody's curve in their preferences for consumption today versus saving for consumption later. But with the extended period of time with which we have undertaken these extraordinary measures, whether instead of working down that curve, we are bending that curve and permanently distorting their impression and their tradeoffs between present and future, and it will be difficult for us to either work that curve again or bend that curve back, such that monetary policy in the future might have meaningful impacts in the short run, at least.

And I wonder kind of what your, Dr. Levy and Dr. Plosser, view on that is and whether we are, indeed, beginning to shape, permanently alter or misshape expectations for the future?

Dr. LEVY. I think yours is a very valuable observation. And I would just bring out something that I am very concerned about, and that is the Fed's policies—and it has had the Federal funds rate below inflation now ever since 2008—and its massive balance sheet, people who have come to believe that this is normal. And when I say people: Households, businesses, savers, and financial markets.

And that potentially raises the costs of exiting and going back to normal. I would say so far the Fed has been lucky. And I would argue also that the Fed has been able to be leisurely in its exit because its policies to stimulate aggregate demand haven't worked. So I am very concerned about your point that this—we perceive current policy as normal. It is absolutely not.

Mr. HOLLINGSWORTH. Right. Dr. Plosser?

Dr. PLOSSER. So I agree with what Dr. Levy just said. I think the other thing is to recognize that during this period there has been this huge conflict in public policy. There is the Fed trying to cut interest rates to zero to encourage people to spend, spend, spend today, don't save, don't save, spend. And then there is the pressure on banks to not lend, not lend, not lend, unless you are really certain.

So we are trying to—we are tugging at each other in ways that are—it is confusing, I think, to the general public in terms of, how are they supposed to respond to all this?

Mr. HOLLINGSWORTH. Right, right.

Dr. PLOSSER. And you are telling the banks not to lend and build capital, and telling the public, no, no, no, borrow all the money you can. And I think that that tension is reflected in part—what you are saying is, are changing people's behavior about their preferences for borrowing—spending today versus spending tomorrow? And since we wiped out a whole bunch of wealth in the housing crisis, now what do households typically want to do? They don't want to spend. They need to rebuild their wealth.

And so there are all these sort of conflicts that are going on that have, I think, been not very helpful at the bottom line.

Mr. HOLLINGSWORTH. And, Dr. Levy, something you have talked about a few times and I just wanted to bring back that point—look, we talk about the philosophy behind whether the Fed should be involved in such activities that add to such huge amounts to the Treasury, but also how those seemingly large amounts might pale in comparison to the potential losses, should interest rates begin to rise and accelerate steadily. And so an old adage someone once told me was be careful picking up pennies in front of a freight train. Even if you get it right a dozen times in a row, you don't want to be wrong once. And I think that your point about that several times is ringing true in my mind.

And, Dr. Levin, something I wanted to bring up and just talk a little bit about. You have pushed hard for transparency and pushed hard for a cogent strategy. And one of the things that is challenging about this, right, is knowing what success looks like, because everybody has a different vision of what is success. What is full employment, right? 4.1 percent seems like full employment, but you look at U-6, you look at wage growth, and maybe we aren't really at full employment. All of these things.

So to me, that harkens back to the need for a cogent strategy and transparency about how we will work these variables into something, right, whether that is a Taylor rule, whether it is some discretion around the Taylor rule, just some understanding of these are the things we consider important and these things moving in these directions will give us indications, but not a clearly defined "end goal," if you will, since we will never be able to measure what success really looks like.

Is that something that you would endorse theoretically?

Dr. LEVIN. Yes, and I would just underscore something I think Dr. Plosser said earlier. The Fed's job is not fine-tuning the last tenth of a point on the unemployment rate or the inflation rate. But it has a crucial job. And I think part of the balancing you are talking about is the risk management.

Again, like a team of doctors, to explain and say we have a bunch of diagnostic tests, but they are a little bit hard to read here. This is an unusual case. And so we are going to be keeping a close eye on the patient. And if this indicator goes up any further, we are going to have to take some action. Those are the sort of clear strategies I think your draft legislation is exactly looking for the Fed to start doing.

Mr. HOLLINGSWORTH. Perfect. Thank you, Mr. Chairman. And I yield back.

Chairman BARR. Thank you. The Chair yields back. And I would like to thank all of our witnesses for your illuminating testimony here today. And, Dr. Levin, appropriate that we leave the hearing with another reference to the excellent analogy of the patient and the family. And for laying the foundation for a strategy-based monetary policy that can help lift our economy.

With that, without objection, all members will have 5 legislative days within which to submit additional written questions for the witnesses to the Chair, which will be forwarded to the witness for

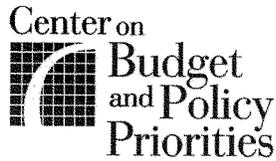
their response. And I ask our witnesses to please respond as promptly as you are able.

This hearing is now adjourned.

[Whereupon, at 4:27 p.m., the subcommittee was adjourned.]

A P P E N D I X

November 7, 2017



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November 7, 2017

Testimony of Jared Bernstein, Senior Fellow, Before the House Committee on Financial Services: Subcommittee on Monetary Policy and Trade

Chairman Barr, ranking member Moore and members of the Committee, thank you for holding this hearing on the transparency, bond purchases, and lending policy of the Federal Reserve in periods of economic stress. As was the case when I testified before this committee a few months ago, I return with a similar message: the independence of the central bank is an essential ingredient to its timely, efficient, and effective functioning. Of course, that independence exists within the legal context set forth by Congress, and, especially as the economy and markets evolve, it is not only appropriate, but essential, for this committee to continuously revisit this context. But in doing so, maintaining the central bank's independence and efficient functionality must always be an elevated consideration.

The bills under discussion today seek to alter the context within which the Fed operates by constraining some aspect of its operations, specifically emergency lending and bond purchases, and by adding reporting/transparency requirements. I find some of the ideas to be worthy of consideration, but some are too restrictive, threaten the Fed's independence, and add unnecessary and potentially damaging process requirements that could potentially do more harm than good to the US and even the global economy.

Economic policy always invokes tradeoffs, in this case between the central bank's independence and ability to act quickly in emergencies on the one side, and its accountability and contributions to potential moral hazards on the other. Getting the balance right is more art than science, but a good place to start weighing the tradeoffs is to briefly consider recent Fed performance.

What is Congress Trying to Fix with these Proposals?

The American political system exists in a difficult moment. The word "dysfunction" is often heard in description of our current situation and I suspect members of this committee would at least partially agree with that characterization. Members would also agree that partisanship is at a very high level and creates a tall barrier to working together to enact the nation's business.

Amidst these challenging times, the Federal Reserve is one institution that has been highly effective in carrying out its mission. Though the Fed failed to identify the housing bubble or forecast the crisis when the bubble burst, it quickly moved into emergency mode. The bank deployed its

That said, some of the Fed's actions during the recession, particularly its invocation of the rarely used section 13(3) in its charter (the part that allows the Fed to engage in emergency lending), raised legitimate concerns about the creation of moral hazard. Also, even if we agree that the Fed performed well in the last crisis and recovery, we cannot know how future Feds would respond. I turn to these concerns next.

Proposal: "Congressional Accountability for Emergency Lending Programs Act"

The motivation for this proposal appears in large part to be to reduce the moral hazard invoked when the Fed provides emergency liquidity to illiquid financial institutions ("moral hazard" occurs when an economic entity—a person or an institution—is protected against a risk such that it has an incentive to ignore the consequences of its risky actions). The proposal intends not to eliminate the Fed's lending authority, but to significantly raise the procedural bar to its implementation. Though I recognize the motivation for the proposal, I see two major drawbacks. First, since the crisis, Congress legislated the Dodd-Frank financial reforms, key sections of which were designed specifically to reduce the need for Fed intervention in this space. Some of these measures remain untested (others appear to be working and are keeping the financial system safer than it was), but I see no reason to add new complexities into this system until we give the Dodd-Frank measures a chance. Second, and this is a profound concern with the proposal, it takes the authority for emergency lending outside of the Fed and requires both chambers of Congress to provide a timely (30-day) approval of the Fed's emergency loans. I believe this adds unnecessary risk to credit markets and the broader economy.

The proposal increases the minimum number of Fed officials who must authorize an emergency lending intervention from five members of the Board of Governors to eight members of the FOMC. It introduces numerous new rules regarding the types of securities the Fed can accept from loan recipients, how the Fed determines the sufficiency of collateral, it specifies how the Fed must construct a penalty rate at which to lend from its emergency facilities, and various other technical requirements.

Some of these ideas warrant consideration, e.g., raising the minimum member requirement, while others may be ill-advised. The penalty rate is specified as the sum of an average of a discount rate across all Fed banks and the average spread between distressed corporate debt and a yet-to-be-determined bond index. This is a highly opaque construct that may or may not serve the purpose of the penalty rate, which is to charge a premium above market rates to (a) avoid crowding out private lending, and (b) penalize lenders that systemically underpriced risk. The prescribed formula could return an overly punitive rate that would potentially undermine the Fed's lender of last resort function. For example, it is not hard to imagine a crisis that "blew out" corporate spreads, which, according to the proposal, would have to be embedded in the penalty rate. Thus, here again, the proposal mistakenly takes decisions outside of the Fed at risk to the nation's credit system at a time of great stress. Moreover, I am not aware of compelling evidence that the Fed underpriced their penalty rate in the recent crisis, so this is another example of 'don't fix what isn't broken.'

But my main concern about this proposal is the establishment of procedures for Congressional approval of emergency credit. This is a sharp departure from the lending authority established in section 13(3) of the Fed's charter, one that undermines both the independence of the institution and

significant weaponry against the downturn, including its first line of defense—reductions of the policy rate and emergency lending—and later, when the policy rate got stuck at its lower bound of zero, it turned to alternative forms of monetary stimulus. These included “forward guidance”—communicating its “lower-for-longer” plans to market participants—“quantitative easing,” and “Operation Twist.” Respectively, these largely involved the purchasing of longer-term securities, including Treasuries and GSE mortgage-backed securities, and extending the maturity of the Fed’s bond portfolio.

While some of these actions are behind the motivations for this hearing, my assessment of their impact, presented in some detail in my July testimony, is that they were effective in offsetting the historically large demand contraction that followed the crisis. Looking at the full spate of monetary interventions described above, Blinder and Zandi find that in 2014, real GDP was 5 percent higher than it otherwise would have been; the level of payroll employment was 4 million jobs above the alternative; the unemployment rate was more than two percentage points lower against a counterfactual of no intervention.

I also cited research that tries to isolate the impact of quantitative easing, including bond purchases that would not be permissible—agency MBS purchases—under some of the legislation under discussion today. John Williams argues that “the central tendency of the estimates [of QE] indicates that \$600 billion of [the] Federal Reserve’s asset purchases lowers the yield on ten-year Treasury notes by around 15 to 25 basis points. To put that in perspective, that is roughly the same size move in longer-term yields one would expect from a cut in the federal funds rate of 3/4 to 1 percentage point.” This too led to faster GDP growth and lower unemployment. As I noted in July, “Williams reports on research that finds the Fed’s LSAP program lowered the unemployment rate by one-quarter of a percentage point, which in today’s labor market amounts to 400,000 jobs. Blinder and Zandi, using a macro-model to score QE against a baseline with no such intervention, estimate that from 2009-14, QE lowered the 10-year Treasury rate by 1 percentage point and raised the level of real GDP by 1.5 percent.” Other research I cited found that the Fed’s MBS purchases lowered mortgage rates by roughly 100 to 150 basis points, which the researchers (Hancock and Passmore) attributed to both the announcement of a “strong and credible government backing for mortgage markets” and the actual purchases themselves.

Post-recession, the Fed continued to promote the recovery and the unemployment fell to what is now the lowest jobless rate in 17 years. At least until recently, the central bank has been admirably data-driven (some analysts, including myself, have questioned recent rate hikes given low and decelerating core prices and non-accelerating wage growth); Chair Yellen, in particular, has carefully and extensively articulated the bank’s thinking and their plans. The job market is solid, with average job gains of 190,000 per month over the past two years. Financial markets are particularly strong, boosted by strong corporate earnings, and perhaps expectations regarding upper-end tax cuts. Of course, all is far from perfect: the Fed has consistently undershot its 2 percent inflation target, and wage growth is slower than many analysts would expect at 4.1 percent unemployment. Slow productivity growth is another serious shortcoming of the current expansion, but economists have little understanding of that phenomenon, and I’m not aware of a credible argument that links this result of any central bank policies.

In other words, if I were looking around Washington for an institution that fits the adage “If it ain’t broke, don’t fix it,” my first stop would be the Federal Reserve, and frankly, I’m not sure where, if anywhere, I’d go next.

its role as “lender of last resort.” With this change, the 535 members of the Congress all become lenders of last resort, a possibility I strongly urge this committee to avoid.

If Congress fails to approve an emergency lending program within the 30 days, the borrower, who, by definition, is facing a balance-sheet crisis, must pay the loan back to the Fed. Moreover, members of Congress and their staffs must quickly engage in highly technical analysis of whether lending institutions are illiquid or insolvent, and the quality of their collateral. Such analysis, to be clear, is standard, ongoing practice at the Fed, but by insisting Congress engage in it as well, the proposal introduces the possibility of politicizing the analysis and, if Congress fails to act in a timely manner, triggering significant market disruptions. Regarding this last point, consider also that there is a strong likelihood these newly required evaluations would be occurring in the midst of a pervasive economic shock, if not a recession, meaning Congress would have many other difficult matters requiring their attention.

To be clear, I do think the bar should be high for approval of emergency lending, but my bottom line is clearing that bar should be the purview of the Fed, not the Congress. Thus, should the Committee consider raising the *internal* bar (i.e., internal to the Fed), while this should be done carefully with great attention to potential unintended consequences, it is consistent with prudent Congressional regulation. Conversely, raising the *external* bar by requiring Congressional approval goes beyond that benchmark.

Turing to my view that provisions of Dodd-Frank potentially obviate the proposal, consider recent writings on this point by Fed chair during the financial crisis, Ben Bernanke. He notes that (my bold):

The Fed intervened in the cases of Bear and AIG with great reluctance, doing so only because no legal mechanism existed to safely wind down a systemic firm on the brink of failure. A key element of the Dodd-Frank financial reform bill... was to provide just such a mechanism—the so-called orderly liquidation authority, which gives the Federal Deposit Insurance Corporation and the Fed the necessary powers to put a failing firm into receivership without creating financial chaos... With the creation of the liquidation authority, the ability of the Fed to make loans to individual troubled firms like Bear and AIG was no longer needed and, appropriately, was eliminated. **As Fed chairman, I was delighted to see my institution taken out of the business of bailing out failing behemoths.**

In addition, Dodd-Frank created a vice-chair for financial supervision (currently held by Randal Quarles). It added restriction to the Fed’s 13(3) authority by requiring: (1) the Treasury Secretary to approve any lending; (2) loans to be open to a broad class of borrowers and not to any one individual borrower; (3) the names of borrowers to be disclosed to Congress within a week; and (4) stricter standards for loan collateral. Dodd-Frank required the U.S. Government Accountability Office (GAO) to do a one-time audit of the Fed’s numerous emergency lending facilities that were established during crisis, leading to seven recommendations to the Fed, “to strengthen policies for managing noncompetitive vendor selections, conflicts of interest, risks related to emergency lending, and documentation of emergency program decisions” which the Fed agreed were worthy of implementation (the committee would be well-advised to follow up on their progress). Dodd-Frank, along with recent international accords under Basel III, have increased what many financial analysts consider the first line of defense against illiquidity/insolvency crisis: capital requirements that disallow excessive leverage.

The best way to avoid emergency lending by the Fed is to avoid credit avoid bubbles, systemically underpriced risk, and the crises that follow these financial pathologies. And the way to achieve that is through market oversight and regulation. Of course, even with robust oversight, crises can occur, but I'd urge the committee not to involve Congress in the granular analysis and approval of emergency lending, but to monitor the effectiveness of regulatory measures currently in place, albeit as yet untested.

In reviewing a proposal much like this one, here's how Bernanke described his concerns, similar to the ones I just raised: "[T]heir approach is roughly equivalent to shutting down the fire department to encourage fire safety. . . . Rather than eliminating the fire department, it's better to toughen the fire code." President Trump's nominee for Fed chair, Jerome Powell, recently made a similar point: "Further restricting or eliminating the Fed's emergency lending authority will not prevent future crises, but it will hinder the Fed's ability to limit the harm from those crises for families and businesses."

In this regard, it is of great concern that some members of Congress want to get rid or defang Dodd-Frank. While such a complex law certainly requires monitoring and improving, broad deregulation of financial markets is completely contraindicated in any case. To do so while also adding the members of Congress to the list of lenders of last resort would be an extremely reckless act of economic policy.

Proposal: "Independence from Credit Policy Act"

The main purpose of this proposal appears to be to restrict the Fed's debt purchases to Treasury bonds. Thus, had this proposal been in place in the financial crisis, the Fed would not have been able to purchase agency MBS. This would have been a serious mistake that would likely have prolonged the downturn, which was, of course, triggered by the bursting of housing bubble that ultimately shut down the flow of credit to the housing sector, a key sector of the economy.

In fact, John Williams of the San Francisco Fed has argued that the MBS purchases were the "most effective" part of the Fed's asset purchase programs and that they "ended up having kind of the bigger bang for the buck than the Treasury purchases." Blinder and Zandi's research, cited above, underscores these findings: "within a short time," the MBS purchases by the Fed meant that "homebuyers with good jobs and high credit scores could obtain mortgages at record low rates, which helped end the housing crash."

Economist Josh Bivens, in recent testimony before the Financial Services Committee, underscored a broader theme as to why this proposal would be misguided:

The key insight behind recognizing that QE needed to go beyond simple Treasury purchases to be most effective is simply that there is not just one "interest rate" in the economy. Instead, there are multiple interest rates, and even multiple long-term interest rates. And expansionary monetary policy should aim to reduce those long-term interest rates most relevant to households' consumption and firms' investment decisions – and these are not the Treasury rates. Putting downward pressure on Treasury rates should result in these other rates coming down as well, but there are times when the risk premium to assets that aren't Treasuries rises substantially (say in the aftermath of the Great Recession and the

related financial crisis), and simply pulling down only Treasury rates would not be the most effective way to conduct monetary policy.

In the spirit of Bivens' insight, I would encourage the committee to consider the following. Uniquely among central banks, the US Fed is, with minor exceptions, restricted to purchasing bonds solely from the US Treasury and the GSE's. In this sense, we were "lucky" that cause of the recession was the bursting of the housing bubble, as a channel existed by which the Fed could prevent the excessive tightening of credit in that sector.

As I noted the last time I testified on this topic, the banks of England, Japan, Canada, and Europe all have few restrictions on the types of assets they can purchase (though in some cases they must seek permission from regulators to go into, for example, equity markets). This creates flexibility for their central banks to bring the water to the specific source of the fire, based on which sector experiences a credit crisis. Because such flexibility would be a large change in the US case, my suggestion here is that the committee may want to study the practices of these other banks and consider their results in the traditionally more constricted US context.

Bivens' comment correctly suggests that in today's interconnected, global capital markets, we do not know from which sector the next credit crunch will emanate. Thus, this may a particularly imprudent time to narrow the space of the Fed's sectoral interventions. This observation is also worth considering in the context of the rule in the emergency lending proposal that loans should only be made to firms providing financial services. That rule represents a very significant reduction of the scope envisioned in 13(3) of the Fed's existing charter, and it may also be too restrictive.

Additionally, I urge the committee to consider adding one other type of allowable debt to the Fed's portfolio: municipal debt. Though this would require, I believe (others question this assertion), a change in the law governing allowable Fed purchases, this would be a safe way to offset recessions at localized levels while stimulating potentially productive building and the creation of good-quality jobs (the Fed is allowed to purchase muni debt, but only up to maturities of six months; this would have to be significantly extended for this idea to be operational).

Proposal: "Monetary Policy Transparency and Accountability Act of 2017"

This proposal introduces the following language: "The [FOMC] shall annually establish exactly 1 monetary policy strategy, which shall serve as a non-technical public communication of the Committee's consensus expectation for the conduct of monetary policy during that calendar year." The central theme of my recent testimony to this committee focused on why this was an impractical, and even unworkable, idea. However, I should note that the current proposal is less burdensome than the one under discussion last summer (the Fed Oversight Reform and Modernization Act), as it does not require a specific rule nor outside regulatory approval for changes in how the Fed employs rule-based monetary policy. In this case, the proposal encourages more of the type of transparency and public communications in which the Bernanke and Yellen Feds are already well engaged, though with an emphasis on rule-based strategies. Such communication is, in fact, a clear positive development for Fed policy and should be further encouraged.

As regards rule-based interest-rate setting, there is clearly a role for benchmarking FOMC decisions against rules like variations on the well-known Taylor Rule. In fact, my recent testimony argued that "One of the first questions a monetary economist might ask in assessing the stance of

Fed policy is, “where is the Fed funds rate relative to the Taylor rule?” However, while this might well be the first question, it should definitely not be the last.”

There are many reasons for flexibility. First, there’s no consensus as to which version of the Taylor Rule, or any other rule, should be the “exactly 1 strategy” noted in the proposal. My testimony raised actively debated questions of which inflation gauge should be used, which coefficients are most appropriate, what should be the Fed’s target inflation rate (more on this in my conclusion), and which output gap or “neutral” interest rate should be used (note that these variables are “unobservable”; they must be estimated by analysts and there is no consensus on the best way to do so; also, they clearly change over time). The Fed also must use real-time data, and they need to have the flexibility to discount data they believe will be significantly revised.

Moreover, when an economist defends rule-based interest rate setting, he or she tends to show how their preferred formula follows the actual path of the Federal Funds Rate (FFR). But no one should take solace from such comparisons as they embed the strong assumption that the path of the FFR was the optimal one for that period and, an even stronger assumption, that this path should dictate the parameters for the optimal path in a later period.

The table below, updated from my earlier testimony, shows the broad range of formula-based interest rates that would have prevailed in the trough of the Great Recession, and those that would prevail now. Note the ranges in both columns: from -0.6 to -6.6 percent in the recession, and from 1.1 to 4.1 percent now. I would certainly hope no member of this committee would endorse the high-end of that range in the current expansion, one that would surely slam the brakes on a healthy expansion with very low—even too low—inflation.

Rule No.	A Surplus of Taylor Rules	Low during Great Recession	Now
1	Standard Taylor Rule	-1.8%	3.8%
2	(1) but with PCE core; $r^* = 0\%$	-2.8%	1.1%
3	(2) but with slack coef = 1	-6.6%	1.2%
4	(1) but with $u - u^*$ instead of GDP gap	-0.6%	4.1%
5	(3) but with $u - u^*$ instead of GDP gap	-4.1%	1.8%
N/A	Actual FFR	0.0%	1-1.25%

So, to the extent that this proposal leads to the Fed to increase their communication and the transparency of their operations, it is worth a close look. But any veering into legislating rule-based policy making, with granular oversight from regulators outside the Fed, should be assiduously avoided.

Conclusion

The sound and reasonable motivation of these proposals is to limit moral hazard and to clarify the transparency of the actions of the Fed, one of our most important economic institutions. I’ve tried to highlight the tradeoffs invoked by the proposals, as there is, of course, a delicate balance between greater Fed oversight and limits on the one hand, and its political independence and efficient function, especially amidst crises, on the other.

There are, however, at least two areas the proposals do not touch on where I believe the Fed could improve its operations, both of which bear on issues raised by the proposals. First, the fact that the Fed has undershot their inflation target of 2 percent signals a significant problem, both with

the institution's understanding of the forces driving prices and the effectiveness of their monetary policy. My testimony reveals that I am a strong supporter of the Fed and its actions in recent years, and yet it is frustrating to hear governors consistently, and, at least thus far, incorrectly, aver that any day now, key variables will start behaving as they predict. Clearly, a rethink is necessary, and many analysts, including myself, have called for the Fed to consider changes to how they target inflation. These ideas include a higher inflation target or target price levels (or levels of other aggregates, like nominal GDP or the wage base). Former Fed Chair Ben Bernanke recently introduced an interesting hybrid: a temporary price level targeting approach that would kick in only when the funds rate was at or near the zero lower bound.

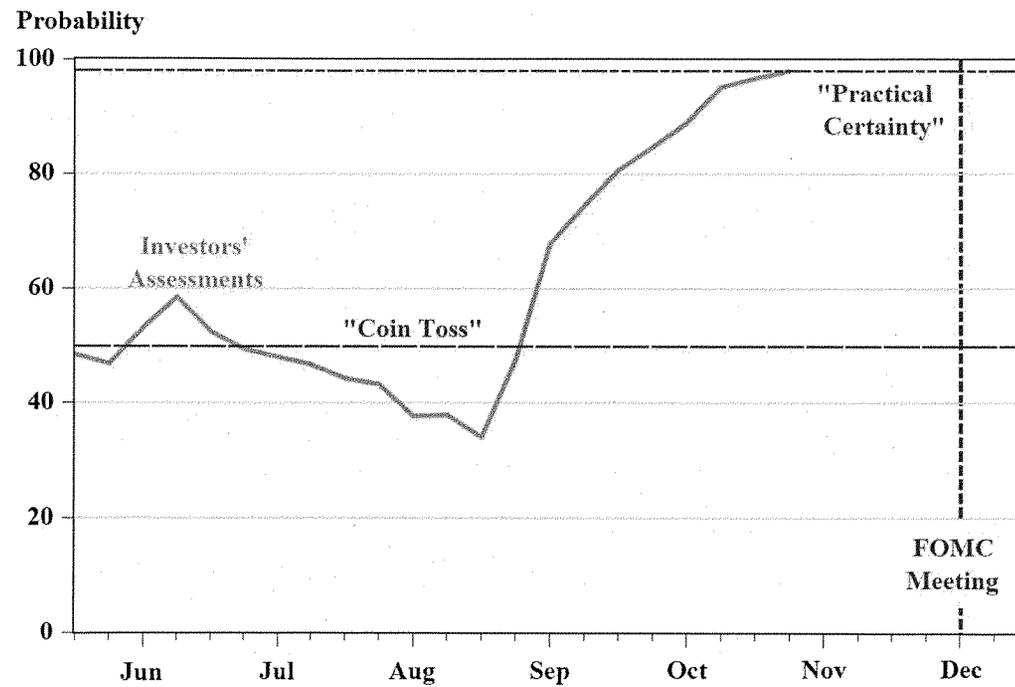
Next, as noted in my testimony, despite internal warnings, the Fed missed the housing bubble, and the ensuing financial crisis and deep recession had severe, lasting consequences for both our economy and our politics. This should also be an area where the central bank significantly improves its performance. Dodd-Frank reforms, discussed above, should be helpful in this regard, as they create greater oversight functions and introduce rules for monitoring leverage, such as "stress tests" and higher leverage requirements. But more could be done here, as Baker and Bivens argue in a recent brief. They suggest three functions that would improve the Fed's bubble-watch capacity, including communicating warnings regarding large asset bubbles in key areas, accompanied by warnings that the Fed will take steps to deflate the bubble; deleveraging, which could include higher margin requirements; and stepped-up bank supervision, as per Dodd-Frank sorts of requirements. But the first step must be for the bank to recognize that they do not have the luxury to maintain a view that recognizing and deflating systemic bubbles are outside of their purview, and that their job is solely to mop up the damage.

Allow me to close with a comment not on monetary policy, but on its very important complement in weak economies: fiscal policy. As I stressed in my last testimony, the policies of the central bank cannot offset downturns, especially deep ones, on their own. They can boost liquidity and lower the cost of credit, but fiscal policy is an essential demand-side ingredient if we want households and businesses to take advantage of less expensive and more readily available credit. In this regard, the pivot to austerity—fiscal consolidation in downturns or weak recoveries—was a significant headwind to the recovery following the Great Recession. Moreover, the debt-increasing tax cuts currently under consideration by this Congress are extremely ill-advised in this context. Even absent recessions—a highly unrealistic assumption, of course—just based on our aging demographics, we are going to need more, not less, revenue in the future. And in the context of the next recession, it will be much harder to implement essential fiscal policies if deficits and debt levels are rising.

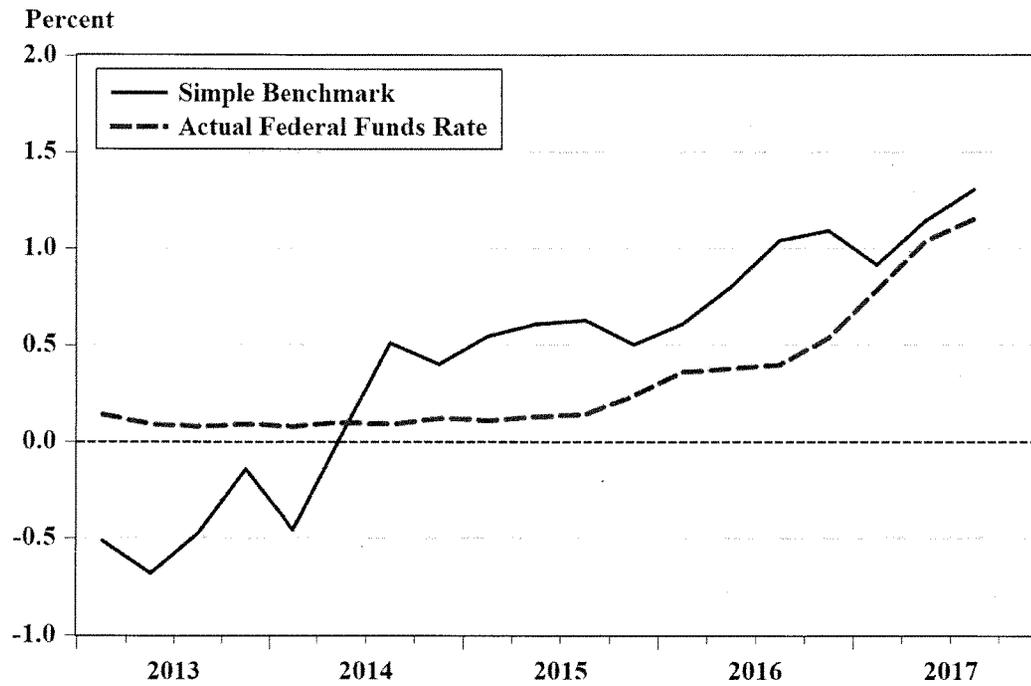
Basic Management Principles

Principle	Purpose	Relevance
Oversight of Strategic Plans	Maintain Accountability, Avoid Micromanagement	Monetary Policy Benchmarks
Prompt Approval of Extraordinary Expenses	Maintain Accountability, Avoid Micromanagement	Emergency Lending
Designated Scope of Responsibilities	Maintain Focus by Reassigning Extraneous Tasks	Credit Policy

Is the Fed's Monetary Policy Strategy Well Understood by Financial Markets?



Is the Fed's Recent Policy Path Consistent with a Simple Benchmark?



Strengthening the Federal Reserve's Effectiveness, Transparency, and Accountability

Andrew Levin
Professor of Economics, Dartmouth College

Testimony before the Subcommittee on Monetary Policy and Trade
Committee on Financial Services
U.S. House of Representatives
November 7, 2017

Chairman Barr, Ranking Member Moore, and members of the Subcommittee on Monetary Policy and Trade, thank you for inviting me to testify at this hearing. I will start with some general remarks about the Federal Reserve's transparency and accountability, and then I will focus on the rationale for establishing simple benchmarks to help clarify the Federal Reserve's monetary policy strategy.

Operational Independence and Accountability

The Federal Reserve is America's central bank, and its monetary policy decisions affect every American—teenagers entering the job market for the first time, and retired people who are concerned about the interest earned on their savings accounts; consumers taking out auto loans to purchase new cars, and workers at the factories that manufacture those cars; households making payments on home mortgages, and construction workers whose firms are deciding how many new homes to build; small businesses whose profit margins may be tight, and families that are struggling to make ends meet.

Given the Fed's crucial role in affecting our economy, it's essential to ask: To whom is the Federal Reserve accountable? Or put more simply, who is the Fed's boss? Indeed, this question is fundamental for the issues being considered at this hearing. Unlike the Supreme Court, the Federal Reserve is *not* a separate branch of government. Rather, the Fed is an agency *of* the government. Moreover, while the Fed's chair and the other members of the Federal Reserve Board are nominated by the President and confirmed by the Senate, the Federal Reserve is not like the Treasury Department or other cabinet offices: Federal Reserve officials do *not* report to the President, nor does the Fed operate under his direction.

So, let me raise the question again: Who is the Fed's boss? And of course, the answer is: Congress. In fact, that answer comes directly from the U.S. constitution, which states that Congress has responsibility for regulating the value of money, and from the Federal Reserve Act, whereby Congress has delegated that responsibility to the Federal Reserve. Thus, the Fed reports directly to Congress, *not* to the President or anyone else.

Now, I've intentionally used the term "boss" because I think we can draw on some basic management principles to shed light on the issues being considered here today. In particular, how should a manager delegate authority to an employee in order to maximize that employee's effectiveness and accountability? Turning to Exhibit #1, here are three common-sense management principles that are followed by every well-run business or non-profit organization and that are highly relevant for the draft legislation being considered by your subcommittee:

(1) The boss stays well informed about the employee's strategy. In many cases, such consultations take place in the context of annual reviews, with regular status updates at a quarterly or semiannual frequency. These consultations are essential for maintaining accountability while avoiding micromanagement; after all, an employee can't be productive if the boss is constantly second-guessing that employee's decisions. And as I'll discuss in a moment, this is the basic rationale for requiring the Fed to explain its monetary policy strategy in terms of simple policy benchmarks.

Exhibit #1: Basic Management Principles

<u>Principle</u>	<u>Purpose</u>	<u>Relevance for Draft Legislation</u>
Oversight of Strategic Plans	Maintain Accountability, Avoid Micromanagement	Monetary Policy Benchmarks
Prompt Approval of Extraordinary Expenses	Maintain Accountability, Avoid Micromanagement	Emergency Lending
Designated Scope of Responsibilities	Maintain Focus by Reassigning Extraneous Tasks	Credit Policy

(2) *Extraordinary budget items require prompt approval.* In particular, the employee should have authority to incur routine expenses up to a specific cost threshold, whereas the boss has to approve extraordinary expenses beyond that threshold. Again, the basic premise is to maintain accountability while avoiding interference in normal day-to-day operations. And this is essentially the logic for preserving the Fed's operational independence but establishing procedures for obtaining prompt congressional approval for emergency lending facilities.

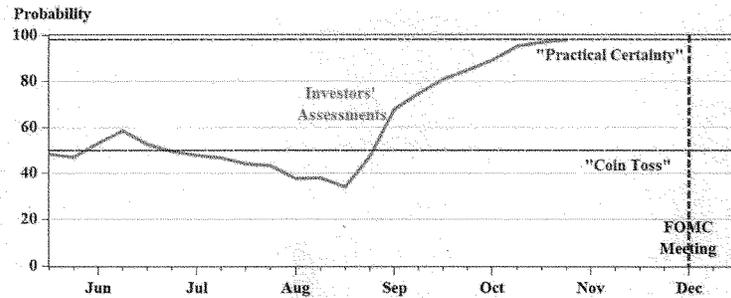
(3) *Extraneous tasks should be reassigned elsewhere.* Effective delegation requires a clear delineation of the responsibilities of each employee. Thus, if a specific assignment evolves into a task that doesn't fit within the employee's job description, then it's generally appropriate for the boss to reassign that task to someone else. And this is the basic rationale for the draft legislation on credit policy: The Federal Reserve has a legal mandate to set the course of monetary policy, to supervise and regulate financial institutions, and to serve as a lender of last resort—the "banker to the banks." In some extraordinary circumstances, carrying out that mandate may result in the Fed's acquisition of private assets. However, such assets shouldn't stay indefinitely on the Fed's balance sheet but should instead be swapped for U.S. Treasury securities, thereby preserving the Fed's operational independence and designated scope of responsibility.

Monetary Policy Benchmarks

The transparency of the Federal Reserve's monetary policy framework has improved substantially over the past few decades. Some of those improvements were legislated (e.g., semiannual monetary policy reports and hearings), some occurred following congressional hearings (e.g., release of FOMC meeting transcripts), and a number of other enhancements were initiated by the Fed itself (e.g., post-meeting statements, expedited minutes, and quarterly press conferences). And when the Fed adopted a specific numerical inflation target in 2012, it did so in close consultation with members of Congress. Thus, it's natural and appropriate to wonder whether there's still room for improving the clarity of the Fed's monetary policy strategy? After all, as Fed insiders often note, "*If it ain't broke, don't fix it.*"

One way to address that question is to take a look at the Fed's official communications. For example, at the conclusion of its policy meeting last week, the Fed issued a 500-word statement. But nearly all of that statement was pure boilerplate, literally repeated word-for-word from the previous statement. There were a few brief references to the transitory effects of the hurricanes. But the only substantive changes were conveyed in two adjectives: the description of recent economic growth was upgraded from "*moderate*" to "*solid*", and core inflation was characterized as "*soft*."

Exhibit #2: Is the Fed's Monetary Policy Strategy Clear to Investors?

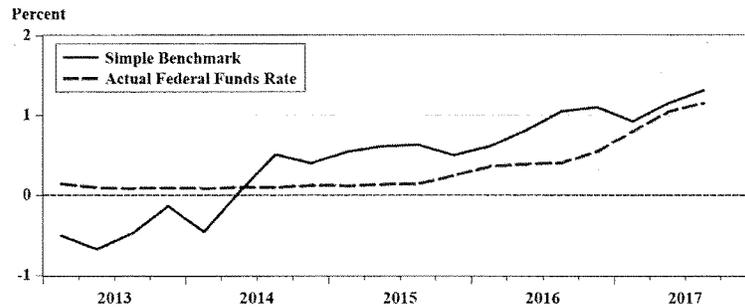


A more concrete way of gauging the clarity of the Fed's policy strategy is to look at market participants' assessments of the likely path of the target federal funds rate, which is the Fed's primary monetary policy tool. Turning to Exhibit #2, you can see that as of last June, investors saw roughly 50-50 odds—just like a coin flip—that the Fed would hike interest rates at its December meeting.¹ Those odds bounced around a bit over the summer and then suddenly jumped upwards in late September and early October, *not* because of some startling new economic data but simply because Fed officials began clearly signaling their intention to hike rates in December. Indeed, investors now see the prospect of a rate hike as a practical certainty even though the December FOMC meeting is still six weeks away. Thus, even though Fed officials regularly reiterate that the path of monetary policy is data-dependent and not on a preset course, the Fed's policy strategy is not well understood by investors who sift through every tidbit of Fed communications, and that strategy is even more opaque to most members of the general public.

By contrast, simple benchmarks can provide a highly transparent means for the Federal Reserve to communicate the key elements of its policy strategy. Of course, the seminal benchmark was created by Professor John Taylor of Stanford University and hence is generally referred to as the "Taylor Rule." In fact, macroeconomists often refer to this sort of mathematical formula as a "rule" or "interest rate reaction function." However, as Professor Taylor has frequently noted, it would be inadvisable for policymakers to adhere mechanically to any simple mathematical formula; rather, such equations should be viewed as benchmarks or guidelines for the setting of monetary policy, while recognizing that professional expertise and good judgment will always be essential for sound policymaking in practice.

It should be noted that the use of simple policy benchmarks is not intrinsically "hawkish" or "dovish" in the sense of being tied to a specific view about how the Federal Reserve should fulfill its statutory mandate. For example, Taylor (1999) analyzed a simple variant of the Taylor Rule that had been used in earlier Federal Reserve staff analysis, and Yellen (2012) referred to that benchmark as the "balanced approach rule" in light of its effectiveness in fostering the Fed's dual objectives of maximum employment and price stability.

¹ This exhibit shows investors' assessments of the probability that the FOMC will raise the target federal funds rate at its December 2017 meeting. These probabilities are computed by the Chicago Mercantile Exchange (CME) and posted in real time on its website; see <http://www.cmegroup.com/trading/interest-rates/countdown-to-fomc.html>. The CME options data indicates that investors saw very low odds that the Fed would hike rates prior to December, and that expectation proved to be correct.

Exhibit #3: Is the Fed's Recent Policy Consistent with a Simple Benchmark?

Indeed, as shown in Exhibit 3, a variant of the “balanced approach rule” provides a remarkably close approximation to the Fed’s actual policy path over the past few years. This simple benchmark can be expressed as follows:

$$i_t = 0.5i_{t-1} + 0.5[r_t^* + \pi_t + 0.5(\pi_t - 2) + 1.0ygap_t]$$

where i_t is the current federal funds rate, i_{t-1} is the average funds rate in the previous quarter, π_t is the 4-quarter average rate of core PCE inflation, $ygap_t$ is CBO’s latest estimate of the current output gap, and r_t^* is the median projection of the longer-run average real federal funds rate as indicated by the Federal Reserve Bank of Philadelphia’s survey of professional forecasters.

This benchmark incorporates two simple adjustments to the formula considered by Taylor (1999) and Yellen (2012). First, that formula assumed that the longer-run normal value of the real federal funds rate had a constant value of 2 percent, whereas this benchmark follows Levin (2014) and Blanchflower and Levin (2015) in adjusting that value over time based on the evolving views of professional forecasters. Second, this benchmark incorporates a moderate degree of interest rate smoothing, consistent with the earlier findings of Levin et al. (1999, 2003).

This analysis confirms that simple benchmarks can indeed be helpful in clarifying the Fed’s monetary policy strategy, thereby contributing to its overall transparency and accountability to Congress as well as its effectiveness in serving the public.

Thank you for your consideration; I will be glad to answer any questions.

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March 24, 2015

Labor Market Slack and Monetary Policy¹

By David G. Blanchflower and Andrew T. Levin

A fundamental cornerstone of modern macroeconomics is that the economy has a *balanced-growth path* that is characterized by stable inflation as well as steady growth of production and employment. In effect, if the economy becomes “overheated” and persistently exceeds its balanced-growth path, then the most notable symptom will be an acceleration of nominal wages and prices and hence inflation overshooting the central bank’s target. Conversely, a persistent shortfall in economic activity and employment not only has substantial adverse effects on households’ well-being but is also associated with downward pressure on wages and prices and hence with inflation falling persistently short of the central bank’s target. Thus, ongoing assessments of the contours of the balanced-growth path—and of significant deviations from that path—are a crucial element of the design and communication of monetary policy, especially for a central bank with a legal mandate to foster maximum employment and price stability.²

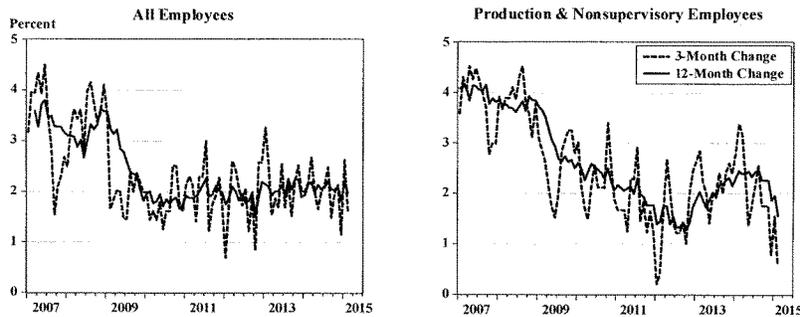
In gauging movements in labor market slack over previous business cycles, macroeconomists have generally focused on the gap between the conventional unemployment rate (that is, the incidence of people who are out of work and actively searching for a job) and the “natural rate of unemployment” judged to be consistent with the balanced-growth path. In the wake of a severe recession and a sluggish recovery, however, the conventional unemployment gap can be a relatively poor or even misleading indicator of labor market slack. In particular, assessments of the shortfall of employment from the balanced-growth path should also in-

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²The FOMC’s Statement of Longer-Run Goals and Policy Strategy (adopted in January 2012 and reaffirmed annually since then) describes its mandated objectives of maximum employment and price stability as “generally complementary.” See FOMC, “Statement of Longer-Run Goals and Monetary Policy Strategy, 2014, available at <http://www.federalreserve.gov/monetarypolicy>.

FIGURE 1

The Recent Evolution of U.S. Nominal Wage Growth



Note: The left panel depicts the growth rate of average hourly earnings for all U.S. private nonfarm employees, and the right panel depicts the corresponding hourly rate for production and non-supervisory employees. Each panel depicts the annualized 3-month change (solid line) and the 12-month change (dashed line). Source: BLS and authors' calculations.

corporate the extent of *hidden unemployment* (that is, people who are not actively searching but who would rejoin the labor force if the job market were stronger) and the incidence of *underemployment* (that is, people working part-time who want a full-time job).

In this paper, we begin by examining the evolution of U.S. labor market slack over recent years and show that underemployment and hidden unemployment currently account for the bulk of the employment gap. Our benchmark assessment of the current magnitude of the shortfall in U.S. employment—including the incidence of underemployment and hidden unemployment—is equivalent to about 3.3 million full-time jobs. Moreover, the uncertainty surrounding that assessment is clearly skewed to the upside, so that the actual shortfall in employment might well be twice as large.

Recent Congressional Budget Office (CBO) analysis indicates that the potential labor force is currently expanding by about 50,000 to 60,000 individuals per month due to demographic factors. Thus, if nonfarm payrolls continue to rise steadily by around 260,000 jobs per month (which has been the average pace over the past few quarters), then the employment gap might be eliminated toward the end of next year. In contrast, if the economic recovery decelerates and payroll growth slows to around 100,000 jobs per month (roughly similar to its pace during 2010 and most of 2011), then the employment gap would barely diminish at all over coming years.

Next, using state-level data, we find strong statistical evidence that conventional unemployment, underemployment, and hidden unemployment each exert significant downward

pressure on nominal wages.³ Such results should not be surprising, because employers may fill a job vacancy by hiring (a) someone who had been out of work and actively searching for a job; (b) someone who had been working part-time, either at the same firm or elsewhere; or (c) someone who had just rejoined the labor force and hence wasn't being counted as unemployed.

Recent data on U.S. nominal wage growth is fully consistent with our assessment that labor market slack remains substantial. As shown in the left panel of Figure 1, the average hourly earnings of all private nonfarm employees decelerated markedly in the wake of the Great Recession, and since 2010 nominal wage growth has remained mired at around 2 percent.⁴ Indeed, the latest 12-month change (from February 2014 through February 2015) was 1.975 percent. The right panel of the figure shows the evolution of nominal wages for production and nonsupervisory workers, a measure that is less sensitive to movements in the upper tail of the wage distribution and hence more informative about broader wage trends. Recent readings on this measure point to a significant *decline* in nominal wage growth over the past few quarters: The 12-month change through February 2015 was just 1.6 percent, down nearly a full percentage point from the pace of wage growth last summer, and the latest annualized three-month change was only 0.8 percent.⁵

Finally, we consider the monetary policy implications of labor market slack using a variant of the simple rule that has been extensively studied by Taylor and characterized as the “balanced approach rule” by Yellen.⁶ This analysis indicates that the initiation of monetary policy tightening would be premature at the present time. Indeed, such a policy move would be a serious mistake in light of substantial downside risks to the current economic outlook.⁷ Rather, liftoff from the zero lower bound should be deferred until labor market slack has diminished substantially further and inflation has moved up significantly closer to the FOMC’s 2 percent inflation goal.

³In a speech on January 15, 2015, Dennis Lockhart (the president of the Federal Reserve Bank of Atlanta) stated that economists at his institution have also “advanced the thesis that the elevated number of people working part-time involuntarily is restraining wage growth.”

⁴The same pattern is evident for other measures of labor compensation such as the employment cost index. Indeed, J. Robertson and E. Terry (“What’s (Not) Up with Wage Growth? *Macroblog*, Federal Reserve Bank of Atlanta, February 17, 2015) analyzed a range of indicators of nominal wage growth and concluded that “none of the characteristic-specific median growth rates we looked at are close to returning to prerecession levels. Lower-than-normal wage growth appears to be a very widespread feature of the labor market since the end of the recession.”

⁵Average hourly earnings of production and nonsupervisory workers increased from \$20.77 in November 2014 to \$20.80 in February 2015—a mealy raise of just 3 cents. Lack of wage growth is also found in other BLS wage series. Median usual weekly earnings for full-time wage and salary workers grew by 1.9 percent over the course of last year and by 1.7 percent in the fourth quarter. For all civilian workers, the Employment Cost Index (ECI) grew by 2.2 percent in both the third and fourth quarters of 2014.

⁶This rule was initially analyzed by J. Taylor, “A Historical Analysis of Monetary Policy Rules, in J. Taylor, ed., *Monetary Policy Rules* (University of Chicago Press, 1999). Its characterization as a “balanced approach rule was given by J. Yellen, “Perspectives on Monetary Policy, remarks given at the Boston Economic Club, June 6, 2012 (<http://www.federalreserve.gov/ncusevents/speech/yellen20120606a.htm>).

⁷According to the US Census Bureau, retail sales declined in three consecutive months: -0.9 percent in December 2014, -0.8 percent in January 2015, and -0.6 percent in February 2015.

Gauging Labor Market Slack

The Employment Gap

Our measure of the employment gap is the sum of three specific components.⁸ First, the *unemployment gap* is the deviation of the conventional unemployment rate—labeled “U3” by the Bureau of Labor Statistics (BLS)—from professional forecasters’ consensus projections of its longer-run normal rate (as reported in semiannual Blue Chip surveys). Second, the *participation gap* is the deviation (in percentage points) of the actual size of the labor force from CBO assessments of the potential labor force; this shortfall corresponds to the notion of “hidden unemployment” described above. Third, the *underemployment gap* takes the BLS measure of people working part-time for economic reasons (expressed as a fraction of the potential labor force) as a deviation from its 1994-2007 average and then converts this deviation into full-time equivalent (FTE) jobs.⁹

As shown in Figure 2, the U.S. employment gap has narrowed markedly over the past few years, along with each of its three components. Nonetheless, it is readily apparent that the conventional unemployment rate has *not* served as an accurate synopsis of the evolution of labor market slack. For example, the declining unemployment rate over the course of 2010 and most of 2011 was not induced by a pickup in job growth but instead reflected the extent to which many Americans gave up searching for work and departed from the labor force. In effect, the reduction in the unemployment gap was almost fully offset by an increase in the participation gap, and hence the overall employment gap showed very little improvement during that period.

Even more importantly, it is evident that the U.S. economic recovery remains far from complete in spite of apparently reassuring recent signals from the conventional unemployment rate. Indeed, while the unemployment gap has become quite small, the incidence of underemployment remains elevated and the size of the labor force remains well below CBO’s assessment of its potential. In particular, the employment gap currently stands at around 1.9 percent, suggesting that the “true” unemployment rate (including underemployment and hidden unemployment) should be viewed as around $7\frac{1}{2}$ percent. Gauged in human terms, the current magnitude of the employment shortfall is equivalent to about 3.3 million full-time jobs.

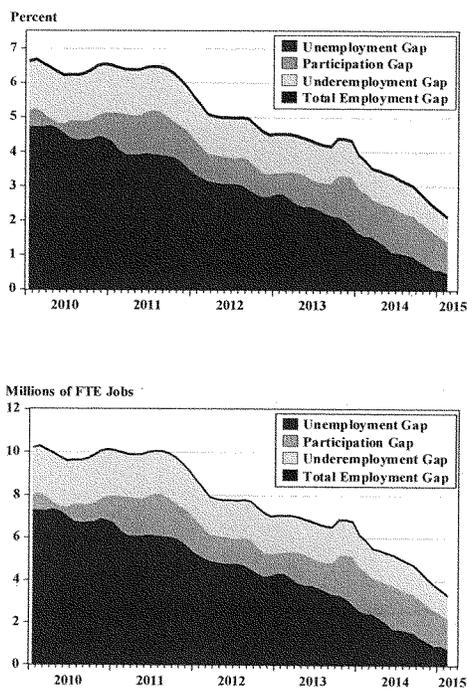
Of course, the characteristics of the economy’s balanced-growth path cannot be directly observed, and hence any particular assessment of the deviations from that path is necessarily subject to considerable uncertainty. In the context of a typical business cycle, such uncertainty might reasonably be judged as symmetric around the benchmark estimate. At the present juncture, however, it seems plausible that professional forecasters and analysts at policy institutions may have become overly pessimistic in gauging the extent to which the Great Recession caused permanent damage to the U.S. labor market. Consequently,

⁸This measure of the employment gap was introduced by A. Levin, “The Design and Communication of Systematic Monetary Policy Strategies, *Journal of Economic Dynamics and Control* (2014).

⁹The FTE conversion factor is computed using BLS data on the average weekly hours of individuals working part-time for economic reasons compared to the average weekly hours of individuals who are working full-time.

FIGURE 2

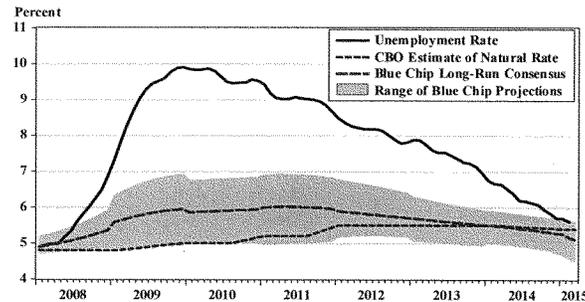
Benchmark Assessment of the Employment Gap



Note: This figure depicts the recent evolution of the U.S. employment gap in proportion to the potential labor force (top panel) and in millions of FTE jobs (bottom panel). In each panel, the dark-shaded area denotes the unemployment gap, the medium-shaded area denotes the participation gap, the light-shaded area denotes the underemployment gap, and the solid line denotes the total employment gap; all of these series are shown as three-month moving averages. Source: BLS, CBO, and authors' calculations.

FIGURE 3

Evolving Assessments of the Unemployment Gap



Note: The solid line denotes the three-month moving average of the U.S. unemployment rate (U3) from January 2008 to February 2015. The short-dashed line denotes the evolution of CBO's assessments of the long-run natural rate. The long-dashed line denotes the Blue Chip consensus (that is, the mean projection) for the unemployment rate 5 to 10 years ahead, while the upper and lower limits of the shaded area represent the average projections in the top and bottom quartiles, respectively. Source: Source: BLS, *Blue Chip Economic Indicators*, and authors' calculations.

the confidence bands around our current assessment of the employment gap may in fact be skewed to the upside; i.e., this assessment may well be an *underestimate* of the true magnitude of labor market slack. To examine that possibility, we now consider each of the individual components of the employment gap in turn.

The Unemployment Gap

CBO regularly produces assessments of the natural unemployment rate that would prevail if the economy were on its balanced-growth path.¹⁰ More specifically, CBO defines the natural rate as the level of unemployment "arising from all sources except fluctuations in aggregate demand." In the wake of the Great Recession, CBO refined its analysis to gauge the extent to which the natural rate has been affected by transitory vs. persistent structural factors. Thus, over the past few years CBO has produced estimates of the *long-term natural rate*, which solely reflects the influences of longer-lasting structural factors.¹¹

¹⁰These assessments are published in CBO's annual *Budget and Economic Outlook* document each January or February as well as in its midyear updates each August.

¹¹Since 2011 CBO has also produced estimates of the *short-term natural rate*, which incorporates the effects of transitory structural factors. In 2014, CBO relabeled the "long-term natural rate" as the "underlying long-term rate of unemployment" and began referring to the "short-term natural rate" as simply "the natural rate." In the immediate aftermath of the Great Recession, the distinction between these two measures was quite substantial (with a peak difference of around 0.8 percentage points). As of 2015, however, the two

Surveys of professional forecasters generally do not collect information about their estimates of the natural rate of unemployment. However, forecasters routinely make longer-run projections regarding the path to which the economy is expected to converge over time, and such projections essentially reflect their assessments of characteristics of the balanced-growth path, including the growth rate of potential output and the natural rate of unemployment. In particular, Blue Chip longer-run surveys (which are conducted semi-annually in March and October) report on the consensus and range of forecasters' projections of the average unemployment rate 5 to 10 years ahead.¹²

As shown in Figure 3, the Blue Chip's longer-run consensus outlook in early 2008 was 4.8 percent—virtually identical to CBO's assessment of the natural unemployment rate. In effect, analysts generally agreed that the unemployment gap at that juncture was effectively nil. Shortly thereafter, the actual unemployment rate skyrocketed upwards, reaching 10 percent by late 2009. CBO then raised its assessment of the natural rate by just a notch, whereas professional forecasters evidently became much more pessimistic about the prospects for long-lasting damage to the labor market: The Blue Chip longer-run consensus outlook moved up to around 6 percent, and the top quartile of projections in that survey reached nearly 7 percent. By 2012, CBO had come to share much of that pessimism and hence marked up its estimate of the long-term natural rate to levels similar to those of the Blue Chip consensus.

Over the past few years, as the unemployment rate has declined steadily and nominal wage inflation has been subdued, professional forecasters have been gradually marking down their longer-run unemployment projections. In the Blue Chip longer-run survey published in March 2015, the consensus outlook for unemployment was 5.1 percent, while the bottom quartile has declined to $4\frac{1}{2}$ percent and the top quartile of projections now stands at $5\frac{1}{2}$ percent. Interestingly, that consensus outlook is identical to the midpoint of the central tendency of FOMC participants' longer-run unemployment rate projections that were released in conjunction with the March 2015 FOMC meeting. CBO's latest assessment of the long-term natural rate (published in late January) was a notch higher at 5.4 percent.

It seems reasonable to infer that the uncertainty surrounding these assessments is skewed to the downside. Indeed, if unemployment declines further over coming quarters while wage inflation remains subdued, analysts will presumably make even further downward revisions to their assessments of the longer-run normal rate of unemployment. Thus, while our benchmark estimate of the unemployment gap is quite small, its true magnitude might well be substantially larger—perhaps by as much as three-fourths of a percentage point.

The Participation Gap

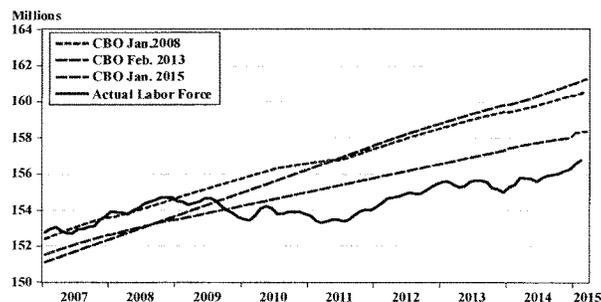
In conjunction with its estimates of potential output and the natural unemployment rate, CBO produces regular assessments of the historical and projected size of the *potential labor force*, that is, the balanced-growth path for the labor force that would prevail in the absence of

measures are now identical; i.e., CBO has concluded that transitory structural factors are no longer having any significant influence on the natural rate of unemployment.

¹²Blue Chip longer-run survey results are reported in the March and October editions of *Blue Chip Economic Indicators*, a publication owned by Aspen Publishers. Copyright (c) Aspen Publishers, Inc. All rights reserved.

FIGURE 4

Evolving CBO Assessments of the Potential Labor Force



Note: The solid line denotes the three-month moving average of the U.S. labor force from January 2007 to February 2015, and the dashed lines denote the CBO's assessments of the potential labor force as of January 2008 (short-dashed), February 2013 (medium-dashed), and January 2015 (long-dashed). Each CBO series has been adjusted to incorporate subsequent revisions to BLS population controls. Source: BLS, CBO, and authors' calculations.

aggregate demand shocks. In effect, given detailed projections for the size and demographic composition of the population (mainly drawing on the work of the Census Bureau), CBO's assessments of the potential labor force convey its analysis of how demographic and structural factors are likely to influence the evolution of labor force participation over time.

Figure 4 depicts the evolution of CBO's assessments of the potential labor force. As of January 2008, CBO estimated that the actual labor force (specifically, about 154 million people) was very close to its potential level; i.e., the participation gap was judged to be negligible. Moreover, at that juncture CBO projected that the potential labor force would expand at an annual pace of about three-quarters of a percent through 2012 and would then decelerate somewhat to an annual pace of about half a percent in subsequent years.¹³

In the wake of the Great Recession, the U.S. labor force actually decreased in size through mid-2011 and then resumed a moderate upward trajectory over the past few years. Nonetheless, from 2009 through 2013, CBO made only modest revisions to its assessments of the potential labor force. Most notably, CBO analysis indicated that the labor force had *exceeded* its potential size by about a full percentage point during the lead-up to the financial crisis. However, CBO made roughly offsetting adjustments to the projected growth rate of the potential labor force, and hence the implications for the magnitude of the participation

¹³As discussed in C. Erceg and A. Levin ("Labor Force Participation and Monetary Policy in the Wake of the Great Recession," *Journal of Money, Credit and Banking*, 2014), CBO's labor force projections in early 2008 were broadly consistent with the projections that were published by BLS in November 2007.

gap as of 2013 were essentially the same as implied by its January 2008 assessment.

In contrast, CBO has recently made substantial downward revisions to its assessments of the entire post-2008 trajectory for the potential labor force. In particular, CBO now judges that demographic and structural factors account for a larger share of the post-2008 decline in labor force participation than indicated by its previous analysis. Moreover, CBO has concluded that much of the cyclical decline in labor force participation has become irreversible; i.e., CBO now anticipates that only two-thirds of the individuals who departed from the workforce in the wake of the Great Recession will rejoin the labor force as the economy continues to strengthen.

Evidently, such judgments have crucial implications for gauging the current magnitude of the shortfall in U.S. employment. According to CBO's latest assessment of the potential labor force, the participation gap currently stands at around 0.8 percent (which is the value that we used in constructing our benchmark estimate of the employment gap as shown in Figure 2). By contrast, CBO's outlook as of February 2013 implies a substantially larger participation gap of around 2.6 percent and hence that the employment gap is *nearly twice as large* as our benchmark estimate.

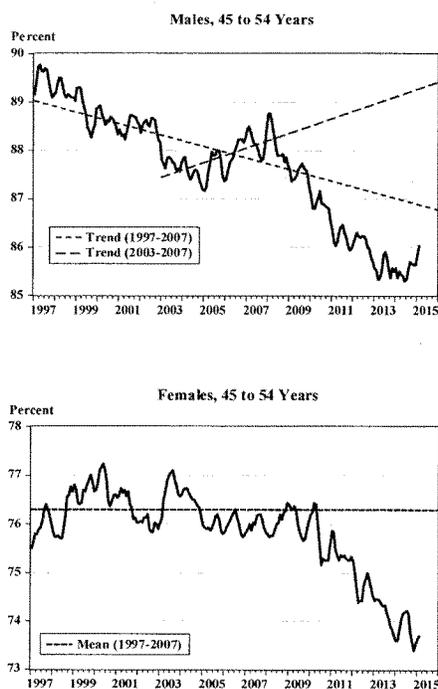
Breaking down the data by gender is also relevant for assessing the extent to which the post-2007 decline in U.S. labor force participation might be largely structural or irreversible. As shown in the left panel of Figure 5, the participation rate of males age 45 to 54 years was drifting downward during the late 1990s, but that trend was arrested and perhaps even reversed during the mid-2000s. Thus, there is evidently a substantial degree of uncertainty about the current magnitude of the participation gap for this demographic group. If one fits a linear trend over the decade ending in 2007, then the actual participation rate is now within a percentage point of that trend line—roughly similar to CBO's current assessment of the aggregate participation gap. By contrast, if one fits a linear trend over the five-year period ending in 2007, then the participation gap is around 3 percentage points, roughly consistent with the implications of CBO's assessments several years ago.

As shown in the right panel of Figure 5, the participation rate of females age 45 to 54 years was essentially flat from 2000 through 2007, and hence there is simply no basis whatsoever for attributing its post-2007 decline to structural factors. Rather, it seems evident that this decline resulted from the persistent weakness of the job market in the wake of the Great Recession. Moreover, the magnitude of that decline—about $2\frac{1}{2}$ percentage points—is virtually identical to the drop in labor force participation of all prime-age adults (that is, aged 25 to 54 years), who comprise the bulk of the U.S. labor force. In effect, this pattern bolsters the view that the Great Recession and its aftermath were largely responsible for the post-2007 decline in the U.S. participation rate, consistent with the conclusions of a number of recent empirical studies.¹⁴

¹⁴See D. Aaronson, J. Davis, and L. Hu, "Explaining the Decline in the U.S. Labor Force Participation Rate, Chicago Fed Letter #296, Federal Reserve Bank of Chicago, 2012; J. Sherk, "Not Looking for Work: Why Labor Force Participation Has Fallen During the Recession, Backgrounder 2722, Heritage Foundation Center for Data Analysis, 2012; W. Van Zondweghe, "Interpreting the Recent Decline in Labor Force Participation, *Economic Review*, Federal Reserve Bank of Kansas City, 5-34, 2012; J. Hotchkiss and F. Rios-Avila, "Identifying Factors Behind the Decline in the Labor Force Participation Rate, *Business*

FIGURE 5

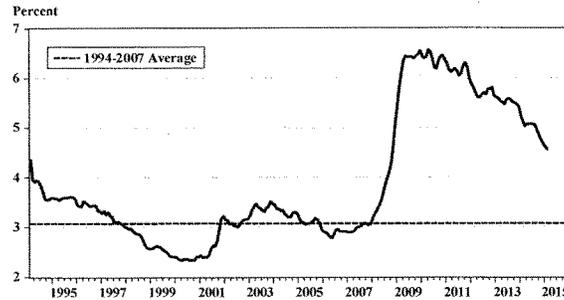
Disaggregated Evidence on Participation Trends



Note: The left panel depicts the three-month moving average of the labor force participation rate of males aged 45 to 54 years (solid line), along with linear trends fitted to observations from 1997 to 2007 (short-dashed line) and 2003 to 2007 (long-dashed line). The right panel depicts the three-month moving average of the labor force participation rate of females aged 45 to 54 years (solid line), along with its mean value from 1997 to 2007 (dashed line). Source: BLS and authors' calculations.

FIGURE 6

The Underemployment Gap



Note: This figure depicts the three-month moving average of the number of people employed part-time for economic reasons as a fraction of total employment (solid line) and the mean value of that ratio over the period from 1994:1 to 2007:12. Source: BLS and authors' calculations.

Finally, it should be noted that the participation rate of males age 45 to 54 years has recently moved up by nearly a full percentage point, rising from 85.3 percent last spring to 86.2 percent in the latest BLS employment report. That development may reasonably provide some reassurance that the labor market damage from the Great Recession is *not* irreversible and that many other prime-age adults (both male and female) as well as younger adults will decide to rejoin the labor force if the job market continues to strengthen going forward.

The Underemployment Gap

Gauging the underemployment gap seems relatively straightforward by comparison with the challenges of assessing the unemployment gap and the participation gap. As shown in Figure 6, the underemployment rate— that is, the incidence of people working part-time for economic reasons (PTER) as a fraction of total employment— did not exhibit any trend over the period from 1994 through 2007. It seems implausible that the sudden rise in underemployment during the Great Recession was caused by demographic or structural factors. And individuals who are underemployed are clearly not “unemployable” (as some have suggested about the long-term unemployed or those who have dropped out of the workforce), since they are already working but simply can’t find a full-time job. Indeed, BLS data indicate that the average person classified as PTER is working about 23 hours per week.

and Economic Research 3:257-275, 2013; and C. Erceg and A. Levin, “Labor Force Participation and Monetary Policy in the Wake of the Great Recession. For a contrary view, see Aaronson et al., “Labor Force Participation: Recent Developments and Future Prospects, *Brookings Papers on Economic Activity*, 2014.

Moreover, it seems unlikely that structural factors are the primary reason why the incidence of underemployment has only declined gradually over the past few years. After all, if the economy were on its balanced-growth path and some employers preferred to shift their workforce toward a greater number of part-time positions, then those employers would need to offer a relatively higher wage to induce workers to take part-time jobs voluntarily—a phenomenon that is certainly not evident in the current job market.

In light of these considerations, it is striking that the underemployment rate has only moved about halfway back from its 2009 peak towards its pre-recession level. That pattern might well suggest that the overall magnitude of labor market slack may have diminished by a similar proportion. In particular, as shown in Figure 2, the employment gap reached a peak of about 6 percent in early 2010. Consequently, it may be reasonable to infer that the employment gap currently stands at around 3 percent—that is, about a percentage point higher than our benchmark assessment. In effect, the evolution of the underemployment gap reinforces the view that the uncertainty surrounding our benchmark assessment of the employment gap is skewed to the upside.

The Wage Curve

We now move on to examine the extent to which measures of labor market slack over and above the unemployment rate impact wages. We do so following the approach taken by Blanchflower and Oswald, using data from the Merged Outgoing Rotation Group (MORG) files extracted from the Current Population Survey (CPS).¹⁵ The CPS is collected monthly and is used to calculate the unemployment rate and other labor market aggregates published monthly in the BLS in the Employment Situation jobs release.¹⁶ Data are available from 1990-2012, so with 50 states and the District of Columbia, there are 1,173 observations in total.¹⁷

Table 1 presents results using the log of hourly earnings as the dependent variable, whereas Table 2 uses weekly earnings. The results are essentially the same, so our discussion will focus on the results shown in Table 1.

¹⁵D. Blanchflower and A. Oswald, *The Wage Curve* (Cambridge, MA: MIT Press, 1994).

¹⁶Respondents in the CPS are surveyed for four consecutive months (waves 1-4), and then after a four-month break, are surveyed for another four months (waves 5-8). The wage questions are only asked in waves 4 and 8, which are referred to as the “outgoing rotations.” Each of the annual MORG files has approximately 170,000 wage observations. Data are aggregated to the level of state and year cell including both hourly and weekly earnings as well as variables on age, gender, race and schooling. This is exact aggregation and solves the Moulton problem. So a gender variable in the micro data file becomes a variable identifying the proportion of workers in a state in a particular year, and so on for the other variables. Mapped onto the file are data from the BLS on the participation rate as well as the proportion of the employed that is part-time for economic reasons as well as the number of the unemployed who have been unemployed for less than 26 weeks; 26-52 weeks and more than 52 weeks.

¹⁷Each regression includes the 19 personal control variables described in the previous footnote, as well as a lagged dependent variable that helps mitigate biases of uncertain sign and magnitude that could result from aggregation or missing variables. The start date of 1990 is determined by the availability of the labor market status variables, whereas the wage data is available for prior years; hence the inclusion of a lagged dependent variable does not constrain the length of our sample.

TABLE 1

U.S. State-Level Panel on Hourly Wages, 1990-2012

1) Long-Term Unemployment

Wage _{t-1}	0.7106 (360.00)	0.6835 (340.65)	0.7101 (350.92)	0.6822 (340.56)	0.7060 (350.53)	0.6834 (340.60)
Unemployment Rate _t	-0.0279 (60.98)		-0.0266 (50.51)		-0.0240 (50.32)	
Unemployment Rate _{t-1}		-0.0365 (90.47)		-0.0404 (80.50)		-0.0364 (80.04)
% Unemployed >26 weeks _t			-0.0001 (0.45)	0.0002 (10.39)		
% Unemployed >52 weeks _t					-0.0004 (10.88)	-0.0000 (0.05)
Adjusted R ²	0.9945	0.9947	0.9945	0.9947	0.9945	0.9947

2) Underemployment

Wage _{t-1}	0.6825 (330.55)	0.6610 (320.67)	0.6534 (320.04)	0.6607 (320.42)	0.6534 (320.40)	0.6225 (290.85)
Unemployment Rate _t	-0.0256 (60.46)			-0.0064 (10.25)		
Unemployment Rate _{t-1}		-0.0339 (80.73)	-0.0351 (90.18)		-0.0210 (40.27)	-0.0178 (30.64)
Non-Participation Rate _t	-0.0956 (40.94)	-0.0830 (40.33)		-0.0906 (40.75)	-0.0823 (40.33)	
Non-Participation Rate _{t-1}			-0.0954 (50.06)			-0.0925 (40.97)
Underemployment Rate _t				-0.0213 (50.87)	-0.0149 (40.22)	
Underemployment Rate _{t-1}						-0.0199 (50.59)
Adjusted R ²	0.9948	0.9947	0.9948	0.9947	0.9948	0.9949

Note: All equations include 50 state dummies, 22 year dummies; 15 schooling variables plus age, gender and two race variables. All variables are in natural logarithms. Each regression uses 1,173 observations. Each coefficient's t-statistic is shown below in parentheses. Source: BLS and CPS MORG files.

TABLE 2

U.S. State-Level Panel on Weekly Wages, 1990-2012

1) Long-Term Unemployment

Wage _{t-1}	0.6499 (340.36)	0.6561 (310.75)	0.6840 (340.21)	0.6560 (310.73)	0.6790 (330.68)	0.6840 (340.21)
Unemployment Rate _t	-0.0441 (90.17)		-0.0443 (70.70)		-0.0405 (70.55)	
Unemployment Rate _{t-1}		-0.0449 (90.31)		-0.0460 (70.87)		-0.0364 (70.71)
% Unemployed >26 Weeks _t			-0.0000 (0.08)	0.0001 (0.34)		
% Unemployed >52 Weeks _t					-0.0004 (10.53)	-0.0000 (0.08)
Adjusted R ²	0.9924	0.9924	0.9924	0.9924	0.9924	0.9924

2) Underemployment

Wage _{t-1}	0.6499 (330.74)	0.6268 (290.47)	0.6125 (280.75)	0.6128 (290.46)	0.6032 (280.75)	0.5821 (260.26)
Unemployment Rate _t	-0.0424 (80.90)			-0.0151 (20.54)		
Unemployment Rate _{t-1}		-0.0423 (80.81)	-0.0443 (90.35)		-0.0162 (20.77)	-0.0264 (50.04)
Non-Participation Rate _t	-0.1238 (50.37)	-0.1155 (40.99)		-0.1207 (50.36)	-0.1172 (50.19)	
Non-Participation Rate _{t-1}			-0.1499 (60.62)			-0.1457 (60.54)
Underemployment Rate _t				-0.0314 (70.29)	-0.0313 (70.48)	
Underemployment Rate _{t-1}						-0.0259 (60.61)
Adjusted R ²	0.9926	0.9926	0.9927	0.9929	0.9929	0.9929

Note: All equations include 50 state dummies, 22 year dummies; 15 schooling variables plus age, gender and two race variables. All variables are in natural logarithms. Each regression uses 1,173 observations. Each coefficient's t-statistic is shown below in parentheses. Source: BLS and CPS MORG files.

As shown in column 1 of the panel labeled “Long-term unemployment”, the lagged dependent variable has a coefficient of 0.7106, consistent with interpreting this regression specification as a wage curve rather than as a Phillips curve.¹⁸ The estimated coefficient of -0.0279 on the logarithm of the unemployment rate is negative and statistically significant, with a t-statistic of around 7. A simple computation indicates that the long-run unemployment elasticity of pay is -0.10, implying that a doubling of the unemployment rate is associated with a 10 percent decline in real wages.¹⁹ As shown in column 2, these findings are not sensitive to the precise timing of the unemployment measure (using the rate in period $t - 1$ instead of period t). Moreover, the results reported here are essentially the same as what Blanchflower and Oswald found across many countries and datasets and are also consistent with the conclusions reached by Nijkamp and Poot in a meta-analysis of wage curve estimates.²⁰

The remaining columns of this panel confirm the findings of Blanchflower and Posen.²¹ In particular, these regressions incorporate various measures of long-term unemployment that are never statistically significant. Evidently, the pace of wage growth is linked to the overall level of unemployment and does *not* depend on its composition, i.e., the relative incidence of long-term vs. short-term unemployment.

The second panel of the table called “Underemployment” provides some new results. As shown in the first two columns, the nonparticipation rate (that is, 100 minus the participation rate) has a negative and statistically significant effect on wage growth, consistent with the findings of Blanchflower and Posen.²² Next, we incorporate the underemployment rate, which is defined as the number of workers who say they are working part-time for economic reasons as a percentage of total employment (as shown in Figure 6). This coefficient estimate is also negative and significant, and its inclusion does not influence the statistical significance of the other key variables.²³

Evidently, wage growth is pushed down by the unemployment rate, the nonparticipation rate, and the underemployment rate. Thus, while the unemployment rate may have been an adequate indicator of slack prior to the onset of the Great Recession, all of these forms

¹⁸D. Card, “The Wage Curve: A Review, *Journal of Economic Literature* 33:785-99.

¹⁹Specifically, this elasticity is computed as $-0.0279/(1 - 0.7106) = -0.0964$.

²⁰Blanchflower and Oswald, *The Wage Curve*; D. Blanchflower and A. Oswald, “The wage curve reloaded, NBER Working Paper #11338, 2005; P. Nijkamp and J. Poot, “The Last Word on the Wage Curve? *Journal of Economic Surveys* 19: 421-50, 2005. Blanchflower and Oswald (*The Wage Curve*, p. 357) stated: “Future work will have to begin to test for statistically significant differences among numbers that lie in a rough band from -0.05 to -0.20. It would probably be unwise to treat the minus-point-one rule as more than one of thumb”.

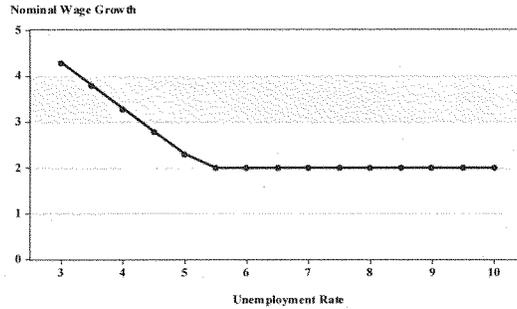
²¹D. Blanchflower and A. Posen, “Wages and Labor Market Slack: Making the Dual Mandate Operational, Peterson Institute for International Economics Policy Brief 14-10, 2014.

²²Blanchflower and Posen, “Wages and Labor Market Slack; A. Paciorek (“Where Are the Construction Workers? FEDS Notes, Board of Governors of the Federal Reserve System, February 26, 2015) found that many individuals who are out of the labor force appear to be relatively good candidates for construction employment, at least on the basis of their demographic characteristics. In particular, he suggests there may be “a large pool of people who would find construction work attractive but did not enter the industry during the bust years.”

²³The results are essentially the same in Table 2 using weekly earnings.

FIGURE 7

A Stylized Representation of the Wage Curve



Note: The shaded area depicts the range for nominal wage growth that Federal Reserve Chair Yellen has described as “normal.” Source: authors’ calculations.

of labor market slack appear to be crucial in interpreting the sluggishness of nominal wage growth over the past few years, as shown in Figure 1.²⁴

Figure 7 presents our interpretation of the relationship between nominal wage growth and the “true unemployment rate (including underemployment and nonparticipation). In particular, we suspect that the wage curve is relatively flat at elevated levels of labor market slack, i.e., a decline in slack does not generate any significant wage pressures as long as the level of slack remains large. As noted above, our benchmark analysis indicates that the true unemployment rate is currently around $7\frac{1}{2}$ percent—a notable decline from its peak of more than 10 percent but still well above its longer-run normal level of around 5 percent. Thus, the shape of the wage curve can explain why nominal wage growth has remained stagnant at around 2 percent over the past few years even as the employment gap has diminished substantially. Moreover, our interpretation suggests that nominal wages will not begin to accelerate until labor market slack diminishes substantially further and the true unem-

²⁴See D. Bell and D. Blanchflower (“How to Measure Underemployment? Peterson Institute for International Economics Working Paper 13/2, August 2013; “Underemployment in the UK Revisited, *National Institute Economic Review*, 224:F8-F22, 2013; “Labour Market Slack in the UK, *National Institute Economic Review*, 229:F4-F11, 2014) for more on underemployment in the United Kingdom based on preferences over hours. Workers are asked in the Labour Force Survey, which is the equivalent of the CPS in the United States, if they want more or less hours. These responses can be aggregated to the economy level. From 2000 to 2008 there was no underemployment as the number of hours of those who wanted more hours approximately equaled the number of hours of those who want fewer hours. Since 2008 the numbers who want more hours dominate to such a degree that underemployment currently is approximately 1.8 percent on top of the unemployment rate itself. It also turns out that one-third of the extra hours currently come from full-time workers, suggesting the measure we use in the US is an underestimate of the true amount of underemployment by around 50 percent.

ployment rate approaches its longer-run normal level of around 5 percent.

Monetary Policy Implications

No macroeconomic model provides a completely satisfactory description of any economy in the real world. Indeed, the limitations of existing macroeconomic models have been underscored by the incidence of relatively large and persistent forecast errors in many advanced economies over the past few years.²⁵ Thus, rather than relying on the monetary policy implications of any single macro model, it seems sensible to consider simple reference rules that provide reasonably robust performance across a range of plausible models. Such rules can serve as valuable benchmarks in the decision-making process and in explaining those decisions to the public.²⁶

Following the seminal analysis of Taylor, a simple rule-of-thumb for adjusting the level of the federal funds rate can be expressed as a weighted sum of four components: the equilibrium real interest rate, the actual inflation rate, the inflation gap (that is, the deviation of inflation from the central banks inflation objective), and the level of resource slack.²⁷ We discuss each of these components in turn.

The equilibrium real interest rate (r^)* is defined as the short-term real interest rate at which the economy evolves along its balanced-growth path and inflation remains stable at the central banks objective. As with other properties of the balanced-growth path, the value of r^* cannot be directly measured but must be inferred from observed economic and financial data. In our analysis, the value of r^* is given by the consensus outlook in the Philadelphia Feds Survey of Professional Forecasters (SPF) regarding the 5-to-10-year ahead projection for the average value of the 3-month Treasury bill rate less the PCE inflation rate. Thus, using the results of the latest SPF (published in February 2015), we set $r^* = 1.25$ percent.²⁸

Inflation and the inflation gap. The FOMC has established an inflation objective of 2 percent, expressed in terms of the price index for personal consumption expenditures (PCE). In measuring actual inflation, we mitigate the influence of transitory price shocks by focusing on the 12-month percent change in the core PCE price index (that is, excluding food and energy prices). In the latest reading, this measure of inflation was 1.31 percent, and hence

²⁵See C. Romer and D. Romer, "Program Report: The NBER Monetary Economics Program, National Bureau of Economic Research Report 1,17, 2014.

²⁶See J. Taylor, "Discretion Versus Policy Rules in Practice, *Carnegie-Rochester Conference Series on Public Policy* 39:195214, 1993; J. Taylor and J. Williams, "Simple and Robust Rules for Monetary Policy, *Handbook of Monetary Economics*, 2010; A. Levin and J. Taylor, "Falling Behind the Curve: A Positive Analysis of Stop-Start Monetary Policies and the Great Inflation, in *The Great Inflation*, Bordo, M., Orphanides, A., eds., Chicago, IL: University of Chicago Press, 2013; and A. Levin, "The Design and Communication of Systematic Monetary Policy Strategies.

²⁷Specifically, such a rule can be expressed as follows: $i_t = r^* + \pi_t + \alpha(\pi_t - \pi^*) + \beta gap_t$, where i_t denotes the target federal funds rate, r^* denotes the equilibrium real interest rate, π_t denotes a smoothed measure of inflation, π^* denotes the inflation objective, gap_t is a measure of resource slack, and the coefficients α and β indicate how much the interest rate should be adjusted in response to the inflation gap ($\pi_t - \pi^*$) and to resource slack, respectively. See J. Taylor, "Discretion Versus Policy Rules in Practice.

²⁸This value of the equilibrium real interest rate is about 25 basis points lower than the median of FOMC participants longer-run real interest rate projections in the latest SEP (published in mid-March).

TABLE 3

**Prescriptions of the “Balanced Approach” Rule
under Alternative Assessments of the Employment Gap**

Assessment	Employment Gap	True Unemp. Rate	Funds Rate Prescription
Benchmark Estimate	1.9	7.4	0.29
Lower Natural Rate (4.8 percent)	2.2	7.7	-0.01
Higher Potential Labor Force (CBO 2013)	3.6	9.1	-1.44
Higher Potential Labor Force and Lower Natural Rate	3.9	9.4	-1.74

Source: BLS, *Blue Chip Economic Indicators*, CBO, SPF, and authors' calculations.

the inflation gap was 0.69 percent.

Resource slack. In light of our foregoing analysis, we measure resource slack in terms of the total employment gap. In addition to our benchmark estimate, we consider the implications of several alternative assessments of labor market slack.

For the sake of brevity, our analysis focuses on one specific rule-of-thumb that was analyzed extensively by Taylor.²⁹ This rule prescribes the level of the federal funds rate as the weighted sum of the equilibrium real interest rate, the current inflation rate, the inflation gap, and the level of resource slack, with weights of 1.0, 1.0, 1.5, and 1.0, respectively. This particular specification has been shown to provide a reasonably balanced approach to fostering the stability of inflation and economic activity, and hence Yellen characterized it as the “balanced approach rule.”³⁰

As shown in Table 3, this policy rule prescribes a target federal funds rate of about $\frac{1}{4}$ percent using our benchmark estimate of the employment gap. However, the implied funds rate is notably lower for other reasonable assessments. Indeed, using CBO’s February 2013 projection for the potential labor force (as depicted in Figure 4) along with a natural rate of 4.8 percent (consistent with analysts pre-crisis projections), the employment gap is nearly twice as high at around 4 percent, and the funds rate prescription is nearly 2 percentage

²⁹J. Taylor (“A Historical Analysis of Monetary Policy Rules, in J. Taylor, ed., *Monetary Policy Rules*, University of Chicago Press, 1999) reported on a comprehensive analysis of the performance of simple policy rules across a wide range of macroeconomic models.

³⁰Yellen, “Perspectives on Monetary Policy.”

points below zero.

This analysis indicates that initiating the process of monetary policy tightening would be premature at the present time. Indeed, such a policy move would be a serious mistake in light of substantial downside risks to the current economic outlook. Rather, liftoff from the zero lower bound should be deferred until labor market slack has diminished further and inflation has moved up closer to the FOMC's 2 percent inflation goal.

Making the Federal Reserve Fully Public: Why and How

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August 2016

Abstract: The Federal Reserve’s governance structure is outdated and inadequate for ensuring that the Fed serves the public interest. In this paper, we examine the case for making the Fed fully public (“why”), and then we consider specific proposals for doing so (“how”). Our analysis indicates that pragmatic and nonpartisan reforms can strengthen the Federal Reserve’s governance while enhancing its operational independence to pursue its statutory mandate without political interference. In particular, the Fed should be a fully public institution whose decision-makers are selected by open and transparent processes; indeed, we find that making the Fed fully public also yields significant benefits for American taxpayers. Moreover, the Fed should be held to the same standards of transparency and accountability as every other public agency, including comprehensive annual reviews by the Government Accountability Office (GAO) and applicability of the Freedom of Information Act (FOIA) to all aspects of the Fed’s procedures and operations.

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I. Introduction

When the Federal Reserve System was founded in 1913, its fundamental purpose was to serve as the “*bank to the bankers*”—that is, a secure depository for bank reserves and a source of funds during liquidity shortages. Thus, like nearly every other central bank of that era, the twelve regional Federal Reserve Banks were established as essentially private institutions, owned and managed by commercial banks under the broad oversight of the Federal Reserve Board (which is an independent federal agency).

Over the past century, however, the Federal Reserve has evolved into *America’s central bank*, and its monetary policy decisions now affect the everyday lives of practically every American family. For example, when the Fed acts to adjust the level of short-term interest rates, that adjustment is reflected in a wide array of interest rates and asset prices, including auto loan rates, home mortgage rates, savings deposit rates, business financing costs, and so forth. And those financial effects reverberate on the broader economy, affecting consumer spending, business hiring and investment, and the determination of wages and prices.

Unfortunately, the Federal Reserve’s governance structure is outdated and inadequate for ensuring that the Fed serves the public interest. The presidents of the Federal Reserve Banks sit on the Federal Open Market Committee (FOMC), which determines the course of monetary policy, but the Federal Reserve Banks are private institutions owned by commercial banks. Indeed, commercial banks select two-thirds of the directors of each Federal Reserve Bank, including half of the directors responsible for appointing its president. Moreover, while the demographics of America have grown increasingly diverse over time, the leadership of the Federal Reserve Banks (that is, the presidents and the directors) has remained overwhelmingly white, male, and insular—dominated almost exclusively by long-time Fed insiders and individuals with a financial background.

Moreover, the Fed’s private ownership is now out of step with practically every other major central bank around the world. For example, the Bank of Canada and the Bank of England became public in 1938 and 1946, respectively, while the European Central Bank has been a public institution since its inception in the 1990s. Nearly all of the 19 national central banks in the eurozone are fully public; the lone exceptions are Belgium, Greece, and Italy. And the Bank of Japan and the Swiss National Bank each have miniscule amounts of outstanding shares, the majority of which are held by other public institutions.¹

In this paper, we examine the case for making the Fed fully public (“why”), and then we consider specific proposals for doing so (“how”). Our analysis indicates that pragmatic and nonpartisan reforms can strengthen the Federal Reserve’s governance while enhancing its operational independence to pursue its statutory mandate without political interference. In particular, the Fed should be a fully public institution whose decision-makers are selected by open and transparent processes; indeed, we find that making the Fed fully public also generates significant benefits for American taxpayers. Moreover, the Fed should be held to the same standards of transparency and accountability as every other public agency, including comprehensive annual reviews by the Government Accountability Office (GAO) and applicability of the Freedom of Information Act (FOIA) to all aspects of its procedures and operations.

¹ The paid-in capital of the Bank of Japan (BOJ) is fixed at a miniscule amount of 100 million yen (roughly \$1 million) that accrues a tiny stream of dividends (about \$50,000 per year). Moreover, the Japanese government owns 55 percent of the BOJ’s paid-in capital, and its other shareholders do not have any role in the BOJ’s oversight or management. The paid-in capital of the Swiss National Bank is fixed at 25 million CHF (about \$25 million), of which roughly two-thirds is held by public institutions.

II. The Rationale for Fed Reform

A. Deficient Selection Procedures

As noted above, the FOMC sets the nation's monetary policy. Under the Federal Reserve Act, the FOMC has a nuanced structure in which the seven members of the Fed's Board of Governors and the president of the Federal Reserve Bank of New York are all permanent voting members, while four of the other eleven presidents serve as voting members on a rotating basis. That design was intended to ensure that the Federal Reserve Bank presidents—as heads of private institutions—would only constitute a minority of the voting members of the FOMC. In recent years, however, the Fed's Board of Governors has regularly experienced multiple vacancies, reflecting a more extensive timeframe for vetting potential nominees as well as a more protracted duration of the Senate confirmation process. Thus, the members of the Board of Governors have constituted a voting majority at only half of the FOMC meetings from 2001 to 2008 and less than one-third of the FOMC meetings since then.² In effect, increased political gridlock has expanded the influence of the Federal Reserve Bank presidents in setting the nation's monetary policy.³

Despite the crucial role of Reserve Bank presidents in determining the nation's monetary policy, the process for selecting them takes place entirely behind closed doors. Recent Reserve Bank presidential appointments have revealed a process that is opaque, inbred, and largely *pro forma*. The Federal Reserve Act establishes the procedure for selecting Reserve Bank presidents. The Federal Reserve Board describes the process as follows: “To conduct the search, the Reserve Bank's board of directors forms a search committee composed of Class B and C directors. That committee hires a search firm to help identify a broad, diverse, highly qualified candidate pool. The committee considers a large nationwide pool of candidates, both within and outside the Federal Reserve System, who meet the position's qualifications.”⁴

Beyond these legal guidelines, very little information is publicly available regarding how Reserve Bank presidents are chosen. The public is kept in the dark about the candidates being considered, the timeline for their selection, and the criteria used to assess candidates' qualifications. When the Reserve Bank presidents in Philadelphia, Dallas, and Minneapolis announced their retirements in 2014, the stage was set for a preview of the re-appointment process set to take place in 2016. One by one, the presidential vacancies at all three Reserve Banks were filled by individuals who had previously been affiliated with the same large bank, and the Board of Governors unanimously approved each of those appointments.⁵ At the Dallas and Philadelphia Reserve Banks, the individuals chosen had been involved in their own selection.⁶

These, however, are not the only examples of Reserve Bank presidents having an inside track to selection. A 2015 analysis conducted by the Bipartisan Policy Center found that 17 of the 25 Reserve Bank

² Indeed, there have been three FOMC meetings at which there were only four members of the Board of Governors, and hence they comprised a minority of the voting members of the FOMC.

³ http://www.brookings.edu/~media/research/files/papers/2015/03/02-fed-banks-21st-century/pcb_workingpaper10_june24_final.pdf.

⁴ <https://www.federalreserve.gov/faqs/how-is-a-federal-reserve-bank-president-selected.htm>.

⁵ <https://www.thenation.com/article/why-do-former-goldman-sachs-bankers-keep-landing-top-slots-at-the-federal-reserve/>

⁶ <http://www.bloomberg.com/news/articles/2015-06-03/not-far-to-look-fed-s-newest-president-searched-found-himself>; <http://bi-beatblog.dallasnews.com/2015/08/dallas-fed-names-harvard-business-professor-as-new-president.html>

presidents since 1990 “have been immediate past employees or board members of a regional bank.”⁷ In response to recent concerns members of Congress raised about the re-appointment process for Federal Reserve Bank presidents being an “inside game,” leaders at the Fed noted that the Board of Governors conducts “ongoing monitoring” and an annual review of Reserve Bank presidents’ performance, and that when the time came to re-appoint or replace presidents, the Board of Governors would “act on the recommendations” of the boards of directors.⁸ In 2016, all Reserve Bank presidents were re-appointed to new terms.⁹

The re-appointment process is *pro forma* and insular. Indeed, Federal Reserve Bank presidents do not conceive of their own appointments as having five-year terms; rather, they mostly expect to serve until they retire or are aged out. One example of the process’ perfunctory nature is the routine re-appointment of presidents who can’t possibly serve the bulk of their term due to mandatory retirements.

To ensure that a wider breadth of candidates—not just those with backgrounds at the Fed and within the financial sector—are considered, the Fed must bring this process out from the shadows.

B. Lack of Diversity

In 1977, Congress amended the Federal Reserve Act to include reforms requiring that Federal Reserve leaders “represent the public, without discrimination on the basis of race, creed, color, sex, or national origin, and with due but not exclusive consideration to the interests of agriculture, commerce, industry, services, labor and consumers.”

Despite these efforts to formally align the institution with current antidiscrimination laws and to expand diversity on Federal Reserve Bank boards of directors, the Federal Reserve remains wholly unrepresentative of the public, in terms of racial, gender, and professional diversity:

- No African American or Latino has ever served as president of any Federal Reserve Bank.
- At present, ten of the twelve Federal Reserve Bank presidents are white men; two are women, and only one is non-white.
- The directors of the Federal Reserve Banks are predominantly white men; specifically, 83 percent are white and nearly three-fourths are men.
- About five years ago, the GAO reported that consumer groups and labor organizations were significantly underrepresented on Federal Reserve Banks’ boards of directors.¹⁰ Since then, however, the share of directors from banking and commerce has increased even further.
- Less than 5 percent of all Federal Reserve Bank directors represent organizations governed by community members and employees.

⁷ <http://bipartisanpolicy.org/blog/reform-the-fed-get-rid-of-groupthink/>

⁸ <https://www.c-span.org/video/?c4580569/sen-jack-reed>

⁹ <https://www.federalreserve.gov/newsevents/press/other/20160219a.htm>

¹⁰ <http://www.gao.gov/products/GAO-12-18>

C. Consequences for Decision-Making

Diversity is more than just a symbolic gesture of fairness and inclusion. Empirical analysis clearly shows that diversity, especially within public organizations, enhances the pursuit of policies and practices that meet a broader range of public needs and expectations and even improves organizational performance.¹¹ This operates through direct as well as indirect channels. When included in decision-making roles, members of underrepresented groups tend to act to ensure that the interests of those who share their group identities are not overlooked. Additionally, their presence in these roles also influences non-minority decision-makers by exposing them to information that may be beyond the scope of their personal experience.

The advice of Federal Reserve Bank directors and the background of Federal Reserve Bank presidents are undoubtedly key factors that contribute to the FOMC's deliberations. The attitudes, perspectives, and life experiences that Federal Reserve Bank presidents and board directors take to the FOMC have an enormous bearing on the Federal Reserve's decisions, which in turn have major implications for public well-being. The outsized voice of the commercial banks in selecting regional Federal Reserve directors significantly affects the capacity of the Federal Reserve Banks to fulfill their responsibility for assessing and characterizing economic conditions in their respective regions. And the resulting lack of diversity of the Federal Reserve Bank presidents—in terms of race, ethnicity, gender, educational background and professional experience—has substantive consequences for comprehensively and accurately assessing the strength of the economy in advance of making monetary policy decisions.

Of course, the Fed is not charged with alleviating the full range of structural factors that lie at the root of racial inequality, and its monetary policy tools would be poorly suited to address those factors. However, monetary policy actions can significantly affect the pace of an economic recovery and hence have effects on employment and wages by shifting the balance of power between workers and employers. These effects tend to be disproportionately large for specific demographic groups because tighter labor markets also make it more costly for employers to discriminate. Thus, it is appropriate for the Fed to consider those effects in setting the course of monetary policy, but the transcripts of FOMC meetings provide little evidence that Fed officials have actually done so.

In particular, African American workers suffer disproportionately from labor market downturns and benefit markedly from economic recoveries. The unemployment rate for blacks typically moves twice as much as the national unemployment rate.¹² And the unemployment rates of black teenagers and young adults—especially those without a college degree—are even more sensitive to shifts in the stance of monetary policy.¹³ Nonetheless, even as national unemployment hovered at crisis levels in 2010, the FOMC meeting transcripts reveal that Fed officials never made a single reference to the abysmal labor market conditions of African Americans.¹⁴

¹¹ J.J. Hinderer, Representative bureaucracy: Further evidence of active representation in the EEOC district offices, *Journal of Public Administration Research and Theory* 3(4):415-429, 1993. S.E. Page, *The difference: How the power of diversity creates better groups, firms, schools and societies*, Princeton University Press, 2007. S.C. Selden, *The promise of representative democracy: Diversity and responsiveness in a government agency*, M.E. Sharpe, 1997.

¹² <http://www.epi.org/publication/the-impact-of-full-employment-on-african-american-employment-and-wages/>

¹³ http://www.npc.umich.edu/publications/working_papers/paper10/03-10rev2.pdf

¹⁴ <https://sites.google.com/site/kochevlakota009/home/policy/thoughts-on-policy/1-18-16>. In 2010 the unemployment rate for African Americans exceeded 15 percent—more than 5 percentage points higher than the national unemployment rate.

To see the positive side of these dynamics, it is helpful to revisit the experience of the late 1990s. By 2000, the average annual unemployment rate had fallen to 4 percent—its lowest level in generations, and the deviation between unemployment rates for blacks vs. whites was only 4.1 percent—notably smaller than in the 1980s or the 2000s. In addition to these substantial employment gains, the real wages of black workers grew by 2 percent per year during the late 1990s—a tad faster than the wage growth of 1.7 percent per year for whites [*Figure D from Full Employment tables & figures.xlsx*]. These employment and wage gains translated into improved living standards for African American households. The share of African American households in the middle 60 percent of the income distribution rose 3 percentage points between 1995 and 2000, whereas that share declined during the recoveries of the 1980s and the 2000s.

It is important to note that these desirable outcomes stemmed from a full employment economy *without* any acceleration in the rate of inflation, suggesting that policymakers should be willing to experiment aggressively with low rates of unemployment for the sake of improving conditions in some of America's hardest-hit communities without undue concern about keeping inflation rates in check. Such considerations may be more likely to occur among a group of policymakers who are familiar with the wide range of economic outcomes in an increasingly diverse and unequal society.

The Fed's lack of sectoral diversity is also a problem. When major corporate figures from a variety of industries are included on the Reserve Banks' boards, the Fed considers its requirement to represent an array of economic interests fulfilled. But multi-millionaire CEOs have an inherently different understanding and perspective than small business owners, debtors, students, middle- and low-income workers, and those seeking credit.¹⁵ In practice, that lack of diversity has frequently skewed concerns within the Fed toward inflation and downplayed the importance of achieving full employment. Indeed, Baker and Bernstein (2013) analyzed the deviation of unemployment from its full-employment level and found that the cumulative gap from 1980 to 2012 was about 31 percentage points.

Finally, the Fed's current governance structure contributes to a "group-think" approach that may explain why policymakers failed to recognize key warning signals prior to the onset of the financial crisis. Indeed, Greider (2014) notes that "...reliance on a narrow frame of reference produces institutional blind spots and gross errors...The telling evidence lies in what the Fed does not talk about. If you scan the public record over the last generation, you might conclude that the policy-makers were unaware of the grave disorders that were steadily accumulating. Or that they believed the economic pressures assaulting citizens were not relevant to monetary policy. Whatever the explanation, the Fed missed the big story—the steady economic deterioration stalking the middle class—just as it did not see the reckless behavior in banking that would lead to collapse."

¹⁵ <http://www.bizjournals.com/twincities/news/2015/08/19/generat-mills-ceo-ken-powell-pay-layoffs.html>

III. Strengthening the Fed's Governance

Legislative action will be required to make the Federal Reserve into a fully public institution. Of course, amending the Federal Reserve Act is a delicate matter, and it is crucial to ensure that such legislation strengthens the Fed's governance and enhances its operational independence to carry out its statutory mandate. In this section, we provide a detailed analysis of the governance reforms proposed by Levin (2016), and then we compare this approach to the proposals of Conti-Brown (2015) and Fisher (2016).

A. Ownership

Current Law. Each regional Federal Reserve Bank is a private institution that is legally owned by commercial banks—referred to as *member banks*—whose headquarters are located within its district.¹⁶ Indeed, the Federal Reserve itself refers to the member banks as “stockholders” who purchase shares of equity and thereby supply the Fed with paid-in capital.¹⁷ Those shares cannot be transferred or sold; i.e., each Federal Reserve Bank is in essence a privately-held corporation.

The equity issued by each Federal Reserve Bank—and hence the amount of its paid-in capital—is determined by the equity of its member banks. Specifically, each member bank is required to provide paid-in capital to the Fed that is equal to three percent of its own equity (that is, its capital plus surplus).¹⁸ If a member bank's equity increases, then it must purchase a corresponding amount of additional shares from its Federal Reserve Bank. Conversely, if a member bank is liquidated or its equity shrinks, then the Federal Reserve Bank cancels the corresponding amount of shares and refunds that amount back to the member bank.

As with many privately-held corporations, each Federal Reserve Bank pays dividends to its shareholders. Under current law, the dividend rate for the larger member banks (assets exceed \$10 billion) is given by the yield on 10-year U.S. Treasury notes, while the smaller member banks (assets less than \$10 billion) receive a fixed dividend rate of 6 percent.¹⁹ As of year-end 2015, the Fed's paid-in capital totaled \$29.5 billion, of which \$27.4 billion was provided by the larger member banks, and \$2.1 billion was provided by the smaller member banks.²⁰

Proposed Reform. All of the regional Federal Reserve Banks should become public corporations that are fully owned by the American people. This transformation would be remarkably straightforward, because the Fed can simply follow the procedures that it already uses for making adjustments to the shares of individual member banks. *Each Federal Reserve Bank will cancel all of the shares of its member banks and refund their paid-in capital along with the prorated amounts of any accrued dividends; those refunds will be issued by crediting each bank's account at the Federal Reserve Bank.*

¹⁶ All nationally-chartered banks are required to be members of the Federal Reserve System. Such membership is voluntary for state-chartered banks, but in practice only a few small banks decline that option.

¹⁷ <https://www.federalreserve.gov/newsevents/press/bcreg/bcreg20160218a1.pdf>

¹⁸ Under current law, the Board of Governors has authority to call on each member bank to provide additional paid-in capital up to a maximum of 6 percent of its own equity; however, that provision has never been used in practice.

¹⁹ These dividend rates became effective on January 1, 2016; prior to that date, all member banks accrued dividends at the fixed rate of 6 percent.

²⁰ The total amount of paid-in capital is shown in the “Federal Reserve Banks Combined Financial Statements” of the Federal Reserve's annual report (<http://www.federalreserve.gov/publications/annual-report/2015-contents.htm>). The subtotals corresponding to large member banks and smaller member banks, respectively, were obtained from the FDIC database of “Statistics on Depository Institutions” (<https://www5.fdic.gov/sdi/>).

This approach to making the Federal Reserve fully public does not involve any change at all in the current value of U.S. government debt. Moreover, this measure will not have any effect on the size of the Fed's balance sheet but will simply *modify the composition of the Fed's liabilities*. In effect, the Fed will be paying off one form of liability—namely, member banks' paid-in capital—by expanding another type of liability, namely, member banks' reserves held at Federal Reserve Banks.

Indeed, this measure will *augment the Fed's net income*, because the stream of dividend payments is much more costly than paying for the equivalent amount of bank reserves held at the Fed. For example, the dividend rate that the Fed pays to the larger member banks (i.e., the 10-year Treasury yield) is now close to 1.5 percent—roughly a percentage point higher than the rate of interest that the Fed currently pays on bank reserves. Of course, the precise magnitude of this spread varies somewhat over time, but the consensus of professional forecasters is that the spread will remain roughly unchanged over the coming decade.²¹ As for the smaller member banks, the interest rate on reserves is currently far below the fixed dividend rate of 6 percent, but that spread is expected to narrow over time as the level of short-term interest rates moves gradually upwards.

Thus, making the Federal Reserve fully public will generate *significant benefits for American taxpayers*, because the Fed generally transfers all of its net income to the U.S. Treasury.²² For example, at the current level of interest rates, the annualized amount of the Fed's dividend payments is about \$540 million.²³ By transforming its paid-in capital into bank reserves, the Fed would instead pay about \$150 million in interest. In effect, this transformation would increase the Fed's annual net income by nearly \$400 million per year. Even with the level of interest rates rising gradually over time, the benefit to taxpayers will continue to exceed \$300 million per year.

Indeed, if we cumulate the annual amounts over the coming decade, *the savings to taxpayers from making the Fed fully public is likely to be well over \$3 billion*. As we have already emphasized, the fundamental rationale for making the Fed public is to enhance its governance, accountability, and transparency. Nonetheless, the magnitude of these fiscal benefits is substantial and thereby makes the case for enacting this reform even more compelling.²⁴

²¹ The Federal Reserve Bank of Philadelphia regularly collects professional forecasters' projections of the longer-run average level of interest rates (<https://www.philadelphiafed.org/research-and-data/real-time-center/survey-of-professional-forecasters>). In the most recent projections (published last February), the median projection was 2.5 percent for the 3-month Treasury bill rate and 3.4 percent for the 10-year Treasury yield; i.e., the spread between those rates is expected to average 0.9 percent over the next decade—just a notch lower than the current spread.

²² Under current law, the Federal Reserve maintains a surplus capital account that is capped at \$10 billion, and any net income exceeding that amount must be remitted to the U.S. Treasury. The Fed's net income has remained positive throughout its history, but if its net income ever turned negative the Fed would draw down its surplus capital and suspend the transfer of funds to the U.S. Treasury.

²³ As noted above, the Fed is currently paying a dividend rate of about 1.5 percent on the \$27.2 billion of paid-in capital provided by the larger member banks and a fixed dividend rate of 6 percent on the \$2.3 billion in paid-in capital provided by the smaller member banks; consequently, those annual dividends are about \$410 million and \$140 million, respectively. By transforming all of its paid-in capital into bank reserves, a fully public Fed would instead pay its current interest rate of 0.5 percent on those bank reserves.

²⁴ Making the Fed fully public may also be viewed positively by commercial banks, because the Fed would refund all of their paid-in capital, which the banks could then invest in the broader economy. Indeed, that is precisely the rationale for H.R. 5027, a bill recently proposed by Rep. Neugebauer that would return most (but not quite all) of the Fed's paid-in capital to the banks.

B. Appointment of Federal Reserve Bank Officials

A key element of making the Fed fully public is that the appointment of Federal Reserve Bank officials—that is, directors and presidents—should occur through an open and transparent process that provides extensive opportunities for public input.

Directors. Each Federal Reserve Bank should continue to be overseen by a board of nine directors who serve staggered three-year terms. Under current law, the member banks select six of those directors—namely, three employees of member banks, and three individuals not employed by any member bank—while the remaining three directors are appointed by the Fed’s Board of Governors. In contrast, once the Fed becomes fully public, it would no longer be appropriate for the commercial banks to have any special role in selecting any of the directors. Instead, all of the directors should be selected through a process overseen by the Board of Governors and involving elected officials of each Fed district.

A fundamental reason for the Fed’s regional structure is to ensure that the nation’s geographical diversity is reflected in the Fed’s monetary policy decisions. Thus, every candidate for director should be nominated by at least one senior elected official—either a governor or member of Congress—from the geographical area covered by that particular Federal Reserve Bank. The Board of Governors would appoint a search committee to narrow down the list of candidates as needed, and then the Board of Governors would make the final decision through a recorded vote.

The appointment process should ensure that directors are broadly representative of the public in terms of racial/ethnic and gender diversity, educational background, and professional experience. The majority of directors on each board should be affiliated with small businesses and non-profit organizations, including community and consumer groups, labor unions, and academic institutions. To avoid conflicts of interest and protect the integrity of the Federal Reserve’s role in regulating the banking industry, individuals affiliated with financial institutions overseen by the Fed should be prohibited from serving as directors.

To ensure a sufficiently high degree of transparency, the appointment process would include the following elements: (i) publication of the selection criteria and timeline; (ii) public forums at which members of the public can meet with the search committee; (iii) publication of the names of all candidates under consideration; and (iv) opportunities for members of the public to submit questions to the candidates, either electronically or at a public forum.

Presidents. The board of directors of each Federal Reserve Bank should maintain responsibility for appointing and overseeing its president. Under current law, that appointment is made by only six of the directors, namely, the three non-bankers chosen by the member banks and the three individuals appointed by the Board of Governors. In contrast, once the Fed becomes fully public, all nine directors would be responsible for making that decision.

To ensure a high degree of transparency, the process of appointing Federal Reserve Bank presidents should be reformed so that each board of directors takes nominations from the public, publishes a list of all eligible nominees, and engages in a selection process involving genuine public participation through public forums and other forms of input and feedback.

C. Terms of Office

Terms of office play a crucial role in ensuring that a central bank has an appropriate degree of operational independence and accountability. If the term of office is fairly short and subject to renewal, then policymakers may be susceptible to political interference that could impair the central bank's ability to carry out its statutory mandate. Conversely, it would not be appropriate for central bankers to have permanent lifetime appointments, because the central bank is an agency with delegated authority, *not* an autonomous branch of government like the judiciary.

In their comprehensive study of central bank independence and transparency, Eichengreen and Dincer (2014) have noted that the international best practice is for monetary policymakers to be appointed to a *single nonrenewable term that exceeds the length of the political cycle*.²⁵ Indeed, that standard is already followed by several other major central banks. For example, the president of the European Central Bank and the governor of the Bank of England each serve a single nonrenewable term of 8 years, while the governor of the Bank of Canada has a 7-year term.²⁶

By contrast, the current terms of office of Federal Reserve policymakers are not consistent with that standard. The Federal Reserve's Chair is appointed to a renewable term of 4 years, and hence the question of whether a current Fed chair will be reappointed has occasionally arisen as an issue in U.S. presidential campaigns.²⁷ The members of the Fed's Board of Governors are appointed to staggered 14-year terms, but in practice their tenure has averaged only about 4 years.²⁸ Finally, as previously noted, the Federal Reserve Bank presidents have renewable 5-year terms, but in practice their reappointments have been *pro forma* and hence they typically hold office for two decades or more.

Thus, making the Fed fully public provides a crucial opportunity to strengthen the Fed's operational independence and accountability. Every Fed policymaker—including the Chair, the Vice Chairs, the other members of the Board of Governors, and the presidents of the Federal Reserve Banks—should have a single non-renewable term of 7 years, and those terms should be evenly staggered over time. Of course, some appointees may not end up serving a full 7-year term due to circumstances that could not be anticipated at the time of their appointment to office. Nonetheless, the vetting process should aim to ensure that every appointee intends to serve the full length of their term.²⁹ That constraint might be binding for some potential nominees who would otherwise be highly qualified. But fostering the Fed's

²⁵ See criteria 1a, 1d, 5a, and 5e in Table 18 of N. Dincer and B. Eichengreen, "Central Bank Transparency and Independence: Updates and New Measures", *International Journal of Central Banking*, March 2014, pp.189-253 (<http://www.ijcb.org>).

²⁶ Since 1987 each governor of the Bank of Canada has served a single term of office; that practice has been a matter of convention rather than a statutory requirement.

²⁷ For example, Chairman Arthur Burns was appointed by President Nixon in 1970 and reappointed by President Ford four years later, but the Fed's policies were questioned in the 1976 presidential campaign, and in 1977 Chairman Burns tried unsuccessfully to persuade the Carter administration to support his reappointment to a third term. *[insert reference here]* Indeed, the issue of the Fed Chair's reappointment has arisen in the current campaign; see <http://www.wsj.com/articles/donald-trump-says-he-would-replace-janet-yellen-supports-low-interest-rates-1462465158>.

²⁸ Under current law, a member of the Board of Governors may initially be appointed to fill out the remainder of someone else's 14-year term and then reappointed to a full 14-year term; moreover, as noted above, the appointment of the Fed Chair is subject to renewal every four years, subject to the constraint that the Chair must be a member of the Board of Governors. Consequently, a Fed Chair's tenure may also be very long, as in the cases of William Martin (1950-1970) and Alan Greenspan (1987-2006).

²⁹ For example, academic institutions typically allow tenured faculty to take a leave of absence for up to two years; thus, a number of such individuals have been appointed to the Board of Governors and then resigned within 18 to 24 months in order to return to their academic positions.

operational independence is crucial to its effectiveness, and hence it is essential to ensure that the tenure of Fed policymakers extends beyond the length of the political cycle.

D. Comparison with Alternative Approaches

Proposals to make the Fed fully public have been debated since the 1930s. Generally speaking, such proposals have involved one of two approaches: (1) the Federal Reserve Banks would be converted into branch offices of the Fed's Board of Governors, and their presidents would become employees of the Board of Governors; or (2) the Federal Reserve Banks would become part of the federal government, and their presidents would become federal officials appointed by the President and confirmed by the Senate. For example, Conti-Brown (2015) has advocated the first approach, while Fisher (2016) has proposed a comprehensive reform package that would incorporate the second approach.³⁰ Under either approach, the board of directors of each Federal Reserve Bank would no longer have any role in its governance and could be transformed into an advisory council or simply disbanded.

Alternative #1: Making the Federal Reserve Bank presidents into employees of the Board of Governors would risk undermining the decentralized structure of the Fed and consolidating too much power in Washington, DC. As employees hired and fired by the Board of Governors, the chiefs of the Federal Reserve Banks could no longer be independent voices representing diverse perspectives and distinctive geographic regions. Indeed, the entire Fed might become even more susceptible to the “group think” problem noted above.

Thus, rather than curtailing or abolishing the Federal Reserve Banks, it would be preferable to strengthen their effectiveness by making them fully public institutions. Involving the senior elected officials of each region in nominating the directors of its Federal Reserve Bank would help ensure that those directors are broadly representative of their entire region—not just its financial and corporate interests. Moreover, opening up the process of appointing the Federal Reserve Bank presidents would dramatically expand the public's ability to engage in that process at a grassroots level, rather than shifting all of those decisions to officials at the Fed's DC headquarters.

Examining the experiences of other central banks around the world, the advantages of public central banks that encourage regional collaboration become clear. In countries where the population is mainly concentrated in a fairly small geographical area (such as Canada, Japan, Sweden, and the United Kingdom), the central bank's policymakers are appointed by the national government while its regional branch offices carry out purely administrative functions. By contrast, the Eurozone encompasses much greater regional diversity, and hence the European Central Bank (ECB) was intentionally designed to have a governance structure similar to that of the Federal Reserve. Thus, monetary policy for the Eurozone is determined by the ECB Governing Council, comprised of its executive board (whose members are appointed by a joint decision of the heads of all Eurozone countries) and the presidents of the 19 national central banks (who are appointed by their respective national governments). Indeed, that regional governance structure has proven crucial in enabling the ECB to face a number of daunting policy challenges over recent years.

³⁰ See <http://vafejreg.com/nc/do-the-banks-own-the-federal-reserve-let-s-finally-make-the-answer-a-resounding-no-by-peter-conti-br/> and <http://shadowfed.org/wp-content/uploads/2016/04/FisherSOMC-April2016.pdf>.

Alternative #2. The presidents of the Federal Reserve Bank could become federal officials appointed by the President and confirmed by the Senate, thereby preserving their independent role in relation to the Fed's Board of Governors. However, shifting the appointment process to the federal level could lead to a greater number of Federal Reserve Bank presidents with political connections in Washington rather than deep and longstanding ties to their own Federal Reserve district. Indeed, the Board of Governors itself is already supposed to be comprised of individuals from diverse regions, but that legal requirement has rarely been considered in practice.³¹

Moreover, expanding the number of Fed officials to be nominated by the President and confirmed by the Senate could be a recipe for a much greater incidence of vacancies among the Federal Reserve Bank presidents, similar to the problem faced by the Fed's Board of Governors in recent years. One way to avoid that particular pitfall would be to slash the number of Federal Reserve Banks, perhaps following a process similar to the approach used in determining military base closures at the end of the Cold War. Alternatively, as in the comprehensive reform package proposed by Fisher (2016), the Fed's Board of Governors could be scaled down to a single Chair while the number of Federal Reserve Banks would shrink from 12 to 8, so that the Fed would have a single decision-making body comprised of nine voting members—all of whom would be federal officials. Such an approach has substantial implications for how the Fed carries out its responsibilities for financial supervision and regulation, and hence a detailed analysis of that proposal would necessarily go well beyond the scope of our paper.

IV. Strengthening the Fed's Transparency and Accountability

Transparency and accountability are fundamental characteristics of every well-governed public agency.³² Moreover, the international experience clearly demonstrated that enhancing a central bank's transparency and accountability raises the public's confidence in the integrity of the monetary policy process and thereby strengthens public support for its operational independence in carrying out its legal mandate. In this section, we consider three key elements that would significantly improve the Fed's transparency and accountability, aligning its practices with those of other U.S. public agencies and with many other central banks around the globe.

A. Public Access to Information

Over the past half-century, the Freedom of Information Act (FOIA) has required that every federal agency must make its records "promptly available to any person," subject to a few specific exemptions that are intended to protect national security, individual privacy, proprietary business information, and pre-decisional agency deliberations. As a federal agency, the Fed's Board of Governors is subject to FOIA.

By contrast, *the twelve Federal Reserve Banks are private institutions that are not covered by FOIA.* In fact, the Board of Governors has successfully argued in federal court that it is obliged to protect

³¹ The law states: "In selecting the members of the Board, not more than one of whom shall be selected from any one Federal Reserve district, the President shall have due regard to a fair representation of the financial, agricultural, industrial, and commercial interests, and geographical divisions of the country." (<http://www.federalreserve.gov/aboutthefed/section%2010.htm>)

³² For further discussion, see <http://regulationbodyofknowledge.org/regulatory-process/institutional-design/> and <http://www.worldbank.org/en/topic/governance/overview>.

the secrecy of all Federal Reserve Bank records and guard against their disclosure.³³ The legal premise is that the Board of Governors is the federal agency that oversees the Federal Reserve Banks, and hence its responsibilities are the same as any federal agency that must protect the confidential information of a private institution. The federal court strongly endorsed that argument in its final ruling:

“...as the Board points out, the fact that it can require examination of the Federal Reserve Banks is no different than any other financial institution subject to mandatory supervision by a federal regulator. If a financial institution cannot expect confidentiality, it may be less cooperative and forthright in its disclosures, even if an examination is mandatory. There is no reason to believe the Federal Reserve Banks would not react the same way.”

*U.S. District Court for the District of Columbia, Case 13-cv-603-tsc
(Laurence M. Ball vs. Board of Governors of the Federal Reserve System)*

It is deeply troubling that a federal court has accepted the premise that the public release of their records could lead the Federal Reserve Banks to become “less cooperative and forthright” in their interactions with the Board of Governors. Unfortunately, that prospect is a direct consequence of the fact that the Federal Reserve Banks are currently structured as private institutions owned by commercial banks.

That lack of transparency is inappropriate and unacceptable, because the Federal Reserve’s fundamental purpose must be to serve the interests of the public. By converting the Federal Reserve Banks into public institutions, the entire Federal Reserve System will be covered by FOIA. Consequently, all of its records will become subject to prompt disclosure (apart from the standard exemptions), regardless of whether those records originated at a Federal Reserve Bank or at the Board of Governors.

B. External Reviews

Regular external reviews are a key element of good management for any institution, public or private. Indeed, such reviews have become standard practice at many central banks as well as global organizations like the International Monetary Fund.³⁴ For example, the Bank of England has a Court of Directors that has authority to examine all aspects of its activities, and those reviews are conducted by an Independent Evaluation Office that reports directly to the Court of Directors.³⁵ As noted above, such reviews strengthen the public’s confidence in the effectiveness of the central bank and thereby enhance its operational independence from political interference.

U.S. federal agencies are generally subject to two forms of external review. First, each agency has an independent Office of the Inspector General that examines all aspects of the agency’s procedures and operations, with the aim of identifying and investigating fraud, waste, and mismanagement. Second, each agency is subject to evaluations by the Government Accountability Office, an independent nonpartisan agency whose fundamental purpose is to help improve the performance and accountability of the federal government.³⁶

³³ <http://www.courthousenews.com/2015/04/02/jpmorgan-atg-bailout-records-remain-secret.htm>

³⁴ <http://blogs.wsj.com/economics/2015/02/20/how-some-central-banks-are-reviewed-around-the-world/>

³⁵ <http://www.bankofengland.co.uk/about/pages/people/court.aspx>

³⁶ <http://www.gao.gov/about/index.html>

Office of the Inspector General (OIG). The Fed’s Board of Governors has an OIG that reviews its procedures and operations, whereas the Federal Reserve Banks are private institutions that do not have any OIG. Moreover, the Board’s OIG cannot conduct any investigation at a Federal Reserve Bank unless it obtains explicit prior permission from the president of that Federal Reserve Bank. Similarly, the Board’s OIG cannot investigate any FOMC incident involving a specific Federal Reserve Bank without the specific prior consent of that Federal Reserve Bank’s president.

Such constraints on the authority of the Board’s OIG authority are inconsistent with the overarching goal of ensuring that the Federal Reserve functions as effectively as possible in serving the American people. By making the Fed fully public, the Board’s OIG can assume responsibility for conducting independent reviews of all aspects of the entire Federal Reserve System—not just the Board of Governors. Moreover, as with all other major federal agencies, the Fed’s Inspector General should be appointed by the President and confirmed by the Senate.³⁷

Government Accountability Office (GAO). As noted above, the GAO is an independent nonpartisan agency that has a proven track record in improving the efficiency and effectiveness of federal government programs.³⁸ In fact, over the past five years, the GAO has saved the taxpayers over \$330 billion—a return of about \$174 for every dollar spent running the GAO itself.

Nevertheless, the GAO has only limited authority to examine the Fed’s procedures and operations.³⁹ For example, the GAO is currently prohibited from reviewing any Fed operations involving foreign central banks.⁴⁰ That prohibition seems particularly unfortunate in light of a recent instance in which the Federal Reserve Bank of New York inadvertently transmitted \$81 million to hackers who had broken into the computer system of the central bank of Bangladesh. A subsequent Reuters investigation found that the New York Fed was “slow to react to warning signs” and “lacked a system for spotting potential fraud in real time, even though such systems were already in use elsewhere.”⁴¹ Indeed, Congresswoman Caroline Maloney stated that the incident posed “a threat to the confidence people could have in the central banking system.”

More generally, the GAO is currently prohibited from investigating any aspect of the Fed’s monetary policy process, including the financial transactions conducted by the New York Fed on behalf of the FOMC. One purported rationale for that constraint is that the Fed’s financial accounts are already subjected to annual audits by private-sector firms. However, those financial audits are solely focused on detecting specific evidence of fraudulent activity—a far narrower scope than the GAO’s mission of identifying inefficiencies, operational risks, and potential improvements in policies or procedures that could be beneficial to the general public or save money for American taxpayers. Moreover, the private firms tasked with conducting Fed audits are by no means impeccable and certainly do not have a public track record like that of the GAO. For example, the accounting firm that conducted the most recent audit

³⁷ The GAO has studied this issue and concluded as follows: “We believe that the differences in the appointment and removal processes between presidentially appointed IGs and those appointed by their agency heads result in a clear difference in the level of independence of the IGs.” (<http://www.gao.gov/new.items/d095241.pdf>)

³⁸ <http://www.gao.gov/products/GAO-16-272T>

³⁹ GAO reports on specific Fed activities are posted at http://www.federalreserve.gov/newsevents/reform_audit_gao.htm.

⁴⁰ Under current law, GAO investigations of the Board of Governors and the Federal Reserve Banks “may not include transactions for or with a foreign central bank, government of a foreign country, or nonprivate international financing organization.” (31 USC 714.b.1)

⁴¹ <http://www.reuters.com/investigates/special-report/cyber-heist-federal/>

of the Fed's books has been sued by Fannie Mae for alleged gross negligence, while the firm that previously audited the Fed has been ruled to have been negligent in a separate case.⁴²

Despite some common misperceptions, comprehensive GAO reviews of the Fed need not be a partisan issue. Indeed, over the past couple of decades proposals to "audit the Fed" have been advocated by members of Congress from both sides of the aisle.⁴³ However, a significant pitfall of those proposals has been the prospect that such audits could become a means of political interference. Thus, in initiating full GAO reviews of the Fed, several specific provisions will be crucial: (1) Such reviews should be conducted on an annual basis, not be triggered by any congressional committee or member of Congress. (2) The GAO should freely determine the topics and focal points of each review. (3) The GAO should be prohibited from commenting on any specific monetary policy decision. With those provisions in place, comprehensive GAO reviews will significantly strengthen the Fed's effectiveness and its public accountability without impairing its operational independence to carry out its statutory mandate.

C. Monetary Policy Reports

In accordance with the Humphrey-Hawkins Act of 1978, the Federal Reserve provides semiannual monetary policy reports to Congress. That statute originally contained specific reporting requirements, but in 2000 those requirements were streamlined into a single broad requirement to provide "*a discussion of the conduct of monetary policy and economic developments and prospects for the future, taking into account past and prospective developments in employment, unemployment, production, investment, real income, productivity, exchange rates, international trade and payments, and prices.*" Indeed, many analysts have characterized the Fed's semiannual monetary policy reports as largely vacuous.

Thus, in line with the practice of many other central banks, the Fed should begin producing quarterly monetary policy reports that explain the rationale for its monetary policy decisions and characterize the diversity of views among Fed officials.⁴⁴ In particular, each report should:

- Present quantitative assessments of the deviation of employment from its maximum level and the deviation of inflation from its mandate-consistent rate, and characterize the degree of uncertainty surrounding those assessments.
- Provide a baseline projection for the economy, including information about the factors that are particularly relevant for specific sectors, regions, and demographic groups.
- Identify material risks to the current economic outlook and explain the Fed's plans for mitigating or responding to those risks.
- Discuss any economic models and benchmark rules that are used in setting the course of monetary policy.

⁴² <http://www.washingtonpost.com/wp-dyn/content/article/2006/12/12/AR2006121201386.html>;
<http://www.theglobeandmail.com/report-on-business/industry-news/the-law-page/court-upholds-ruling-on-deloittes-negligence-over-livent/article28078784/>

⁴³ GAO audits were a key plank of the Fed reform bill proposed in 1993 by Democratic Rep. Henry Gonzalez.

⁴⁴ For example, quarterly monetary policy reports are produced by the Bank of Canada, the Bank of England, the Bank of Norway, and the Swiss National Bank.

V. Conclusion

In this paper, we have presented the case for a set of pragmatic and nonpartisan reforms that would strengthen the Federal Reserve's governance and enhance its operational independence to carry out its statutory mandate of fostering maximum employment and price stability. Moreover, these reforms would ensure that the Fed is a publicly accountable institution that takes a wide array of economic perspectives into account, thereby enriching the Fed's decision-making process while affirming the norm that those decisions should not be subject to political interference.

At the heart of the proposed reforms is a call to make the Fed a fully public institution whose decision-makers are public officials selected through open and transparent processes. This begins with transferring ownership of the twelve regional Federal Reserve Banks away from commercial banks to the American people. By following procedures already in place for adjusting the shares of individual member banks, the process for carrying out this transition would be incredibly straightforward, and have no effect on the current value of U.S. government debt or the size of the Fed's balance sheet.

Another key element in making the Fed fully public involves changing the process by which Federal Reserve Bank directors and presidents are appointed. In sharp contrast to the current process that is opaque, inbred and largely *pro forma*, we propose a process requiring a higher degree of transparency in selection criteria, timeline, selection of candidates for president and board nominees, and extensive opportunities for public input. To avoid potential conflicts of interest, we further recommend that individuals affiliated with financial institutions overseen by the Fed should be prohibited from serving as directors. Additionally, establishing a single non-renewable 7-year term of office for every Fed policymaker—including the Chair, the Vice Chairs, the other members of the Board of Governors, and the presidents of the Federal Reserve Banks—would strengthen the Fed's operational independence and accountability.

There are clear and measurable benefits to these proposed reforms. Making the Fed fully public would generate a fiscal benefit for American taxpayers of at least \$300 million per year. These additional savings would come from larger transfers of net income from the Fed to the U.S. Treasury as a result of the Fed no longer having to pay dividends to commercial banks. In addition to this fiscal benefit, the reforms we've outlined also provide greater capacity for the Fed to more fully represent and serve the best interests of the American people when making monetary policy decisions. As America's central bank, the Fed's monetary policy decisions affect the everyday lives of practically every American family, and have even greater consequences for specific demographic groups. Bringing the appointment process out of the shadows and expanding opportunities for public input in the appointment of Fed officials responsible for making monetary policy greatly increases the potential for assembling a more diverse and inclusive body of decision makers. More diversity, in terms of race, ethnicity, gender, educational background and professional experience, would enhance the Fed's ability to comprehensively and accurately assess the strength of the economy in advance of making monetary policy decisions.

Proposals to make the Fed fully public have been debated since the 1930s. Failure to make that transition has resulted in a Federal Reserve governance structure that is outdated and inadequate for ensuring that the Fed serves the public interest. Moreover, the Fed's private ownership by commercial banks is now out of step with practically every other major central bank around the world. Incremental amendments to the Federal Reserve Act at various points in time have routinely failed to overcome the hindrances of private

ownership, or to transform the leadership of the Federal Reserve Banks beyond the status quo, which is overwhelmingly white, male and insular – dominated almost exclusively by long-time Fed insiders and individuals with a financial background.

Overcoming these deficiencies and bringing about lasting change within the Federal Reserve requires Congressional action to make the Fed a fully public institution. Pragmatic reforms that appeal to the nonpartisan principles of good governance, transparency and accountability are the best way to ensure that the necessary Congressional action is taken. While the reforms outlined in this paper are by no means the only options on the table, they undoubtedly meet those standards.



Contents lists available at ScienceDirect

Journal of Economic Dynamics & Control

journal homepage: www.elsevier.com/locate/jedc

The design and communication of systematic monetary policy strategies[☆]



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ARTICLE INFO

Article history:

Received 13 August 2014

Received in revised form

5 September 2014

Accepted 5 September 2014

Available online 22 September 2014

JEL classification:

E24

E32

E52

E58

J21

Keywords:

Central Bank independence

Inflation targeting

Simple monetary policy rules

ABSTRACT

The efficacy of central bank communications is inextricably linked to the characteristics of the monetary policy framework. Therefore, this paper presents a set of fundamental principles regarding the joint design of monetary policy strategy and communications. The practical implications of these principles are illustrated by considering a number of significant policy challenges faced by central banks in the advanced economies.

Published by Elsevier B.V.

1. Introduction

Over the past two decades, central banks around the world have made tremendous strides in clarifying their monetary policy communications. Indeed, while many other aspects of monetary policymaking remain controversial, economists have reached a broad consensus regarding the strong rationale for clarity about the central bank's policy framework, that is, its longer-run goals and strategy, its assessments of the economic outlook, and its judgments about the appropriate path of policy.¹ In large part, the breadth of this consensus is a reflection of two distinct benefits:

- Clarity about the monetary policy framework bolsters the effectiveness of the *monetary transmission mechanism* by enhancing the private sector's understanding of how the stance of policy is likely to evolve in response to changes in economic and financial conditions.

[☆] This paper was prepared for the Hoover Institution conference on "Frameworks for Central Banking in the Next Century" to be held at Stanford University on May 29–30, 2014. The author appreciates many invaluable conversations with George Akerlof, Ali Alich, Ravi Balakrishnan, Andrew Berg, Olivier Blanchard, Danny Blanchflower, Dennis Botman, Charles Calomiris, Nigel Chalk, Luisa Charry, Stephan Danninger, Jörg Decressin, Christopher Erceg, Josh Felman, Emilio Fernandez, Thomas Helbling, Douglas Laxton, Lusine Lusinyan, Tommaso Mancini, Jean-Marc Natal, Andrea Pescatori, Adam Posen, Markus Rodlauer, Juan Sole, Lars Svensson, and John Taylor. Nonetheless, the views expressed here are solely those of the author and do not necessarily reflect the views of the International Monetary Fund or of any other person or institution.

¹ See Blinder et al. (2009) and Velin (2013).

- Transparency about monetary policy is essential for maintaining the central bank's *operational independence* in a context of public accountability, thereby enabling its policy decisions to remain insulated from short-term political pressures.

Economic and financial developments in recent years have broadly confirmed the importance of clear central bank communications and in many instances have also underscored the scope for significant further improvements.

In contemplating these issues, it is essential to recognize that the efficacy of central bank communications is inextricably linked to the characteristics of the monetary policy framework. Therefore, this paper presents a set of fundamental principles regarding the *joint design of monetary policy strategy and communications*. These principles are framed in terms that are likely to be relevant for a wide array of central banks, including those of emerging markets and low-income countries. For the sake of brevity, however, the practical implications of these principles are generally illustrated using current policy challenges facing central banks in advanced economies. It should also be emphasized that such examples are solely for illustrative purposes and *not* intended to provide any definitive policy recommendations.

In particular, simple monetary policy rules can serve as valuable benchmarks for central banks in the decision-making process and in explaining those policy decisions to the public.² Of course, it would be inadvisable for policymakers to mechanically follow the prescriptions of a rule whose specification has been permanently fixed. However, in circumstances where policymakers judge that the stance of policy should deviate temporarily from the path prescribed by the policy rule, the rationale for doing so should be clearly explained to the public. Moreover, the central bank should maintain a systematic procedure for considering potential adjustments to the specification of its policy rule, recognizing that minor technical adjustments might occasionally be warranted whereas the fundamental characteristics would not be modified unless there were compelling reasons for doing so.

The remainder of the paper is organized as follows: Section 2 lays out several broad principles regarding monetary policy strategy and communications. Section 3 considers the framing of the central bank's inflation objective. Section 4 discusses the central bank's assessments of resource slack. Section 5 analyzes the use of simple policy rules as benchmarks. Section 6 considers the merits and limitations of specific communication tools. Section 7 concludes.

2. Some general principles

Central bank communications contribute to economic prosperity by facilitating well-informed decisions of households and businesses and by reducing economic and financial uncertainties. Clear communications also enhance the effectiveness of the monetary transmission mechanism by helping financial market participants and the general public understand how the stance of policy is likely to evolve in response to changes in economic and financial conditions. In recent decades, economists have also arrived at a broad consensus regarding the importance of insulating monetary policy decisions from short-term political pressures. However, the central bank's operational independence is only sustainable if the government provides a clear legal mandate regarding its policy objectives and instruments and then holds the central bank accountable over time for fulfilling that mandate. Consequently, enhancing the transparency of the central bank's policy framework and communicating clearly about the rationale for its specific policy decisions facilitate accountability to the general public and thereby reinforce the central bank's operational independence.³

⇒ *Provide regular communications regarding the central bank's assessments of the balance of risks to the economic outlook and contingency plans for mitigating and addressing such risks.*

Forecasters at many central banks and in the private sector have tended to focus on providing precise assessments of the modal outlook rather than on gauging the evolution of the balance of risks. Scenario analysis is a valuable tool for examining key risks and formulating contingency plans aimed at mitigating such risks. In effect, it may be beneficial for central banks to conduct and publish stress tests for monetary policy, analogous to the stress testing that is becoming standard practice for private financial institutions.

⇒ *Communicate clearly about the central bank's plans for adjusting the specific instruments that will be used in implementing its policy strategy over time.*

The central bank may be able to deploy a number of distinct monetary policy instruments, depending on its legal mandate and on the characteristics of the domestic financial system. For example, such tools may include direct lending to financial institutions, payment of interest on reserves, and transactions in publicly traded securities or foreign exchange. Thus, clarity about the central bank's monetary policy framework necessarily involves transparency about its choice of instruments, including its assessments of their efficacy, costs, and risks. There are also substantial benefits of clarifying the central bank's judgments regarding the appropriate path of policy as well as the conditions that could warrant significant adjustments to that path.⁴

² See Taylor and Williams (2010) for further analysis and discussion.

³ Indeed, in his remarks at last December's official commemoration of the Federal Reserve's centennial, then-Chairman Bernanke (2013) stated: "Ultimately, however, the most important reason for transparency and clear communication is to help ensure the accountability of our independent institution to the American people and their elected representatives." See also Bernanke (2007) and Kohn (2014).

⁴ See Gurkaynak et al. (2005), Swanson and Williams (2014), Stein (2014), and Yellen (2011, 2014).

⇒ *Foster and encourage a diversity of viewpoints in the process of formulating the central bank's policy decisions and communications.*

Historically, the institutional culture of central banks has tended to be quite conservative, with a strong inclination towards presenting a unified front in all public communications. However, effective risk management and contingency planning require “outside-the-box” thinking and creative problem-solving. These considerations underscore the institutional benefits of ensuring that both policymakers and staff represent a diverse set of backgrounds and perspectives.

3. The inflation objective

⇒ *Establish a numerical inflation objective that will serve as a fundamental benchmark for monetary policy strategy and communications.*

In the absence of an explicit inflation objective, the central bank may be particularly susceptible to short-term political pressures that lead to gradual upward drift in inflation expectations.⁵ Conversely, empirical analysis has demonstrated that a transparent and credible inflation objective has significant effects in keeping inflation expectations firmly anchored, which in turn contributes to the stability of actual inflation.⁶ Moreover, specifying a numerical inflation objective provides the central bank with greater flexibility to promote macroeconomic and financial stability.⁷

The process of initiating or revising the inflation objective depends on the central bank's institutional setting. In particular, the specification of this objective may be legislated in the central bank's charter or determined by periodic consultations with government authorities. Alternatively, the central bank itself may determine the inflation objective that is judged to be most consistent with its legal mandate. For example, in 2003 the Governing Council of the European Central Bank (ECB) established a quantitative definition of price stability—its mandate under the Maastricht Treaty—as keeping consumer price inflation “below but close to 2 percent over the medium term.” More recently, the Federal Open Market Committee (FOMC) and the Bank of Japan (BOJ) have each established an inflation goal of 2 percent.

3.1. Specification

⇒ *The inflation objective should be defined in terms of a broad measure of consumer prices; that definition should only be adjusted for technical reasons.*

In the advanced economies, the inflation goal has generally been defined in terms of a broad measure of consumer prices, such as the consumer price index (CPI) or the price index for personal consumption expenditures (PCE). Such measures of inflation may also fluctuate in response to fiscal policy adjustments, such as a revision in government-administered prices or indirect tax rates. However, the central bank can readily make note of those factors in its monetary policy communications; indeed, the Bank of Japan (BOJ) has regularly done so in explaining the implications of recent and prospective value-added tax (VAT) rate hikes.

It should be noted that significant communication challenges may arise if the inflation goal is defined in terms of a price index that responds directly to movements in the level of short-term interest rates. For example, a monetary policy tightening aimed at restraining inflation pressures may nonetheless induce a near-term *upward* shift in such an inflation measure. In light of such concerns, the Bank of England's inflation target was initially defined in terms of the retail price index excluding mortgage payments (RPIX) rather than the overall retail price index (RPI). A few years later, the Bank of England's inflation target was redefined in terms of the CPI, but that redefinition was clearly explained as a technical adjustment and hence did not undermine the credibility of the monetary policy framework.⁸

⇒ *The numerical value for the inflation objective should be re-examined periodically but should only be modified for compelling economic reasons.*

To serve as an effective nominal anchor, the inflation objective must be transparent and credible; that is, the private sector must have a reasonable degree of confidence that this objective will be sustained over time and that the central bank will take actions as warranted to fulfill that objective. Indeed, in analyzing the early experiences of several inflation-targeting central banks, Bernanke et al. (1999) found that the private sectors inflation expectations tended to move only gradually in the wake of the initial announcement of the inflation objective. Moreover, such patterns do not necessarily reflect sluggish information flows or irrationality; rather, the evidence indicates that even professional forecasters tend to

⁵ See Levin and Taylor (2013).

⁶ See Levin et al. (2004), Gurkaynak et al. (2010), and Beechey et al. (2011).

⁷ The Federal Open Market Committee's statement on longer-run goals and policy strategy (FOMC, 2014) indicates: “Communicating this inflation goal clearly to the public helps keep longer-term inflation expectations firmly anchored, thereby fostering price stability and moderate long-term interest rates and enhancing the Committee's ability to promote maximum employment in the face of significant economic disturbances.”

⁸ See King (2004) and Gurkaynak et al. (2010).

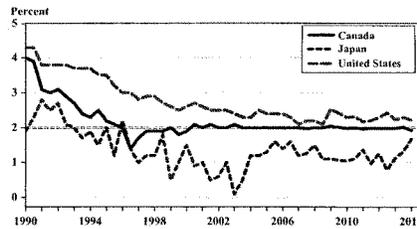


Fig. 1. The Evolution of Longer-Run Inflation Expectations in Three Advanced Economies. Source: Consensus Forecast longer-run surveys of CPI inflation projections 6 to 10 years ahead, published semiannually in April and October. Copyright (c) Consensus Economics Inc.

take a wait-and-see approach in assessing the extent to which a significant institutional change is likely to be durable over time.⁹

The numerical value of the inflation objective is appropriately determined in light of assessments of the relative costs of inflation, the extent of downward nominal wage rigidity, and the costs and risks associated with the zero lower bound on nominal interest rates. Such assessments might well evolve over time as a result of new data and empirical analysis, and hence the specific value of the inflation objective should *not* be viewed as having been set permanently in stone. On the other hand, frequent tinkering with the specification of this objective incurs the risk of undermining its clarity as well as its credibility.¹⁰ Consequently, the specification of the inflation objective should be revisited on a periodic but relatively infrequent basis—perhaps once every five or 10 years—in the context of a comprehensive review of the central bank's policy framework. Moreover, such reviews must be systematic and transparent to ensure that any modification of the inflation goal would only occur as a consequence of compelling economic reasons rather than short-term political pressures.

To illustrate the foregoing principles, it is helpful to consider the evolution of longer-run inflation expectations in three advanced economies, as depicted in Fig. 1.

Canada: In early 1991, the Canadian government and the Bank of Canada agreed on a policy framework with a medium-term inflation target of 2 percent for the total consumer price index (CPI). Initially, that target does not appear to have been fully credible: as of spring 1992, professional forecasters still anticipated that CPI inflation would settle at around 3 percent over the longer run. Over time, however, inflation expectations moved into line with the target, facilitated by the Bank of Canada's actions and communications and underpinned by the breadth of public support for its policy framework. Indeed, survey evidence and financial market data indicate that inflation expectations in Canada have remained firmly anchored since the late 1990s.¹¹ Moreover, the monetary policy framework has been reviewed regularly at five-year intervals, but each of those reviews has concluded that the existing policy framework continued to be workable and appropriate; cf. Carney (2011).

United States: Longer-term U.S. inflation expectations drifted steadily downward during the 1990s—a period in which the Federal Reserve did not have an explicit inflation objective but pursued a course of policy that has been characterized as “opportunistic disinflation.”¹² That course of policy effectively ended in mid-2003, when the Federal Open Market Committee (FOMC) indicated that a substantial further decline in inflation would be unwelcome. Consequently, professional forecasters longer-term outlook for U.S. consumer inflation levelled off at around 2 percent, although empirical analysis subsequently indicated that inflation expectations were still not as firmly anchored as in a number of other economies that had established an explicit numerical inflation objective. In January 2012, the FOMC established a longer-term inflation goal of 2 percent, as measured by the price index for total personal consumption expenditures (PCE), and has reaffirmed that inflation goal at each of its annual organization meetings since then.¹³

Japan: During the 1990s, the Bank of Japan (BOJ) indicated that it was aiming at modestly positive levels for published measures of inflation, thereby keeping the true underlying rate of inflation close to zero. The Consensus Economics longer-run

⁹ See Evans and Wachtel (1993) and Erceg and Levin (2003).

¹⁰ DePooter et al. (2014) analyzed data for three emerging-market economies and found that inflation expectations were somewhat less firmly anchored in Brazil (where the inflation target is specified on a year-to-year basis) compared with Chile and Mexico (each of which has a fixed target for inflation).

¹¹ The Consensus Economics survey results indicate that professional forecasters longer-run outlook for Canadian inflation has stayed very close to the 2 percent target throughout the past 15 years. Moreover, Gurkaynak et al. (2006) analyzed Canadian daily data on forward inflation compensation that is, the difference between forward rates on nominal and inflation-linked bonds and found that far-forward inflation compensation did not respond significantly to either Canadian or U.S. macroeconomic news.

¹² See Meyer (1996) and Orphanides and Wilcox (2002).

¹³ It should be noted that Fig. 1 shows the evolution of the longer-run outlook for U.S. CPI inflation—the measure used in Consensus Forecast surveys. The Federal Reserve Bank of Philadelphia's quarterly Survey of Professional Forecasters (SPF) elicits projections for both the CPI and the PCE price index. In the May 2014 survey, the SPF's median projection for the 10-year average U.S. PCE inflation rate was exactly 2 percent, while the corresponding projection for U.S. CPI inflation was a notch higher at 2 1/4 percent, virtually identical to the outlook in the April 2014 Consensus survey.

outlook for Japanese CPI inflation declined gradually during the 1990s, it remained at around 1 percent through the subsequent decade even as headline inflation was generally running below zero.¹⁴ In March 2013, the BOJ announced a strong commitment to taking the requisite quantitative and qualitative policy measures in order to achieve its 2 percent inflation goal. The BOJ's actions and communications evidently succeeded in bolstering the credibility of its inflation goal: as of April 2014, the longer-run Consensus outlook for Japanese CPI inflation stood at 1.7 percent, up from 1.1 percent a year earlier and higher than any previous reading since the mid-1990s.

3.2. Time frame

⇒ *The central bank must clearly convey its assessments of the time frame over which inflation is projected to converge to its objective and the policy actions that are likely to be warranted in fostering that convergence process.*

Generally speaking, the framing of any goal may be practically meaningless without some sort of concrete plan for achieving that goal within a reasonable time frame. Thus, to ensure that its inflation objective serves as an effective nominal anchor, the central bank must clearly communicate its strategy for bringing inflation back to the objective, including the anticipated time frame for the convergence process as well as the policy actions that are likely to be warranted.

The appropriate time frame for closing the inflation gap—that is, the deviation of actual inflation from its objective—evidently depends on conjunctural conditions. For example, if a transitory commodity price shock induces a spike in consumer price inflation, policymakers may reasonably anticipate that inflation is likely to revert to its objective fairly quickly even in the absence of any policy actions. Conversely, an ongoing acceleration in commodity prices may exert persistent upward pressure on inflation, and a significant monetary policy tightening might indeed be warranted to offset such pressures and bring the inflation rate back to its objective. Indeed, in the absence of clear communications about the central bank's policy strategy, longer-run inflation expectations could become dislodged and exacerbate the upward pressure on actual inflation.

Inflation gaps can also arise from shifts in aggregate demand that may result from changes in fiscal policy, external demand, or credit market frictions. During “normal” times, the central bank can take prompt action to offset such shifts, thereby stabilizing resource utilization and keeping the inflation rate close to its objective. In contrast, when faced with a large and protracted decline in aggregate demand, monetary policy can become constrained by the zero lower bound on nominal interest rates, and hence the shortfall in aggregate demand may exert persistent downward pressure on the inflation rate.¹⁵ Under such circumstances, the rationale for clear monetary policy communications becomes even more compelling:

To illustrate some practical implications of this principle, we briefly consider recent developments and prospects for inflation in the United States and the euro area.

United States: U.S. inflation plummeted during the Great Recession and remained subdued during the early stages of the economic recovery. Indeed, Federal Reserve officials flagged the risk of further disinflation or deflation as a key rationale for launching a second round of large-scale asset purchases (commonly known as QE2) in late 2010.¹⁶ In the first half of 2011, headline inflation moved sharply upwards in the wake of surging global prices of energy and other commodities, and measures of core inflation also headed upward, reflecting pass-through of higher input prices as well as the effects of supply-chain disruptions in the aftermath of a tragic earthquake and tsunami in Japan. At that juncture, the FOMC clearly indicated its judgment that those developments were largely transitory and hence that consumer inflation would “subside to levels at or below those consistent with the Committee’s dual mandate as the effects of past energy and other commodity price increases dissipate.” (FOMC, 2011)

As shown in Fig. 2, that expectation proved to be well-founded. The four-quarter average rate of PCE inflation peaked at around 2 3/4 percent in 2011:Q3 and then headed steadily downward toward a level of about 1 percent. As of early spring 2014, FOMC participants and professional forecasters generally expected that PCE inflation would head gradually upward toward the FOMC’s 2 percent inflation goal. Indeed, at that juncture the FOMC made note of the risk that inflation could remain flat or decline further over coming quarters.¹⁷

Euro Area: As noted above, the ECB’s policy strategy since 2003 has been explicitly intended to maintain euro area CPI inflation “below but close to 2 percent over the medium run.” The ECB President subsequently defined this time frame very specifically: “The medium term for a central bank is a period of 18 months to two years.” (Trichet, 2008). Actual inflation has exhibited substantial fluctuations in recent years, dropping close to zero in the wake of the global financial crisis and then

¹⁴ In 2006 the nominal anchor was framed more specifically in terms of year-to-year changes in the CPI, and policy board members’ assessments of the appropriate value for the inflation goal had a midpoint of 1 percent. In early 2012, the BOJ specified a numerical inflation goal of 1 percent for the time being” and a year later the BOJ revised its inflation goal upward to 2 percent.

¹⁵ Matheson et al. (2013) analyzed inflation developments in the advanced economies in the wake of the global financial crisis.

¹⁶ See Bernanke (2010) and Yellen (2011).

¹⁷ During the first half of 2014, each FOMC meeting statement indicated that “The Committee recognizes that inflation persistently below its 2 percent objective could pose risks to economic performance, and it is monitoring inflation developments carefully for evidence that inflation will move back toward its objective over the medium term.”

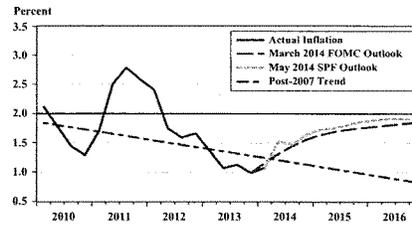


Fig. 2. The U.S. inflation outlook. Note: In this figure, actual U.S. inflation (solid line) is measured by the four-quarter average change in the PCE price index. The FOMC's inflation outlook (long-dashed line) is represented by taking the midpoint of the central tendency of the PCE inflation projections of individual Committee participants, as published in the March 2014 Summary of Economic Projections (SEP). The private sector's inflation outlook (short-dashed line) is represented by the projections for PCE inflation published in the May 2014 edition of the Federal Reserve Bank of Philadelphia's Survey of Professional Forecasters (SPF). The post-2007 trend (dot-dashed line) is estimated by ordinary least squares regression using quarterly data for the period 2007:Q1 to 2014:Q1.

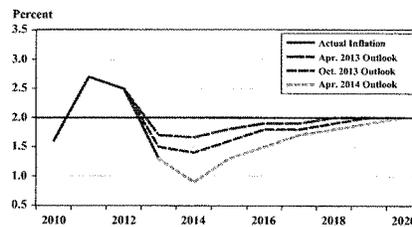


Fig. 3. The inflation outlook for the Euro area. Source: Consensus forecast longer-run surveys of CPI inflation projections 6–10 years ahead, published semiannually in April and October. Copyright (c) Consensus Economics Inc.

rising above 2 1/2 percent following the global surge in commodity prices. In the face of those developments, however, the ECB succeeded in keeping longer-run inflation expectations anchored at around 2 percent.¹⁸

As shown in Fig. 3, the inflation outlook for the euro area deteriorated markedly over the course of 2013 and early 2014.¹⁹ According to the Consensus Economics longer-run survey published in April 2014, forecasters expected that euro area inflation would rise only gradually over coming years before eventually converging to the ECB's inflation objective towards the end of the decade—a far longer convergence horizon than would be implied by a “medium run” time frame. Moreover, there were notable downside risks to that outlook: In the ECB's May 2014 survey of professional forecasters, respondents assigned a 30 percent probability to outcomes in which the inflation rate in 2015 would remain below one percent. In light of those risks, ECB officials indicated that they were prepared to take further policy actions to foster a more satisfactory inflation outlook and to ensure that inflation expectations would remain firmly anchored.

3.3. Financial stability considerations

⇒ *The central bank should ensure that financial stability considerations do not undermine the public's confidence in its nominal anchor.*

The global financial crisis spurred the recognition that price stability and macroeconomic stability are inextricably linked to the stability of the financial system. Moreover, while macroprudential supervision and regulation should serve as the first line of defense in averting financial crises, there is a growing consensus that monetary policy adjustments may also be warranted under some circumstances. While a full discussion of the implications for the design of monetary policy strategy and communications would go well beyond the scope of this paper, one key aspect bears emphasis at this juncture.²⁰

¹⁸ See Beechey et al. (2011) and Galati et al. (2011).

¹⁹ The contours of the inflation outlook in the ECB's quarterly survey of professional forecasters (available at <http://www.ecb.europa.eu/stats/prices/indic/forecast>) are very similar to the Consensus survey results shown in Fig. 3.

²⁰ For further analysis and discussion, see Svensson (2013) and Alichii et al. (2014).

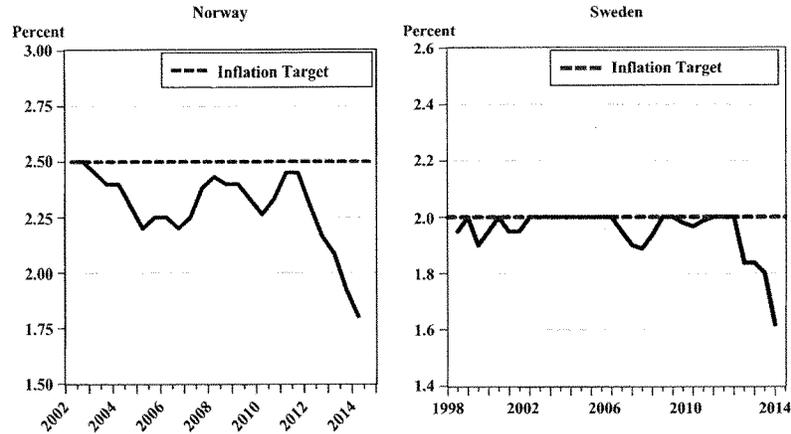


Fig. 4. The evolution of longer-run inflation expectations in two Scandinavian economies. Note: Each panel depicts the central bank's inflation target (dashed line) and the evolution of longer-run inflation expectations (solid line), as measured by a moving average of the latest two semiannual Consensus forecast surveys of CPI inflation projections 6–10 years ahead. Copyright (c) Consensus Economics Inc.

In particular, it seems to be essential to ensure that financial stability concerns do not undermine the public's confidence in the central bank's nominal anchor. Indeed, keeping longer-term inflation expectations firmly anchored is almost surely a crucial element in fostering the safety and soundness of the financial system. Conversely, a policy strategy that allows inflation expectations to drift over time seems likely to be counterproductive for financial stability as well as price stability.

Fig. 4 points to the potential relevance of this issue for two Scandinavian economies. The Sveriges Riksbank's inflation target of 2 percent was established in 1993, and by the late 1990s longer-run inflation expectations were well-anchored at that target. Norges Bank's inflation target of 2.5 percent was established in 2001, and over the subsequent decade it succeeded in keeping longer-run inflation expectations close to that target. More recently, however, both of these central banks maintained a relatively tight stance of monetary policy aimed at mitigating emerging financial imbalances, even as inflation dropped persistently below target in each economy. Consequently, longer-run inflation expectations—at least as measured by Consensus Economics surveys—began drifting downward noticeably.

The incidence of disagreement among forecasters tends to be highly correlated with the degree of uncertainty about the economic outlook; cf. D'Amico and Orphanides (2008). Consequently, measures of cross-sectional dispersion can also serve as useful indicators of the extent to which longer-run inflation expectations are firmly anchored.²¹ For example, the TNS Sifo Prospera survey (which is conducted on behalf of the Sveriges Riksbank) indicates that the degree of dispersion regarding the Swedish inflation outlook widened notably over the past several years. In particular, the cross-sectional standard deviation of 5-year-ahead inflation projections increased from 0.30 percent in January 2011 to 0.52 percent in July 2014. Over the same period, the mean forecast in the TNS Sifo Prospera survey declined about 0.3 percentage points to a level of about 1.8 percent.²² Moreover, since the extent of dispersion is directly linked to the degree of sampling uncertainty associated with any specific survey, these results do not appear to be significantly different from those obtained from the Consensus Economics longer-run surveys.

4. Assessments of resource slack

⇒ *The central bank should regularly communicate its assessments of resource slack and the degree of uncertainty surrounding those assessments.*

One of the cornerstones of modern macroeconomics is that every economy has a balanced-growth path that is consistent with keeping inflation stable at its desired rate. With that conceptual framework in mind, there are two compelling reasons for assessing the magnitude of *resource slack*—that is, the level of economic activity relative to the balanced-growth path—and incorporating such assessments into the central bank's monetary policy strategy and communications. First, shortfalls in

²¹ See Gurkaynak et al. (2010) and Beechey et al. (2011).

²² The survey methodology and the detailed results are available at <http://www.prospera.se/reports/inflation-expectations>.

aggregate income and employment have direct human costs, because households experience a lower level of economic wellbeing. Second, rates of resource utilization influence the setting of wages and prices, and hence persistent resource slack tends to exert downward pressure on inflation; conversely, persistently elevated rates of utilization tends to induce upward pressure on inflation. Consequently, the monetary policy goals of macroeconomic stability and price stability are generally—though not always—complementary.

Of course, the contours of the balanced-growth path cannot be directly measured, so its characteristics must be inferred using statistical analysis of observable data. Moreover, such estimates are necessarily uncertain and subject to revision, and the extent of that uncertainty may be highly relevant in determining the course of monetary policy. These considerations underscore the benefits of regular communication of the central bank's assessments of resource slack as well as the degree of uncertainty surrounding those assessments.

To illustrate these issues, the remainder of this section focuses on challenges in gauging the magnitude of labor market slack—an issue that is of particular relevance for U.S. and U.K. policymakers at the current juncture.

4.1. Deviations from Okun's law

In his classic work, Okun (1962) documented a set of empirical comovements between real output and the unemployment rate—often referred to as *Okun's Law*—that have proven to be remarkably robust over time and across a wide array of countries.²³ For example, the following version of Okun's Law is estimated using annual U.S. data from 1980 to 2007:

$$\Delta u_t = 1.26 - 0.43 \Delta y_t \quad (1)$$

(0.16) (0.04)

where Δu_t denotes the change in the unemployment rate (Q4/Q4), Δy_t denotes the growth rate of real GDP (Q4/Q4), and the standard error of each regression coefficient is shown in parentheses. This equation has a remarkably good fit ($R^2 = 0.79$), and the residuals exhibit no serial correlation at all ($DW = 1.89$).

In effect, Okun's Law indicates that the unemployment rate will tend to decline when the growth of actual GDP exceeds its potential growth rate, and conversely, that unemployment will tend to show little or no improvement when real GDP growth is roughly in line with its longer-run normal rate. As shown in Fig. 5, however, the recent evolution of the U.S. economic outlook does not seem to have been consistent with that pattern.

As shown in the upper panel of the figure, real GDP growth from 2010 through early 2014 consistently underperformed relative to the FOMC's economic outlook.²⁴ For example, in November 2010 the FOMC indicated that the economic recovery had been "disappointingly slow" and launched its second round of large-scale asset purchases (QE2); at that time FOMC participants generally expected that by 2012 the pace of real GDP growth (Q4/Q4) would pick up to about 4 percent. In fact, however, output growth during 2011–2012 only averaged about 2 percent—not even reaching most participants' assessments of its longer-run normal rate. Consequently, in September 2012 the FOMC initiated a third round of asset purchases (QE3), with the expectation that output growth would subsequently pick up to around 3 1/2 percent.²⁵ Unfortunately, the economy underperformed yet again during 2013, with GDP growing notably slower than Committee participants' assessments of its potential growth rate (which had been revised downward about a half percentage point relative to their assessments three years earlier).

In light of Okun's Law, one might have expected that the persistent underperformance in economic growth would have been associated with relatively little improvement in the unemployment rate. In fact, however, as shown in the lower panel, the decline in unemployment over that timeframe was much steeper than the FOMC anticipated.²⁶ For example, the FOMC's June 2011 meeting statement conveyed the expectation that unemployment would "resume its gradual decline," and the statement issued in November 2011 indicated that the Committee expected that unemployment would "decline only gradually towards levels judged to be consistent with its mandate." At that FOMC meeting, participants generally projected that the unemployment rate would be close to 8 percent as of 2013:Q4. In fact, however, the unemployment rate plummeted to around 6 3/4 percent by the end of 2013 and to around 6 percent by mid-2014—only slightly higher than the upper end of the central tendency of FOMC participants' assessments of its longer-run normal rate.

²³ See recent studies by Ball et al. (2013) and Daly et al. (2014).

²⁴ In 2007 the FOMC initiated the quarterly publication of its Summary of Economic Projections (SEP), which reports the central tendency and range of Committee participants' projections for GDP growth, unemployment, and inflation. (The phrase "Committee participants" refers to all of the members of the Board of Governors and presidents of the Federal Reserve Banks.) In 2009 the FOMC further enhanced its communications by reporting on participants' estimates of the longer-run normal rates to which those variables would converge over time in the absence of further shocks. In effect, the SEP's longer-run projections convey participants' assessments of the characteristics of the balanced-growth path, that is, the *potential GDP growth rate* and the *natural rate of unemployment* (often referred to as the NAIRU).

²⁵ At that meeting, the FOMC also announced its expectation that a highly accommodative stance of policy would likely remain warranted "for a considerable period as the economic recovery strengthens" and that liftoff from the ZLB was not likely to be warranted "at least until mid-2015."

²⁶ From November 2010 to April 2011, FOMC meeting statements projected "a gradual return to higher levels of resource utilization." The June 2012 FOMC statement projected that the unemployment rate would "resume its gradual decline", while subsequent FOMC statements projected that the unemployment rate would "decline only gradually" (August 2011 to January 2012), "decline gradually" (March and April 2012), "decline only slowly" (June and August 2012), and "gradually decline" (January 2013 to January 2014).

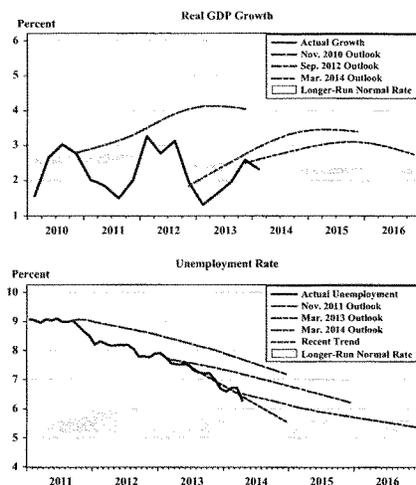


Fig. 5. The evolution of the U.S. economic outlook. *Note:* The upper panel depicts the actual path of U.S. real GDP growth (solid line) from 2010:Q1 through 2014:Q1, along with the midpoint of the central tendency of FOMC participants' projections for the trajectory of GDP growth (Q4/Q4) as of November 2010 (dashed), September 2012 (dot-dashed), and March 2014 (dot-dot-dashed). The lower panel depicts the actual path of the U.S. unemployment rate (solid line) from January 2011 through April 2014; the midpoint of the central tendency of FOMC participants' projections for the path of the unemployment rate (Q4 average) as of November 2011 (long-dashed), March 2013 (dot-dashed), and March 2014 (dot-dot-dashed); and the linear trend based on the latest 12 months of unemployment readings. In each panel, the shaded area denotes the evolution of the central tendency of FOMC participants' assessments of the longer-run normal rate; those central tendencies are simply extended from March 2014 through the end of 2016 for illustrative purposes.

These departures from Okun's Law can be gauged in terms of the out-of-sample forecast errors from Eq. (1) over the period from 2008 to 2013. As shown in the left panel of Fig. 6, the deviations from Okun's Law have been remarkably large and persistent. The historical residuals (1980–2007) have a standard error of 0.44 percent, so that a deviation of around -1 percent would be expected to occur no more than once in a 20-year period. And given that the historical residuals are serially uncorrelated, a sequence of *three consecutive deviations* of that magnitude would be exceedingly rare, say, once in 10,000 years.

In interpreting these deviations from Okun's Law, one key element is that potential GDP growth appears to have shifted downward substantially in recent years.²⁷ Indeed, CBO (2014) estimated that potential GDP growth had an average rate of about 1.5 percent during 2011–2013, compared with an average rate of about 3 percent over the period 1980–2007. Using the estimated slope coefficient of 0.43 in Eq. (1), that decline in potential GDP growth would induce a downward shift in the residuals of about 0.65 percent—roughly half the magnitude of the forecast errors shown in the left panel of Fig. 6.

However, it is also important to consider the possibility that the recent trajectory for unemployment may have at least partly reflected a decline in labor force participation that was induced by the sluggish pace of the economic recovery.²⁸ Indeed, Okun himself flagged this issue in his classic paper:

In a slack labor market, people without a job may give up when they are convinced that job-hunting is a hopeless pursuit. They then may be viewed as having left the labor force though they stand ready and eager to work. The response of participation rates is likely to be a complicated lagged phenomenon which will not be closely tied to the current unemployment rate. While this aspect of the difference between potential and actual output is hard to quantify, zero is certainly not a satisfactory estimate. (Okun 1962, pp. 5–6)

²⁷ Fernald (2014) provides comprehensive and detailed analysis on this issue.

²⁸ A number of recent studies have analyzed this issue, including Aaronson et al. (2012), Sherik (2012), Van Zandweghe (2012), Hotchkiss and Rios-Avila (2013), Erceg and Levin (2013), and Hornstein et al. (2014).

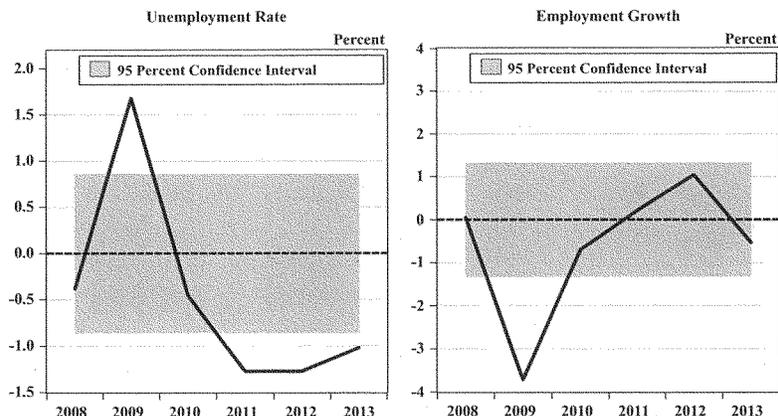


Fig. 6. U.S. Deviations from Okun's Law. Note: This figure depicts out-of-sample forecast errors for 2008 to 2013 as implied by two versions of Okun's Law estimated using U.S. annual data from 1980 to 2007. The left panel shows the forecast errors associated with equation (1), which is specified in terms of changes in the unemployment rate. The right panel shows the corresponding implications of equation (2), which is specified in terms of employment growth. In each panel, the shaded region denotes the 95 percent confidence interval based on the standard error of each regression.

Thus, we now turn to the following variant of Okun's Law involving *employment growth* rather than changes in the unemployment rate:

$$\Delta e_t = -0.14 + 0.50 \Delta y_t \quad (2)$$

(0.23) (0.70)

where Δe_t denotes the growth rate of total employment (Q4/Q4). As above, this specification has a good fit over the sample period 1980–2007 ($R^2 = 0.69$), and the residuals exhibit no serial correlation at all (DW = 1.74).

The out-of-sample forecast errors from Eq. (2) are shown in the right panel of Fig. 6. Notably, the forecast errors for the period 2010–2013 vary in sign from year to year and fall well within the 95 percent confidence interval—a much better out-of-sample fit than Eq. (1). These results bolster the view that the unexpectedly steep decline in unemployment over that timeframe was indeed related to the concomitant drop in labor force participation.

4.2. The composition of labor market slack

As discussed in the Bank of England's May 2014 *Inflation Report*, the employment gap can be represented as a sum of three components: the unemployment gap, the participation gap, and the underemployment gap. In particular, the *unemployment gap* is the deviation of actual unemployment from the NAIRU, and the *participation gap* is the deviation of the actual labor force from its equilibrium level. The *underemployment gap* refers to the incidence of involuntary part-time work relative to its normal level, that is, the incidence of individuals who are currently working part-time (less than 30 h/week) who would prefer to have a full-time job but are unable to find one.

The upper panel of Fig. 7 shows the Bank of England's assessments, as of May 2014, regarding the magnitudes of the specific components of the U.K. employment gap. Each component is scaled by its standard deviation over the period 1992–2007 in order to reflect the extent to which the current magnitude of that gap exceeds its normal variability. Evidently, all three components became quite large in the wake of the global financial crisis and remained sizeable through 2011. As the U.K. labor market subsequently improved notably, the participation gap essentially disappeared and the unemployment rate reverted close to its normal level, whereas the underemployment gap remained about two standard deviations away from Bank staff's current assessment of its medium-term equilibrium.

The lower panel depicts an assessment of the evolution of the total U.S. employment gap in terms of these three components. The unemployment gap refers to the deviation of actual unemployment from the CBO (2014) estimate of the NAIRU, and the participation gap refers to the difference between the actual size of the labor force and the CBO (2014) estimate of the potential labor force. The estimate of the underemployment gap shown here is obtained using a trend-cycle decomposition of the incidence of involuntary part-time work; detailed information is provided in the appendix. Evidently, while U.S. labor market conditions improved substantially since 2010, this estimate suggests that the U.S. employment gap

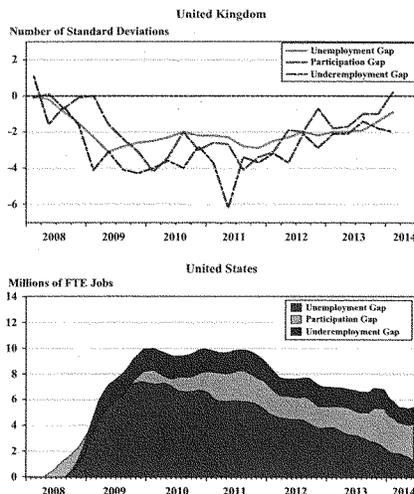


Fig. 7. The magnitude and composition of labor market slack. Note: In the upper panel (which borrows directly from Chart 3.7 of the Bank of England's May 2014 Inflation Report), the unemployment gap is the difference between the actual unemployment rate and the Bank staff's estimate of its medium-term equilibrium rate; the participation gap is the difference between the actual labor force participation rate and the Bank staff's estimate of its medium-term equilibrium rate; the underemployment gap is the difference between average weekly hours worked and Bank staff's estimate of its medium-term equilibrium level; and each of these gaps is scaled by its own standard deviation (computed for the period 1992–2007). The lower panel depicts the level of the U.S. employment gap (expressed in millions of full-time equivalent (FTE) jobs) and its components, where the unemployment gap is the deviation of actual unemployment from the CBO's estimate of its longer-run natural rate, the participation gap is the deviation of the labor force from the CBO's estimate of its potential level, and the derivation of the underemployment gap is shown in the appendix.

remained quite large as of spring 2014 and that the participation gap and the underemployment gap accounted for the bulk of that gap.²⁹

5. Using simple policy rules as benchmarks

⇒ Simple monetary policy rules can serve as valuable benchmarks in determining the course of monetary policy and explaining those judgments to the public.

No macroeconomic model provides a completely satisfactory description of any economy in the real world. Indeed, the limitations of existing macroeconomic models have been underscored by the incidence of relatively large and persistent forecast errors in many advanced economies over the past few years.³⁰ Thus, rather than relying on the monetary policy implications of any single macro model, it seems to be sensible to develop simple rules that provide reasonably robust performance across a range of plausible models. Such rules can serve as valuable benchmarks in the decision-making process and in explaining those decisions to the public. For example, following the seminal work of Taylor (1993), a vast literature has investigated the specification and performance of simple monetary policy rules of the following form:

$$i_t = r^* + \pi_t + \alpha(p_t - \pi^*) + \beta(x_t - x_t^*) \quad (3)$$

where i_t denotes a measure of the short-term nominal interest rate, r^* denotes the equilibrium real interest rate, p_t is a smoothed measure of inflation, π^* is the central bank's inflation objective, $x_t - x_t^*$ is a measure of resource slack, and the coefficients α and β are chosen appropriately in order to foster the stability of economic activity and inflation. For example, the Taylor (1993) rule was specified in terms of GDP price inflation and the output gap, with $r^* = 2$, $\pi^* = 2$, and $\alpha = \beta = 0.5$.³¹

²⁹ Blanchflower and Posen (2014) analyzed panel data and found highly significant effects of the participation gap and the underemployment gap on nominal wage setting in the United States and the United Kingdom, respectively.

³⁰ See Romer and Romer (2014).

³¹ Taylor (1980) set forth the seminal analysis of the "monetary policy frontier" in terms of the relative variability of economic activity and inflation. Taylor (1999) reported on a comprehensive analysis of the performance of simple policy rules across a wide range of macroeconomic models.

Nonetheless, there are two distinct reasons why it would be inadvisable for policymakers to mechanically follow the prescriptions of a rule whose specification has been permanently fixed:

- Economic conditions may occasionally arise that are not well-captured by any of the models that were used in formulating the policy rule. Thus, in certain circumstances policymakers might judge that the stance of policy should deviate temporarily from the path prescribed by the policy rule, and the rationale for doing so would need to be clearly explained to the public.
- The salient characteristics of the set of plausible models will inevitably evolve over time, reflecting new economic and financial data and ongoing improvements in analytical and empirical methods as well as changes in the structure of the economy itself. Consequently, the central bank should have a systematic procedure for considering potential adjustments to the specification of its policy rule. Minor technical adjustments may occasionally be warranted, but the basic specification of the policy rule would not be modified unless there were compelling reasons for doing so.

To illustrate these considerations, the remainder of this section focuses on two practical issues that are currently facing monetary policymakers in a number of advanced economies. It should be noted that a number of other important issues—such as the appropriate degree of policy inertia or implications of uncertainty about natural rates—cannot be addressed within the scope of this paper.³²

5.1. The equilibrium real interest rate

Conceptually, the equilibrium real interest rate is the level of short-term real interest rates at which the economy evolves along its balanced-growth path and inflation remains at its objective.³³ Of course, as with other properties of the balanced-growth path, the level of the equilibrium real interest rate cannot be directly measured but must be inferred from observed economic and financial data. For example, Taylor (1993) specified the value $r^* = 2$ based on the historical average value of the real federal funds rate.

However, there are strong conceptual and empirical reasons to expect that the equilibrium real interest rate may move significantly in response to a shift in total factor productivity growth that changes the pace of output growth along the balanced-growth path. Moreover, econometric analysis suggests that the level of r^* may also vary over time in response to other domestic and global economic developments. Such shifts in the value of r^* can be consequential for the performance of a simple policy rule. For example, if the economy were on its balanced-growth path ($x_t = x_t^*$) but the true value of the equilibrium real interest rate were a percentage point lower than the value specified in the monetary policy rule, then inflation would persistently fall short of its objective: e.g., with $\alpha = 0.5$, the prevailing inflation rate would be zero instead of 2 percent.

As shown in Fig. 8, professional forecasters' assessments of equilibrium real interest rates shifted downward substantially over the past few years. Prior to the onset of the global financial crisis, the consensus outlook for the far-ahead forward real federal funds rate (left panel) was roughly in line with the value of 2 percent embedded in the Taylor (1993) rule. The consensus outlook subsequently declined to around 1 1/4 percent—a decrease that is roughly comparable to the reduction of about 0.6 percentage points in forecasters' longer-run projections for U.S. GDP growth (not shown). The dispersion in forecasters' views is evident from the interquartile range, which effectively covers the entire interval from 0 to 2 percent. Substantial downward revisions in r^* have also occurred for a number of other advanced economies (right panel).³⁴

5.2. Measures of Inflation and Resource Slack

For a policy rule like Eq. (3) to serve as a practical benchmark for monetary policy, the central bank needs to clarify which measures of inflation and resource slack will be used in computing its prescriptions. During normal times, the particular specification of those measures may be fairly innocuous. For example, a quarter-point difference between two measures of inflation would only imply a difference of about 40 basis points in the prescriptions of the Taylor (1993) rule, and a half percentage point difference between two measures of resource slack would only affect the Taylor rule's prescriptions by 25 basis points.

In contrast, when a large shock has pushed the economy relatively far away from its balanced-growth path, the specification of the measures of inflation and resource slack may become highly consequential. For example, Taylor's (1993) rule was specified in terms of the output gap, which CBO (2014) estimated at -4.3 percent as of 2014:Q1. Thus, with the coefficient $\beta = 0.5$, the Taylor rule would imply a funds rate reduction of about 2 percentage points (assuming a constant value of r^* and with inflation at its target rate).

³² Orphanides and Williams (2002) analyzed the implications of uncertainty about potential output and the natural rate of interest in the formulation of simple policy rules, and Eggertsson and Woodford (2003) analyzed the benefits of history dependence when the policy instrument is constrained by the ZLB; see also Woodford (2003).

³³ From Eq. (3), it is evident that the real interest rate $i_t - p_t$ is equal to r^* when $\pi = \pi^*$ and $x_t = x_t^*$.

³⁴ Furceri and Pescatori (2014) provide comprehensive analysis of the evolution of global real interest rates over the past several decades and in the wake of the financial crisis.

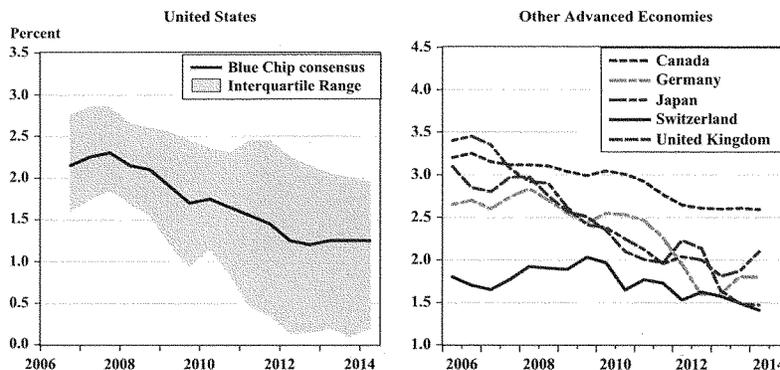


Fig. 8. The evolution of professional forecasters' assessments of equilibrium real interest rates. Note: The left panel shows the consensus outlook (solid line) and interquartile range (shaded area) of professional forecasters' projections for the average level of the U.S. 3-month treasury bill rate 6–10 years ahead, less the consensus of their projections for the average level of U.S. CPI inflation 6 to 10 years ahead, computed as a moving average of the latest two semiannual Blue Chip Economic Indicators longer-run surveys. Copyright (c) Aspen Publishers, Inc. The right panel shows corresponding results taken from Consensus Economics' semiannual longer-run surveys regarding the expected average level of 10-year Treasury bond yields 6 to 10 years ahead less the expected average level of CPI inflation 6 to 10 years ahead; these results are shown for Canada (short-dashed), Germany (dot-dashed), Japan (dot-dot-dashed), Switzerland (solid), and the United Kingdom (long-dashed). Copyright (c) Consensus Economics Inc.

One plausible alternative would be to use the unemployment gap as the measure of resource slack. Indeed, Orphanides and Williams (2002) suggested that the prescriptions from the following rule would be roughly equivalent to those of the Taylor rule:

$$\hat{i}_t = r^* + \pi_t + 0.5(\pi_t - \pi^*) - 1.0(u_t - u_t^*) \quad (4)$$

where u_t denotes the actual unemployment rate, u_t^* denotes the NAIRU, and the coefficient of -1.0 on the unemployment gap was based on the usual application of Okun's Law.³⁵ CBO (2014) estimated that the NAIRU would remain steady at 5.5 percent through the remainder of this decade, implying that the unemployment gap was about 0.75 percentage points as of mid-2014. Consequently, according to this specification, the prevailing degree of resource slack would only call for a modest funds rate reduction of less than a percentage point, all else equal.

Conversely, the preceding analysis in Section 4 may provide a compelling rationale for specifying the benchmark rule in terms of the employment gap rather than the unemployment gap, especially when there are large and persistent deviations from the unemployment rate version of Okun's law. As shown in the lower panel of Fig. 7, the total U.S. employment gap was close to 3.5 percent as of 2014:Q1—that is, about three times as large as the unemployment gap. Consequently, using the same coefficient of -1.0 as in the preceding specification, this measure of resource slack would call for a funds rate reduction of about 350 basis points, all else equal.

6. Communication tools

6.1. Post-meeting statements and press conferences

⇒ The head of the monetary policy committee should hold a press conference following every regular-scheduled meeting.

In recent years, there have been numerous instances in which an abrupt shift in the economic outlook has warranted a prompt and decisive monetary policy response. That experience has underscored the importance of having regular monetary policy meetings at which policymakers can carefully consider the incoming economic and financial information and determine whether any action would be appropriate at that particular juncture. Moreover, policymakers need to be prepared to provide a prompt explanation to the public regarding the rationale for each policy decision, regardless of whether the decision involves action or inaction.

In all of the advanced economies, the monetary policy committee has a regularly scheduled meeting every few weeks. For example, the Bank of England's MPC and the Bank of Japan's policy board each convene on a monthly basis, while the

³⁵ See the discussion of Eq. (1) in Orphanides and Williams (2002).

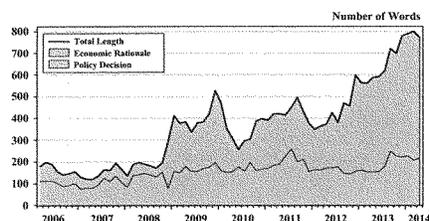


Fig. 9. The evolution of FOMC meeting statements. Note: This figure shows the number of words in each of the FOMC statements that were issued in conjunction with regularly scheduled meetings from March 2006 through April 2014. This word count does not include voting tallies, dissenting views (if any), or separate decisions of the Federal Reserve Board (as distinct from the FOMC). The content of each FOMC statement is categorized as follows: (i) the Committee's *policy decision*, that is, the actions taken at the meeting as well as any forward guidance about the likely future path of policy; and (ii) the Committee's *economic rationale*, including its synopsis of recent developments and its description of the economic outlook and the balance of risks.

FOMC and the Bank of Canada's governing council each hold meetings eight times per year.³⁶ Of course, a monetary policy committee can also convene unscheduled meetings as needed—either in person or via conference call—but such meetings are quite rare apart from crisis situations.

The standard practice for every monetary policy committee is to issue a written statement following the conclusion of each regularly scheduled meeting, but the purpose and structure of such statements varies significantly across central banks. In some cases, the post-meeting statement is very brief and simply conveys the substance of the current policy decision. For example, following its meeting on 8 May 2014, the ECB issued the following statement: "At today's meeting, which was held in Brussels, the Governing Council of the ECB decided that the interest rate on the main refinancing operations and the interest rates on the marginal lending facility and the deposit facility will remain unchanged at 0.25 percent, 0.75 percent, and 0.00 percent, respectively." On the same day, the Bank of England released the following statement: "The Bank of England's Monetary Policy Committee at its meeting today voted to maintain Bank Rate at 0.5 percent. The Committee also voted to maintain the stock of purchased assets financed by the issuance of central bank reserves at 375 billion."

In contrast, some central banks—including the Bank of Canada, the BOJ, and the FOMC—generally issue much longer post-meeting statements that provide a specific description of the policy decision and explain the economic rationale for that decision. As shown in Fig. 9, FOMC statements typically comprised about 150–200 words during the first two years of Chairman Bernanke's tenure in 2006–2007. The total length of FOMC statements surged during the financial crisis and continued rising over subsequent years to around 800 words by spring 2014. That upward trend mainly reflected the increased complexity of policy decisions involving large-scale asset purchases and forward guidance about the pace of purchases as well as the timing and pace of liftoff of the federal funds rate from the zero lower bound. In addition, the economic rationale in each FOMC statement was also expanded from about 100 words prior to the crisis to around 200 words more recently.

It has also become standard practice for central banks to hold regular press conferences at which the head of the monetary policy committee presents some opening remarks and then engages in Q&A.³⁷ The media participants typically represent a wide spectrum of news outlets, including mainstream and social media as well as the financial press. Consequently, central banks have generally found press conferences to be an effective platform for explaining the central bank's policies to the general public as well as for addressing more specific points that are relevant for analysts and other specialists. The frequency of press conferences varies noticeably across central banks. The Federal Reserve Chair holds a press conference following each quarterly FOMC meeting at which committee participants update their assessments of the economic outlook. At the Bank of Canada and the Bank of England, press conferences are held once per quarter in conjunction with the release of monetary policy reports. In contrast, at the BOJ and the ECB, press conferences take place every month at the conclusion of each monetary policy meeting.

Recent experience points to the merits of relatively frequent press conferences and the limitations of post-meeting statements. For example, as shown in the left panel of Fig. 10, all of the significant revisions to the FOMC's policy decisions from early 2012 through spring 2014 occurred in conjunction with quarterly press conferences. In principle, of course, the FOMC could make substantive adjustments to its policy stance at any meeting, even if there were not any press conference afterwards. But the reality is that 30–60 min of Q&A can provide a much more comprehensive explanation than a few hundred words in a written statement. Indeed, as shown in the right panel of the figure, revisions to the economic rationale in FOMC statements over the past few years rarely involved changing more than about 50 words. Consequently, there seems to be a strong case for arranging press conferences to be held in conjunction with every regularly scheduled meeting, so that the monetary policy committee has the flexibility to take action whenever warranted while ensuring that such actions are clearly and promptly communicated to the public.

³⁶ The ECB's governing council has traditionally held monthly policy meetings but recently announced that it will be shifting to a schedule of eight monetary policy meetings per year starting in 2015.

³⁷ At some central banks, one or more deputies also participate in the press conference and assist with the Q&A.

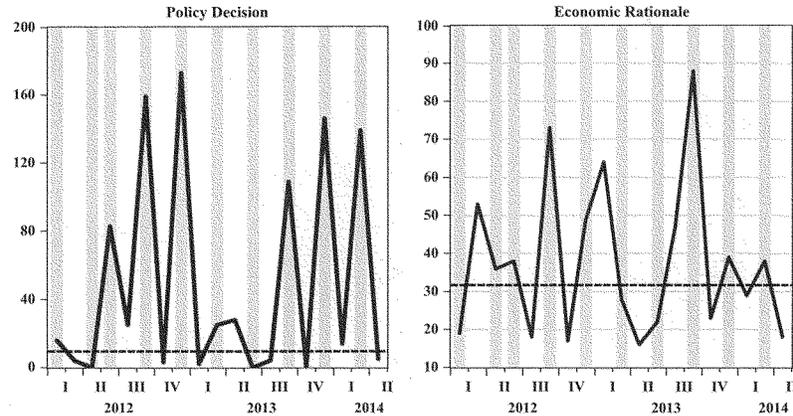


Fig. 10. Revisions in FOMC statement language (number of word changes from previous FOMC statement). Note: This figure depicts the incidence of revisions to the FOMC statement issued after each regularly scheduled meeting since January 2012 compared with the FOMC statement from its previous regularly scheduled meeting. The number of revisions is obtained by counting how many words have been inserted or modified (not including rearrangements in word order). The decomposition of the content into the policy decision (left panel) and economic rationale (right panel) is described in the notes to the preceding figure. In each panel, the shaded bars denote instances in which the Federal Reserve Chair held a press conference following the conclusion of the FOMC meeting, and the dashed line indicates the mean number of revisions which were made at FOMC meetings that did not include a press conference.

6.2. Monetary policy reports

⇒ The central bank should publish quarterly monetary policy reports that provide a detailed rationale for its policy decisions.

Press conferences and post-meeting statements are valuable tools for communicating broadly to the general public. However, it is also essential for the monetary policy committee to publish more detailed information about the rationale for its policy decisions. Such reports can be particularly helpful in ensuring that professional forecasters and financial market analysts have a clear understanding of the central bank's policy strategy, thereby reducing economic and financial uncertainty and facilitating the effectiveness of the monetary transmission mechanism. Such reports are also highly relevant for academic economists, who often play a key role in evaluating the central bank's policy framework and in contributing to its public accountability over time.

In particular, regular monetary policy reports can provide crucial information about the central bank's assessments of the economic outlook and the balance of risks. Such reports provide a means of discussing the specific details of economic and financial developments—and the methods used in analyzing those developments—that go well beyond the intrinsic limits of what can be communicated in a post-meeting statement or a press conference. Moreover, as noted above, monetary policy reports can present the implications of alternative scenarios that illuminate key risk-management issues.

From a practical standpoint, monetary policy reports are largely prepared by the central bank's staff. Consequently, such reports are typically viewed as effectively representing (either implicitly or explicitly) the views of the head of the monetary policy committee. However, such reports can also serve a valuable role in presenting the diversity of views of the entire committee. For example, the Bank of England's May 2014 *Inflation Report* frequently utilized phrases like “the central view of most MPC members” and “a range of views on the Committee.”

7. Conclusions

Clarity and transparency of communications play a key role in enhancing the effectiveness of monetary policy and in sustaining the central bank's operational independence over time. In recent years, many central banks around the world have made significant improvements to the clarity of their communications. However, such communication will inevitably be a work-in-progress that requires continual effort and engagement with the public. Moreover, there are numerous dimensions of policy strategy and communication for which further research is warranted by economists at central banks and international organizations as well as at academic institutions.

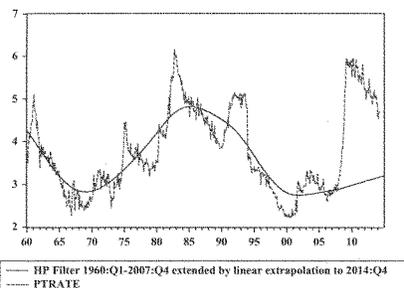


Fig. A1. Trend-cycle decomposition of U.S. involuntary part-time work.

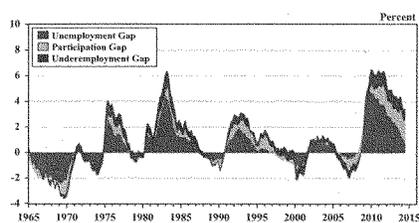


Fig. A2. The magnitude and composition of the U.S. employment gap since 1965.

Appendix A

This appendix describes the methodology used to construct each of the three components of the U.S. employment gap that are depicted in the lower panel of Fig. 7. The *unemployment gap* is the deviation of the civilian unemployment rate from the CBO (2014) assessment of the longer-run NAIRU, and the *participation gap* is the percent deviation of the actual labor force from the CBO (2014) assessment of the potential labor force.³⁸ The *underemployment gap* is defined as the number of full-time equivalent (FTE) jobs (expressed in proportion to the potential labor force) that would be required to eliminate the cyclical component of involuntary part-time work.

To construct the underemployment gap, the following three monthly time series were downloaded from the BLS website: (a) number of individuals working part-time for economic reasons (seasonally adjusted, BLS Identifier LNS12032194); (b) average hours per week of individuals working part-time for economic reasons (not seasonally adjusted, BLS Identifier LNU02033232); and (c) average hours per week of individuals who usually work full-time (seasonally adjusted, BLS Identifier LNS12505054). Henceforth these three series are denoted as *NINV*, *HINV*, and *HFULL*.³⁹ The relative shortfall in hours per week is given by $HRATIO = HINV/HFULL$.⁴⁰

Next, the incidence of involuntary part-time employment was normalized by the potential labor force, i.e., $INVRT = 100 * NINV / LPOT$. The trend-cycle decomposition of *INVRT* was obtained by applying Eviews HP filtering algorithm over the sample period 1960:1 to 2007:12, where the smoothing parameter of 129,600 was determined by the Uhlig–Ravn formula. To project the trend beyond 2007, its monthly average change was computed for the period 2005:1 to 2007:12, and

³⁸ The CBO (2014) series were downloaded from <http://www.cbo.gov/sites/default/files/cbofiles/attachments/keyAssumptionsPotentialGDP.xlsx>. Since the CBO (2014) series were published at an annual frequency, Eviews was used to interpolate each series to monthly frequency using the quadratic match average method.

³⁹ The Eviews X13 procedure was applied to *HINVOL*, since the BLS does not publish a seasonally adjusted version of that series.

⁴⁰ The BLS series on full-time hours is only available starting in 1994:1, and hence the mean value of 0.535 for *HRATIO* over the post-1994 sample was used in constructing the underemployment gap for all periods prior to 1994.

that slope (namely -0.0015) was used to extend the trend linearly from 2008:1 to 2014:4. The cyclical component $INV\text{CYCLE} = INV\text{RT} - INV\text{TREND}$; the resulting trend-cycle decomposition is shown in Fig. A1. Finally, the underemployment gap is obtained as $(1 - HR\text{ATIO}) \times INV\text{CYCLE}$.

Using these methods, Fig. A2 depicts the evolution of the magnitude and composition of the U.S. employment gap over the past five decades.

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Monetary Policy for Healthy Economic Performance

Mickey D. Levy*

Testimony before the Subcommittee on Monetary Policy and Trade
Committee on Financial Services
U.S. House of Representatives

November 7, 2017

Chairman Barr, ranking member Moore and members of the Committee, I appreciate this opportunity to present my views on the Federal Reserve's monetary policy. I begin with the ultimate goal of sustained healthy economic growth and higher standards of living. This of course is a laudable objective, but it requires the correct set and mix of policies. Policymakers must identify which policy tools are appropriate to achieve desired economic performance and the proper mix of policies. While fiscal, tax and regulatory policies heavily influence economic outcomes, today's hearing focuses on the Fed's conduct of monetary policy.

Two things have become obvious during the 2002-2007 economic expansion that was marked by the debt-financed housing bubble, the financial crisis and deep recession of 2008-2009 and the current lengthy but slow-growth expansion. First, monetary policy plays a critical role—and serves best by being even-keeled and pursuing a low inflation target during expansions and actively countercyclical in response to downturns and financial crises. Second, there are limitations to what monetary policy can achieve, as some of the sources of under-performance in the economic and labor market are beyond the control of monetary policy and best addressed through other economic, fiscal and regulatory policies—and pushing monetary policy beyond its limits does not improve performance but instead generates risks and uncertainties that undercut desired economic objectives.

The Fed's creative emergency measures during the 2008-2009 crisis helped stabilize financial markets and avert an even deeper and more damaging recession, but the efficacy of its sustained artificial low interest rates and massive asset purchases, well after the start of the economic recovery is questionable. It has not stimulated faster growth and has distorted economic and financial performance, and poses sizeable risks.

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The Fed's efforts to stimulate economic growth and employment, lift wages and improve other labor market conditions has extended the role of monetary policy beyond its normal scope. The Fed's massive asset purchase programs and maintenance of an excessively large balance sheet have crossed the border into fiscal policy and credit allocation. Confusion about the proper role of monetary policy and what it is capable of achieving relative to tax, fiscal and regulatory policies has made Congressional oversight of the Fed much more difficult.

The economy is now growing on a self-sustaining basis and is far beyond the point of needing the Fed's excessive monetary ease as a crutch. Now it is time to institute changes that set monetary policy on a course consistent with sustained healthy economic performance and establish a framework for dealing with emergency situations. The Fed should continue to normalize interest rates and modify its balance sheet unwind strategy. A framework needs to be established that clarifies the proper scope and operational conduct of monetary policy during emergency situations, along with the roles of the Treasury and Congress.

The Expanded Scope of Monetary Policy

Even after the economic recovery gained traction and was self-sustaining, the Fed dramatically expanded its balance sheet through massive purchases of treasury and mortgage-backed securities (MBS) while maintaining zero interest rates, all in an effort to stimulate economic growth and job creation. The Fed's macroeconomic models predicted that through the "real balance effect", maintaining low rates and providing more excess liquidity would encourage risk-taking and push up asset prices, all of which would stimulate faster growth in aggregate demand.

In reality, the Fed's QEIII and forward guidance stimulated financial markets and home values as predicted, but the response of aggregate demand was tepid at best—in fact, nominal GDP, the broadest measure of current dollar spending in the economy, actually decelerated. In the four years following the implementation of QEIII (through 2016Q4), nominal GDP growth averaged 3.7%. Most striking, business investment growth remained disappointing even though the Fed was successful in reducing the real costs of capital and business profits and cash flows were rising to record levels. Employment rose and the unemployment rate receded, but wage gains fell far shy of expectations.

The economy would have grown along its modest pace and jobs gains would have occurred even if the Fed had not engaged in its asset purchases and would have gradually normalized interest rates. Not surprisingly, the Fed's interpretation of the slow growth has been different. It takes full credit for the

increase in employment. Until recently, the Fed argued that any monetary policy normalization would have sidetracked the economic expansion. These positions seem to reflect a good deal of hubris, but nevertheless led the Fed to delay unwinding its balance sheet out of fear of any negative repercussions on the economy or financial markets.

History has shown clearly that following countercyclical monetary accommodation, once an economic recovery from recession has taken hold, Fed rate increases back to neutral do not harm economic growth. Granted, there is no experience of unwinding an excessively large balance sheet, but it is highly unlikely that a gradual unwind that still leaves an ample amount of excess bank reserves would harm performance.

The economy's lackluster response to the Fed's stimulus highlights the important influences of other factors and policies, and the Fed's limitations in achieving certain economic objectives. The Fed's efforts to stimulate the economy through monetary policy have been countered to a large degree by counterproductive government tax and regulatory policies. In general, a growing web of regulatory burdens and uncertainties about future tax and regulatory policies—at the Federal and state and local levels in both the financial and nonfinancial sectors—have constrained economic activity.

Banks have been deterred from lending by the burdensome regulations imposed by Dodd-Frank and the Fed's stress tests, as well as the Fed's policy of paying interest on excess reserves (IOER), which may have led banks to park excess reserves at the Fed. These factors have clogged the monetary policy channels. In the nonfinancial sector, the increasingly burdensome tax and regulatory environment has constrained business and household spending. Of note, uncertainties about these government-imposed burdens have led businesses to raise their required hurdle rates for investment projects, offsetting the attractiveness of low costs of capital. This has led businesses to scuttle investment expansion plans. The Fed's overly-cautious forward guidance ("if we raise rates at all it may throw the economy back into recession") may have added to business and household caution. In addition, low interest rates have increased demand for holding money. As a result of these factors, despite the dramatic surge in the Fed's monetary base resulting from the Fed's asset purchases, in recent years M2 has grown at a modest 6% rate and nominal GDP has grown even more slowly, reflecting the persistent decline in money velocity.

Along with weak productivity gains, the tepid response of nominal GDP to the Fed's unprecedented efforts to stimulate activity has been a key reason why inflation has remained below the

Fed's 2 percent target. Along with soft productivity gains, it has also served to constrain wage increases. Inflation results from excess aggregate demand relative to real productive capacity. With nominal spending growth during this expansion through 2016Q4 hovering around 3.5% and estimates of real potential growth centering close to 2%, inflation has settled around 1.5%. To put this into historic context, nominal GDP grew 5.3 percent annualized during the 2001-07 expansion and at a 5.6 percent pace during the 1990s.

In addition to the slow productivity, soft growth of aggregate product demand has influenced wage and price setting behavior. Businesses know that the soft aggregate product demand environment constrains their flexibility to raise product prices, which reduces their willingness to grant higher wages. In the last two quarters (2017Q3-Q4), nominal GDP has accelerated to a 4.6% growth pace and productivity has picked up. If these trends are sustained, wage gains will rise.

The Fed's Balance Sheet

The Fed's asset purchases ballooned its balance sheet to \$4.45 trillion by mid-2014. The Fed's policy of reinvesting maturing assets has maintained that level of assets. The Fed's portfolio includes \$2.5 trillion of U.S. Treasury securities of various maturities and \$1.8 trillion of MBS, primarily with long maturities. The Fed is now the largest holder of each, with 17 percent of outstanding federal publicly held debt and 12 percent of MBS outstanding. (The Fed's holdings of Treasuries are counted as publicly-held debt because the Federal Reserve Banks are legally capitalized by the private-sector banks in their districts). Prior to the financial crisis, the Fed's balance sheet was roughly \$850 billion, comprised nearly entirely of short-term Treasuries and other liquid securities.

The Fed's out-sized balance sheet and its MBS holdings directly infuses monetary policy into fiscal and credit policies, and involves significant risks, including risks to the Fed's independence. The Fed's significant earnings—it effectively funds its long-dated portfolio with short-term borrowing—are remitted to the US Treasury. These remittances peaked at \$117 billion in Fiscal Year 2015 and have receded to roughly \$81 billion as average bond yields have fallen and the Fed has raised its Federal funds rate, which triggers higher IOER to commercial banks. These remittances have reduced budget deficits, but they entangle the Fed's monetary policy in the government's budget and fiscal policy in unhealthy ways and involve sizeable risks to current and future taxpayers.

Congress has a tendency to view the Fed's remittances as risk-free and permanent (it has already taken advantage of the Fed's balance sheet and profits to fund some spending legislation) and maintaining the

Fed's balance sheet involves sizeable interest-rate risks. Such risks may undercut the Fed's credibility and threaten its independence. The interest rate risks should be taken seriously. The Congressional Budget Office has estimated that a 1 percentage point increase in interest rates would raise budget deficits by \$1.6 trillion over its 10-year projection period. Such a rise from current low levels would not be a surprise: the Fed's official forecasts call for a rising Fed funds rate, sustained economic growth and 2% inflation, and economic momentum is building.

The Fed's efforts to be more transparent about monetary policy should include a clear and honest assessment of the government's budgetary risks of its sustained outsized balance sheet. Congress must be more aware of the interest rate risks, and understand that taking advantage of the Fed's contributions to temporarily reducing deficits to finance spending programs is inappropriate and imprudent.

The Fed's sustained holdings of MBS directly involve the Fed in credit allocation and are inappropriate. The Fed's first MBS purchases at the height of the financial crisis in November 2008 had a distinct purpose—to stabilize a completely dysfunctional and illiquid market that posed a threat to global markets. Soon after these first purchases, then Fed Chair Bernanke stated that the MBS purchases were in response to an emergency situation, and that the Fed would unwind them on a timely basis. Instead, the Fed added dramatically to its MBS holdings through QEII, QEIII, and has maintained them through its reinvestment policy.

The Fed's MBS holdings effectively favor mortgage credit over other types of credit. Mortgage markets are functioning normally with sufficient liquidity, and even a casual observation of the housing market suggests that the Fed's ongoing explicit subsidies of the housing sector are irrational.

The Fed's LSAPs have not involved purchases of equities. Some financial market participants and fiscal policymakers have argued that it may occasionally be appropriate for the Fed to buy equities. It is not, under any circumstances. In emergency situations—so-called “unusual and exigent circumstances”—the Fed's efforts to stabilize financial markets would be much better served through temporary loans of other specified liquid financial securities, without the excess economic and political baggage of absorbing equities into its portfolio. Purchases of equities would be very risky on many dimensions, and should be deleted from the Fed's potential monetary policy “tool kit”.

Recommendations for the Conduct of Monetary Policy

The Fed should continue to normalize monetary policy: it should continue to raise rates, but it should modify its balance sheet unwind strategy to gradually eliminate its entire holdings of MBS and aim to reduce its total asset holdings more than it is currently suggesting. These steps would not harm the economic expansion but would reduce distortions and improve the health of financial markets while reducing the risks involved in the Fed's current balance sheet policies.

In addition, the Fed needs to adopt a flexible rules-based approach of conducting monetary policy and establish clearer rules for when and how it executes emergency monetary operations. The roles of the Treasury and Congress must also be clarified. A flexible rules-based approach would be a favorable change from its current discretionary approach, increasing its transparency and enhancing the ability of Congress to supervise the Fed.

Interest rate and balance sheet normalization. Currently, the Fed funds rate is below inflation even as the real economy is growing above standard estimates of potential and gaining momentum. The Fed should continue to raise its target rate toward the natural rate of interest plus the Fed's 2 percent longer-run inflation target, consistent with its official forecast of the appropriate path of the Fed funds rate.

With the economy operating near estimates of potential and the unemployment rate below estimates of its natural rate, an acceleration of economic growth would naturally require quicker rate increases, while a material economic slowdown should slow the pace of normalizing rates. Tax or fiscal legislation that raises economic growth and expected returns on investment would be associated with a rise in the natural rate of interest. This should lead the Fed to adjust up its trajectory and end-point of the appropriate Fed funds rate.

The Fed should maintain its longer-run inflation target of 2 percent, but tolerate a lower range of inflation if inflationary expectations remain well-anchored and are not a factor that influences household or business spending and investing decisions. This is more in keeping with the Volcker-Greenspan consensus during the successful economic period known as The Great Moderation. The Fed should express less worries that inflation is too low; rather, the low inflation is favorable for economic performance. The Fed must tone back its tendency to fine-tune the economy and acknowledge that its best contribution to sustained healthy economic growth is to maintain an even-keeled monetary policy consistent with stable, low inflation.

The Fed has embarked on its current strategy of very gradually and passively unwinding its large portfolio of treasuries and MBS that involves reinvesting all but a small fraction of maturing assets (\$6 billion per month in treasuries and \$4 billion per month in MBS). It will gradually increase those amounts of unwind as deemed appropriate. The Fed has not set an official strategy for the size of balance sheet it ultimately aims to maintain, but several Fed members have stated that the goal should be to keep the balance sheet sufficiently large in order to maintain a large amount of excess bank reserves. Governor Jerome Powell, the nominee to be Fed Chair, has stated the aim of reducing the Fed's portfolio to \$2.5-\$3.5 trillion. Based on the current \$1.5 trillion in currency in the economy, this implies the Fed would maintain over \$1 trillion of excess bank reserves. Other Fed members have mentioned \$3 trillion.

This strategy should be modified in two ways. First, the Fed should reset its strategy to fully unwind its MBS portfolio, but make it sufficiently gradual such that the mortgage market is allowed to absorb the Fed's reduced role in the MBS market. Although the bulk of the Fed's MBS holdings are of long maturity, their duration is significantly shorter, reflecting the natural amortization of mortgages and principle pay downs. Accordingly, this MBS unwind likely could be nearly fully achieved over a five year time period. The key point is the Fed should establish a reasonable unwind strategy and stick to it.

The Fed's intention of maintaining a large balance sheet and buffer of excess reserves implies a shift from pre-financial crisis operating procedures. The Fed would continue to remit substantial profits to the Treasury. Under this procedure, the Fed would continue its post-crisis policy to pay IOER and manage the effective Federal funds rate through a "floor system". This contrasts to its historic reliance on a market-based "corridor system". The Fed's argument for this new strategy is that it would benefit the Fed's conduct of monetary policy and enhance its ability to stabilize financial markets. I am not convinced of the benefits of this new procedure relative to its costs in terms of the Fed's expanded financial footprint and its ongoing exposure to fiscal policy and associated economic and political risks. However, this preference is less important than the higher priorities of fully winding down the Fed's MBS holdings and reining in the scope of monetary policy. More thorough cost-benefit analysis of this issue is required rather than agreeing to the Fed's arguments.

Resetting monetary policy. Resetting monetary policy to a flexible rules-based approach would steer the Fed away from a fully discretionary approach and its short-term oriented tendency to fine-tune the economy toward a flexible rule that operates as a guideline that focuses the Fed on a longer-term

strategy of achieving its dual mandate. One benefit of this approach would lead the Fed toward conducting monetary policy within its natural scope and avoid discretionary policies that historically have been the source of mistakes and undesired economic outcomes.

The debate about implementing a rules-based policy has been influenced by the notion that it would unduly constrain the Fed and prevent it from responding to an economic downturn or financial crisis. That is not its intention or the intention of pending legislation. Rather, a rules-based approach would be used as a guideline, and would allow the Fed to deviate from the rule, but require that the Fed explain those deviations to Congress and the public. This would improve transparency and facilitate improved Congressional supervision of the Fed. It would also be an important tool for reaching an understanding about the limitations of monetary policy and its proper role among other economic policies in achieving desired economic objectives.

Analysis shows that more rules-based policy over time would have generated smoother fluctuations in aggregate demand and improved economic performance compared to actual policy; but once again, such a framework must provide sufficient flexibility to quickly and aggressively maneuver monetary policy amid financial crisis or economic downturn. My observation is such a rules-based guideline would result in even-keeled monetary policy during normal times, and the efficacy of monetary policy during extraordinary times would depend on the discretion, judgment and leadership of the Fed, as is currently the case under fully discretionary policy.

Establishing the ground rules for emergency monetary policy. Ground rules need to be established for the conduct of monetary policy under extraordinary circumstances, including approval processes and responsibilities of the Fed, Treasury and Congress. Many of these governance issues are complex, but several things seem clear. While precisely defining emergency situations—unusual and exigent circumstances—that require extraordinary Fed intervention is difficult, responsibilities and approval processes within and across institutions must be established, and Congressional oversight of Fed operations must be open. I view several items as important. The Fed's governance rules should be modified such that Fed decisions to engage in extraordinary monetary policy should be determined by the FOMC, rather than just the Board of Governors. The Treasury should be mandated to approve the Fed's extraordinary interventions and capital exposure. The Congress should be involved in approving the budgetary impacts of the Fed's emergency policies, and its supervisory role should be spelled out. The Fed, Treasury and Congress have learned a lot from the financial crisis, and they should coordinate to be prepared for future economic, financial or idiosyncratic shocks.

Testimony before the Subcommittee on Monetary Policy and Trade

Committee on Financial Services

U.S. House of Representatives

November 7, 2017

Why the Fed Should Only Own Treasuries

By

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Why The Fed Should Only Own Treasuries¹

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One of the most important guiding principles of sound central banking is the independence of monetary policy decision-making. History teaches us that unless governments are constrained constitutionally or by statute, they often resort to the “printing press” to avoid making tough fiscal decisions. But in a democracy, independence must come with limitations on the central bank’s authorities and discretionary powers. Otherwise, central bankers can use their powers to venture into policy realms unrelated to monetary policy, especially fiscal policy, which more appropriately rests with elected officials. If a central bank has the power and willingness to conduct fiscal policy, it undermines the integrity of fiscal choices by Congress and the checks and balances on the distributional effects of fiscal actions. Engaging in such actions also undermines the central bank’s legitimacy and the case for independence.

It is useful to think of a central bank in terms of its balance sheet. For the Federal Reserve, the liabilities are predominately currency and the reserves of the banking system. Increasing the liabilities is often thought of as monetary policy. However, central banks also manage the asset side of the balance sheet and governments often put constraints on what the central bank can acquire or hold. Changes in the composition of the assets are often referred to as credit policy.

Historically, the Fed has conducted monetary policy through the purchase or sale of Treasury or Treasury-related securities (such as repurchase agreements). Thus, the vast bulk of Federal Reserve assets has been Treasury securities. Credit policy did not play a significant role as assets outside of Treasuries were relatively small.

During the financial crisis and ensuing recession, this picture changed dramatically. The Federal Reserve made a number of decisions that significantly altered both the size and the composition of its balance sheet. For example, the Fed pursued a program of large-scale asset purchases in an effort to increase monetary accommodation after it reduced its conventional policy tool, the federal funds rate, to near zero. The balance sheet grew from less than \$1 trillion to \$4.5 trillion. This expansion was achieved, in part, through the purchase of large quantities of Treasury securities.

But in a more unusual step, the Fed also purchased large quantities of non-Treasury securities, altering the composition as well as the size of the Fed’s balance sheet. In particular, a significant share of the purchases was in the form of mortgage-backed securities (MBS), which targeted the housing sector for special attention and thus was a form of credit policy in support of a specific sector of the economy. So

¹ This piece was published by the Hoover Institution as part of its Defining Ideas Online Journal, June 10, 2017

quantitative easing (QE) was a mixture of monetary policy, adding liabilities in the form of bank reserves, and credit policy that altered the composition of the assets away from Treasuries toward housing securities and MBS in particular. This was an unprecedented market intervention by the Fed.

More troubling was the lending under Section 13(3) of the Federal Reserve Act (FRA), which included support of the creditors of Bear Stearns and AIG. The Fed also funded other lending programs designed to support the purchase of commercial paper and other types of asset-backed securities. These credit policies were market interventions intended to benefit or subsidize specific parties during the crisis. The broader goal was to help stabilize the financial system. Regardless of the rationale, the Fed sold Treasury securities from its portfolio and used the proceeds to purchase risky private sector securities. These actions amounted to debt-financed fiscal policy but without the explicit authorization of Congress. Given the distributional effects of such interventions, it is not surprising they proved controversial.

A Fed with the power to engage in fiscal policy through such credit allocations faces risks that its authority can be abused by political leaders or the Fed itself. The discretion to engage in credit allocation represents an open invitation to politicians and interest groups to pressure the central bank to use its authority to manage its assets to further some other agenda. Maybe the Fed should invest in green energy companies, in domestic manufacturers who pledge not to ship jobs overseas, or infrastructure bonds issued by state or municipal authorities. This may seem far-fetched, but Congress asked the Fed to invest in the automobile companies in 2008. After all, it had already supported Bear Stearns and AIG, and weren't the big four auto companies as important to the economy and employment as these financial firms? Fortunately, the Fed said no, but the discretionary authority to engage in credit allocation could prove to be a threat to Fed independence. This danger is further aggravated by the calls for the Fed to rely on an operating regime that untethers the balance from monetary policy. In such a regime, the size of the balance is free to vary while monetary policy is determined by the rate of interest on reserves. What a temptation for mischief with the balance sheet that could prove to be.

In response to such criticisms of the scope of Fed authorities, the Dodd-Frank legislation in 2010 modified lending under Section 13(3) to programs with "broad-based eligibility." Dodd-Frank also attempted to devise a resolution regime for large financial institutions so that such rescues by the Fed need not arise in the first place. The actions by the Fed that pushed the envelope and scope of Fed authorities also have spawned other proposals such as the "audit the Fed" movement and calls for changes in Fed governance. These latter proposals, if passed, would strike at the heart of monetary policy independence.

One way to limit the Fed's ability to engage in credit allocation and reduce the incentive for political interference is to restrict the central bank to an all-Treasuries portfolio. This would not constrain the conduct of monetary policy. There are ample Treasury securities for conducting monetary policy for the foreseeable future. The large purchases of MBS were a significant departure from past practice and, as I mentioned, were a mixture of both monetary policy (increasing the size of the balance sheet) and credit policy (changing the composition of the assets on the balance sheet). The justification of the MBS

purchases was not based on the scarcity of Treasuries available for purchase in the open market, but on the desire to support housing, which was viewed as important to economic recovery.

A Treasuries-only policy would prevent the Fed from purchasing private sector assets that would offer some firms, sectors, or asset classes preferential treatment and expose the taxpayer to credit risk. It would also prevent the Fed from rescues or bailouts of creditors on its own discretionary authority as it did during the crisis under Section 13(3). Moreover, it would rule out the discretion of the Fed to acquire agency securities and municipal bonds, as well as private securities such as equities and corporate bonds. These limitations would strengthen Fed independence by reducing the incentives for political interference and lobbying by interested parties.

Some argue that an all-Treasuries portfolio would limit the ability of the Fed to respond to a financial crisis. As a lender of last resort, the Fed should focus on the integrity of the payment system. As articulated by Walter Bagehot in 1873, the central bank should lend to solvent institutions at a penalty rate against good collateral. The Fed's lending to Bear Stearns and AIG were not examples of such lending. Instead the Fed lent to failing institutions against questionable collateral. Moreover, the Fed has never articulated a strategy for determining who and when such emergency lending was appropriate, or defined the collateral requirements.

It should not be a goal to make bailouts and rescues easy for the Fed, or any other agency for that matter. To reduce moral hazard, such options should be eliminated or made very difficult to pursue. Section 13(3), even as revised, permits the government to use the Fed's off-budget financial position to engage in fiscal actions so the fiscal authorities do not have to step up to the plate. This encourages moral hazard, increases risk taking, misplaces decision rights, and undermines accountability.

A Treasuries-only constraint on the Fed would dramatically curtail its credit policy actions, reduce moral hazard, and protect its independence. Yet some argue that the Fed must have the authority to intervene in an emergency much as it did in 2008. But this is not necessary. Fiscal policy that puts taxpayer funds at risk should be the responsibility of Congress and the U.S. Treasury. It's unnecessary to grant the Fed discretionary authority to execute such rescues. If a situation such as Bear Stearns were to arise, the first line of defense should be orderly liquidation or bankruptcy. Neither would necessitate a financial role for the Fed.

Nevertheless, it is understandable that many believe that there should be some backstop mechanism for the government to act on relative short notice. Emergencies can and do arise. What is needed is a mechanism that aligns decision rights and accountability for the fiscal actions being contemplated.

On several occasions², I have suggested a new accord between the Fed and the Treasury. The idea is to specify ex ante the decision rights and accountability for such fiscal decisions during a financial crisis.

² https://www.philadelphiafed.org/-/media/publications/speeches/plosser/2009/02-27-09_us-monetary-policy-forum.pdf?la=en
https://www.philadelphiafed.org/-/media/publications/speeches/plosser/2012/02-24-12_us-monetary-policy-forum.pdf?la=en
https://www.philadelphiafed.org/-/media/publications/speeches/plosser/2013/11-13-13_cato-institute.pdf?la=en

The decision to put taxpayer funds at risk in order to allocate credit differentially across parties or sectors lies with the fiscal authorities. The accountability then should also rest with those authorities. The role of the Federal Reserve should be limited to helping the Treasury implement the decision. Recognizing the appropriate accountability, the Treasury would be required to remove the private securities from the Fed's balance sheet in exchange for Treasury securities, thus restoring the all-Treasury character of the Fed's balance sheet and ensuring that the fiscal authorities are accountable for the risks.

The framework is easily described:

1. The Federal Reserve should be required to maintain a Treasuries-only policy as it pertains to the conduct of monetary policy.
2. The Federal Reserve should be prohibited from purchasing non-Treasury securities, private sector securities or lending against private collateral except through traditional discount window operations with depository institutions.
3. Emergency lending under Section 13(3) of the FRA should be eliminated and replaced with a new Fed-Treasury accord, under which the Fed may facilitate, at the Treasury's request, the purchase of private sector securities in an emergency. The Treasury would be required to seek Congressional approval for such expenditures within 30 days of the action. Upon approval, the Treasury would promptly arrange to exchange (at book value) Treasury securities for the private sector securities temporarily acquired by the Fed. Should the Congress not approve the action, the Treasury would require the Fed to liquidate such securities within 60 days. Any losses or gains incurred by the Fed under such an action would be the responsibility of the Treasury. Through these provisions credit policies would cease to be a tool of the Federal Reserve and would no longer be a threat to the independence of the Federal Reserve.

To illustrate how this might work, consider the case of Bear Stearns.

The decision to support the rescue of Bear Stearns should have been made by the U.S. Treasury. Bear Stearns was not a depository institution, nor was it regulated by the Fed. Rather, it was an investment bank which had as its primary regulator the SEC. Surely, consultation with the Fed, the SEC, the FDIC, and other agencies would be appropriate, but the decision should be that of the fiscal authorities. The Fed could help facilitate that decision and be instructed by the Treasury to acquire whatever securities required to implement the decision. But it is important that the decision rights rest with the Treasury, with the Fed as the facilitator operating under the instructions of the Treasury.

In this case, the transaction could have proceeded as it did. The Fed facilitated the purchase of Bear Stearns by JP Morgan by, in effect, purchasing (raising cash by selling Treasuries from its portfolio) approximately \$29 billion of high risk private assets. These risky assets were placed in an LLC wholly owned by the New York Fed, named Maiden Lane.

Then comes the important part. The Treasury would then be required, within 30 days, to get an approval or appropriation by Congress. Following approval, the Treasury would arrange an exchange of those

private assets purchased by the Fed for Treasury securities. For example, the Treasury could simply issue debt in the amount of the book value of the Maiden Lane assets and deposit the proceeds at the Fed in exchange for the ownership of Maiden Lane assets. The Fed would then use the proceeds to purchase Treasuries in the secondary market. At the conclusion of such an exchange, the Fed's portfolio would be returned to where it was before the transaction, the U.S. Treasury would be the owners of the Maiden Lane assets, and accountability for the decision would rest with the appropriate decision-making authority. Any gains or losses on the ultimate disposition of the securities would then accrue to the Treasury and the taxpayer.

Requiring the Federal Reserve to maintain an all-Treasuries portfolio would address several issues. It would protect its independence; reduce its discretionary authorities; and return fiscal authority and credit allocation to Congress and the U.S. Treasury.

