

SOUND MONETARY POLICY

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

MARCH 16, 2017

Printed for the use of the Committee on Financial Services

Serial No. 115-4



U.S. GOVERNMENT PUBLISHING OFFICE

27-203 PDF

WASHINGTON : 2018

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

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SOUND MONETARY POLICY

Thursday, March 16, 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 10:08 a.m., in room 2128, Rayburn House Office Building, Hon. Andy Barr [chairman of the subcommittee] presiding.

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

Ex officio present: Representatives Hensarling and Waters.

Chairman BARR. The Subcommittee on Monetary Policy and Trade will come to order.

Without objection, the Chair is authorized to declare a recess of the subcommittee at any time.

Today's hearing is entitled, "Sound Monetary Policy." I now recognize myself for 5 minutes to give an opening statement.

Before joining our Financial Services Committee in 2013, I had to learn a new language: "Fedspeak." One of the first words I learned was "headwinds." Translated for the layperson, "headwinds" means unconventional monetary policies promised a lot, but delivered little on what really matters: economic opportunity for every American.

In recent testimony, Federal Reserve Chair Yellen cited slow productivity as a headwind. Specifically, she said, "We are not able to address every problem. If there is slow productivity growth in the United States, that is not something that the Fed has much ability to address."

Sharing a widely held sentiment among economists, The Wall Street Journal recently characterized slow productivity growth as, "the biggest factor affecting Americans' living standards." Yet, Chair Yellen questioned if there is slow productivity growth.

The data are clear. Productivity growth is remarkably slow, yet Chair Yellen chalked it up as a headwind. According to her testimony, that is not something that the Fed has much ability to address. I disagree. Almost 8 years out of recession, the absence of sound monetary policy continues to weigh on productivity growth and the economic opportunities it can offer to every American.

Testimony from today's hearing will show us a better way. The longer we go without a reliable strategy for monetary policy, the

longer households and businesses will continue losing their direction in the thickest of economic fogs.

Absent clear price signals about when and where goods and services can find their most promising opportunities, productivity will continue to fall well short of potential.

Today's monetary policy is data-dependent in name only. It is a policy that never tells us what data matter, let alone how they matter. It is a policy that continues to leave households and businesses scratching their heads about when and where the oracles from the Fed's Eccles Building will turn next. It is a policy that creates uncertainty instead of clarity. It is a policy that has weighed on productivity from its start a decade ago.

Slow productivity growth cannot be dismissed as an unavoidable headwind. It is time to ditch the Fed speak. Productivity demands clear monetary policy.

The longer the Fed continues to leave us guessing about where policy will move next, the longer the malaise of "Obamanomics" will linger.

As the chart on our hearing room screen shows, each year of President Obama's Administration saw the ceiling on economic opportunity drop sharply. For 5 straight years, productivity did not rise above 1 percent.

Unfortunately, as the Fed's policy fog kept getting thicker, Americans saw their untapped potential grow faster than their economy. Ignoring this clear signal, that unconventional monetary policy had stopped working, if it worked at all, the Fed decided last December to extend its unprecedented streak of sub 1 percent policy rates to almost 100 straight months.

For years, so-called forward guidance has served better as a fog machine than a clear communication program. Throughout, the Fed told us that policy rates will gradually rise to more conventional levels, but always found a last-minute reason to pull back.

According to The Wall Street Journal, "Bad news delayed rate increases, but good news didn't speed them up." Central bank officials began in both 2015 and 2016 projecting three to four quarter percentage point rate increases and in both years delivered just one, in December.

A few weeks ago, the Fed decided to hide yet again behind policies that depend on the data in name only. This time while central bankers have been characterized as loathe to tighten policy when the market is not anticipating such a move, the Fed did just that.

Absent any substantive change in the data for inflation or employment, the Fed surprised again by spiking expectations for what became yesterday's rate increase.

The Committee on Financial Services is dedicated to a set of reforms that will blow away the lingering policy fog, reforms that will bring monetary policy back into the sunlight so that transparency and discipline can help all Americans finally get back on track.

I look forward to testimony from our panel of accomplished business, policy, and academic leaders. Their counsel will help us not only jettison a decade of interest rate and balance sheet policies that distort economic decisions and threaten policy independence, but also establish a reliable strategy that supports economic opportunity for every American.

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

Ms. MOORE. Yes, sir. Good morning, everyone. Let me, first, congratulate our brand new Chair, Mr. Barr, for his elevation to this position. I certainly look forward to working with you.

And I want to thank our witnesses for taking the time to be here again. I always find it very instructive and informative. Some of you are old friends, familiar faces, and I look forward to our hearing today.

The Federal Reserve was forced to take unconventional actions to address the serious nature of the fiscal downturn. And I am glad they did. I was here, Mr. Barr, when Hank Paulson walked in and said, "Give us \$700 billion or else we will have no economy."

And it seems clear when we were losing 700,000 jobs a month. And it seems clear that in the macro sense, the policies implemented by the Fed have been successful. The current unemployment rate is 4.7 percent, and at the height of the crisis in 2009, the first year of President Obama's tenure, it was a full 10 percent.

The GOP suddenly seems thrilled about these job reports that are the same or less to what we saw throughout the Obama Administration, steady growth in new jobs. And for the first time in many years, the Fed raised its short-term interest rate, signaling more to come, a judgment that our economy is finally healthier. Thank you, Barack Obama.

Unfortunately, the recovery has been uneven. The gains made by the comfortable have not found their way to the afflicted. And this is largely due to austerity measures. We want to talk about how to make the recovery make its way to all of our citizens.

This committee should unanimously urge President Trump to restore the Obama rule that reduced the annual premium FHA fee for the first-time home buyers. It was amazing that his first act was to nick low-income homeowners.

We also need to get additional help to help homeowners in distressed areas that have not seen their home values rise. A big complaint that we get is that we, "rescued the financial markets and left homeowners under water," people who were paying their mortgages every month.

We also need to protect retirement savers by urging the Administration to not delay the implementation of a rule requiring investment advisors to put their clients' financial interests ahead of their own. What is wrong? Who could possibly object to a best interest standard?

We should reject Trump care, a massive tax cut for the top one-tenth percent masquerading as a healthcare bill, a bill that will further drive damaging inequality, while making millions of Americans sick and poor, if not dead.

We should also reject Trump's budget, a budget that invests in weapon systems but neglects humans. A missile does a lot for this country. But Meals on Wheels or the Center for Disease Control does so much more.

Thank you, and I yield back. Did I mess up on my time? What did I do? No? I have 2 more minutes.

Chairman BARR. Does the gentlelady yield back?

Ms. MOORE. Yes.

Chairman BARR. I thank the gentlelady for her kind words, and I look forward to working with her as well.

The gentleman from Texas, Mr. Williams, the vice chairman of the subcommittee, is now recognized for 1 minute for an opening statement.

Mr. WILLIAMS. Thank you, Chairman Barr and Ranking Member Moore. I wanted to take a moment to first congratulate you on today's hearing, marking the first as our new subcommittee Chair. I am proud to be serving with you this Congress and I look forward to a very productive year.

Mr. Chairman, I would be remiss if I didn't mention that last night, at midnight, the debt limit was reset, and according to the U.S. Treasury, the United States currently owes \$19.85 trillion in debt. Now more than ever a sound transparent monetary policy is needed to ensure our economy doesn't continue to underperform.

It is vital that we create certainty for the American economy, which has grown tired of guessing where monetary policy is headed. Our economy needs an effective strategy that works for all Americans and doesn't pick winners and losers.

I look forward to hearing from our witnesses today, and with that, Mr. Chairman, I yield back.

Chairman BARR. The gentleman yields back.

The Chair now recognizes the gentleman from Illinois, Mr. Foster, for 1 minute.

Mr. FOSTER. Thank you. I would like to join my colleagues in congratulating Chairman Barr and thanking our witnesses for being here today.

One of the only really encouraging developments in the quality of our political debate recently is the acknowledgement that economic growth is not a single value function of monetary policy. In Chair Yellen's recent speech, she emphasized technology and scientific progress as crucial inputs to economic growth.

Some studies indicate that over 50 percent of all economic growth since World War II has been due to technological progress, much of it achieved through federally-funded research. And this highlights the shortsightedness of the Trump Administration's 15 to 20 percent proposed cut in Federal research and development, in particular in science.

And so, that is going to have a long-term drag on our economic growth, and I think that people should pay attention to that.

Thank you, and I yield back.

Chairman BARR. The gentleman yields back.

The Chair now recognizes the gentleman from California, Mr. Sherman, for 1 minute for an opening statement.

Mr. SHERMAN. I welcome the new Chair and disagree with him profoundly in criticizing the Fed. To put up a chart showing the difference between actual economic growth and what was theoretically possible, is to argue for lower interest rates.

The chairman then condemns the Fed for having interest rates that are too low. You can't win for losing. The fact is, I think the Fed has done a reasonable job. I have pushed for rates to be about a quarter point lower than the Fed has called for and regretted the recent decision.

But the idea that we can eliminate Fed decision-making and instead have some published formula: plug in interest rates here, plug in the stock market there, and automate the Fed's Open Market Committee out of business or to take any discretion out of it, I think, overrates what can be done with an algorithm.

And I yield back.

Chairman BARR. The gentleman yields back.

Today, we welcome the testimony of Mr. John Allison, former chairman and chief executive officer of BB&T Corporation, former CEO and president of the Cato Institute, and the current executive in residence at the Wake Forest School of Business.

Dr. Martin Goodfriend is the Friends of Allan Meltzer professor of economics at Carnegie Mellon's Tepper School of Business, and the former senior vice president and policy advisor at the Federal Reserve Bank of Richmond.

Dr. John B. Taylor is the George P. Schulz senior fellow in economics at the Hoover Institution, the Mary and Robert Raymond professor of economics at Stanford University, and also served as senior economist on President Ford's and President Carter's Council of Economic Advisors, as a member of President George H.W. Bush's Council of Economic Advisors, and as Under Secretary of the Treasury for International Affairs.

And Dr. Josh Bivens is the director of research at the Economic Policy Institute.

Each of you will be recognized for 5 minutes to give an oral presentation of your testimony. And without objection, each of your written statements will be made a part of the record.

Mr. Allison, you are now recognized for 5 minutes.

STATEMENT OF JOHN ALLISON, EXECUTIVE IN RESIDENCE, WAKE FOREST SCHOOL OF BUSINESS, AND FORMER CHAIRMAN AND CEO, BB&T CORPORATION

Mr. ALLISON. Thank you, Mr. Chairman. It is a pleasure to be here. Thank you, committee members. At the time of the most recent financial crisis, I was the longest serving CEO of a major financial institution in the United States. I went through three financial crises.

In my opinion, as an inside observer, I think in all cases the Federal Reserve made the crises much worse than they needed to be. The Federal Reserve has a tendency to overreact in bad times, creating bubbles in the economy.

And then as they realize they made bubbles, they try to correct, raising rates too rapidly, which leads to another correction. I think they significantly contributed to the magnitude of the corrections.

In a free market, there would be economic corrections. However, markets would correct much more rapidly. The Fed tries to prevent those corrections and actually creates bigger problems in the long term.

A classic example of this is what happened in the early 2000s where we were having a minor correction. We needed one. Housing prices were already 10 percent too high, based on incomes. The Fed didn't want to have a correction. I think for political, or as I call it emotional reasons, so that they wanted to look good. And they created negative real interest rates.

That actually sponsored and created bubbles in the housing market, along with Freddie Mac and Fannie Mae, but there were also bubbles in commodities. There were bubbles in the automobile market. There were bubbles in the stock market. You can't get all those bubbles without monetary policy because where is the money coming from? The Fed controls monetary policy and they control regulatory policy and the combination of the two led to those bubbles.

It is not surprising that the Fed makes these mistakes because their job is, in fact, impossible. One of the few things that is agreed to in monetary economics is that price fixing does not work. And that is essentially what the Fed is doing, is price fixing of interest rates.

And what makes this problem particularly difficult is that interest rates are one of the most complicated, integrated, and important prices in the world. In fact, you could argue that because the U.S. dollar is the world's reserve currency, its interest rate has a profound effect on the global economy.

Interestingly enough, I have talked to a number of Fed Governors over the years and asked them if they thought price controls were good things, if price fixing was a good thing. And to a person, they have all said no. But somehow affixing interest rates, which is a price, makes sense.

I asked them if a group of bureaucrats in Washington, D.C., could determine the price of eggs or chickens or automobiles, and to a person, they all said no. And I would argue that any of those prices would be easier to figure out than the proper price of money, without the information that markets provide.

Markets provide the information to drive prices. And when bureaucrats arbitrarily drive prices, there are many negative impacts. I do strongly believe that a rule-based system would improve the performance. It is not a perfect answer. I think the discretion of bureaucrats who have lots of different motivations, if you look at public choice theory leads to bad outcomes.

I am a supporter of the Taylor Rule. I particularly like the nominal GNP rule. I think that discipline would be very important.

I think it would be very important, by the way, to business decision-makers, to banks because we are worried about what Janet Yellen had for breakfast this morning when she meets because that might influence her policy.

We don't know how to do a calculation when the Fed can arbitrarily set rates. If you had a formula, that piece of information would be very valuable to the marketplace.

By the way, for those who support the Fed and yet claim to be supporters of the working class, they should look at the massive redistribution the Fed has achieved in this recent correction. By holding interest rates below what market rates would be, they penalize working-class savers.

When you run a bank, the people who have money in the bank are not wealthy people. They are working-class people who buy CDs. They don't have stocks. They have CDs and the low interest rates have redistributed an estimate of \$1 trillion from the working class to wealthy individuals who own stocks.

I think that is a very destructive policy, and it probably has had an impact on politics and how people think about what is going on.

There is a sense of injustice that comes from that. And I think people should recognize that the Fed has played a very significant role in that regard.

During the recent financial crisis, they also accentuated by tightening lending standards, which has hurt small business lending. I started as a small business lender and up until very recently it was harder to make a small business loan today than it was over the last 40 years.

And that has redistributed assets to large companies away from small business and innovation and jobs that they create. And that has been another very destructive policy. I don't think you can really be advocates to the working class and small business and be happy with the Federal Reserve's policies.

[The prepared statement of Mr. Allison can be found on page 50 of the appendix.]

Chairman BARR. Thank you.

Dr. Goodfriend, you are now recognized for 5 minutes.

STATEMENT OF MARVIN GOODFRIEND, FRIENDS OF ALLAN MELTZER PROFESSOR OF ECONOMICS, TEPPER SCHOOL OF BUSINESS, CARNEGIE MELLON UNIVERSITY, AND FORMER SENIOR VICE PRESIDENT AND POLICY ADVISOR, FEDERAL RESERVE BANK OF RICHMOND

Mr. GOODFRIEND. Thank you, Mr. Chairman, and Ranking Member Moore. I am pleased to testify today on sound monetary policy, but more specifically on why the Federal Reserve needs a credible commitment to price level stability. In January 2012, the Federal Open Market Committee released for the first time, the so-called, "Statement of Longer Run Goals and Monetary Policy Strategy."

I want to talk about why that Statement is inadequate. It "adopted" a 2 percent inflation target based on an accompanying set of principles. At the end of my testimony, I will recommend improvements in this statement to lock down the public belief and confidence in the inflation target.

But before doing so, I want to explain why the Fed's failure to secure the credibility of its inflation target creates three risks for the Fed and the economy going forward.

First, weak inflation target credibility elevates risks inherent in the implementation of interest rate policy itself. Markets understand that the Fed's interest rate target changes are highly persistent and seldom quickly reversed, so that a change in the overnight interest rate carries expected future short-term rates with it and longer-term interest rates as well.

And the Fed is able to exert considerable leverage over longer-term rates that matter for the economy. The Fed's inclination to delay Federal funds rate target changes until it is certain not to have to reverse field explains, in fact, why monetary policy has been behind the curve so many times in the past.

But the point at issue today is that when the public is unsure of the Fed's commitment to the inflation target, the Fed is forced to move even more preemptively than otherwise against rising inflation to assure markets of its commitment to the target.

And having to do that, having to move more preemptively, in turn increases the risk of moving prematurely, reversing field and

undermining the Fed's leverage over longer-term interest rates entirely, thus weakening the power of monetary policy over the economy.

Second, weak inflation target credibility invites a re-emergence of what I would call cyclical inflation fighting risk premia in bond rates. Let me explain. The problem for monetary policy today is that the credibility of the Fed's 2 percent inflation target is about to be tested for the first time.

The last inflation-fighting scare occurred in 1993 and 1994. The cyclical inflation-fighting risk premium in long bond rates then rose by around 2 full percentage points, without a prior increase in inflation or inflation expectations, reflecting a jump in bond investors' concern of a return to an era of cyclical inflation-fighting risk in bond rates, such as occurred during the Great Inflation period between 1965 and 1985.

At the time, that didn't happen. The jump in bond rates quickly reversed, and inflation remained low, in part because of a timely rise in productivity growth in the United States in the late 1990s.

Today, a sudden sharp re-emergence of cyclical inflation-fighting risk premia in long-term bond rates would effectively tighten monetary policy, depress output in employment, and present monetary policy with an uncomfortable short run tradeoff between stabilizing inflation and employment. That is the second major risk of not tying down the Fed's commitment to long-run inflation stability.

Third, weak inflation targeting credibility increases household financial insecurity. If in past years the Fed had been fully committed to price stability, as embodied in an inflation target, then retirees would be in a much better position today.

Years ago, households would have been advised and willing to hold a significant share of their lifetime savings in long-term nominal bonds, paying a safe nominal interest rate.

The promised nominal interest rate, having incorporated a 2 percent inflation premium to offset the steadily depreciating purchasing power of money at the Fed's target, would have delivered a safe, long-term, real interest rate upwards of 3 percentage points per year.

Instead, the Great Inflation called the Fed's commitment to price stability into question, as it decimated the real return on long-term bonds. Responsible households have since shied away from saving in long-term nominal bonds to protect themselves from inflation risks.

To avoid the inflation risk, however, households have shortened the maturity of their interest-earning savings and reached for more return in equity products, thereby forced to accept the risk of ultra-low short-term interest rates and volatile equity prices in the bargain.

In conclusion, I recommend three improvements in the Federal Reserve's Statement of Longer Run Goals of Monetary Policy Strategy to help secure the credibility of the Fed's inflation target, so important for the future.

First, the Statement should be modified to make clear that its roots lie in the mistakes and successes of past Fed policy. In particular, the Statement should be linked, in the modern way with

technology, to those historical narratives that inform the principles underlying the inflation target.

Second, as currently written, the Statement ends, remarkably to me, by saying, “The Committee intends to reaffirm these principles and to make adjustments as appropriate at its annual organizational meeting each January.”

The grounds for that revision should be circumscribed tightly, in my opinion, so as not to undermine the very credibility of the Statement itself, in general, and its inflation target, in particular, since there is virtually no reason to modify that commitment to price stability.

And finally, the FOMC should declare its intention in the Statement to strengthen the legislative oversight process, to help enforce its inflation target, and the systematic pursuit of monetary policy.

To do so, the Federal Open Market Committee should declare in the Statement its intention to present the Federal Open Market Committee’s independently chosen monetary policy decisions, against a familiar Taylor-type reference rule for monetary policy, to improve the discipline of that monetary policy. Thank you so much.

[The prepared statement of Dr. Goodfriend can be found on page 67 of the appendix.]

Chairman BARR. Dr. Taylor, you are now recognized for 5 minutes.

STATEMENT OF JOHN B. TAYLOR, MARY AND ROBERT RAYMOND PROFESSOR OF ECONOMICS, STANFORD UNIVERSITY, AND FORMER UNDER SECRETARY OF THE TREASURY FOR INTERNATIONAL AFFAIRS

Mr. TAYLOR. Thank you, Mr. Chairman, Ranking Member Moore, and members of the subcommittee, for inviting me to talk about sound monetary policy. In these opening remarks, I would like to focus on the three issues raised in the invitation letter.

First, the Fed departed from conventional monetary policy a dozen years ago in 2003 to 2005, when it held the Federal funds rate well below what was indicated by experience of the previous 2 decades of good economic performance. I have been very critical of the Fed for this departure and that contrasts in my very positive support of the Fed during much of the 1980s and the 1990s.

Though a dozen years ago may seem like a long time now, it is crucial to remember that these excessively low rates brought on risk-taking search for yields and excesses in the housing market. Along with a breakdown in the regulatory process, these policies were a factor in the financial crisis and in the terribly high unemployment we experienced.

During the panic in the fall of 2008, the Fed did a good job in its lender-of-last-resort capacity, by providing liquidity to the financial markets and by cutting its policy interest rate.

But then the Fed moved sharply in an unconventional direction. It purchased large amounts of U.S. Treasuries and mortgage-backed securities, and it held its policy interest rate near zero, when indicators used in the 1980s and 1990s would have suggested a higher rate.

My research shows that these post-panic policies were not effective. Economic growth was consistently below the Fed's forecast and was much weaker than earlier U.S. recoveries from deep recessions.

Second, the Fed should and can facilitate an orderly normalization of policy, which means a return to a rules-based policy with a conventional balance sheet.

I have recently seen a more determined effort by the Fed to normalize policy. And that is a good thing. But normalization is difficult in practice and at times the pace has been slow and uncertain. With the policy interest rates still below appropriate levels, a key step is to raise the policy rate gradually and strategically.

As part of this normalization process, the size of the Fed's balance sheet should be gradually reduced. As long as this normalization is strategic, it should not have negative effects.

In my view, reserve balances should be reduced to the size where the interest rate is market determined, rather than administered by the Fed setting a rate on excess reserves. I know there is some disagreement about the eventual size of the balance sheet, and I consider these issues in my written testimony.

Third, monetary policies can reliably support economic growth going forward by being more predictable, transparent, and accountable. It is very important to adopt and explain its monetary strategy for the Fed and the FOMC and then compare that strategy with monetary policy rules in a transparent way.

In a recent speech, Fed Chair Yellen compared current monetary policy with the original Taylor Rule, with the Taylor Rule which is more reactive to the state of the economy, with the Taylor Rule with inertia. Similarly, Vice Chair Fisher gave two recent speeches which take a similar approach.

All of these speeches, in my view, show progress toward the kind of policy transparency that is contained in the recent legislative proposals, including the Fed Oversight Reform and Modernization Act (FORM).

Experience points to the need for some kind of monetary reform, such as the FORM Act. Some worry, of course, that this reform would lose independence of the Fed, but having a clear articulated strategy would improve independence.

Empirical research shows that economic performance would improve if the Fed was accountable about the strategy for achieving its goals. And as you know, a number of Nobel prize winners, former Fed officials, and monetary experts have supported such an approach.

Finally, let me note that monetary normalization and reform have important implications for the international monetary system. Unconventional monetary policies have spread internationally to the Bank of Japan, the European Central Bank, and other central banks.

In my view, normalization by the Fed would lead other central banks to move away from such unconventional policies. I think that would be good for the international monetary system.

Indeed, as the Federal Reserve has shown recently a more determined effort to normalize policy, there has been an increased un-

derstanding of a change at these other central banks. And that is also a good thing for the United States.

Thank you. I would be happy to answer any questions.

[The prepared statement of Dr. Taylor can be found on page 75 of the appendix.]

Chairman BARR. Thank you Dr. Taylor.

And Dr. Bivens, you are now recognized for 5 minutes.

**STATEMENT OF JOSH BIVENS, DIRECTOR OF RESEARCH,
ECONOMIC POLICY INSTITUTE**

Mr. BIVENS. Thank you, and I would like to thank the full Financial Services Committee for allowing me to testify here today on sound monetary policy. My written testimony makes the following broad points.

One, the Fed's actions over the past decade, roughly, shortened the Great Recession and hastened the recovery. These actions demonstrated an admirable commitment to their statutory mandate to pursue maximum employment subject to inflation stability.

Their actions, particularly expanding their balance sheet and purchasing assets besides Treasuries, were certainly unusual relative to historical experience, but they were in response to an absolutely extraordinary economic and financial crisis.

Policymakers who maximize the authority they have under the law to make life better for working Americans should be applauded. I would say this is true even, or maybe especially, if this requires moving out of historic norms about what constitutes appropriate policy. And one cannot help but contrast the monetary policy response with the fiscal policy response to the Great Recession.

Since the official end of the Great Recession in June 2009, when measured against all other postwar recoveries, fiscal policy has put a historically large drag on growth and recovery. We should be even happier that the Fed did not follow suit.

That the Fed's actions were taken in response to a historically severe economic and financial crisis highlights that abstract criticisms to these actions based on claims that they did not act in a rules-based manners are worth discounting. There is simply no rule that would have reliably performed as well as the real world independent Federal Reserve did over this past decade.

For example, it is well-known by now that economies suffering large and prolonged output gaps of the kind that were shown in the slide that began this hearing, can lead to large errors when you are trying to make rules-based policy.

To make this really concrete, we just don't have a good sense at all even what potential output is in the United States today. Again, as your slide at the beginning showed, forecasts for a potential output in 2017 was going to be, made in 2007, said that it is \$2 trillion higher than what the CBO says that it is today.

Is that degradation of potential output something that was purely about supply side trends that would have happened regardless of the Great Recession or not? Or is it the result of the prolonged slump in aggregate demand that could be substantially cured with a period of above trend growth?

I would say a goal of monetary policy should be precisely to probe this question. Assuming we absolutely know the answer with certainty, coming out of an economic crisis like this, I think that is hubris.

One aspect of the Fed's actions over the past decade that has received particular criticism is their purchase of non-Treasury assets, mortgage-backed securities in particular. As a general matter, the purchase of non-Treasury assets can maximize the potential effectiveness of large-scale asset purchases.

The point of these purchases is ultimately to reduce the long-term rates faced by households and businesses. And this clearly includes rates besides those paid on risk-free Treasury bonds. Buying assets like mortgage-backed securities both pushes down long rates generally, but can also produce spreads between these assets and risk-free benchmarks.

That is certainly what happened during the first round of quantitative easing, and these lower rates helped households that wished to purchase or refinance home mortgages, both of which help support economic recovery.

These Fed purchases also helped provide liquidity and confidence in overall financial markets. And this can be seen in the big reduction in interest rate spreads after these first round of purchases began.

Some have claimed that purchasing anything that is not a Treasury asset, *de facto*, implies that the Fed is engaged in something that is not monetary policy and they have overstepped their agreement.

This is not a valid critique. There is no monetary policy decision, indeed, no macroeconomic stabilization policy decision that is always distributionally neutral everywhere. That does not mean it is no longer monetary policy.

In the end, complaints that the Fed were too *ad hoc* over the past decade privileged process over substance. The question about all Fed moves should simply be, are they consistent with the Fed's mandate to pursue maximum employment, subject to the constraint that stability and inflation be maintained? Over the past decade, their actions largely have done this.

Finally, the Fed should be in no rush to return to pre-Great Recession status quo policy stance. The economy right now shows no sign of overheating and generating accelerated inflation. So even recent short-term interest rate increases were premature, in my view.

When it does become time to moderate growth, rate hikes should go before any concerted balance sheet reduction. And a larger balance sheet with a more varied set of assets should not be seen as something that must be abandoned as quickly as possible. Instead, it should be seen as another potentially useful tool in the Fed arsenal.

If the last decade has taught us anything, it is that the Fed and all other macroeconomic policymakers should have as many tools as possible on hand to boost growth and maintain maximum employment in the face of crises.

Thank you for your time, and I am happy to answer any questions.

[The prepared statement of Dr. Bivens can be found on page 53 of the appendix.]

Chairman BARR. Thank you, Dr. Bivens.

And the Chair now recognizes himself for 5 minutes.

Late last year, our committee received testimony from Dr. Mickey Levy, Berenberg Capital's chief economist. That testimony included the following observation: "The Fed's fully discretionary approach to conducting policy, highlighted by its ever-changing explanations for delaying rate increases, adds confusion and has created an unhealthy relationship with financial markets."

Let me start by asking each of our witnesses a brief yes-or-no question about that observation.

First, Mr. Allison, do you agree with Dr. Levy's argument that monetary policy uncertainty is undermining financial and economic performance? Yes or no?

Mr. ALLISON. Yes.

Chairman BARR. And Dr. Goodfriend, same question. Would a more firmly grounded and transparent monetary strategy help sweep away the policy fog that continues to undermine support for a dynamic economy? Yes or no?

Mr. GOODFRIEND. Yes, absolutely.

Chairman BARR. Dr. Taylor, doesn't monetary policy work best when it reliably produces clear price signals? That is, broadcasting loud and clear vital information for goods and services which include labor to find their most promising opportunities? In other words, couldn't the Fed lift this uncertainty and this policy fog of its own making by telling us in plain English what data matter and how they matter?

Mr. TAYLOR. Yes.

Chairman BARR. And finally, Dr. Bivens, do you agree with Dr. Levy that the Fed's improvisational monetary policy adds confusion and has undermined economic performance?

Mr. BIVENS. No.

Chairman BARR. Okay.

So, a follow-up question to Dr. Taylor. You heard Dr. Bivens' emphatic no there, and you heard his testimony where he has applauded the discretion of the Fed and giving the Fed as many tools as possible in exercising that discretion.

The question for you is, and you can elaborate a little bit more than a yes or no on this one, why is a more transparent monetary policy strategy better than what Dr. Bivens is advocating, that is, the discretion to run a high-pressure economy?

Mr. TAYLOR. I think we have lots of empirical evidence that a more predictable policy works. And in my testimony, I began with what happened in 2003, 2004, and 2005, not even mentioned as in any of the other statements.

That was a period where there were excesses. There were many reasons for it, but monetary policy was part of it. It was a deviation, to be sure, of a policy that worked very well in the 1980s and 1990s. I think there are many other examples.

If you look way back at the 1970s, it is the same thing. It was a mess. Inflation was rising and unemployment was rising. And again, the Fed was not predictable. It kept changing its policies. But it changed in the 1980s and 1990s.

I think that historical record is very important. You see it with other central banks in other parts of the world. It is quite remarkable. And then we have economics that tells us the same thing. If people know what the policy is, they can plan better. Resources can be allocated more efficiently and the economy will work better.

Chairman BARR. Thank you.

And Mr. Allison, the narrative we so often hear, either in the media or up here in Washington, and especially from our colleagues on the other side of the aisle, about the financial crisis was that it was the absence of sufficient regulation that caused the crisis.

However, in your testimony, Mr. Allison, you wrote that the Federal Reserve policies themselves were the primary cause of the financial crisis. Can you explain further why you believe that to be the case?

Mr. ALLISON. Yes, sir. First, the banking industry was not deregulated. There was a massive increase in regulation during this period of time. It was focused on things like the Patriot Act, et cetera.

But there was a huge amount of pressure on affordable housing on what is now called subprime lending. And that, of course, incented activity in bond markets and other areas. In addition, monetary policy, those of us who were more conservative—my bank went through the financial crisis without a single quarterly loss.

But it was very hard when you had these asset prices going up very rapidly and not knowing where the Fed was going to be conservative because you were punished in the stock market. The people who were taking the highest risks were being rewarded because monetary policy was pushing up asset prices, and that looks good to banks until the bubble ends.

And so it made it much more difficult to actually run a healthy bank. And I think this is very hard for community banks because all the economic short-term incentives coming out of the Fed, they wanted you to make high-risk loans. And monetary policy itself was blowing up asset bubbles were such that being disciplined was very difficult.

Chairman BARR. Thank you.

My time has expired.

The Chair now recognizea the distinguished ranking member, Congresswoman Moore, for 5 minutes.

Ms. MOORE. And thank you so much, Mr. Chairman.

I did enjoy your testimony, and I was able to very quickly sort of track along and peruse some of your testimony. And again, this is part of my free MBA program to sit here at these hearings.

[laughter]

Dr. Taylor, we have had an opportunity to hear from you before. And I wanted to quickly follow up on some exchanges that we had the last time you here regarding government interventions in the market.

You have said, and you are sticking with it, that you don't believe that government intervention is appropriate. And I asked your opinion on whether you felt it was appropriate for Trump, our President Trump now, to do these kind of ad hoc interventions, like

he did for Carrier and his various Tweets about companies like Boeing.

If we are critical of the Fed for its QE interventions, I am wondering what you think about the President now, not only sort of intervening in the markets but being kind of an active participant?

Mr. TAYLOR. So what I see now happening, with respect to things that affect firms, is a focus on possible changes in regulations and in tax policy. It seems to me, to the extent that firms can be signaled there is a change in policy, that seems to me a good thing.

There seems to be also a lot of evidence that firms are beginning to think there is going to be a change in tax policy and in regulatory policy.

Ms. MOORE. So how does that—

Mr. TAYLOR. See, that should be the emphasis in conversations, we hope to have a more cost-benefit approach to regulations. So the regulations are necessary—

Ms. MOORE. So you—

Mr. TAYLOR. —as it applies to the banks. This is the wealth of the manufacturing firm.

Ms. MOORE. I am reclaiming my time. So you see that the President's intervention, like when his dear daughter Ivanka saw that her line was not going to be carried by Nordstrom, he attacked the company.

How does this fit in with your notion that we need to have a strategic rule base, whatever distinction you make between rule base and strategic, with him doing things like that? How do you distinguish between what the Fed did on a larger scale, QE, and what the President is doing?

Mr. TAYLOR. I don't know that particular case, but I am definitely—

Ms. MOORE. Everybody knows about that.

Mr. TAYLOR. —of the view that more strategic, if you like, rules-based policies are good. And more transparency about policy is good. More emphasis on predictable policy, more generally, rule of law, use of markets and a cost-benefit analysis to all government activity—

Ms. MOORE. So is the President—do you see this as rules-based for him to Tweet out stuff about companies, Boeing, Nordstrom, Carrier? Is that strategic or rule-based, in your opinion?

Mr. TAYLOR. What is important to me, and I don't read all the Tweets. To be sure, I do Tweet myself. I like Tweeting, but I am not reading all the Tweets.

What is important to me is the Executive Orders on regulations, passing the REINS Act, using the Congressional Review Act to take actions. That is what I see. That is what I look at.

Ms. MOORE. Okay. So okay, reclaiming my time. So you don't have any problem with the President intervening in the markets. You just have a problem with the Fed doing it.

Dr. Bivens, there is a lot of criticism here about what the Fed did under extraordinary circumstances, as you have described. Can you just talk to us a little bit about the impact of austerity, given the new budget that we are seeing coming out of the new Administration and what impact that will have on our ability to grow?

Mr. BIVENS. Yes. I think that is a really good point because someone, one of the other witnesses, mentioned that this recovery has been the slowest on record in terms of GDP growth. And that is true. And if the Fed was sort of the only game in town, then maybe you could say that means their actions have failed.

But the Fed is absolutely not the only game in town. Over the course of this recovery, we have seen historically contractionary fiscal policy. That is austerity on the spending side, mostly starting from the 2011 Budget Control Act on.

And it is that fiscal drag on growth that entirely explains the gap in performance between this recovery and previous ones. And if the Fed had joined fiscal policy in that drag, we would have been much worse off than we are today.

Ms. MOORE. Thank you, and my time has expired.

Thank you all.

Chairman BARR. The gentlelady yields back.

And the Chair now recognizes the vice chairman of the subcommittee, the gentleman from Texas, Mr. Williams, for 5 minutes.

Mr. WILLIAMS. Thank you, Mr. Chairman.

And again, thanks to all of you witnesses for being here today. Last month at our hearing with Chair Yellen, I shared with her my concerns about the Fed's large \$4.5 trillion balance sheet. As Chair Yellen has stated in the past and confirmed at our hearing, she is in no hurry to unwind or sell off these assets.

She stated that the economic crisis has required the Fed to take a highly accommodative strategy and that she would like to wait until normalization is well under way before the Fed begins running off its balance sheet, in case maybe there is some sort of shock to our economy, which she doesn't expect, she added. Because of all this risk, she believes that the Fed needs to be able to respond and support the economy.

So my first question to you, Mr. Allison is, what risk does maintaining the current balance sheet size and composition create for our economy?

Mr. ALLISON. Yes. Let me give you a little context. People get confused. They think monetary and regulatory policy don't work together. But actually, the Fed provides 10 percent of the base. But banks and other financial institutions provide 90 percent of the money.

What has happened in this case, and why they had to do all these QEs, is they were pumping out money in one hand but they were tightening lending standards so the multipliers dropped exponentially. And so they didn't really need to buy all that if they just hadn't irrationally tightened the lending standards.

And having been in the business, as I said, these standards are crazy.

So they have a big problem, in my opinion. I don't know exactly how they ought to unwind it, but I am clear they ought to unwind it, and it needs to be done. I don't think of the problems with the Fed, it is not the one that bothers me the most, but it bothers me.

Mr. WILLIAMS. Okay. Let me follow up on that. Do those risks affect the Federal Reserve's independence, do you think?

Mr. ALLISON. I do. I don't think the Fed is independent. I think that is a naive point of view. Let's face it. They are recommended

by the President. They are approved by Congress, and they are human beings.

And so they hear political effects. And when I talk to them, it is obvious that they are thinking about things that aren't just purely in their realm of being.

Mr. WILLIAMS. Okay.

Mr. ALLISON. But I think having this problem makes it harder for them to be objective. Because if they really rise the interest rates rapidly and they don't deal with this bond portfolio, they are going to have massive losses.

The Fed will be in default. It will have more liabilities than it has assets. So that is going to make it harder for them to be objective in the decision process in terms of how fast they raise rates.

Mr. WILLIAMS. Okay. Thank you.

Mr. Taylor, to what extent did the Fed's remarkable balance sheet expansion lessen the financial crisis, in your opinion?

Mr. TAYLOR. I think during the panic in 2008 the Fed took some actions which did expand its balance sheet, liquidity operations. Most of those expired automatically and were drawing down, would have drawn down.

It is the other ones that I think are problematic. It is the ones, really, beginning in earnest in 2009. I have studied those, the mortgage-backed security purchases. I don't think they had impact other than perhaps some short-run impact, which was quickly run off.

And so in the meantime, this large balance sheet has accumulated. And the question is what to do with it. And I think it is a problem.

If it is just sitting there, it means that monetary policy is run with interest on excess reserves, not through supply and demand for reserves. And I think that continues to be a problem caused by those original actions.

Mr. WILLIAMS. With that in mind, to what extent did the balance sheet—we are talking about expansion—prolong the financial crisis and discourage a more robust recovery, in your opinion?

Mr. TAYLOR. I think you could argue it was a negative. And what I would add to that is the very low rates all that period of time. The interest rate has actually gone negative in other countries, and a very low interest rate makes it harder for banks to operate. It is less incentive to make loans. And I think it has been a drag.

But the main thing is to get back to a normal policy at this point. And I think the Fed is going in that direction. And actually, since there has been some notice of the change, you can see quite a bit of difference in the economy, quite a bit of difference in the financial sector. I think that indicates that a move towards a more normal policy is actually beneficial to the economy.

Mr. WILLIAMS. All right, switching topics really quickly, I want to take a second and ask about monetary policy and the economy created under President Obama. The former President can boast that the economy was recession-free for 30 quarters under his watch, yet far too many Americans continue to struggle in this economy, particularly those living at the margins.

Mr. Allison, why didn't this work?

Mr. ALLISON. Say that again?

Mr. WILLIAMS. We talked about the former President, we talked about the economy being recession-free for 30 quarters, yet we still have mainstream America hurting. Why didn't his policies work? Why, in year after year of the lackluster recovery, has the Fed looked at variables like oil prices, promised robust growth, but we never saw it happen?

Mr. ALLISON. Yes. The fundamental reason is that we haven't had an increase in productivity, as the chairman started talking about. And at the end of the day, you can't raise real incomes long term without it raising productivity.

The combination of a regulatory influence on the market has been very destructive for economic investment, along with Fed policy's uncertainty.

Chairman BARR. And the gentleman's time has expired.

The Chair now recognizes the gentleman from California, Mr. Sherman.

Mr. SHERMAN. Thank you, Mr. Chairman.

We have the national debt chart. We have now shifted to the trade deficit chart. Both of these charts show a huge problem for our country. The Federal deficit is important and the trade deficit symbolizes and causes lost jobs and a loss of national power.

Monetary policy arguments about the tertiary, possible effects of monetary policy are kind of ephemeral. So I focus on the direct policy effects. Lower interest rates mean a lower national debt and a lower trade deficit.

The Federal Government is the largest borrower in the world and higher interest rates lead to a stronger dollar which hurts our manufacturers.

That big balance sheet that we have means big profits for the Fed and the Government as well. If those profits had been dedicated to building a particular new aircraft carrier, then that big balance sheet would probably be more popular on the other side of the aisle.

Mr. Goodfriend talks about savers who can't live on their savings without invading principal or risking principal. Treasury Inflation-Protected Securities (TIPS) are yielding about three-eighths of a percent over the inflation rate. So you really can't live on your savings without risking principal because real interest rates are three-eighths of a percent.

We almost never have had a real interest rates high enough to allow people to retire without either consuming their principal or risking their principal. But in the past we have had inflation.

So the fact that you were invading your principal was disguised, because you would have a nice nominal interest rate and you would preserve your nominal capital.

This made retirees happy. Happiness is important. And that is one more reason why we would be happier with a 2½ percent target inflation rate so that retirees could at least appear to be preserving their principal, not its buying power, but its nominal amount, while being able to supplement their Social Security with retirement income.

Mr. Allison, you talk about how higher rates would help the working class. I think in this room we are so close to Wall Street, we get cut off from the working class. Working-class people are not

lenders. They are borrowers. The average amount of assets available in a working-class family might be a few thousand dollars in the bank.

Most have credit card debt, even a larger—or not most, a huge percentage of credit card debt. Most have mortgage debt not—high interest rates hurt the working class unless you define the working class as the hard-working people who make over a quarter million dollars a year.

What we need to help the working class is a labor shortage so that workers don't just participate in productivity increases, but that we shift national income from capital to labor. And that is why we need lower interest rates, to create that labor shortage.

The first two or three witnesses talked about normalizing monetary policy as if there was some great Golden Age of monetary policy where we all knew what the interest rate would be and nobody had to figure out what Greenspan had for breakfast. Everybody knew what the rule would be.

I don't think we can make monetary policy great again because I don't think there was a Golden Age of monetary policy. And it is true that this is a weak recovery, the weakest. It is also the third longest recovery. It may turn out to be the longest recovery.

Mr. Allison, I agree with you that the lending standards being imposed on banks basically make it impossible for them to make small business loans to expanding small businesses. There is no such thing as a prime-plus-five loan. What can we do to encourage banks to lend to small businesses?

Mr. ALLISON. The main thing you need to do is get the regulators off the banks' backs. Going through the financial crisis, the Federal Reserve and the FDIC forced my company to put a lot of people out of business that didn't need to go out of business.

I went through the financial crisis in the 1980s and the 1990s. The FDIC actually worked with healthy banks, and we kept those people in business. And if they were still in business, they would be creating jobs.

And the Fed has tightened the lending standards. That is why the money multiplier is not working. And it has reallocated the assets—

Mr. SHERMAN. And instead of just requiring a slightly higher reserve on that small business loan they are, in effect, prohibiting it.

Mr. ALLISON. They basically can't do it.

Mr. SHERMAN. I yield back.

Mr. ALLISON. They can't do it.

Chairman BARR. The gentleman's time has expired.

The Chair now recognizes the chairman of our Capital Markets Subcommittee, Mr. Huizenga, for 5 minutes.

Mr. HUIZENG. Thank you, Mr. Chairman, and congratulations on your chairmanship. This is a great subcommittee. And I am glad to be continuing to serve on it.

Moving kind of quickly, it struck me, Mr. Allison, when you talked about—your quote was, “the price fixing of interest rates,” and Dr. Taylor kind of talked a little bit about that. And you heard the assertion on the other side of the aisle that it was austerity measures that have actually caused the income gap to widen over recent years and over the last decade.

And it seems to me that rather it is sort of an artificial market manipulation that has really happened that has not allowed those who have disposable income to catch the upside of what we have been going through. And I just wanted to see if you very briefly maybe wanted to comment on that?

Mr. ALLISON. Yes. I would say two things. I think that the regulatory environment has made businesses less willing to invest and then banks haven't been able to make loans.

And then this issue about the interest rates, remember, the U.S. Government is the largest debtor in the world. But when you help debtors, you hurt creditors.

And who are the creditors? Individuals. You took assets out of individual hands and put them into the Government's hand and there is lots of economic evidence that private markets are more productive than Government activity is.

So you have had a redistribution to high-income people, but you have simultaneously had a redistribution of assets to the Government. And it is really Government spending that matters. And when you have kind of a fake low interest rate it encourages even more Government spending, which is actually economically negative.

Mr. HUIZENGA. All right. I appreciate the clarification on that.

And Dr. Taylor, according to Mr. Allison's testimony earlier, he and a number of other respected economists have really talked about monetary policy playing a prominent role in the economic downturn. And obviously we heard Dr. Bivens talk about that we need to have the monetary engine run even hotter.

It seems to me—being a Michigan guy, I use car analogies a lot—like breaking the speed limit isn't really a remedy for the aftermath of a crash on the highway.

And yesterday's Fed changing its policy statement to say that the target inflation is now symmetric, that is the Fed's 2 percent inflation target is no longer a ceiling but rather a target that should be met on average allowing inflation to overshoot 2 percent for considerable amounts of time.

I am curious, especially as we have seen it at well below 2 percent over the last decade, I am curious for you to comment on that.

It just seems to me as a father of five with kids approaching college, that for every dollar I am putting away for them, we are really only realizing about 70 cents on that or they might be. And it doesn't seem to me that that is price stability. So I would love for you to comment on that, please?

Mr. TAYLOR. I think during the period where the inflation rate had fallen below two that doesn't mean you have your foot on the floor completely, which I think the argument is the inflation rate is a little bit below two and therefore we have to do these extraordinary policies. And I don't think that follows at all.

I think in many respects they could have moved towards a more normal policy during that period of time. And similarly, this is a situation where inflation does go above the target the actions should be taken.

It shouldn't be taken lightly, if that is the impression that is being given. It is very important to maintain that credibility.

And also if I could add, I think to me the policy problems, in addition to monetary policy during this slow recovery and they are related to productivity, are the regulations, are the tax policies, and are the things that have not really been changed. And that is what you are focused in on now. And it is very important.

Mr. HUIZENGA. And I would love to hear your comment about what happened when Chair Yellen was here last year. I asked her the question about whether we would have seen a more rapid recovery, rather than this 30-plus quarters that we have been sort of dragging this along here.

And after a good 3 or 4 seconds of stammering, not knowing how to answer, she actually said, well, she wouldn't agree with that characterization, which seemed to contradict actually what she had said in the Senate the day before and what she had said before this committee previously.

But Dr. Goodfriend or Dr. Taylor, if you would care to comment on that?

Mr. TAYLOR. Okay. So I think that right now productivity growth is so low and it is we have had our ups and downs. This is a down period.

I think there is a great opportunity for a revival of productivity growth and labor force participation. That is why I am more optimistic about growth picking up. But it does require these other policies.

I think monetary policy and reform is part of that. My observation is that over time, good policies go together: good monetary policy; good fiscal policy; and good regulatory policy. And so it should be very much a part of that.

I think we can get a pickup of growth. It is going to come from productivity, and it is going to come from increased labor force participation. Both are very possible.

Mr. HUIZENGA. Thank you.

And I yield back.

Chairman BARR. The gentleman yields back.

The Chair now recognizes the gentleman from Michigan, Mr. Kildee.

Mr. KILDEE. Thank you, and congratulations, Mr. Chairman, my classmate. So we are at that point where we are—oh, I guess I am not.

[laughter]

That is all right. Well, first of all, I thank the panel for your testimony, and if any of my questions are redundant, I came in and some of this might have been answered, but I wondered, Mr. Bivens, if you first, and then perhaps others might comment on the following.

You come to us at an interesting time. That is probably an understatement. But particularly today as we see a budget proposal that could have some impact on an aspect of the Fed's responsibilities. And I speak specifically to the Fed's dual mandate, and particularly the mandate on full employment.

I am curious, first of all, Mr. Bivens, if you might comment since the Fed does not operate in a vacuum, and particularly in the context of that responsibility, even less direct control is exercised by the Fed when it comes to that particular responsibility.

If you might comment on the impact on the Fed's responsibility for full employment of, let's just pick a few, the dramatic reduction in access to higher education through the reduction of Pell Grants, or the dramatic reduction in worker retraining programs to prepare the workforce for the emerging sectors of the economy that might need a trained workforce in order for those sectors to be fully realized.

Or, for example, a significant reduction in Federal support for scientific research that might on one hand fuel new sectors of the economy and new exploding markets, but also potentially unlock the questions that we face regarding really difficult disease that has a huge impact on our economy and a negative impact on productivity.

If you just might comment on how those sorts of decisions in that direction could have an effect on the Fed's responsibilities around full employment?

Mr. BIVENS. I think there are two aspects to that. One is sort of near term, and one is longer term. In the near term, as I mentioned before, the primary reason why recovery since the Great Recession has been so slow relative to historical averages is the fiscal austerity that has been undertaken during that time.

And so to the degree that these spending cuts continue that austerity, that is going to be a drag on growth. That is going to make the Fed's job to try to maintain full employment much harder.

The long-term angle that has been mentioned many times here is that one of the troubling features in the economy over the past 4 or 5 years is a slowdown in productivity growth.

Mr. KILDEE. Right.

Mr. BIVENS. The biggest reason why that productivity growth has slowed down is because private investment has been so weak. There is a pretty simple answer to that, which is to do more public investment, or at least not cut the public investment that we already do.

Most of the programs you just mentioned, Pell Grants, workforce training, research, these are all things that boost productivity in the economy. And if you think we have a productivity crisis it seems an odd time to start cutting those.

Mr. KILDEE. I wonder if the other panelists might offer their thoughts on that question?

Mr. TAYLOR. There is no question that capital growth and investment is low, and that is a problem for productivity. It is one of the key things. Actually, the capital accumulation for workers is actually negative in the last 5 years. It has never been quite that bad.

I don't think the answer is more public sector investment. The problem is the low private sector and that has to be encouraged. That is where the tax reform, regulatory reform, I think, can really make a big difference.

And the other part of productivity, just bringing new ideas into the market with new firms, new expansion of firms, I think that also can be encouraged by, again, these tax reforms or regulatory reforms. I don't see fiscal austerity as a problem in this recovery.

In fact early on, I had written, and I think the evidence is clear that the big stimulus packages were not very effective. And so if

anything, getting back to a fiscal policy like we had before where you saw the debt explosion recently? That is with us right now.

Mr. KILDEE. I wonder if I could follow up on that because it seems to me I have heard in the past you comment on the fact that growth does not meet the projected targets that the Fed has set.

And we have been in a period of relative austerity in terms of our domestic discretionary agenda on the programs that I just mentioned. The cuts that are being proposed are cuts from an already relatively low level of expenditure.

So what form do you think austerity ought to take? Where would the priorities be? For example, would it be significant buildup of defense spending or would it be, perhaps, investing in those areas of retraining and access to higher education that might not be fueled by private sector investment?

And I know my time has expired.

Mr. TAYLOR. I would just briefly emphasize the K-12 part of that equation, which you didn't mention, seeing that is really where we have fallen very far behind in many parts of our country.

Chairman BARR. The gentleman's time has expired.

And now, the Chair recognizes the gentleman from North Carolina, Mr. Pittenger.

Mr. PITTENGER. Thank you, Mr. Chairman, and thank you for your good leadership on this subcommittee.

I thank each of you for being with us today. I am struck as I read the debt clock that the former President has the legacy of extending the debt greater than all of the other Presidents combined. And I also recognize that Chair Yellen intends to raise the interest rates and the impact that has on our debt payment.

And the timing of it just seems interesting to me, that all of a sudden we have this robust economy. Could you comment on that?

I know she was with us maybe a handful of times in the entire Congress, and until last year she had perhaps 75 meetings with the Administration. There seems to be a considerable amount of cooperation or collusion or whatever, but I would like for you to comment on that reality?

Mr. ALLISON. Yes. It is hard to know what people's motivations are, but definitely raising interest rates will increase the deficits. Now, I actually believe that is good because it will cause more discipline.

I don't think deficits are as big an issue as government spending, but they are a significant issue. It is allocation of resources between the private economy and the government that determines productivity.

And what has happened because of the lack of private investment, is that the distribution has shifted to the government economy. And that has reduced our productivity.

In fact, if you look at where our productivity has been falling, it is not manufacturing. It is not things that are private. It is schools and hospitals that government has a huge influence in.

And I think the attitude of business, and I know you are a business person, I can see it like night and day because they were not only over-regulated, they were not only overly taxed, but they were also made to be evil.

And for whatever foibles the current Administration has had, at least they are not saying that business is bad. And that has a huge effect on people's actual actions.

Mr. PITTENGER. Sure.

Mr. Goodfriend, do you have a comment?

Mr. GOODFRIEND. Yes. I think that one of the reasons the recovery was so slow is that because of the deficits, taxes would have to go up in the future.

When you make investments there is a hurdle rate. Why invest in the future if you are going to be in the crosshairs of higher future taxes because you made a successful investment and made a lot of money? So people are just waiting and seeing.

And I think the sluggishness of the recovery was largely due to that kind of assessment in years past before the new Administration, which reflects the idea that in an environment unfriendly to business, business just said, well, let's wait, let's see, let's have some optionality about this. And I think there is every reason to think that is about to change.

Mr. PITTENGER. It just appeared to me to be to provide the opportunity for the proclivity of the President's spending to—since that in terms of interest rates, keeping them so low.

Mr. GOODFRIEND. I'm sorry. I couldn't quite hear what you said.

Mr. PITTENGER. The fact that the interest rates were that low for so long allowed the President's spending proclivity to continue.

Mr. GOODFRIEND. Oh, I think that is true. There was a sense that debt is a freebie.

Mr. PITTENGER. Yes.

Mr. GOODFRIEND. That you could spend money you didn't have and defer the taxes to the future and people wouldn't care. But the irony is, I think, businessmen were aware that those taxes were out there in the future. And so they were saying, well, why should we invest—

Mr. PITTENGER. Exactly.

Mr. GOODFRIEND. —even at a low interest rate if we have to pay much higher taxes against our profits in the future? So the whole thing kind of, I think, got stuck and boomeranged.

Mr. PITTENGER. Dr. Taylor, do you have any comment on this?

Mr. TAYLOR. The issue of low growth, disappointing growth, to me, has largely been a policy problem. I have been writing about that for a long, long time. Other people gave other reasons. It is just secular. That is the way it is. I think that is wrong.

And I think we are now going to see that there will be a change in policy and it will deliver. It will be a huge test. I think the test is—we are going to pass it with flying colors, but the test is going to come, and that is the good news.

Mr. PITTENGER. Just quickly, whomever would like to comment, what risk does maintaining the current balance sheet size and composition create for our economy?

Mr. ALLISON. I would say the real risk is entitlement programs. And if you look at the present value of the entitlement programs, Cato did some research for that and it is over \$100 billion, the liability.

And so current expenditures matter, but at some point we are going to have to face the issue of what do we do about entitle-

ments, which I know politicians don't like to talk about, and I understand that.

But that is the real risk. And if you are running a business you are thinking, well, how do we pay for this in the long term and what does that do to my long-term investments?

Mr. PITTENGER. Okay. My time has expired. Thank you.

Chairman BARR. The gentleman's time has expired.

The Chair now recognizes the gentleman from Texas, Mr. Green.

Mr. GREEN. Thank you, Mr. Chairman, and congratulations on becoming Chair.

Chairman BARR. Thank you.

Mr. GREEN. I would also like to thank the ranking member for her service on this subcommittee and committee. And I thank the witnesses for appearing today as well.

Mr. Chairman, while there may be many people in this room who are of the opinion that America is not great, it seems that the world views America as great. People trust America. People trust the American currency.

The dollar is the currency of choice the world over. It is the reserve currency. It is the currency that is redeemable. It is far out in front of other world currencies. There are others that are vying for currency supremacy, but the dollar is supreme.

And one of the ways that you can measure the prowess of any country is, how do other countries respond to their currency? In my travels around the world, when I have had dollars I have always been able to transact business.

So let me just ask, can you give me three major world powers that are currently using a formula-based method to determine monetary policy? Three major world powers, Mr. Allison?

Mr. ALLISON. I cannot give you three major world powers.

Mr. GREEN. Yes. I take it you cannot, and I will accept that as your answer.

Can anyone give me three major world powers that are using a formula methodology to determine monetary policy? Anyone?

Mr. TAYLOR. So I could say they all—

Mr. GREEN. No, no, no, no, no. Formula-based such that that is the means by which you determine your policy? There are none. And to put the United States of America in a position such that it is using a formula to determine monetary policy would make it an outlier. It could have an impact on the dollar unlike we can imagine.

The dollar is, remember now, the currency of choice. It is the reserve currency of choice. To make such a bold move without any other countries having taken up this process, could put us at risk of becoming the country that must be made great again. It is already great.

So my question to you is, and I will go to Mr. Bivens, sir, could we have an adverse impact upon the dollar if we employ a formula for determining our monetary policy?

Mr. BIVENS. I think we could. I think it could go in many different directions. Personally, my fear is that many rules-based policies would lead to excess increases in interest rates prematurely.

If that happened in the current moment, I think one risk about raising interest rates in the U.S. in the current moment is that

other countries that are mired in sort of economic slumps, they are not going to raise rates. There is going to be decoupling. The dollar is actually going to get excessively strong and lead to large trade deficits.

And so I definitely think that the dollar, the effect of poor interest rate decisions on the value of the dollar could be bad, I think, over the next year. The primary worry I have is an excessively strong dollar leading to big trade deficits.

Mr. GREEN. And do you also agree, Mr. Bivens, that it is trust and confidence in the United States that makes the dollar strong, the belief that we will pay our debts? This is why we have debt because people believe that we are going to repay it. They will get their money and they will get more. They will get some interest on their money.

So if we employ this formula does that automatically instill confidence in people that the American economy is going to be able to have enough discretion to deal with crises that cannot be anticipated by a formula?

Mr. BIVENS. Yes, it is a good question. And I would say given that I think a strict rules-based policy would make us less able to respond to deep economic crises and hence would have a bad impact on potential future growth, I think perhaps people around the world would think the same thing.

It would certainly, as you note, make us an outlier and would lead to uncertainty in outlook for sure.

Mr. GREEN. Thank you.

I will close with this comment. I think that, "Make America Great Again" is a political slogan, and it should not become a part of monetary policy. I think we have to be very careful about how we manipulate monetary policy and have an impact on the Fed because of the impact that it can have on the dollar.

Thank you, Mr. Chairman. I yield back.

Chairman BARR. The gentleman yields back.

The gentlelady from Utah, Mrs. Love, is now recognized.

Mrs. LOVE. Thank you. Thank you, Mr. Chairman and I thank the subcommittee ranking member, Congresswoman Moore.

I have to tell you, it has been really interesting for me to listen to the testimony here today. I have a couple of questions in regards to monetary policy.

The Federal Reserve Act of 1913 set price stability for the Fed's principal objective with regards to monetary policy. It wasn't until 65 years later, in 1975, that Congress amended the Act to redefine the goals of monetary policy to include maximum employment.

In the late 1970s, of course, there was a period of slow economic growth and high inflation, the phenomenon that was dubbed "stagflation." Is it reasonable to assert that in altering the Fed's mandate at a time where Congress was reacting to a serious but ultimately temporary circumstances, was not in the best interests of the economy or the American people for the long term?

And I am interested in your thoughts about that, Mr. Allison?

Mr. ALLISON. I definitely think so. I think that you have given the Fed somewhat conflicting goals, and I think that the belief that the Fed can solve unemployment problems leads to misinvestment.

I think that it is the private economy that is going to solve that because of a good regulatory environment, a good tax environment. The Fed is about price stability because money is about a medium of exchange that we can have confidence in.

If we start giving the Fed multiple objectives, I think it creates unsatisfactory outcomes. And I would argue we have had a long period of unsatisfactory. We have had much more volatility than we needed to have.

I think it is wrong. It is strange to me that people don't think that we could have done better. And that they would always go back to well, how did we compare to the 1800s? We don't compare buggy whips and airplanes.

Is there a better solution? Is there a market-based solution that would have produced less volatility? And I think that the answer is yes. But I do think giving the Fed two goals that potentially are in conflict makes it hard to optimize results.

Mrs. LOVE. You did mention in your testimony earlier today that it is not surprising that the Fed makes so many mistakes because their job is literally impossible.

Mr. ALLISON. It is. Economists, including liberal economists, agree that price fixing doesn't work. And that is what they are doing when they set interest rates. They are fixing prices. And therefore, they are almost always wrong. They might be a little bit wrong or they might be a lot wrong, but they can't do that job. It can't be done.

Mrs. LOVE. And I guess this would be a follow up, would you agree that the economy's overall performance is most optimal, and therefore its job creating capacity maximized under the circumstance of price stability? Do you think that the economy's overall performance is better placed in the hands of a stable market instead of just fixing?

And I guess I want to hear what your thoughts, everyone's thoughts are on this issue in terms of what our job is in Congress and what the market job is versus what the Federal Reserve is involved in doing.

Mr. ALLISON. It is interesting to me that the Federal Reserve has chosen a 2 percent inflation target. You know, 2 percent over 10 years is 20 percent. It is a pretty rapid inflation rate.

And if they are having a problem when inflation is less than that is an interesting—to me it is not, there is not a monetary problem there.

It is a different problem. We went for long periods of time with flat or low inflation and had great economic results back in U.S. history. So, I think that the Fed price stability helps people make better decisions.

It is price uncertainty, worries about inflation, which Dr. Goodfriend mentioned earlier, make people less willing to make investments, and worry about increased taxes to pay for expenses, makes people less willing to make investments.

Mrs. LOVE. Dr. Goodfriend, I know you haven't been asked very many questions. Do you want to chime in on this?

Mr. GOODFRIEND. I agree with the last comment completely. I would like to point out that the one thing the Federal Reserve can control, the only thing the Federal Reserve can control over the

longer run, is the rate of inflation or the purchasing power of the currency. And I wish there was more discussion of that at this hearing.

That is exactly what we need to talk about. That is why my statement focused entirely on that subject, and I would be happy to go back to that subject if you want to.

Mrs. LOVE. So quickly, yes or no, dual mandate?

Mr. GOODFRIEND. There is no dual mandate in the sense that the only thing that Federal Reserve monetary policy has power over, over the long run, is one thing and that is the purchasing power of money. So in that sense, yes, the dual mandate is in a sense incoherent.

Mrs. LOVE. Okay. Thank you.

Chairman BARR. The gentlelady's time has expired.

And I will just remind the witnesses to pull your microphone towards you so we can hear you just a little bit better. Thank you.

The Chair now recognizes the gentleman from Arkansas, Mr. Hill.

Mr. HILL. Thank you, Mr. Chairman, and congratulations on your leadership of our subcommittee. I appreciate you convening this hearing and I also thank the ranking member for her opening remarks.

Mr. Allison, as a former banker, you know the CAMEL rating process added an "S," which was for interest rate sensitivity. And I am curious, as a former bank CEO with a \$4.5 trillion balance sheet at the Fed, owning 40 percent of the mortgage-backed securities in the country, 15 percent of the new interest Treasuries and a duration that is between 5 and 6 years, would the Fed get a satisfactory rating on interest rate sensitivity?

Mr. ALLISON. They would flunk miserably. They would also flunk on capital. They would not meet their own standard, not even close.

Mr. HILL. Thank you for that. I am concerned about how this balance sheet gets unwound. And one of those reasons is the composition of that balance sheet is important to the government markets, and it leads me to ask, should the FSOC review the Fed for its systemic risk to the economy?

Mr. ALLISON. If we are going to have that kind of review, yes, because I actually think that the Fed is literally the biggest risk to the economy. Their errors in monetary policy create enormous risk in the economy, and I think they created the last bubbles.

And by the way, going back to the dollar, the United States probably created the global recession because of everybody relying on the dollar, and that has actually spread to other countries.

Mr. HILL. Thank you.

Dr. Goodfriend and Dr. Taylor, on this issue of what the Fed owns, I have been concerned by some of the other central banks in the world moving beyond sort of a core open market operations in government securities and in some cases buying equities and corporate debt. I find that very concerning.

And I am discussing legislation with my colleagues to limit the Fed strictly to purchases of U.S. Treasuries. But with my previous statement that we own 40 percent of the government agency market, do you have concerns about my idea that we limit open market operations strictly to U.S. Treasuries?

Dr. Goodfriend, let's start with you.

Mr. GOODFRIEND. Yes. I completely agree with the idea, with your idea, that the Federal Reserve should limit its purchases of assets to U.S. Treasuries. To buy anything other than Treasuries, even agencies, is what I have called in the past a credit policy, in the sense that it is essentially allocating credit, in this case, Federal Reserve reserves, to certain portions of the economy.

That is the business of the private economy. And massive Fed purchases of anything but Treasuries is essentially a credit allocation policy that in our free market economy should not be undertaken by the central bank. So I completely endorse that view of yours.

Mr. HILL. Thank you.

Dr. Taylor?

Mr. TAYLOR. I completely agree with that. I agree with your proposals. I also think that the other central banks to some extent is caused by the Fed. This very aggressive thing affects exchange rates and sort of it is QEB gets QE is what you observe. And I think the Fed normalizing and following the kind of policy you are suggesting would affect the whole global economy.

Mr. HILL. In shrinking the balance sheet, following up on Mr. Williams' question, Chair Yellen said, regarding winding down the balance sheet that, "the Fed target range was between 50 and 75 basis points."

And that she wanted "a bit more buffer" in order to reach normalization before she contracted the size of the balance sheet. I have submitted a question for the record to her on what in the heck is a bit more buffer? But my question would be, what if they began shrinking the balance sheet first?

Let that adjust rates obviously out in the marketplace and then allowed short-term rates to follow. Could you reflect on that?

Maybe start with you Dr. Taylor, and then we will hear others.

Mr. TAYLOR. I think it would make sense to work on the balance sheet now, as long as it is strategic. As long as it is understood. It shouldn't have an impact which is negative. I think it would be positive.

My analogy sometimes is what happened with the so-called taper tantrum, when the former Chair said, we are going to do some adjustments in the next few meetings. Very sudden, the shock, and there was a lot of turbulence caused by that.

But when they were more strategic, I will put it that way, about the tapering, there was almost no impact. It is just a world of difference, and I think that is how to approach this problem.

Mr. HILL. Dr. Goodfriend?

Mr. GOODFRIEND. Yes. I agree with John. And I would point out that the taper tantrum was a different circumstance.

What people forget about the taper tantrum was that only 6 months or 7 months before that, the Fed embarked on what they called QE3, a massive, unprecedented, open-ended purchase of U.S. Treasury securities and mortgage-backed securities that they then reversed field on only 6 or 7 months later by musing that maybe this was too much.

We call that, where I come from originally, “whipsawing” markets. That was the mistake. What we are talking about here is something quite different.

We are talking about, as John was saying, setting up a rule by which the Fed would slowly and gradually let those assets run off.

Mr. HILL. Thank you.

I am afraid my time has expired. Thank you.

Chairman BARR. The gentleman’s time has expired.

The gentleman from Ohio, Mr. Davidson, a new member of the committee, is recognized.

Mr. DAVIDSON. Thank you, Mr. Chairman. Thank you colleagues and thank you all for your testimony. It is an honor to be here and serve on this committee. And I just wanted to ask if we could pull up a slide that shows Federal debt as a percent of GDP?

I came into this meeting with a few different questions, but as I have listened to some of my colleagues on the other side of the aisle, I was surprised to learn that we have been in a period of austere fiscal policy.

[laughter]

And I would ask each of you to answer, does this chart reflect austere fiscal policy, yes or no?

Mr. ALLISON. Absolutely not.

Mr. GOODFRIEND. Of course not.

Mr. TAYLOR. No.

Mr. BIVENS. Yes.

[laughter]

Austerity has pulled down the growth rate of GDP. That is the denominator there.

Mr. DAVIDSON. Okay. Well, thanks for your opinion, it seems to defy facts. Do deficits matter? Yes or no?

Mr. ALLISON. Yes. Yes, they matter. I think spending matters more, but deficits do matter. Yes.

Mr. GOODFRIEND. Deficits matter because they represent simply taxing in the future rather than the present. And taxing in the future rather than the present is just as deleterious as taxing in the present, in a sense that it causes a great hurdle rate for investments which bear fruit in the future.

And that hurdle rate being higher causes current investment to be low, which has been one of the biggest problems of this recovery.

Mr. DAVIDSON. Thank you.

Mr. TAYLOR. Yes, it certainly matters. And in fact if you extend your chart according to most forecasts, it keeps going unless there is a change. And that is really be going—that gets a concern. So there needs to be some fiscal consolidation for this.

Mr. DAVIDSON. Thank you.

Mr. BIVENS. Deficits absolutely matter. Sometimes they should get smaller. Sometimes they should get bigger to support growth. You would never know ahead of time whether a larger or a smaller deficit is good for the economy or not.

Nobody thinks that the deficit should have been held at zero in 2009 and 2010. Ask any witness here whether or not the deficit should have been held at zero in 2009 and 2010 with this—

Mr. DAVIDSON. Right. I am not saying zero, but the question is, did you look at what is sustainable?

Mr. BIVENS. Whether or not it should get bigger or larger depends on context.

Mr. DAVIDSON. Thank you.

Mr. Allison, you had spoken earlier about how distortionary monetary policy and fiscal policies coincide with the slowest recovery since at least World War II.

What does this tell you about monetary policy in relation to fiscal? Has fiscal policy really been a brake and we have only been saved by the Fed's sound monetary policy?

Mr. ALLISON. I don't think fiscal policy has been a brake. I think you can look at these deficits, and I wouldn't call this being frugal. I don't think monetary policy has helped—I think handling the correction, that they did a good job.

But to me, it is like firemen putting out the fire after they started the fire. I think the Fed started the fire then they did a pretty good job putting the fire out.

I think monetary policy net-net has been negative, and particularly combined with regulatory policy. And I don't think you can disconnect the two because they have made it harder for people to make investments to small businesses that, you know, entrepreneurs, innovation.

And I think the combination of the two has actually been one of the most negative forces in the economy.

Mr. DAVIDSON. Thank you.

And I want to ask you a broader question, then ask a few of you to answer it.

So as we look at fiscal policy in an era that would be more stimulative, fiscal policy that deals with the regulatory environment and fiscal policy that deals with our tax situation and particularly corporate and the amount of assets that we are holding outside the United States by U.S. entities.

In the investment, fundamentally capital is going to find a return and far too often over this century so far, we have seen capital finding a return outside our markets, when we could easily continue America's trend as the world's land of opportunity.

What kinds of things are at risk in monetary policy? The price signals that are out there, the role that only monetary policy can play, how is that at work?

And I guess I would just start with Dr. Taylor and work left please?

Mr. TAYLOR. The risk with monetary policy, as it continues in this unorthodox vein, is that it's hard to predict what is happening. It hasn't been effective. If you go back to the 12-year period, it is pretty abysmal what has happened. And the risk is that continues.

And I think there is an international risk of that, too, because as I mentioned, there is a global contagion of policies out there. So I hope that is fixed. It is on the way to fixing it. Some of the legislation that you are working on here will improve that greatly.

It is very important to get that done, and I worry because there is so much history that when there is a more predictable policy in the United States or in other countries, it works so much better. It is just a better kind of policy to have.

Mr. DAVIDSON. Thank you. I wish I had more time and I could sit and talk to you. I have about 10 more questions, but thank you

all for your expertise. Thanks for your testimony, and I look forward to working with you in the future.

Chairman BARR. The gentleman yields back the balance of his time.

And now the Chair recognizes another new member of the subcommittee. We welcome the gentleman from Indiana, Mr. Hollingsworth, for 5 minutes.

Mr. HOLLINGSWORTH. Good morning. Thank you, Mr. Chairman.

My question is for you, Dr. Taylor. I am a big fan of the Rule, by the way, but I wanted to really understand—when I think about the Taylor Rule, it really decomposes nominal GDP into two separate components, right, output and price?

And some of those inputs are inherently unobservable or unknowable. Are we better off targeting nominal GDP itself and going after something that we have a lot more knowledge and observation of rather than the rule? Or what are the advantages and disadvantages of focusing on the rule versus the other—

Mr. TAYLOR. I think a rule like that has an advantage. It stabilizes nominal GDP so then the objective is no different. Moreover, people who have tried to implement a nominal GDP approach, they basically have a rule or a strategy. It is very much like that.

They are responding to different things in the economy. It is hard to measure everything. But some measure of the state of the economy, GDP, where we are relative to normal is very hard to measure.

But it is just as hard for a discretionary policy. It is hard to measure what the so-called neutral rate is that Chair Yellen referred to a lot yesterday.

Mr. HOLLINGSWORTH. Right.

Mr. TAYLOR. But it is even worse when you are kind of in a discretionary mode because anything goes. So I think a lot of the things that sometimes people raise with respect to rule-like or strategic kind of policy are even worse with respect to that.

And if I could just add on this question, I don't think anyone is saying that the Fed should follow a strict formula mechanically. That is certainly not—I have never said that.

Mr. HOLLINGSWORTH. Right. No, I agree.

Mr. TAYLOR. It is not in the legislation. People keep repeating it. It is not the policy and no one even thinks of it that way.

Mr. HOLLINGSWORTH. Do you think that because of the financial crisis, some of the inputs or the natural rate or others have been permanently affected in the U.S. economy and permanently lowered as some evidence suggests or others disagree with?

Mr. TAYLOR. So what I think with respect to this is the interest rate, right?

Mr. HOLLINGSWORTH. Right.

Mr. TAYLOR. Yes. I think there has very quickly been a view established, and this is at the Fed, that the so-called neutral rate has come down, say from four nominal to three. And it shows that by their dots.

Mr. HOLLINGSWORTH. Yes.

Mr. TAYLOR. I really question whether there is that much evidence for it. I have done research on it. It is masked by many other

factors including the regulatory and tax policy. So I think ultimately they think it is going to three now. That is their projections.

When they get there, and I hope they do, then the question is if that is enough? And I think it is an open question. I would say it is probably not going to be enough, but we can wait until we get there to determine it.

Mr. HOLLINGSWORTH. Dr. Bivens, I heard what you said earlier, and I was a little bit confused by it. So the offset of private investment has certainly been reduced. Right? So your assertion that we need to increase public investment to offset that.

I guess do both have the same exact effect on long-term productivity? It doesn't appear to be the same in a marginal investment that public investment gets the same effect on the magnitude of productivity that private investment does.

Mr. BIVENS. Definitely not the exact same marginal effect.

Mr. HOLLINGSWORTH. Yes.

Mr. BIVENS. There is lots of evidence that there is a higher marginal effect on public investment, especially given the very slow rate of public investment growth over the past 10 or 20 years.

Mr. HOLLINGSWORTH. Right.

Mr. BIVENS. They both definitely increase capital deepening and increase productivity.

Mr. HOLLINGSWORTH. To what extent do you think that public investment ultimately has that deleterious effect, I think was the word, Dr. Goodfriend used, on private investment on account of ultimately its tax burden in the future discounted by whatever the rate is between that future and today?

Mr. BIVENS. I think if it is done well and it doesn't crowd out private sector investment, so essentially it should be in things that the private sector tends to not want to do, sort of public goods—

Mr. HOLLINGSWORTH. Right.

Mr. BIVENS. —goods with a lot of externalities, then it is as likely to crowd in more private investment as crowd any out.

Mr. HOLLINGSWORTH. I know there has been a lot of discussion and the focus obviously today is on monetary policy. Tell me a little bit about, maybe as quickly as possible for each of you, what is the most important lesson to learn from the long-term economic malaise that Japan has suffered on account of their own asset bubble popping?

What is the most instructive piece that we should take away from that for us thinking about going forward? Start at the left and go right.

Mr. ALLISON. I think they made a lot of mistakes. They have a really interesting problem that is not fiscal policy or monetary policy. They don't have any population growth. And actually that is a challenge for us because young people eventually become productive.

You can raise your standard of living in the short term by not having children.

Mr. HOLLINGSWORTH. Okay.

Mr. ALLISON. But if you don't have children—and I think that has overwhelmed and they have tried to fix a deeper problem—

Mr. HOLLINGSWORTH. Yes. Yes. I totally get it.

Dr. Goodfriend. I just want to make sure that we have time.

Mr. GOODFRIEND. In Japan they have tried to overcome the deflation problem with tremendous government spending, blowing up their deficit, blowing up the debt and doing lots of public infrastructure spending.

Mr. HOLLINGSWORTH. Right.

Mr. GOODFRIEND. And it hasn't worked.

Mr. HOLLINGSWORTH. Yes.

Mr. GOODFRIEND. And I think that is a good cautionary tale about the United States trying to substitute private investment with public investment.

Mr. HOLLINGSWORTH. Dr. Taylor?

Mr. TAYLOR. I think there is a third arrow that Abe used to talk about, that structurally formed tax reform. They have forgotten that. The lesson should be, let's not forget it.

Mr. HOLLINGSWORTH. Yes, that there are limits to monetary policy especially in zero bound, and that we need to focus on some of the other aspects in terms of fiscal discipline, regulatory discipline ensuring the economy functions. Long-term, it is going to be growth, not monetary policy that determines standard of living in the distant future. Thank you.

Chairman BARR. The gentleman yields back.

And as a courtesy to the witnesses, we have finished our first round of questioning. The Members have expressed an interest in a second round of questioning, although not all Members. So this would be a little bit of a brief round.

So with the witnesses' consent, we will do a brief second round of questioning. Is that okay with you all? Okay, very good. So without objection, Members on both sides will be given an additional round of questions, and I will recognize myself for an additional 5 minutes at this time.

Dr. Taylor, Dr. Bivens made the argument that a strict rules-based policy would prevent the Fed from being able to react or respond to certain sudden economic events or developments.

What would be your response to that in terms of if Congress were to amend the Federal Reserve Act to impose a strategy-based or rules-based policy, a format kind of reform, do you share Dr. Bivens' concern about that, and if you do not, why not?

Mr. TAYLOR. No, I don't share the concern, especially the way the reform act was written. First of all, the Federal Reserve could deviate from whatever strategy it chose. The Fed would choose its own strategy. It would just have to inform the Congress why.

There is nothing in the major lender-of-last-resort actions that is precluded in any way, shape or form by that Act. That is a very important part of monetary policy. It could be more rules-based, but that is another thing completely. So I don't think there is any tension.

Sometimes people say, again, it is a strict formula. That is not true. That is not what is in the Act. It is not what people are suggesting. It is kind of something that has been thrown out there to criticize. It is not true at all. But I think that the history of this is so informative.

I think the 1960s or in the 1970s were a period which was very unsystematic; policy changed all the time. It was a mess, and start-

ing with Volcker and through much of Greenspan's term, it was different.

And so we have that evidence of that is the kind of strategy, rules-based policy that we are talking about. Of course, it is a new world. Things are different. It could be made better than that. But I think it is there are some great opportunities if we just learn from history.

Chairman BARR. Thank you.

And Mr. Goodfriend, I know you want to elaborate a little bit on the inflation-fighting risk premia, and I will invite you to do that, but I also want you to maybe take some time here and address what you perceive as the danger of a bloated balance sheet.

And in particular the FORM Act or moving to a more rules-based policy has been criticized for potentially compromising Fed independence. How does unconventional policy or a large balance sheet compromise Fed independence? And does the large balance sheet itself invite political interference?

Mr. GOODFRIEND. The large balance sheet works in two ways. There is an aspect where the Federal Reserve is buying not Treasury, but non-Treasury assets which, as I mentioned earlier, is a kind of credit allocation policy, which I think compromises the Fed's independence because credit policy is a kind of a fiscal policy that invariably has political consequences and creates controversy among those who would like to get more credit for themselves directed by the Fed.

So you want to keep the Fed out of credit policy and therefore not have a big balance sheet on that account.

The other aspect of the big balance sheet is that it is a maturity transformation policy, a kind of a government hedge fund, which involves the Fed necessarily making bets buying long-term assets funded by overnight reserves that are borrowed from banks.

And that, that maturity transformation, hedge fund aspect of monetary policy, is also controversial because it is costly potentially for taxpayers.

And on that second count, there is no reason for the Fed to get in that business at all. We can do monetary policy in a rules-based way, as John has been talking about, without a big balance sheet.

Chairman BARR. I know you want to elaborate more on inflation but in the remaining 1 minute that I have to any of the witnesses here, I want to further explore this topic of productivity. And in my opening statement I talked about the Fed's unconventional policies as itself a potential contributor to low productivity.

Can any of you speak to that? Obviously my colleague, Mr. Kildee, talked about education and skills and technological innovation as a potential boost to productivity, but how is monetary policy, and especially improvisational monetary policy, an impediment to productivity?

Mr. ALLISON. It creates uncertainty. And uncertainty makes people less willing to invest. And what you need is more capital investment because the more bulldozers people have to work with, the more productive they are.

And we have had way too low a capital investment, and one component has been the uncertainty of monetary policy and its long-

term consequences, along with regulatory policy and the debt level, all together have reduced investment.

Chairman BARR. So your testimony is that monetary policy is not alone in contributing to low productivity, and there could be other factors. But if you don't have a stable, predictable, transparent, accountable, strategy-based monetary policy, that can undermine productivity?

Mr. ALLISON. No question.

Chairman BARR. Okay. My time has expired.

The ranking member, the gentlelady from Wisconsin, is now recognized for an additional round of questioning.

Ms. MOORE. Thank you so much, and thank you witnesses for bearing with us for this second round. I have so many questions. I hope I will be able to squeeze them all in in 5 minutes.

As I have listened to the testimony, it seems to me that many of you agree with Dr. Taylor in advocating for a sort of supply side economy. We have heard this trickle down argument for a really long time. Right now we have record stock market activity, but we also have record inequality.

The last time we saw this kind of inequality was, like, 1929, 1930, when we had the Great Depression. It is really interesting that the greater the inequality—like I said, the Great Recession and the Great Depression are times in our American history where we have seen the greatest inequality.

So what I want to know now as I try to take a deep dive into the blueprint here, when we see \$800 billion being cut out of Medicaid, State Department 28 percent, EPA, Commerce, Ag, Energy, Transportation, HUD, I guess I am wondering from the supply side, at what point will we see the trickle start?

Maybe I will ask Dr. Bivens. When is the trickle going to start, because we are waiting? I will be 66 in April, and I have been waiting on the trickle for a while.

Mr. BIVENS. Yes. I would not expect that strategy to lead to higher living standards for low- and moderate-income Americans anytime. I would say, I think the primary way the Fed affects inequality is by actually trying to generate full employment in the economy, the way they have been for the past 10 years.

Like, a big contributor to inequality over the past 30 years, is that we have tolerated excessively high unemployment in the name of fighting phantom inflation. And I think if we can reverse that, we can make a lot of headway.

Ms. MOORE. Okay. Another question I have is, and I think Mrs. Love said that, Dr. Goodfriend didn't have a chance to answer many questions. So I just wanted to ask him about his criticism of the dual mandate as incoherent.

And I am just wondering, if unemployment were 1 percent, would you expect inflation? And if unemployment were 15 percent, would you expect deflation?

Mr. GOODFRIEND. What I meant to say was that in the very long run, the only thing that monetary policy can control is the purchasing power of money, because the only thing that monetary policy does is control the quantity of money.

Ms. MOORE. You didn't mean to say that this was incoherent then?

Mr. GOODFRIEND. It would be incoherent for the Federal Reserve to adopt a target for employment over the long run. And in fact the Fed has not done that. Over the short run, there is the possibility of using monetary policy to smooth or to mitigate fluctuations in employment around what we call the natural rate, which is where employment is going over the long run.

And that is fine. But whether employment is 1 percent or 20 percent over any sustained period of time is largely due to factors beyond monetary policy's control.

Ms. MOORE. So Dr. Bivens, what would create more job opportunities? If, in fact, the Fed is going to adhere to its dual mandate, what would contribute to increased employment opportunities? You say austerity is not it. You get the question.

Mr. BIVENS. Yes. I think in the short run, we still have productive slack in the U.S. economy that needs to be taken up, which is why I don't think the Fed should be raising rates. But the economy is healing pretty steadily. We should let that continue. We shouldn't short-circuit it with premature rate increases or shrinking of the balance sheet.

And if then if we wanted to really accelerate that final push to genuine full employment, we could reverse some of the fiscal austerity we have seen, do more public investment.

Ms. MOORE. All right.

And Mr. Allison, quickly, I just read an article from the American Banker that talked about how robust things are, and Dodd-Frank has not harmed banks. How would you suggest that we deal with the Wells Fargo, Credit Suisse, HSBC, Deutsche Bank conflicts with less regulations? How do we rein in these institutions?

Mr. ALLISON. I think we ought to quit bailing a lot of those institutions out. They wouldn't be here. That is not true of Wells Fargo, but the other institutions have been bailed out.

Ms. MOORE. I know. But no, they poison our economy. It is not just those institutions.

Mr. ALLISON. I think the world would be better if some of them had gone out of business during the financial crisis. Citigroup has gone broke 3 times in my career. It has been bailed out by the Government, not by markets. Markets would have disciplined Citigroup.

Ms. MOORE. Thank you.

I yield back.

Chairman BARR. The gentlelady yields back.

The Chair now recognizes the gentlelady from Utah, Mrs. Love.

Mrs. LOVE. Thank you, Mr. Chairman. I wanted to continue to focus on the dual mandate a little bit. And I wanted to see if we can get a consensus on something. And I just want to go quickly across the board and see if everyone agrees with this comment.

Can we all agree that price instability in the form of either deflation or rapid inflation can have drastic consequences on economic decision-making, and therefore, economic growth and job creation?

Mr. ALLISON. Yes.

Mrs. LOVE. Can we agree with that? Okay. So wouldn't the Fed be pursuing maximum employment most effectively if it actually exclusively focused on ensuring price stability? If you think about

just that and ensuring price stability, wouldn't they be in essence pursuing maximum employment most effectively that way?

Mr. ALLISON. I think they would, myself, yes.

Mr. GOODFRIEND. I think that would be the right thing to do.

Mr. BIVENS. Yes.

Mr. TAYLOR. So I think you need a little more elaboration here. I think in the periods of the 1980s and 1990s there was a dual mandate. You say it was put in the late 1970s. So neither of the, at this point—

Mrs. LOVE. I'm sorry. I can barely hear you.

Mr. TAYLOR. During this period—

Mrs. LOVE. Thank you.

Mr. TAYLOR. —neither of the Chairs Volcker or Greenspan—they almost never referred to the dual mandate. It was get inflation down, stabilize your price level, and we will have a good employment performance.

Mrs. LOVE. Right.

Mr. TAYLOR. And in fact that is what happened. Because unemployment was so high in the 1970s and got higher and higher, and that is what bad monetary policy can do. And monetary policy in this Great Recession recently, unemployment got very high again. That is what bad monetary policy can do.

So it is very important, when you think about this dual mandate, to recognize that a policy which is erratic or too discretionary can cause a lot of harm to the economy.

So that is why, I think, this strategy of having the Fed discuss what its strategy is, is the most effective way to deal with this problem, which is there in any case.

Mrs. LOVE. Okay.

I wanted to give you an answer, Dr. Bivens, to—

Mr. BIVENS. Yes, your question is interesting. I think if we had perfect foresight and there was a totally predictable relationship between unemployment and inflation, then you would be right. You just pick price stability and that is the best we can do, and that will maximize employment.

We live in a really uncertain world and, to me, the job of the Fed is to probe exactly what maximum employment is. And the way they probe it is if they spark accelerated inflation, they have overshoot. If they haven't, they have undershot. And so I think it is that uncertainty that makes you need to have that dual mandate.

Mrs. LOVE. Okay. Oh, gosh, time goes by so quickly. Do you think it is widely accepted that the Fed's monetary policy changes impact the economy with substantial lag, perhaps as much as several quarters or even more than a year after the changes in policies are announced?

I want to make sure that I just want to get to the support for the formula that Mr. Taylor has.

Mr. ALLISON. I think there is a long lag time. Sometimes it can be longer than a few quarters. And in fact, that is one of the problems we have, because a lot of times the Fed gets away with making mistakes because we can't connect the mistake to the time when they made it.

Mrs. LOVE. Okay. Yes.

Mr. ALLISON. And I think that is a big problem.

Mrs. LOVE. And given that reality, isn't it reasonable to argue that, in trying to meet the mandate of maximum employment, the Fed might, and even perhaps more often than not, do more harm than good without focusing on just making sure that we have strategies in place?

Mr. GOODFRIEND. I think that has been the case in the past. And that is why in my testimony I emphasized how important it is for the Fed to commit to the inflation target, to commit really seriously in a way that it hasn't done in the past.

And that would help pin down the public's confidence in the Fed's commitment to maintain some degree of price stability above all.

Mrs. LOVE. And I wanted, Dr. Taylor, to give you a final word on that.

Mr. TAYLOR. So one of the reasons why it is important to have the strategy in terms of the policy instruments is there is this lag you mention. It is hard to hold the central bank accountable, which you should do, based on just these targets, because they come much later.

I think that is why some focus on the instruments, Federal funds rate, money supply reserves, balance sheet is a very important part of the discussion.

Mrs. LOVE. And I also wanted to just finish up by saying that the United States of America is the leader, I believe, in this world. And just because other countries aren't doing it, doesn't mean that we shouldn't be doing it. We should be the leaders, especially when it comes to strategies and monetary policy. Thank you.

Mr. ALLISON. Absolutely.

Chairman BARR. The gentlelady yields back her time.

And we now welcome another new member to the subcommittee. The gentlelady from New York, Ms. Tenney, is recognized for 5 minutes.

Ms. TENNEY. Thank you, Mr. Barr.

I just want to thank the panel for being here today. I am from rural upstate New York, in District NY22, and we have an unemployment rate that is well above the national average. In fact, 2 of the largest counties in my district have over a 7 percent unemployment rate.

With the job conditions in this country obviously still sluggish, and a consistent downward trend with labor participation rates, the Federal Reserve must be promoting economic growth and job creation. Personally, I don't believe this is being done.

My district used to flourish with opportunities in manufacturing from sectors across the world. Indeed, I own, or co-own, a manufacturing business right in the heart of the district and in central New York that was started over 70 years ago by my grandfather. But we are still struggling in this economy.

However, over 5 million manufacturing jobs have disappeared nationwide in the last decade. Two weeks ago in my district, Remington Arms, which is the largest private employer in Herkimer County, laid off 122 workers in the district.

Remington Arms is an iconic manufacturing company. In fact, it is reputed to be the oldest manufacturing firm consistently running in the country, for over 200 years.

This is actually the norm in my community, and manufacturing companies are usually the headliner in our media. They are moving out of either New York or out of our country. And we hear about that every week.

Herkimer County, where Remington is based, has an unemployment rate of 6.6 percent right now, which is actually one of the lower rates in my district. And it is likely to increase if we do nothing about what is happening now with monetary policy.

Our economy, as you know, grew at a lethargic annualized rate of about 1.9 percent in the last quarter. For 2016, the economy grew only 1.6 percent. During the Obama Presidency, quarterly GDP growth has been 1.8 percent, and that reflects my district as well.

My question is, and I would like to address this to Mr. Allison, in your opinion, hasn't the Fed's so-called extraordinary policy stance, which has been in place for over a decade now, has it produced the kind of robust economic growth that has been the post-World War II norm in this country? And I would love to hear your comments on that in light of my situation.

Mr. ALLISON. It has not.

Ms. TENNEY. Okay.

Mr. ALLISON. I think the evidence—I am from North Carolina, and it has had a lot of those same kinds of problems.

I think there has been more damage actually done by the regulatory side of the Fed than has been done by monetary policy, because the Fed has kept traditional banks that were in healthy shape, like BB&T, from doing their traditional lending, which is what creates the replacement jobs for what is happening with manufacturing, along with the Federal-level high tax rates and general regulation.

So I think favorable regulatory—the monetary policy hasn't helped and it hasn't caused the problem, but the regulatory side of the Fed has done more damage than the monetary side.

Ms. TENNEY. Mr. Goodfriend, do you have a comment on that?

Mr. GOODFRIEND. Yes. I agree with that. I really like the point that when industries leave a locality, labor markets are freed up.

And what makes an economy like ours healthy is a dynamism, the ability of people with ideas to reemploy those workers productively.

And that capacity depends entirely on the ability to get loans, usually from bankers, to finance small businesses. And that is really where the problem has been over the last few years.

Ms. TENNEY. Thank you. I appreciate your input today.

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

Chairman BARR. Thank you. The gentlelady yields back.

And now the gentleman from Texas, Mr. Green, is recognized for an additional round of questioning.

Mr. GREEN. Thank you, Mr. Chairman. Let us talk for just a moment about the circumstance that we have with reference to witnesses today. I think it is important for people to know that there is but one witness here from the Democratic side, and there are three from the Republican side.

I think it is important to know this, because I think people who may be viewing this might assume that the ratio in the country of

persons who could testify and give expert testimony would be three-to-one.

Probably not three-to-one. In fact, most independent thinkers in this country want to see an independent Fed. Is that a fair statement, Mr. Bivens?

Mr. BIVENS. Yes. I think that independence of the Fed is a widely held value among economists.

Mr. GREEN. And do you agree, Mr. Bivens, that if the GAO has oversight of the Fed, that that diminishes the independence of the Fed?

Mr. BIVENS. Oversight, yes. I think they should all be—

Mr. GREEN. And the—

Mr. BIVENS. —all government agencies should be evaluated at times.

Mr. GREEN. If the Fed, in using a formula-based method for determining policy, is audited by GAO, if it deviates from that formula and if GAO reports to Congress what the deviation is, are we not now encroaching upon the Fed's independence to the extent that there is additional oversight from GAO that it brings to the attention of Congress?

Mr. BIVENS. It certainly could be. If it is purely an informational request or addition to Congress, maybe not. But it is hard to not see that as providing pressure for Congress to start micromanaging the Fed, and I think everyone thinks that would be a bad idea.

Mr. GREEN. That is the operative phrase, "micromanage," because that is what we are getting to. That is where we would be headed. That is the direction we would be headed in.

And once that report gets to Congress from the GAO, that then opens the floodgates for Congress to now invade, encroach upon, if you would, the independence of the Fed. Are most central banks, generally speaking, independent? Or don't they seek independence, Mr. Bivens?

Mr. BIVENS. Yes, and that has been the strong trend in recent decades as well.

Mr. GREEN. And is the United States considered the premiere, the preeminent, the supreme, superb central bank of the world?

Mr. BIVENS. I think that is fair to say. There are probably other contenders, but yes, that's fair to say.

Mr. GREEN. So there are other contenders, but the yen is not as strong as the dollar. The euro is not as strong as the dollar. The pound is not as strong as the dollar.

The dollar is the preeminent currency in the world, and it is such because everybody knows that the United States of America pays its bills. We pay our bills. That makes the dollar strong. Do you agree, sir?

Mr. BIVENS. Yes. I would say that the evidence that we have of the highest functioning central bank is actually our performance during this recent 10 years.

Even more than the strength of the currency, I think when you compare us to the ECB, people say, "I am really happy we have the Fed rather than the ECB running things in the United States." So I think it is their performance over the past 10 years that really sets them apart, generally.

Mr. GREEN. Not only over the past 10 years, but when we have times of inflation, we pay our bills. Recession? We pay our bills. Stagnation? Stagflation? We pay our bills. We consistently pay our bills. That gives confidence. That confidence is what causes the dollar to have its preeminence.

Without continuing along this line, I need to get to something else rather quickly. But thank you for your input.

Let us talk for just a moment about monetary policy and high unemployment. At what point do we get to high unemployment? Right now, unemployment is under 5 percent. When does it become high, generally speaking?

Mr. TAYLOR, when does it become high?

Mr. TAYLOR. It has been high many times, and we have—

Mr. GREEN. I understand it has been high many times. I hate to intrude, and I don't mean to be rude, crude, and unrefined, but I do have to ask you to answer. At what point? At 5 percent? Is that considered high?

Mr. TAYLOR. Yes.

Mr. GREEN. Five percent is high. Six percent is high.

Mr. TAYLOR. Yes, of course.

Mr. GREEN. So if 6 percent is high, and African-American unemployment is 7.7 percent currently, would that be high?

Mr. TAYLOR. Absolutely.

Mr. GREEN. And is it true that African-American unemployment is always, usually, generally speaking, twice that of white unemployment? Is this true?

Mr. TAYLOR. Unfortunately.

Mr. GREEN. Unfortunately, it is. And it is a wonderful thing to know that the current Chair of the Fed has agreed to examine why African-American unemployment is usually twice that of white unemployment.

That is one of the functions of the Fed. The Fed looks at subsets of society to ascertain whether or not these subsets are in some way not benefiting from the policies of the Fed so that they can tweak the policies of the Fed.

I wish I had more time, but I will yield back.

Chairman BARR. The gentleman's time has expired.

Now the gentleman from Minnesota, Mr. Emmer, is recognized.

Mr. EMMER. Thank you, Mr. Chairman, and thanks to the witnesses for being here today and for sharing your expertise, all of you.

First, Dr. Bivens, the term "independent" that we were just talking about—independent means free from political pressure and free from emotionally based decision-making. Wouldn't you agree?

Mr. BIVENS. More in the former than—I am not sure what emotionally based means, but yes, free from political pressure, from—

Mr. EMMER. Sure.

Mr. BIVENS. Yes.

Mr. EMMER. And you would understand, there is a difference between micromanagement of an agency versus holding an agency accountable for its actions.

Mr. BIVENS. Yes.

Mr. EMMER. All right. And you wouldn't be here today suggesting that we shouldn't hold every agency of this Federal Government accountable for its actions?

Mr. BIVENS. That is correct. Yes.

Mr. EMMER. All right. Mr. Allison, I was listening this morning. First, this dual mandate, it hasn't always existed. The dual mandate of the Fed was put in place in the 1970s at some point, correct?

Mr. ALLISON. Yes, sir.

Mr. EMMER. This morning, when you started off your remarks, you noted that, in your time, you have seen three financial crises that the Fed reacted to.

And in your expert opinion, as someone who actually ran one of these major financial institutions and did so rather successfully during difficult times and good, you witnessed what you said was the Fed making the situation worse and delaying the recovery. Is that correct?

Mr. ALLISON. Yes, sir.

Mr. EMMER. And all three of those crises that you referred to happened after the dual mandate was put in place, correct?

Mr. ALLISON. Yes. Of course, my career didn't start until about the same time, so—

Mr. EMMER. No, I get it. I get it. We are not that far apart in age, I don't think, even though I look a lot older.

[laughter]

I guess what I am getting at is you also referenced—well, I will go to your actual statement.

You said, "While in theory, the Fed has a dual role of maintaining both stable prices and low unemployment," you, Mr. Allison, "have had numerous private conversations with Board members over the years in which they readily admitted that the political pressure is to maintain low employment, not stable prices." Is that correct?

Mr. ALLISON. Absolutely. If you get them in a candid conversation, they get a lot more—now if prices went up really crazy, they would get excited. But they get a lot more worried about unemployment because that is politically visible.

Mr. EMMER. Again, going off your remarks when you started this morning, you referenced a potential crisis—I think it was in the housing market—in the earlier 2000s.

Mr. ALLISON. Yes, sir.

Mr. EMMER. All right. And you said that the Fed didn't want to have a crisis because of "political and emotional reasons." Can you explain what you were talking about?

Mr. ALLISON. It is really simple. Alan Greenspan was the head of the Fed. He had been there a long time. He was considered the maestro. He was getting ready to retire in a couple of years, and he wanted to go out looking good.

And so he orchestrated negative real interest rates, which took a minor bubble in housing that would have corrected and wouldn't have been a big deal, and it created the drive—and this is what, I think, Dr. Taylor was talking about.

All of a sudden, we had these new kind of policies, and they were very different from what Greenspan had done in the past. I will

suggest, I am speculating on what motivated that, but there is no rational reason that you can think of of why those policies were implemented.

Mr. EMMER. At no rational reason—

Mr. ALLISON. Since the other ones were working.

Mr. EMMER. All right, as a non-expert but a policymaker who has watched this from afar, there is no explanation other than the Fed is determined that when it was given the power to not only deal with price stability but suddenly to somehow be involved as the great God from above in taking care of the unemployment in this country, that that just expanded all kinds of discretionary ideas within this body that was really restricted to do a very important thing.

And I have listened this morning. It gets very frustrating. I have listened this morning. It brought back memories of a comedian from the 1960s and early 1970s by the name of Flip Wilson, who had a character named Geraldine. Geraldine was regularly heard saying, “Are you going to believe me or are going to believe your lyin’ eyes?” Right?

I look at this, and maybe, Dr. Taylor, you can address it. I heard this morning that this unconventional monetary policy, which seems to be addressing unemployment, because really it is not about price stability, if you can make that argument. But it really is this gray area how they are going to tinker tools in the toolbox.

Really? A bloated balance sheet is another tool in the toolbox? And I see I have run out of time. Hopefully, I will be able to continue this frustration at a later time. Thank you for being here.

Chairman BARR. The gentleman’s time has expired. He yields back. Thank you.

Now, the vice chairman of the subcommittee, the gentleman from Texas, Mr. Williams, is recognized.

Mr. WILLIAMS. Thank you, Mr. Chairman. I will be brief. As you can tell, working on Fed reform is our mission, and our chairman is doing a great job of that.

And I would just maybe ask you, Mr. Goodfriend, or any of you, what should the Fed look like? If it were just starting over again, what would it look like? I am a Main Street guy. I am a car dealer back in Texas, and Main Street is hurting.

And also probably French and I, and maybe Mr. Taylor, we were in business at 21 percent. I remember that. When you take 21 percent, you take 1988, you take 9/11, and you take today.

This is the toughest time for Main Street America since 2008 that I have ever experienced. And so what should the Fed look like?

Mr. GOODFRIEND. That is an awfully big question—

Mr. WILLIAMS. You have a lot of time here.

Mr. GOODFRIEND. I am a little bit like a broken record here. You want to start out making very clear that the priority for monetary policy is stabilizing the purchasing power of money.

And then the way to do that would involve a strategy which relied on the oversight process in a coherent way to discipline the Federal Reserve’s actions.

And in that sense, I want to say we would talk about the Federal Reserve explaining its monetary policy decisions to the oversight committees against a familiar Taylor-type reference rule.

That doesn't mean the Fed would follow the rule religiously. It means the Fed would invite the oversight process to discipline itself so that the Congress and the Fed together would finally stabilize the purchasing power of money.

It is very important, if we were to reform the Fed to invite the oversight process into the mix so that the Congress and the Fed could work together to lock down in the public's mind that we would have secure price stability from here on.

That would be, in my view, the most important combination of things to do if we were really going to reform the Fed.

Mr. ALLISON. Can I make an extra comment on that?

Mr. WILLIAMS. Sure, please.

Mr. ALLISON. I think it would be very critical to separate regulation from monetary policy. I think that is one of the problems we had during the financial crisis. I don't think it was monetary policy that caused the Federal Reserve to save Citigroup. And that led to Dodd-Frank and a lot of other stuff.

I think it was they were regulating Citigroup and they didn't want Citigroup to look bad because they would look bad. And all of this contagion stuff being in the banking business, I think that is a myth. And so I think it would be really important to separate regulation from monetary policy.

And then on the regulatory side I think Congress ought to come up with some simple rules. If you have "X" amount of capital then you don't get all these regulations. And as long as you are taking risks with your own money, and not other people's money, not through the FDIC insurance, then let the market decide.

And some banks, by the way, should fail. It is just that you shouldn't have systemic failures, and I don't think you will have systemic failures except when all the same rules are applied to everybody and everybody does the same thing. And that is when you get systemic problems.

Mr. WILLIAMS. Yes.

Dr. Taylor?

Mr. TAYLOR. I would like to second the—

Mr. WILLIAMS. Yes, sir?

Mr. TAYLOR. I would like to second very much John's comments. I think a combination of what we have been saying is important.

Mr. WILLIAMS. Yes. Yes, sir.

I have some time left. Dr. Taylor?

Mr. TAYLOR. I would just add to the list of reforms along the lines of Mr. Allison, is some way to revise the bankruptcy code that could apply to a large financial institution so that you could definitely say this is an alternative to the bailouts which there is legislation.

I think it is part of the CHOICE Act, but out of the Judiciary Committee in the House, which I think is very good, very worthwhile considering. And I think it should be part of this mix. It is really part of the notion it is bankruptcy not bailouts notion.

Mr. WILLIAMS. Dr. Bivens, would you like to add to that?

Mr. BIVENS. Yes. I think if we are starting from blue sky and reconstituting the Fed, one thing I would like to see would be regional Federal Reserve Boards that were not dominated by the financial sector.

And I would say the one caveat to independence that I see in the current Fed structure today is that it is not independent from the policy preferences of the finance sector, which dominate the regional boards.

There are supposed to be seats on there for consumer, labor, and advocacy groups. They sometimes are, sometimes aren't. That share of seats should be much higher, so I think that would be the first thing I would do.

Second, I would keep the dual mandate. I think making them be responsible for maximum employment in the short run is a very key reason why they are considered among the gold standard of central banks in the world.

Mr. WILLIAMS. I appreciate that. Thanks for being here.

Mr. Chairman, I yield back.

Chairman BARR. The gentleman yields back the balance of his time.

And for our final round of questioning, the gentleman from Arkansas, Mr. Hill, is again recognized.

Mr. HILL. Thanks, Mr. Chairman.

We were talking in the previous round about the size of the balance sheet and raising short term rates, which the Board of Governors announced yesterday, versus shrinking the balance sheet, in other words, letting actual net sales of assets start.

But there is this other issue that that balance sheet is funded by excess reserves in the banking system. And we really, or I haven't heard if we have talked much about that today.

Section 201 of the Financial Services Regulatory Act of 2006 allowed the Fed to start paying interest on excess reserves in 2011. And they are supposed to statutorily not pay more than the comparable short-term market rate.

But in fact they have, significantly, and so I would like your thoughts on that. And your thoughts on the interplay of that?

Should we begin lowering that rate as a part of the mix in the toolbox to affect the short-term marketplace of rates? And our ranking member of the full Financial Services Committee, Ms. Waters, described it at last year's Humphrey-Hawkins testimony.

This was a massive subsidy to the biggest financial institutions in the country, and when you answer my question about the use of that tool, if you would add to the point should we have that published, the amount of interest paid to the banking industry on an institution to institution basis?

So I will start with you, Mr. Allison?

Mr. ALLISON. I think that paying interest on reserves was a very bad decision, particularly at the time it was made. It is interesting that the context of the decision was that banks were at a disadvantage because they weren't getting any interest on their reserves competing with other institutions, many of which got into financial trouble.

I would not have allowed the Fed to manage monetary policy through high rates on reserves. I think they ought to phase the in-

terest rates on reserves out period. And I think that would lead to banks getting more aggressive back in the lending business. And at the same time they have to reduce the regulations so banks can make loans.

They have to do both because the combination is what created this problem. They made it hard for banks to make loans and then they pay high rates on reserves.

So in terms of the subsidy to banks, I think in a way that is unfair because the Fed is incenting banks to do this, right? It is not that the banks are doing something they are not supposed to do.

They are doing something the Fed wants them to do. They are incentivized to do this. The Fed puts pressure on banks to keep excess reserves now, because they like having excess reserves to fund their huge bond portfolio.

I don't think the banks are doing any more than they have to because of the Fed's goals. I think they are doing what the Fed wants them to do.

Mr. HILL. Clearly, if you are paying over the statutory rate you are supposed to be paying, there is a Fed inducement there.

Dr. Goodfriend?

Mr. GOODFRIEND. The reason the Federal Reserve initiated paying interest on reserves in the first place dates back to the post-crisis rescue.

And it was to enable the Federal Reserve to keep interest rates above zero at the time, worrying about inflation, while also funding a reintermediation of credit markets, which had collapsed at the time, by creating reserves and then using the funds to lend to those parts of the economy that could no longer get credit.

But that was an emergency measure. What we should do now is shrink the Fed balance sheet, drain those reserves out of the system so we can move back to the pre-crisis way of doing monetary policy where the Federal funds rate would float above interest on reserves.

We would recreate a scarcity of reserves and that would solve the problem you are talking about. And that is why this morning we have been talking about a bunch of reasons to scale back the Fed's balance sheet.

Mr. HILL. And just for the viewers at home, I think it is \$2 trillion in excess reserves now. And for the 10 years prior to the 2007 peak in the economy it averaged about \$1.7 billion with a "B." And you look at that as a percentage of the GDP, it is a massive increase.

Dr. Taylor?

Mr. TAYLOR. Yes. I think the goal should be to get the balance sheet down to the point where the supply and demands for reserves determines the interest rate so it will be a market interest rate. Then these issues would go away, and I think in the meantime, or at the appropriate time, don't have interest on excess reserves.

Mr. HILL. Yes.

Mr. TAYLOR. I think that is the goal and how fast you should get there is the question of the day. So it would be really rapid. I think it should be strategic, but that goal I think is very important. That you don't need a gigantic balance sheet. You don't need a lot of excess reserves.

You need the scarcity, as Marvin put it, to get to the right level. And that is a market-determined rate that way. It worked fine in the past. We don't need all these excess reserves. And there are people out there who say we do, and I try to deal with that, some of that criticism in my testimony.

Mr. HILL. Thank you, Dr. Taylor.

Chairman BARR. The gentleman's time has expired.

And I would like to thank all of our witnesses for their insightful testimony today. I also want to thank my colleagues for their excellent questions.

The Chair notes that some Members may have additional questions for this panel, which they may wish to submit in writing. Without objection, the hearing record will remain open for 5 legislative days for Members to submit written questions to these witnesses and to place their responses in the record. Also, without objection, Members will have 5 legislative days to submit extraneous materials to the Chair for inclusion in the record.

This hearing is adjourned.

[Whereupon, at 12:29 p.m., the hearing was adjourned.]

A P P E N D I X

March 16, 2017

Written Testimony of John Allison
 House Financial Services Committee
 Subcommittee on Monetary Policy and Trade
 Hearing on “Sound Monetary Policy”
 March 16, 2017

Chairman Barr, ranking Member Moore, and members of the committee, thank you for inviting me to testify about sound monetary policy. The following are excerpts from my 2012 book called *The Financial Crisis and the Free Market Cure: Why Pure Capitalism is the World Economy's Only Hope*, which I believe best represent my views on how the Fed's monetary policies caused the Great Recession, distort markets, and harm the ability of American firms and families to reliably plan for the future.

“In a simple (but fundamental) sense, the only way there could have been a bubble in the residential real estate market was if the Federal Reserve created too much money. It would have been mathematically impossible for a misinvestment of this scale to have happened without the monetary policy of the Fed.

In 1913, the monetary system in the United States was nationalized. The federal government owns the monetary system. We do not have a private monetary system in the United States. Problems in the monetary system were the source of the current Great Recession. If there are problems in the monetary system, they are, by definition, caused by the federal government, because the federal government owns the monetary system.

If interstate highway bridges were falling down, most people would realize that since the interstate highways are owned by state and federal governments, the problem was essentially caused by government decisions. Even if a bridge contractor did not use the right materials, government highway agencies select the contractor, inspect the materials, and so on. This would be particularly true if many bridges were falling down and these bridges had been built by different contractors.

It would then be clear that something was wrong with the government highway agencies' specifications, selections, procedures, inspections, and other actions. In the last several years, monetary highway bridges have been falling down all over the place.

The Federal Reserve owns and controls the monetary system in the United States. The Federal Reserve is theoretically an independent government agency. However, the president appoints the members of the Federal Reserve Board with the approval of Congress. While some members of the board are qualified, many appointments are driven primarily by political considerations. As with many government appointments, it is very unlikely that an individual who does not fundamentally agree with the existing role of the Fed will be appointed. This makes it difficult for the board to have a broad base of different economic perspectives and means that the board is strongly influenced by the political environment. Many members of the board (regardless of their professional backgrounds) are political in nature or they would not have gone through the political process necessary for their appointment. The banking industry has one appointment position on the board. In my 40-year career, the industry has never been represented by the best and brightest bankers. The industry is typically represented by politically connected bankers.

While in theory, the Fed has a dual role of maintaining both stable prices and low unemployment, I have had numerous private conversations with board members over the years in which they readily admitted

that the political pressure is to maintain low unemployment, not stable prices. We will discuss the significant long-term implication of this political pressure.

In theory, the Federal Reserve was created to reduce volatility in the economy. In fact, the Federal Reserve reduces volatility in the short term, but increases volatility in the long term. In a free market, because human beings are not omniscient, markets are constantly correcting. Poorly run businesses for which customer demand has changed, go out of business, and new businesses that do a better job of meeting consumer demand are created. A free market is in constant correction. It is always searching for the best way to produce goods and services at the lowest cost and of the best quality.

When the Federal Reserve steps in and uses monetary policy to stop the downside correction process, all it achieves is to defer problems to the future and make them worse. Its action delays and distorts the natural market correction process, thereby reducing the long-term productivity of the economic system by encouraging a misuse of capital and labor. One of the best ways to view free markets is as a great number of experiments that are being conducted simultaneously. Most of the experiments are failures. However, every failure contributes to the learning process. Thomas Edison noted that the 1,000 apparently failed experiments that led to the lightbulb were, in fact, absolutely necessary. For every Google or Microsoft, there are 1,000 failures, all of which are in a certain sense necessary.

By the way, the argument for the Federal Reserve is that there were significant economic corrections in the 1800s and government needed to provide stability to banking. Interestingly, the United States created two quasi-central banks in the 1800s, both of which effectively failed. (One of the great debates at our founding was between Jefferson and Hamilton on this issue.) Most banks, however, were state-chartered. The state banks were not any less political than the federally regulated banks. One of the major reasons for failures of state-chartered banks was that they were required to purchase state-issued bonds that typically financed the expansion of railroads. Many of the rail roads were built by crony capitalists who had powerful political contacts and did not know how to run a railroad. The railroads failed, then the state bonds failed, and then the banks failed. Still, U.S. government surpluses were the norm during this period, and the national debt declined steadily from 30 percent GDP in 1869 to just 3 percent in 1913. Downturns during the Gilded Age (1865-1913) were less common and less severe than economists once believed.

Before the Federal Reserve, and despite these problems, in the late 1800s and early 1900s, the United States experienced a phenomenal growth rate while absorbing a huge inflow of immigrants with very limited skills. Most economic corrections during this period, while sometimes deep, were short, and the economy quickly regained steam. Government debt was low, and the future was not mortgaged (as it is today). There was nothing close to the economic devastation of the Great Depression. It is interesting that the Federal Reserve will now, finally, admit that its policies played a significant role in causing the Great Depression, even though this fact was established decades ago by Milton Friedman. In other words, without the Federal Reserve, we would not have had a Great Depression.”

“The fact that the federal government (via the Treasury and the Federal Reserve) can “print” money allows Congress to undertake many programs that accumulate debt (and buy votes) and motivates the Fed to constantly try to inflate the money supply, undermining the trustworthiness of the value of the money. Markets are always aware of this risk and are constantly trying to figure out when the Fed will begin to debase the currency again. The fact that the Fed can debase the dollar anytime it wants to makes investing

in dollar-denominated assets more risky. If a business undertakes the development of a long-term project, it may face higher input costs than it expects if the Fed decides to start inflating the currency. The business cannot know which will rise more, its cost of production or the sales price of its products, because inflation does not affect all prices evenly.

This has been a particularly significant problem in recent years because the Federal Reserve has undertaken a massive expansion of the money supply. If the economy begins to improve and the Fed does not withdraw the tremendous reserves it has created from the banking system, rampant inflation will follow. If it does withdraw the reserves quickly, interest rates will rise rapidly. This situation makes economic calculations extremely difficult and makes businesses less willing to invest, especially for the long term. If business owners could fully trust the Fed, this would not be an issue, but we have all been burned too many times to trust the Fed."

"In my career, the Fed has a 100 percent error rate in predicting and reacting to important economic turns, which is not surprising. It is trying to arbitrarily set the single most important price in the economy--the price of money. This price affects every economic decision. What is interesting is that the economists at the Fed know that bureaucratic price setting is a total failure. They have observed this phenomenon in all socialist and communist economies. They would not claim the ability to set the right price for an automobile, but they somehow believe that they can establish the proper interest rate for a highly complex economy in a globally integrated environment.

On several occasions, I have asked members of the Fed Open Market Committee (who set interest rates) whether they believed in price fixing. They all emphatically said no. Then I asked them why they believed that they had the ability to set the price of money. Their response was effectively that the price of money (interest rates) is different. Why? No answer. I said earlier that the Federal Reserve economists are intelligent. They are, but they have a specific kind of intelligence. They have a detached-from-reality, academic, floating abstraction form of intelligence. This type of intelligence thrives on mathematical reasoning, but has difficulty dealing with nonmathematical phenomena, such as the impact of intangible incentives on human actions. They are surprised (continually) that individuals do not act the way their models say they should. Of course, if they were truly intelligent, they would realize that their task is impossible and recommend a market-based monetary system"

Thank you again for the opportunity to testify today and I look forward to answering your questions.

Testimony of
Josh Bivens, Ph.D.
Research Director, Economic Policy Institute
Before the House of Representatives Subcommittee on Monetary Policy and Trade
“Sound Monetary Policy”
10 am, Thursday March 16
Rayburn House Office Building

The sound approach to monetary policy has been (and remains) targeting genuine full employment

I’d like to thank the committee, and particularly Chair Huizenga and ranking member Moore for their invitation to testify. My name is Josh Bivens and I am the research director of the Economic Policy Institute and a macroeconomist by training.

The Federal Reserve took extraordinary policy actions over the past decade aimed at boosting aggregate demand and spurring a faster and full recovery from the Great Recession. This hearing aims to assess the effectiveness of these actions. My testimony makes the following points:

- The extraordinary policy actions undertaken by the Federal Reserve did not come out of the blue; instead they were in response to an extraordinary economic and financial crisis.
- Since the recession’s end in June 2009, *fiscal* policy has been historically contractionary relative to other post-war recoveries. This fiscal drag, combined with the extraordinary damage left in the Great Recession’s wake, contributed strongly to the need for monetary policy to be historically expansionary.
- The recession was shorter and the recovery was more rapid because of the Fed’s actions. A healthier mix of fiscal and monetary policy should have seen expansionary fiscal policy take more of the lead in spurring full recovery, but that’s not under the Fed’s control. What they do control is the *direction* of monetary policy, and they have consistently got this direction right over the past decade.
- The Fed’s actions have not laid the ground for dangerously rapid inflation. Instead, they have been insufficiently strong to fully neutralize the ferocious *downward* pressure on wage and price growth in recent years. A Fed fully committed to 2 percent price inflation as a target (and not a hard ceiling) should commit to allowing inflation to run above 2 percent for a spell to correct the below-target inflation of recent years.
- There is no reason to think that there is great urgency for the Fed to begin the “exit strategy” from expansionary monetary policy. Most indicators of inflationary pressure remain weak, and there is ample evidence that an extended period of time where the economy is allowed to “run hot” could repair some of the damage to labor force participation and productivity growth incurred during the recession and slow recovery.
- There is no reason to fear that the “exit strategy” from expansionary monetary policy will prove dangerous or problematic when it begins. If one defines any short period of above -target

inflation as a catastrophe, then one can claim that the timing and execution of the exit strategy is extraordinarily fraught. But this is defining catastrophe down to an unreasonable degree.

- Going forward, sound monetary policy should continue to prioritize boosting demand-growth to achieve genuine full employment in the near-term. Even for the longer-term, sound monetary policy should include a larger Fed balance sheet, routine purchases of longer-term assets, and a wider mix of purchased assets besides just Treasury bonds and bills. If the experience of the last ten years has taught us anything, it should be that macroeconomic policymakers across-the-board (including the Fed) need more, not fewer, tools to fight recessions and spur demand-growth.

Macroeconomic and policy background to Fed actions

It is important to realize that the Fed's extraordinary actions in recent decades did not come out of the blue and were not taken on a whim - they were instead taken in response to extraordinary economic circumstances. The crash of the \$7 trillion housing bubble that began in 2007 eventually led to a larger negative shock to private-sector spending than the one that led to the Great Depression in the early 1930s. The Fed actually began attempting to cushion the coming blow of the 2008-09 Great Recession by lowering short-term interest rates in August 2007 and providing support to failing financial institutions early in 2008 – well before the blowup associated with the fall of Lehman Brothers.¹

This support led to the Fed expanding its balance sheet to provide direct lending via emergency facilities in order to restore financial market functioning following the banking crisis in fall 2008. This direct lending roughly doubled the size of the Fed's overall balance sheet (raising it from just below \$1 trillion to roughly \$2 trillion). By the spring of 2009, this direct lending through the emergency lending facilities had substantially declined as chaos in financial markets (exemplified by historically large spreads between Treasury interest rates and other assets' returns) had largely subsided. Without further action, the size of the Fed's balance sheet (and hence the liquidity being provided to the U.S. economy) would have shrunk quickly back down to pre-recession levels.

Largely driven by the desire to keep providing monetary support to a still-contracting economy, the first round of large-scale assets purchases (LSAPs, sometimes popularly known as quantitative easing, or *QE*) began when the Fed announced in March 2009 that it would commit to purchasing \$300 billion in Treasury securities, \$200 billion in agency debt, and \$1.25 trillion in mortgage-backed securities. The purchases were completed by the spring of 2010. This raised the question of what to do about maturing assets; if the Fed did not replace them as they matured, the balance sheet would decline by \$100 to \$200 billion annually as assets naturally reached maturity (a process sometimes known in the jargon as *rolloff*). To forestall this automatic shrinking of their balance sheet, the Fed announced in August 2010 that it would purchase Treasury securities to replace the maturing securities to keep the size of its balance sheet stable.

¹ Most of this policy and economic background is contained in Bivens (2015), found at: https://www.brookings.edu/wp-content/uploads/2016/06/Josh_Bivens_Inequality_FINAL.pdf

The second round of LSAPs (QE2) began in November 2010 with an announcement that the Fed would purchase an additional \$600 billion in Treasury securities (at a pace of roughly \$75 billion per month) by June 2011. It further committed to continuing to replace maturing securities with Treasury purchases. While the official end of the Great Recession had occurred in June 2009, more than a year before, the U.S. unemployment rate in November 2010 was *higher* than at the recession's trough (9.8 versus 9.5 percent). Employment had fallen by nearly 300,000 since the recession's trough and contracted in four of the five months before November 2010. In retrospect, a consistent round of job growth (which of course could be in part endogenous to the introduction of QE2) actually began in October 2010, but in real-time the recovery seemed to be stubbornly stalled.

The final round of LSAPs (QE3) began with an announcement in September 2012 that the Fed would purchase \$40 billion in market-backed securities (MBS) per month. This announcement had no end date and no ceiling on the total amount that would be purchased. In December of 2012, the Fed then announced that it would also begin purchasing \$45 billion in Treasury securities (in addition to the MBS purchases). In December 2013, the Fed announced that it would begin reducing the size of monthly purchases, and in February the pace of total purchases declined from \$85 billion to \$65 billion. The purchases ended in October 2014, with the Fed's balance sheet at roughly \$4.5 trillion.

When QE3 was announced, the unemployment rate stood at 7.8 percent after having declined a full percentage point in the previous year. Yet there were reasons to think this progress could slow. For one, about a third of the change in unemployment between November 2010 (the beginning of QE2) and September 2012 (QE3) was due to falling labor force participation rather than employment growth. Further, the "fiscal cliff" was clearly on the horizon. In January 2013 a number of fiscal stimulus measures were set to expire, and the long-scheduled expiration of tax cuts passed in 2001 and 2003 was set to occur. If all the different elements of the fiscal cliff had come to pass, there would have been a very large increase in fiscal drag in 2013, and the first half of that year would likely have seen negative output growth. It seems hard to believe that this worry was not a significant part of the Fed's decision making regarding QE3.

Finally, by September 2012, it was clear that the spending reductions forced into law by the Budget Control Act (BCA) were going to place severe downward pressure on demand growth in coming years. In fact, since the trough of the Great Recession in 2009, combined government spending has been slower in the ensuing recovery than in any other previous recovery. This fiscal austerity has happened even as the cumulative output gap (essentially a measure of the damage caused by the recession) was larger at the end of the Great Recession than at any other recession, and when conventional monetary policy was largely defanged. The notion that the Fed should reach for additional tools to boost economic growth in this context seems in retrospect very wise indeed.

Given this context, the rest of my testimony addresses a number of common questions asked about the Fed's strategies over the past decade, and about possible challenges they face going forward.

Did the Fed's unconventional strategies work?

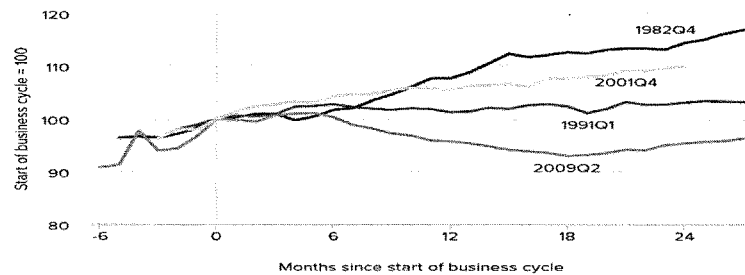
A key question is simply whether or not purchases of assets by the Fed worked to boost output and job-growth. The economic evidence is overwhelming that the Fed's actions went in the right direction, though there is substantial uncertainty as to just how effective they were.

Start with the much-less controversial case that *conventional* monetary policy has effects on output and employment. For example, there is no doubt at all that the Great Recession would have been worse, perhaps much worse, had the Fed kept interest rates at the 5.26 percent that characterized July 2007 – the last month before it was clear that a global financial crisis was in the making. There was, as far as I know, not a single economist arguing between July 2007 and June 2009 (the official end of the recession) that the Fed should not have lowered its conventional policy rate as the recession approached.

Figure 1 (from Bivens (2016))²

Fiscal austerity explains why recovery has been so long in coming

Change in per capita government spending over last four business cycles



Note: For total government spending, government consumption and investment expenditures deflated with the NIPA price deflator. Government transfer payments deflated with the price deflator for personal consumption expenditures. This figure includes state and local government spending.

Source: EPI analysis of data from Tables 1.1.4, 3.1, and 3.9.4 from the National Income and Product Accounts (NIPA) of the Bureau of Economic Analysis (BEA)

Economic Policy Institute

There is a school of thought (to which I'm sympathetic) that argues that while the Fed has great power to rein in an overheating economy through interest rate increases it actually has far less power to spur spending in an economy that is deflating – the vivid metaphor often used to explain this asymmetry is “pushing on a string”. And there are reasons to think the Fed's conventional tools were especially ill-

² For Bivens (2016), see: <http://www.epi.org/publication/why-is-recovery-taking-so-long-and-who-is-to-blame/>

suited to the fallout of the most current recession. For example, increased housing activity is a key tradition channel through which interest rate cuts spur economic activity. Given the massive overbuilding and plummeting home prices resulting from the burst housing bubble, it was always very unlikely that increased activity in the housing sector – regardless of what the Fed was doing – was going to be a primary channel for pulling the U.S. economy out of recession.

However, noting this asymmetry in the Fed's power does not argue that interest rate loosening cannot work at all or is somehow the wrong thing to do. As households, for example, look to pay down debt in the wake of lost housing wealth, low interest rates can provide immediate space for them to do by lowering auto, credit card, and even some mortgage loans (and often can afford the possibility of refinance). And in the past, monetary loosening has clearly been a key ingredient in spurring rapid economic recovery, even from severe recessions. Romer (1992), for example, finds that expansionary monetary policy was a key ingredient in helping the U.S. economy escape from the Great Depression in the 1930s.

More recently in U.S. history, an examination of the very sharp (though thankfully very brief) recession of 1981-1982 also provides clear evidence of the efficacy of expansionary monetary policy. The unemployment rate in December 1982 actually peaked at 10.8% - higher than at any point in the Great Recession. Yet 12 months later payroll employment was back to its pre-recession level. What contributed to this extraordinarily rapid recovery in jobs and unemployment? The simplest answer is very rapid output growth – GDP grew in the 2 years following the trough in 1982 at an annual average rate of 6.7% - in the 6 quarters since the trough of the most recent recession growth rates have averaged well under half this pace. This rapid output growth, in turn, was driven in part by an extraordinary degree of monetary easing – the policy rate controlled by the Fed fell nearly *10 percentage points* between the business cycle peak of 1981 and the recession's trough of November 1982. The Fed continued cutting rates for the next 6 months following this trough – and by November 1983 payroll employment had completely recovered its pre-recession level.

Large-scale asset purchases, in particular

Because the Fed reached the limit of reductions in the federal funds rate halfway through the Great Recession, and because the economy remained deeply damaged, they searched for other ways to boost output and employment. A key thing to note about conventional monetary policy interventions is that while they directly affect only very short-term interest rates, through arbitrage and imperfect substitutability, cuts in short-term rates eventually put downward pressure on long-term rates. But because long-term rates are generally higher than short-term rates, this means that when short-term rates are at zero, there is still room for long-term rates to fall.

This leads to the idea that the Fed can directly push down longer-term rates by buying longer-maturity assets. This is all that quantitative easing really is - using money creation to purchase long-term, not just short-term, assets. To think that QE somehow failed to work, one must either claim that conventional monetary policy does not work, or, that somehow buying long-term assets directly has no effect on their prices and returns. Neither is true.

Given their importance to both the output and employment impacts as well as to distributional outcomes, we present estimates of the LSAP effects on interest rates and asset prices below in Table 1. The key indicator in each of these is the effect of LSAPs on long-term Treasury yields, since the estimates for other asset prices tend to be derived from historic estimating relationships between these yields and other financial markets. These Treasury estimates are a key issue in judging the robustness of assessments about LSAPs effects on stabilization; assessments of what LSAPs have done for asset markets hinge largely on what they were estimated to have done to Treasury yields.

Though an oversimplification of the impact of LSAPs, for our purposes here we estimate that the combined LSAPs reduced long-term Treasury yields by an average of 100 basis points since their introduction in March 2009. Much of the empirical research on the financial market effects of LSAPs uses event studies to track changes in Treasury yields following successive announcements or implementations of LSAP programs (see for example, Gagnon et al. (2011) and Krishnamurthy and Vissing-Jorgensen (2011)). This means that the effects of LSAPs are not uniform over time; the effects tend to spike upon announcement and then fade over time. Further, the impact of LSAPs hinges crucially on the overall state of financial markets at times of announcement and implementation, with LSAPs thought to be particularly effective in changing interest rates during periods of keen financial market distress. As financial markets stabilized over the 2009–2014 period, it is possible that larger asset purchases were needed to provide the same downward pressure on interest rates.

Table 1 (from Bivens (2015))³

Table 4: Financial Market Effects of LSAPs		
Financial yield or price	Assumed LSAP effect	General range in survey literature
10-year Treasury interest rates	100 bps	38-150 basis points for QE1. More mixed results for QE2 and very little direct estimates of QE3 extant.
10-year MBS	150 bps	Gagnon et al. (2011) and Krishnamurthy and Vissing-Jorgensen (2011) find larger impacts on non-Treasury rates. Rough ratios from their papers applied to Treasury rate above.
10-year bond prices	9-14 percent	Given starting interest rate of 3 percent on 10-year bond, then assuming 100-150 basis point decline.
Equity prices	5 percent	Range from < 3 percent in Dobbs et al. (2013) to 8.5 percent in Engen (2014).
Home prices	7 percent	Constructed from existing literature on elasticity of home prices to long-term rates. Also in line with Dobbs et al. (2014) finding.

The empirical research on the impacts of LSAPs on long-term Treasury yields is generally consistent. Most studies find a significant non-zero effect of LSAPs, most agree clearly on the direction of LSAP's effects (i.e., they reduced long-term Treasury rates) and the estimates for the first round of purchases (QE1) are quite large—tending to fall in the 30 to 150 basis point range following initial announcement.

³ See https://www.brookings.edu/wp-content/uploads/2016/06/Josh_Bivens_Inequality_FINAL.pdf

Undertaken during times of less financial market distress and including only purchases of Treasuries (as opposed to mortgage-back securities), QE2 had smaller estimated effects than QE1. This strongly suggests that the market stabilization effects of LSAPs are a key channel through which they boost bond prices and reduce yields. This supports the assumption that non-Treasury yields fell more than one-for-one with Treasury yields due to LSAPs.

Even with relatively weak estimated effects of QE2, our estimates of LSAPs' effects on long-term interest rates over the entire period since March 2009 may not be too optimistic. For one, QE3 was weighted more heavily towards MBS than QE2, so perhaps this could boost its effectiveness. Further, QE3 was open-ended: no total value of purchases was specified by the Fed. This total limit on purchases was identified by some as a potential weakness in earlier rounds of LSAPs. Finally, Engen et al. (2015) estimate that the macroeconomic impact of the combined LSAPs has only reached its peak in recent years. This does not guarantee that their impact on long-term interest rates peak in the same year, but it does suggest that the large estimated effects of QE1 likely did not fade completely away as successive rounds of LSAPs were undertaken.

Just to give a sense of the potential of this quantitative easing for spurring purchasing power in the U.S. economy, analysts at JPMorgan Chase have estimated that if all mortgage holders guaranteed by the federal government (through Fannie Mae and Freddie Mac) had been able to refinance when 30-year rates dropped to nearly 4%, this could have added an economic stimulus of more than \$50 billion per year to the economy. Further, since this stimulus would be effectively permanent (the lower mortgage payments would be faced for the life of each holder's mortgage after refinance), the extra economic output it would have likely spurred would have been very large.

Is now (or very soon) the time for the Fed to begin its "exit strategy"? What should that exit strategy look like? Are there reasons to worry that it will threaten the ongoing economic recovery?

Since the Fed's asset buying began there has been much talk about the potential challenges of the "exit strategy" - a return to a more-normal Fed policy stance and balance sheet,, both in terms of size and maturity structure. But concerns about such an exit strategy are still premature - the Fed should not be quickly raising rates (indeed, in my view should not be raising rates at all) over the next couple of years.

As 2017 begins, the Fed has raised rates twice in two years, and many policymakers have declared that a more rapid pace of rate increases should begin. The claim is that the economy has reached full employment, and that any further acceleration of spending by households, businesses and governments (or *aggregate demand*) should be met by Fed rate increases to keep it from sparking inflation in wages and prices. This reasoning is presumably what lay behind the Fed decisions to raise rates at the end of 2015 and 2016.

But this reasoning is clearly premature. There is no evidence in the data that the U.S. economy is at genuine full employment. The headline unemployment rate remains significantly higher than it reached in 1999 and 2000, when we saw 4.1 percent unemployment and lower for a full two years without

accelerating inflation. The share of adults between the ages of 25 and 54 with a job hasn't even recovered to pre Great Recession levels, which were in turn far below the peaks reached in the late 1990s. And, most importantly, no durable and significant acceleration of wage growth to healthy levels has happened yet. Wage-growth in a healthy economy that is consistent with the Fed's 2 percent price inflation target should be at least 3.5 percent - and a few years of wage growth above 3.5 percent is needed to claw back ground lost during the recession and slow recovery. The most recent month's data on annual wage growth shows nominal wages rising at 2.8 percent. This is an improvement relative to most of the post-recession period, but still well below target. Wage growth below 3.5 percent puts no durable upward pressure on the Fed's inflation target.⁴ This means that there is no reason to believe that aggregate demand is growing too fast rather than not fast enough, and hence no reason to believe the Fed needs to begin aiming to moderate the pace of economic growth.

Once it is appropriate to begin making monetary policy less expansionary, there are a number of questions for the Fed to address. First, should they begin this process by raising short-term rates or shrinking their balance sheet? Second, if the former, how should they raise short-term rates with such a large saturation of excess reserves? Third, is there any compelling reason for them to hasten the sale of long-duration assets on their balance sheets. Finally, is there any compelling reason for the Fed to return to the pre-crisis size of their balance sheet?

First, should the begin raising short-term rates or shrinking the size of their balance sheet first?

The Fed has expressed a preference for not shrinking the size of its balance sheet until short-term rates were well above zero. The essential argument for this is that once balance sheet shrinkage begins, the process should be as predictable as possible to ensure market stability. Further, given that even a totally-predictable process of balance sheet shrinkage could have not perfectly predictable effects on financial markets, it should begin after there is ample room for conventional expansionary monetary policy (short-term interest rate cuts) to provide support for the economy during the process.⁵

This argument seems sound. There is no evidence that the Fed's larger balance sheet is doing any harm to the large economy, so holding off on shrinking it until there is every indication that conventional policy can provide support for any unanticipated negative shock stemming from balance sheet reductions is a wise policy.

Second, if the Fed decides to raise short-term rates first, how should they do this with such a large saturation of excess reserves

The potential difficulty with raising rates with a large balance sheet is that very large changes in reserves at the Fed might be necessary to induce small changes in the federal funds rate in the current environment. This could reduce the predictability of fed funds rate changes and make hitting the Fed's target rates more difficult than during times when the level of reserves held at the Fed were low.

⁴ For the explanation of this nominal wage target, see Bivens (2014): <http://www.cbpp.org/research/full-employment/a-vital-dashboard-indicator-for-monetary-policy-nominal-wage-targets>

⁵ Bernanke (2017) provides a typically lucid explanation of this view: <https://www.brookings.edu/blog/ben-bernanke/2017/01/26/shrinking-the-feds-balance-sheet/>

However, there seems to be good evidence that varying the rate of interest paid on excess reserves will let the Fed be precise in their targeting of the Federal funds rate, even with a large balance sheet, so this worry about the mechanics of open-market operations seems like it can be put mostly to rest.

The criticism that raising interest rates paid on excess reserves is implicitly a subsidy to banks is, however, fair enough. This argues strongly that post-crisis promises made by policymakers (both fiscal and monetary) that they would seek to ensure a “fair and substantial contribution from finance” for the public aid to the sector during the crisis needs to be honored. There are many ways to do this (with my own personal preference being a financial transactions tax).⁶

Further, raising the federal funds rate even with a large balance sheet could likely be done relatively easily by raising required reserve ratios as well as by increasing the interest paid on reserves. Required reserves admittedly would be not as precise a tool, and prospects for some temporary over- or under-shooting of the federal funds rate around the announced target could happen. I’m sympathetic to Fed desires to not have these temporary deviations lead to media speculation that they had “lost control” of the Fed funds rate, but I think in economic terms such deviations would be small, temporary and mostly meaningless.

Third, is there any compelling reason for them to hasten the sale of long-duration assets on their balance sheets?

The case for the Fed only gradually allowing the natural “rolloff” of assets on its balance sheets as they mature (as opposed to affirmative sales of these) is strong. Such a natural rolloff provides much greater predictability for financial markets. The Fed actions since the crisis began greatly stabilized credit spreads on MBS relative to Treasuries – there is no reason to jeopardize this hard-won victory with any unnaturally rapid sell-off – particularly when inflationary pressures in the economy remain extraordinarily subdued.

Given that the transmission of short-term rate shifts into shifts in long-term rates is the key channel through which the Fed attempts to stabilize macroeconomic conditions, it seems reasonable to keep direct targeting of long-term interest rates by the Fed as a routine tool in the Fed’s toolkit for managing demand-growth in the economy.

Finally, is there any compelling reason for the Fed to return to the pre-crisis size of their balance sheet?

Not particularly. It is important to note that even if the economy had been fully normal over the past decade that the Fed’s balance sheet should have expanded simply to stay constant as a share of overall GDP. And, much more importantly, the economy has not been normal. Instead, there has been a chronic excess demand in financial markets for safe, long-lived assets. A large Fed balance sheet satisfies this

⁶ For a reminder about how pervasive these post-crisis promises were, and an overview of possible instruments to make these promises real, see: <https://www.imf.org/external/np/g20/pdf/062710b.pdf>

demand. This demand has been boosted in part (likely small part) by regulatory changes nudging banks to have a higher share of safe assets in their overall portfolios. In this sense, a large Fed balance sheet is a useful complement to (usefully) stricter regulation in the financial sector. Further, a large balance sheet - particularly one that includes assets of various maturities - can improve the efficiency of monetary policy transmission by allowing the Fed to routinely work directly on the portion of the yield curve they most wish to target.

Have the Fed's actions over the past decade laid the ground for dangerous increases in inflation?

Contrary to much speculation, extraordinary Fed actions did not cause accelerating inflation, nor have they inevitably laid the groundwork for it⁷. This was not a surprise to those arguing that the Fed and fiscal policymakers should be attempting to boost aggregate demand growth. So long as demand-growth is running slower than growth in the economy's potential capacity, prospects for a sustained, significant rise in inflation are essentially nil.

The argument in favor of viewing Fed actions as clearly inflationary is rooted in a far too-simple view of the inflation process, often summarized in the words of Milton Friedman: inflation is always and everywhere a monetary phenomenon. From here, the rise in "base money" spurred by Fed actions during the Great Recession was viewed as the obvious monetary phenomenon that would spark inflation. Yet, as Willem Buitier has pointed out, inflation is essentially the price of money. Saying, then, that inflation is always and everywhere a monetary phenomenon is essentially as deep or illuminating as saying that "the price of bananas is always and everywhere a banana phenomenon".⁸

What's missing in the most simple monetarist views of potential inflation during the past ten years was recognition of the ferocious downward pressure on prices stemming from the enormous and prolonged gap between aggregate demand and productive capacity. This output gap trumped anything else in keeping inflation (of both wages and prices) tame.

Occasionally the claim is made that it was only the Fed's decision to begin paying interest on excess reserves that kept hypothesized inflation from emerging. The argument seems to be that these interest payments kept money bottled-up that otherwise would have flowed rapidly out of Fed reserves and into demand for goods and services. The Fed's interest payments on excess reserves were less than 50 basis points as recently as November 2016. It seems completely implausible that interest payments this low were all that stood in the way of significantly higher inflation.

Should the Fed buy assets besides Treasuries?

As noted above, the Fed's purchases of mortgage-backed securities (MBS), particularly during the first round of LSAPs, correlated strongly with a normalization of the MBS market. Restoring the health of mortgage financing was a key ingredient to providing monetary policy traction in aiding recovery. The

⁷ See <http://www.nytimes.com/2009/05/04/opinion/04meltzer.html> or <https://www.wsj.com/articles/SB10001424052702303939404579527750249153032> for examples of predicting inflation.

⁸ For the full context of his comments, see Buitier (2006): <http://willembuitier.com/globinf.pdf>

same lesson should hold in the future if either MBS or other particular asset markets seem to be impaired. Claims that the Fed should never purchase anything but Treasuries because to do so means they are engaging in something that has distributional consequences and hence by definition not monetary policy (critics sometimes call non-Treasury purchases “credit allocation policy”) are specious. Even the most conventional monetary policy is not distributionally neutral - neither is any other macroeconomic stabilization policy. Limiting the Fed’s ability to meet its dual mandate by making arbitrary distinctions between what is and what is not monetary policy serves no useful purpose, and makes little economic sense.

Indeed, the more sensible move is for policymakers to give the Fed more, not fewer, tools to meet its dual mandate. This would help in both effectiveness and public understanding of Fed actions. For example, Fed actions during the early stages of the financial crisis are often interpreted (incorrectly) as proving that the Fed only used its powers to help banks and financial institutions. A corollary claim is that the Fed should create money to boost the purchasing power of households or state and local governments directly. These are potentially good ideas in theory, but the Fed today lacks either the capability or the legal authority to do this.⁹ Providing new institutions and mandates to allow the Fed to make more direct interventions to lift the purchasing power of households and state and local governments directly should be considered seriously in coming years. But the Fed today cannot be criticized for not having done what it could not do in past years.

One way to insure broad political understanding of the Fed’s role in trying to spur recovery, however, could be done with small changes to the Fed’s legal authority. For example, the Fed could be given the authority to hold longer-duration state and local bonds that it currently can. As we noted previously, the Fed’s actions during the crisis were in part an attempt to induce state and local governments to borrow and spend more to help counteract the downturn in aggregate demand. In a sense, the Fed policy worked: interest rates were very low for very long, so optimizing state and local governments should indeed have financed long-lived investment projects during this time. Buying state and local bonds directly would not likely have been a game-changer in economic terms when it came to inducing state and local governments to borrow and spend more; the interest rate effects of buying these bonds directly rather than driving their yields down indirectly by buying up close assets would have been small. And yet the public would likely have understood direct purchases of state and local bonds by the Fed much more clearly as a powerful economic policymaking institution endeavoring to help Main Street directly rather than running monetary expansion through the financial sector.

Did the Fed’s low interest rate policy induce fiscal policymakers to act irresponsibly?

The claim is sometimes made that the Fed’s efforts to keep interest rates low induced irresponsible fiscal behavior by governments by making the cost of taking on debt low. This claim is false - as noted before in **Figure 1**, government spending growth has been historically slow since the Fed began LSAPs in March 2009. Further, the fiscally responsible thing to do during this period would have been taking on

⁹ For ideas on how to do this, see Blyth and Loneragan (2014): <https://www.foreignaffairs.com/articles/united-states/2014-08-11/print-less-transfer-more>

more debt to finance job-creating investments. In a sense, the Fed did indeed try to induce more government spending with low-interest rates, and this was exactly the appropriate macroeconomic policy stance. The shame is that their inducement was not taken up by governments.

Did the Fed's expansionary monetary policy stance hurt small savers?

In general, no. Almost by definition, someone who is poor cannot be hurt much by low interest rates. If someone has \$10,000 in savings, and gets near zero interest instead of the 2–3 percent they may have received in a more normal time, the loss comes to \$200–\$300 a year.

That's not trivial, but if the cost of low rates is that relatively few people lose \$200–\$300 a year in interest payments, while the benefits of low rates are that millions more low- and moderate-income people get jobs and tens of millions more get pay raises, then maintaining low rates would still be very good policy.

People with more savings (e.g., \$50,000 or \$100,000) would have more to lose, but it is difficult to call these people "poor." Also, the overwhelming majority of people with more than \$50,000 or \$100,000 in money market funds or other short-term accounts also has money in the stock market and/or hold long-term bonds. The prices of these assets have soared in recent years, making their holders much wealthier. Given this, we shouldn't be too worried if people holding them didn't make much on their savings accounts.

Finally, low interest rates keep inflation rates from falling even lower than they would otherwise, which is a boon to net borrowers. Unexpected declines in inflation boost the real (inflation-adjusted) burden of debt, leading to a redistribution from borrowers to lenders. By keeping inflation from falling even further, the Fed's loose monetary policy clearly helps net borrowers.

Did the Fed's expansionary monetary policy cause the rise in income inequality?

Highly unlikely. It is difficult to see any significant role for quantitative easing (QE) in increasing income inequality. Inequality was rising for most of the period between 1980 and 2007. And inequality increased sharply immediately following the Great Recession, as profits rose at the expense of wages due to the weak labor market. All of this massive upward redistribution of income preceded any quantitative easing by the Fed. Quantitative easing undoubtedly had some impact in raising stock prices, but stock prices would have almost certainly bounced back from their recession lows whether or not we had QE. Further, any additional job growth that resulted from QE is far more of a benefit to low- and middle-income people than any QE-related boost to stock prices is to the wealthy.¹⁰

Do banks and Wall Street benefit from LSAPs and the Fed's low interest rate policy

No they do not. Banks benefit from paying lower interest rates to their lenders, but they also are getting less money in interest from their borrowers. In fact, margins between the interest rates at which they

¹⁰ For a detailed look at the potential effect of the Fed's actions on inequality, see Bivens (2015): https://www.brookings.edu/wp-content/uploads/2016/06/Josh_Bivens_Inequality_FINAL.pdf

lend and borrow tend to fall during long periods of low interest rates. This has recently been the case with 30-year mortgage rates, which fell below 4.0 percent for the first time in more than 50 years.

The banks' biggest concern is that more job growth will lead to upward pressure on wages and prices. They fear that the resulting inflation would erode the value of loans, helping borrowers but hurting lenders. For this reason, banks have tended to favor higher interest rates and excessive vigilance against any uptick in inflation.

Finally, it's worth noting that quantitative easing was *explicitly* aimed at reducing the spread between short- and long-term interest rates, directly eating into banks' profits.

Could strengthening the Fed's full-employment mandate impinge on the Fed's independence?

Not in historical context. The Fed was created by Congress and gets its guidance from Congress. Under the law, the Fed is supposed to pursue a policy that promotes maximum employment and price stability. Congress decided that these goals should be the basis for policy when it enacted the Humphrey-Hawkins Full Employment Act of 1978. The concern is that the Fed has placed more emphasis on the price stability portion of its mandate than Congress had intended when it passed the law. The purpose of the Full Employment Federal Reserve Act is to emphasize the need for the Fed to give more weight to the full employment part of its mandate. Passing this law would be no more of an interference with the Fed's independence than passing the 1978 law.

Don't low interest rates fuel speculation?

Not necessarily. Low interest rates are more conducive to speculation than high interest rates, but there is no direct relationship between low interest rates and asset bubbles. The U.S. had very low interest rates in the '40s, '50s, and into the '60s without experiencing any major asset bubbles. The 1990s stock bubble grew in a period of normal interest rates. The housing bubble of the last decade did not stop growing even as the federal funds rate crossed 4.0 percent in 2005.

While there are some markets that may be seeing bubbles, for example the housing market in San Francisco and the market for some tech stocks, it is not clear that low interest rates are a major factor. Furthermore, denying millions of people jobs and tens of millions of workers pay raises by deliberately slowing the economy with high interest rates would be a very high price to pay to bring down the price of a few overvalued social media companies.

It's important to note that the Fed has other tools that it can aim at incipient bubbles or excessive leverage. The Fed can raise margin requirements for stock purchases if the excesses are in equities, it can raise loan-to-value ratios for home mortgages if the excesses are in residential housing markets, and it can simply highlight excesses in various markets in its public comments. The Fed has other tools to target bubbles. Slowing down the entire economy by raising interest rates is not the solution.¹¹

¹¹ For a more fleshed-out argument about why the Fed should reach for tools besides interest rate increases to deflate potential asset market bubbles, see Baker and Bivens (2016): <http://www.epi.org/publication/the-wrong-tool-for-the-right-job-the-fed-shouldnt-raise-interest-rates-to-manage-asset-bubbles/>

Conclusion

The Federal Reserve deserves great credit for the policy actions they have taken over the past decade. They acted earlier, more aggressively, and with a more sustained focus than other policymakers - particularly fiscal policymakers. Without their action the recession would have been longer and the recovery slower. The primary danger going forward is that they will decide to make monetary policy notably less expansionary even as no evidence of inflationary pressures building up in the economy has emerged. The Fed's job should be to aggressively plumb the limits of maximum employment, and they should begin shifting to a less-expansionary monetary policy stance only when actual evidence of mounting inflationary pressures emerges. In short, the sound monetary policy stance for the past decade has been to target faster growth in aggregate demand and insure idle economic resources are put to use. This should be their target today as well. The U.S. economy has improved markedly since the trough of the Great Recession, and is not that far from genuine full employment, but the Fed should not shift to a more contractionary policy stance until we've achieved durable full employment.

The Fed Needs a Credible Commitment to Price Stability

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

Marvin Goodfriend¹
Friends of Allan Meltzer Professor of Economics
Tepper School of Business
Carnegie Mellon University

March 16, 2017

¹ Former Senior Vice President and Policy Advisor, Federal Reserve Bank of Richmond, 1993-2005.

Introduction

I am pleased to be invited to testify today on "Sound Monetary Policy" before the Subcommittee on Monetary Policy and Trade of the House Financial Services Committee. In the decades since the Fed under Paul Volcker ended the Great Inflation in the early 1980s, central banks around the world have come to understand that sound monetary policy requires a credible commitment to price stability, which in practice has come to mean committing to an inflation target. In January 2012, the Federal Reserve finally followed the global trend when the Federal Open Market Committee [FOMC] adopted a 2 percent inflation target in its "Statement of Longer-Run Goals and Monetary Policy Strategy."

The "Statement" as currently written is a good first start; but the statement stops short of committing the Fed fully to an inflation target, and in some ways it actually undermines the target's credibility. At the end of my testimony I recommend improvements in the "Statement" to lock down the public's belief and confidence in the inflation target. Before doing so, however, I discuss three specific ways in which the Fed's weak commitment to its inflation target creates policy risks for the economy and I explain how the Fed and the economy would benefit from a greater commitment to price stability as embodied in the inflation target.

By failing to secure the credibility of its inflation target, the Fed:

- increases risk inherent in using the federal funds rate to influence longer-term interest rates, and thereby degrades the capacity of monetary policy to stabilize employment and inflation over the business cycle.

- invites a re-emergence of cyclical "inflation-fighting" risk premia in longer-term interest rates with potentially adverse effects on employment and inflation.

- forces households to guard against inflation risk, and thereby greatly increases household financial insecurity over a working lifetime and in retirement.

Weak Inflation Target Credibility Worsens Inherent Interest Rate Policy Risk

The Fed targets the federal funds rate in order to stabilize inflation and employment as best it can. Output and inflation, however, do not respond directly to the overnight federal funds rate, but only to longer-term rates. Hence, the Fed targets the federal funds rate with the aim of influencing longer-term interest rates. It exercises its influence as follows. The federal funds rate controls the level of other short-term interest rates in the economy via a variety of banking and money market arbitrage opportunities. The market then determines longer-term interest rates as the average expected level of short-term interest rates over the relevant horizon (abstracting from a time varying term premium and default risk). For instance, investors with a 10-year time horizon have the option of rolling over 3-month Treasury bills for 10 years or buying a fixed interest 10-year Treasury bond. Hence, the market will determine interest on the 10-year bond so that it returns the expected average 3-month T bill rate over the 10-year horizon plus a term spread.

The Fed manages its federal funds rate target to maximize the influence of target changes on longer-term interest rates, and thereby on the economy. To do so, the Fed waits before changing the federal funds rate target until it is relatively sure that it will not have to reverse field any time soon, and that further changes in the same direction are likely. Markets, in turn, understand that the Fed's interest rate target changes are "highly persistent and seldom quickly reversed." In this way, a change in the overnight federal funds rate target carries expected future short-term rates and longer-term rates with it as well. The Fed's inclination to delay federal funds rate target changes explains why monetary policy has been "behind the curve" more often than not in the past, whether acting against rising inflation or looming recession.

Operational risk inherent in interest rate policy is exacerbated when the inflation target lacks credibility, that is, when the public is unsure of the Fed's commitment to the inflation target. In that case, the Fed may be forced to move more preemptively than otherwise against rising inflation to

assure markets of its commitment to the target. On the other hand, the Fed may be afraid of moving preemptively against recession for fear of having to reverse field against inflation. In other words, lack of a fully credible inflation target raises the risk of moving preemptively and prematurely, undermining the mutual understanding with markets that enables monetary policy to maximize its influence over longer term interest rates and the economy at large. In short, a fully credible inflation target helps mitigate longstanding operational risk inherent in interest rate policy and thereby improves the potential for monetary policy to stabilize both employment and inflation.

Weak Inflation Target Credibility Invites a Re-emergence of Cyclical "Inflation-Fighting" Risk Premia in Longer-term Interest Rates

As discussed above, monetary policy is usually understood to exert its influence over longer-term interest rates via average expected future short-term interest rates over the relevant horizon. By anchoring the short end of the yield curve, the federal funds rate pulls longer-term interest rates up and down to stabilize employment and inflation over the business cycle. Monetary policy also influences longer-term interest rates indirectly via inflation expectations and the price of cyclical risk transfer embedded in bond rates.

During the Great Inflation period from 1965 to 1985 interest rates rose with rising inflation as investors insisted on embedding ever-higher inflation expectations in interest rates as compensation for the rising rate of depreciation of the purchasing power of money.

The Great Inflation period was also marked by four recessions deliberately precipitated by the Fed to contain rising inflation. These "inflation-fighting" recessions were initiated by a tightening of monetary policy that raised interest rates aggressively to collapse aggregate demand and employment until inflation was deemed to be sufficiently contained. Longer-term bond prices, which move inversely to interest rates, would fall sharply during these "inflation-fighting" recessions. Since bond prices would fall sharply just when aggregate employment and income were

depressed, investors required a premium in bond rates on average as compensation for the cyclical "inflation-fighting" risk in bond prices.

By some estimates the cyclical inflation-fighting risk premium in bond rates ranged as high as 4 percentage points in the early 1980s before the Fed under the leadership of Paul Volcker ended the Great Inflation. Since then, the public has become increasingly confident of the Fed's commitment to low inflation. For now, inflation expectations conform to the Fed's 2 percent target, and the risk premium for holding bonds has declined to around 1 percentage point or so, roughly where it was before the onset of the Great Inflation period.

The problem for monetary policy today is that the credibility of the Fed's 2 percent inflation target is about to be tested for the first time. The slow recovery from the Great Recession of 2007-09 has nearly returned inflation to the Fed's 2% target and the US economy to its sustainable level of employment. That raises the possibility of a re-emergence of cyclical "inflation-fighting" concerns, which have the potential to elevate risk premia in longer-term interest rates suddenly and sharply, effectively tightening monetary policy, depressing output and employment, and presenting monetary policy with an uncomfortable short-run tradeoff between stabilizing employment and inflation.

The Fed's history of falling behind the curve on inflation is cause for concern. The last "inflation-fighting" scare in 1993-94 saw a 2 percentage point jump in the long bond rate even without a prior increase in inflation expectations, apparently reflecting a jump in bond investors' concern about a return to an era of cyclical "inflation-fighting" risk. That didn't happen. The jump in bond rates quickly reversed, and inflation remained low, in part, because of a timely rise in productivity growth in the United States in the second half of the 1990s. Whatever happens now, the Fed and the economy would be better off if the credibility of its inflation target were secured more firmly.

Weak Inflation Target Credibility Increases Household Financial Insecurity

If in years past the Fed had been fully committed to price stability as embodied in an inflation target, retirees would be in a much better position today. Years ago, households would have been advised and willing to hold a significant share of their lifetime savings in long-term nominal bonds paying a safe nominal rate of interest. Households could have counted upon the fact that the nominal return would have been locked in purchasing power terms. The promised nominal interest rate, having incorporated a 2% inflation premium to offset the steadily depreciating purchasing power of money at the Fed's inflation target, would have delivered a safe long-term real return upwards of 3% per annum.

Instead, the Great Inflation called the Fed's commitment to price stability into question as it decimated the real return on long term nominal bonds. Responsible households have since steered away from saving in long-term nominal bonds to protect themselves from inflation risk. To avoid inflation risk, households have shortened the maturity of their interest-earning savings and reached for more return in equity products, forced to accept the risk of ultra-low short-term interest rates and volatile equity prices in the bargain.

Decades after the Fed under Paul Volcker ended the Great Inflation and five years after having adopted the 2% inflation target in 2012, the public still regards inflation risk in long bonds as prohibitive, seeing the Fed as only weakly committed to its longer-run inflation target. By not moving definitively to foreclose its inflationary discretion, the Fed greatly increases household financial insecurity over a working lifetime and in retirement.

Securing the Fed's Inflation Targeting Credibility via the "Statement of Longer-Run Goals and Monetary Policy Strategy"

The Fed took a major step in securing the credibility of its commitment to low inflation by adopting an explicit inflation target for the first time in the January 2012 "Statement of Longer-Run Goals and Monetary Policy Strategy," announcing a 2 percent inflation objective for PCE inflation

over the longer run as "most consistent with its statutory mandate." The FOMC promoted its 2 percent inflation goal by asserting another principle in its "Statement," saying that an explicit inflation goal "helps keep longer-term inflation expectations firmly anchored," which would "enhance the Committee's ability to promote maximum employment in the face of significant economic disturbances." Importantly, the statement also acknowledged that employment in the long run is largely determined by non-monetary factors, and that it would not be appropriate for the Fed to specify a fixed goal for employment. In setting monetary policy, the FOMC would seek to keep inflation close to its 2 percent target and mitigate fluctuations of employment around a level assessed to be sustainable.

It is commendable that the FOMC accepts the abovementioned principles and the 2 percent inflation target in its "Statement." But the "Statement" should be improved to secure the credibility of the Fed's inflation target.

First of all, the "Statement" should be modified to make clear that its roots lie in the mistakes and successes of past Fed policy. The full power of the FOMC "Statement"--the case for really committing to the principles surrounding the inflation target--can only be appreciated by understanding that its reasoning is rooted in historical Fed experience. The "Statement" should be linked to the historical narratives that inform the principles underlying the inflation target to help convince the public of the Fed's commitment to the target, and thereby help lock down the public's belief and confidence in the target.

Second, the statement ends saying that the Committee intends to reaffirm these principles and to make adjustments as appropriate at its annual organizational meeting each January. The open-ended invitation to "reaffirm these principles" is counterproductive in a document that purports to be about longer-run goals and monetary policy strategy based on a century of lessons

from Fed history. At a minimum the annual renewal should be circumscribed tightly so as not to undermine the credibility of the Fed's "Statement" in general and its inflation target in particular.

Finally, the FOMC should declare its intention in the "Statement" to invite the legislature to accept the inflation target to further enhance its credibility. And the FOMC should declare its intention to strengthen the legislative oversight process to help enforce the systematic pursuit of monetary policy, that is, the period-by-period mitigation of fluctuations of inflation around its 2 percent target while keeping employment close to its sustainable level over time. To do so, the Fed should include in the "Statement" its intention to improve legislative oversight by presenting the FOMC's independently chosen monetary policy decisions against a familiar Taylor-type reference rule for monetary policy.

Sound Monetary Policy

John B. Taylor*

Testimony before the Subcommittee on Monetary Policy and Trade
 Committee on Financial Services
 U.S. House of Representatives
 March 16, 2017

Chair Barr, Ranking Member Moore, and members of the Subcommittee on Monetary Policy and Trade, thank you for inviting me to testify at this hearing on Sound Monetary Policy and, more specifically, on how the Federal Reserve departed from conventional monetary policy, how the Federal Reserve can facilitate an orderly return to a conventional balance sheet, and how monetary policies can reliably support economic growth going forward.

How the Federal Reserve departed from conventional monetary policy

The Federal Reserve's departure from conventional monetary policy began during the "too low for too long" period of 2003-2005 when the Fed held the federal funds rate well below what was indicated by the experience of the previous two decades of good economic performance. I have been critical of the Fed for the "too low for too long" period from 2003-2005, and that contrasts to my positive support for the Fed during the 1980s and 1990s. We have had big swings in monetary policy over the past 50 years. Since the "too low for too long period," policy has been much different, and that is a cause for concern.

During the 2003-2005 period the Fed also started giving forward guidance that its policy rate would remain very low for a "considerable period" and that it would be raised at only a "measured pace." These actions were a departure from the policy strategy that had worked well in the 1980s and 1990s,¹ and many have explored the reasons why the deviation occurred.²

But regardless of the reasons, this original bout of unconventional policy was not helpful. The excessively low rates along with promises that they would remain low brought on a risk-taking search for yield and excesses in the housing market. Along with a breakdown in the regulatory process, these policies were a key factor in the financial crisis and the Great Recession. And in a typical go-stop fashion the unnecessarily low rates in 2003-2005 brought unnecessarily high rates in 2007 and early 2008.

During the panic in the fall of 2008, the Fed did a good job in its lender of last resort capacity by providing liquidity to the financial markets and by cutting its policy interest rate.

* Mary and Robert Raymond Professor of Economics at Stanford University, George P. Shultz Senior Fellow in Economics at Stanford's Hoover Institution, and former Under Secretary of Treasury for International Affairs, 2001-2005. This testimony is based on my testimonies before this committee on May 17, 2016 and December 7, 2016, updated to reflect developments since then in the economy and in policy.

But then Fed policy moved sharply in an unconventional direction. The Fed purchased large amounts of U.S Treasury and mortgage backed securities in 2009, financed by equally large increases in reserve balances, which enlarged the Fed's balance sheet. And long after the recession ended, these large-scale asset purchases continued and the Fed held its policy interest rate near zero when indicators used in the 1980s and 1990s suggested that higher rates were in order. The Fed also utilized forward guidance, but changed the methodology several times, which increased uncertainty.

My research and that of others over the years shows that these post-panic policies were not effective, and may have been counterproductive.³ Economic growth was consistently below the Fed's forecasts with the policies, and was much weaker than in earlier U.S. recoveries from deep recessions. Job growth has been insufficient to raise the percentage of the population that is working above pre-recession levels. There is a growing consensus that the extra low interest rates and unconventional monetary policy have reached diminishing or negative returns. Many have argued that these policies widen the income distribution, adversely affect savers, and increase the volatility of the dollar exchange rate. Experienced market participants have expressed concerns about bubbles, imbalances, and distortions caused by the policies. The unconventional policies have also raised public policy concerns about the Fed being transformed into a multipurpose institution, intervening in particular sectors and allocating credit, areas where Congress may have a role, but not a limited-purpose independent agency of government.

In many ways this whole period can be characterized as a deviation from the more rule-like, systematic, predictable, strategic and limited monetary policy that worked well in the 1980s and 1990s. Empirical research has shown that such deviations worsen performance in the U.S. and in other countries.⁴

How the Federal Reserve can facilitate an orderly return to a conventional balance sheet

The policy implication of this experience is clear. Monetary policy should be normalized. The Fed should transition to a sound rules-based monetary policy like the one that worked in the past while recognizing that the economy and markets have evolved.

I have seen a more determined effort in the past few months at the Federal Reserve to normalize policy and that is a good thing. But normalization, or transition, is difficult in practice, and at times the pace has been slow and uncertain. With the policy interest rate still below appropriate levels, a key step is to raise the policy rate gradually and strategically.

As part of the normalization process, the size of the Fed's balance sheet should be gradually reduced. As long as the normalization plan is strategic, it need not have a negative effect. Studies that have detected impacts of bond purchases on the economy have focused on announcement effects, and thus have not examined the later impacts where fundamentals come into play. I learned a lot by being in charge of currency market policy in the United States when I was Under Secretary of the Treasury for International Affairs. Whenever the Japanese intervened in the currency market by buying or selling they sent me an email. So I saw the real-

time impacts, but soon they were reversed, though the reversal took time. There is an analogy with the Taper Tantrum, when Ben Bernanke's words at a hearing of the Joint Economic Committee in May 2013 conveying the idea that Quantitative Easing would end in "the next few meetings" caused a major disruption. Yet when the strategy to reduce purchases gradually was stated more clearly, there was virtually no effect of the tapering. I think the same would be true of balance sheet reduction.

I do not see balance sheet reduction a substitute for funds rate hikes, though, to be sure, the effects on interest rates are uncertain. Some of the estimated effects of quantitative easing have been attributed to a signaling of longer periods of lower federal funds rates. That need not be the case with balance sheet reduction, and, moreover, a clear adherence to a policy strategy would provide good guidance as to future funds rate changes.

For the reasons I gave when I testified before this committee in May 2016,⁵ reserve balances should be reduced to the size where the interest rate is market determined rather than administered by the Fed's setting the rate on excess reserves. In other words, my target level for the size of the balance sheet would be a level of reserves where the interest rate is determined by the supply and demand for reserves. Reserves are way above that level now so the federal funds rate is effectively determined by the interest on excess reserves.

I know there is some disagreement about the eventual size of the balance sheet. Some feel that more reserves are needed for liquidity purposes. For example, in testimony before this committee in May 2016, Todd Keister argued that with a smaller quantity of reserves the payments system would not adequately function without very large intraday credit to banks (daylight overdrafts).⁶ However, with some workable reforms, such as giving a specific limit on the amount of overdrafts as a percentage of collateral, the system could run smoothly with a smaller amount of reserves. John Cochrane⁷ suggested that it would be beneficial for a government entity to provide liquidity in the form of deposits for anyone—not just banks—but that service could also be provided as part of the Treasury debt management. Others want to have a permanently large balance sheet so that quantitative easing would effectively become a permanent tool of policy; I do not think that is a good idea.

The composition of the Fed's portfolio should focus on Treasury securities so that the Fed is not involved in private credit allocation. Given that the supply of reserves is now many times greater than demand, the Fed has no alternative but to pay interest on reserves during the normalization period. Careful monitoring and communicating with markets will be required to prevent instability.⁸

How monetary policies can reliably support economic growth going forward.

Sound rules-based monetary policy and good economic performance go hand in hand. Thus monetary reform is an important part of overall economic reform along with tax reform, regulatory reform (including financial reform) and budget reform. They reinforce each other. All are crucial to a prosperous economy. In my view, the opportunity for monetary reform is better than it has been in years. The goals of insulating the Fed from political pressures, creating a more

predictable-transparent-accountable policy, and better achieving economic stability and price stability appear to be widely held.

It is very important to have a basic understanding of the monetary policy strategy. The FOMC should be required to adopt and explain its monetary strategy, and then compare that strategy with monetary policy rules that are out there in a transparent way. I have long argued that in practice a strategy is not mechanical nor a formula. In a recent speech,⁹ Federal Reserve Chair Janet Yellen compared current monetary policy with the original Taylor rule, with a Taylor rule which is more reactive to the state of the economy, and with a Taylor rule with inertia. Vice-Chair Stanley Fischer gave two recent speeches¹⁰ which take a similar approach, referring to decisions made in 2011 and more generally, explaining how the analysis feeds-in and is considered by the FOMC to arrive at a policy decision. These speeches show progress in my view toward the kind of policy transparency that is contained in recent legislative proposals including the Fed Oversight, Reform and Modernization Act (FORM).

Despite claims to the contrary, that legislation does not say that the Fed has to follow a mechanical rule, or any particular rule at all. The Fed's "Statement on Longer-Run Goals and Monetary Policy Strategy" says a lot about goals, like an "inflation at the rate of 2 percent" or the "longer-run normal rate of unemployment," but it says little about a strategy for the instruments of policy.

This experience points to the need of some kind of monetary reform such as the FORM Act which would require the Fed to "describe the strategy or rule of the Federal Open Market Committee for the systematic quantitative adjustment" of its policy instruments. The Fed would choose its strategy, and could change it or deviate from it if circumstances called for a change, in which case the Fed would have to explain why. Some worry that, with this reform, the Fed would lose independence, but having and clearly articulating a strategy would improve independence. It is important to emphasize the word "strategy" as stated in the legislation. Though economists frequently use the word "rule," that term may convey the false idea that a rules-based monetary strategy must be purely mechanical.

There is precedent for this type of Congressional oversight. Legislation that appeared in the Federal Reserve Act from 1977 to 2000 required reporting the ranges of the monetary aggregates. The requirement was removed in 2000, creating a void which would be filled by the new legislation.

Empirical research shows that if such legislation had been in place in recent years, the Fed would have had to explain the deviations, which would have likely reduced their size.¹¹ Research also shows that economic performance would improve if the Fed was accountable about the rule for achieving goals as well as about the goals.¹² Such legislation would provide a transparent connection between technical policy analysis at the Fed and actual policy decisions, a connection which is essential to sound monetary policy. For these reasons and others, a number of Nobel Prize winners, former Fed officials, and monetary experts have supported such legislation.¹³

Such a strategic framework would also enable a substantive discussion of issues such as the impact of different estimates of the long-run equilibrium interest rate. Long ago I estimated that the long-run equilibrium federal funds rate was about 2% in real terms, and with an inflation target of 2% that would be 4% in nominal terms. Recently there has been a lot of research arguing that the equilibrium real rate has fallen to 1% or less, including research by Thomas Laubach and John Williams.¹⁴ Their work is based on the idea that the low policy rate has not stimulated the economy by much so that the equilibrium rate must have fallen. In work with Volker Wieland, I have written that there is a great deal of uncertainty about these estimates, and that the apparent low equilibrium rate may be due to poor regulatory and tax policy that has held the economy back.¹⁵

Monetary normalization and reform have important implications for the international monetary system. Unconventional monetary policies with near zero policy rates have spread internationally as the Bank of Japan, the European Central Bank, and other central banks adopted similar policies.¹⁶ Thus the international monetary system has deviated further from a sound rules-based monetary system. This has increased the volatility of the dollar and other exchange rates, which in turn has caused governments to impose capital controls and intervene in exchange markets, frequently in non-transparent ways that raise suspicions of currency manipulation.

A key foundation of a transparent rules-based international monetary system is a rules-based policy in each country. Therefore, normalization and reform by the Fed contributes to normalization elsewhere and ultimately to international monetary reform. In my view, normalization by the Fed would lead other central banks to move away from unconventional policies. Indeed, as the Federal Reserve has shown a more determined effort in the past few months to normalize policy, there has been increased understanding of a change at other central banks, and that is also a good thing.¹⁷ International monetary reform will in turn benefit the United States.

Thank you. I would be happy to answer your questions.

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⁶ Todd Keister, “Interest on Reserves,” Testimony before the Subcommittee on Monetary Policy and Trade, Committee on Financial Services, U.S. House of Representatives, May 17

⁷ John Cochrane, “Monetary Policy with Interest on Reserves,” *Journal of Economic Dynamics and Control*, Vol. 49, December 2014, pp. 74-108

⁸ Donald H. Dutkowsky and David D. VanHoose (2016), “Interest on Reserves, Regime Shifts, and Bank Behavior,” June

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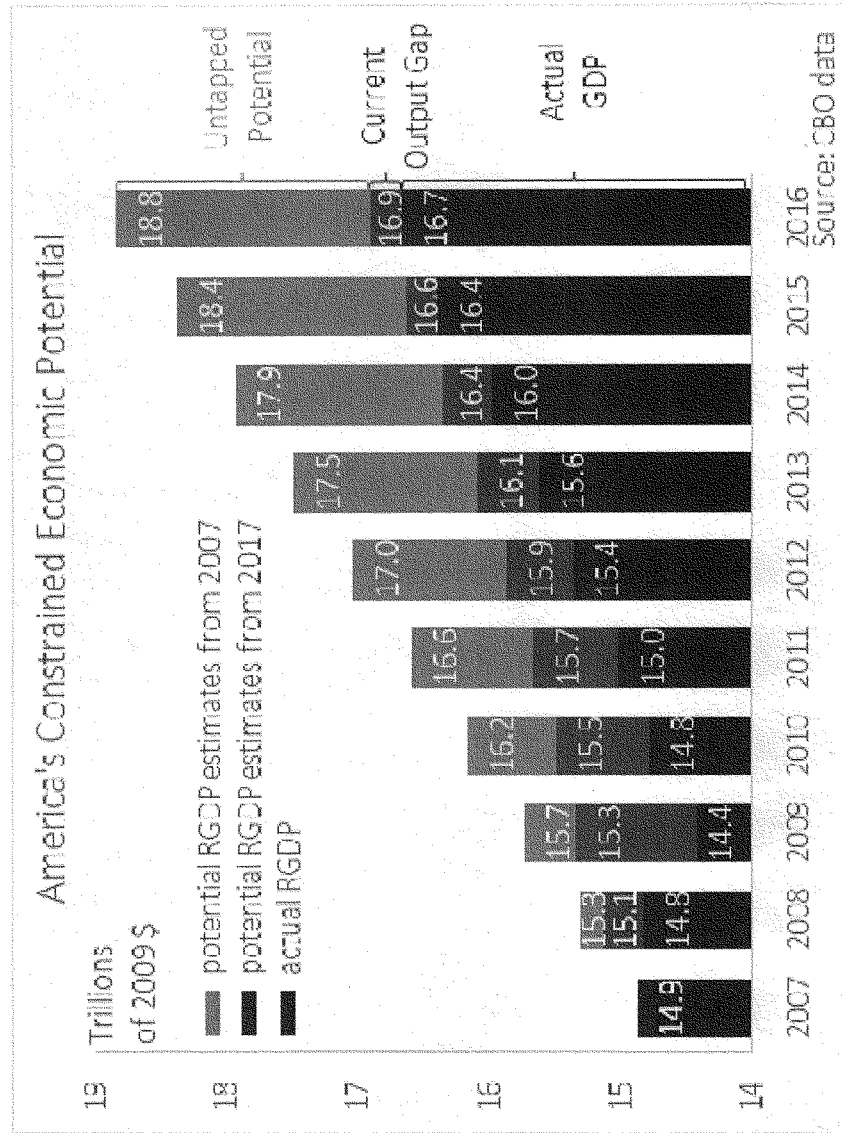
¹³ Lars Peter Hansen, Robert Lucas, Edward Prescott, George Shultz, Robert Heller, Jerry Jordan, Athanasios Orphanides, William Poole, Michael Bordo, Michael Boskin, Charles Calomiris, Varadarajan Chari, John Cochrane, John Cogan, Steven Davis, Marvin Goodfriend, Gregory Hess, Peter Ireland, Mickey Levy, Bennett McCallum, Allan Meltzer, Gerald O’Driscoll, Lee Ohanian, Scott Sumner, John Taylor (2016), “Statement on Policy Rules Legislation.”

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Federal Debt as % of GDP

