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THE SEMIANNUAL MONETARY POLICY REPORT TO THE CONGRESS

HEARING

BEFORE THE

COMMITTEE ON BANKING, HOUSING, AND URBAN AFFAIRS UNITED STATES SENATE

ONE HUNDRED FIFTEENTH CONGRESS

SECOND SESSION

ON

EXAMINING THE FEDERAL RESERVE'S SEMIANNUAL REPORT TO CONGRESS ON MONETARY POLICY AND THE STATE OF THE ECONOMY

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C O N T E N T S

THURSDAY, MARCH 1, 2018

WITNESS

Additional Material Supplied for the Record

THE SEMIANNUAL MONETARY POLICY REPORT TO THE CONGRESS

THURSDAY, MARCH 1, 2018

U.S. SENATE,
COMMITTEE ON BANKING, HOUSING, AND URBAN AFFAIRS,
Washington, DC.

The Committee met at 10:01 a.m. in room SD–538, Dirksen Senate Office Building, Hon. Mike Crapo, Chairman of the Committee, presiding.

OPENING STATEMENT OF CHAIRMAN MIKE CRAPO

Chairman CRAPO. The hearing will now come to order.

Welcome, Chairman Powell, for your first appearance before this Committee as Chairman of the Federal Reserve Board of Governors. Congratulations on your confirmation.

Today's hearing is an important opportunity to examine the current state of monetary and regulatory policy.

Over the past few years, the Humphrey-Hawkins hearing has often served as an opportunity for Members of this Committee to review the new regulations imposed in the wake of the financial crisis.

While I did not always agree with former Chairman Bernanke and former Chair Yellen, I appreciated their willingness to engage with the Committee and to discuss possible improvements to the regulatory regime.

These discussions were helpful in building common ground for our banking bill, Senate bill 2155, particularly for provisions like the threshold for enhanced standards under Section 165 of Dodd-Frank.

This bipartisan bill now has 13 Republican and 13 Democratic and Independent co-sponsors. The bill was the result of a thoughtful, deliberative process over several years that included hearings, briefings, meetings, and written submissions from hundreds of commentators and stakeholders.

The primary purpose of the bill is to make targeted changes to simplify and improve the regulatory regime for community banks, credit unions, mid-size banks, and regional banks to promote economic growth.

Economic growth has been a key priority for this Committee and this Administration and for this Congress.

The U.S. economy has failed to grow by more than 3 percent annually for more than a decade, by far the longest stretch since GDP has been officially calculated. But now there are widespread expectations that growth is finally picking up.

According to the January FOMC meeting minutes, the Federal Reserve increased its expectations for real GDP growth going forward after fourth quarter growth exceeded expectations.

The Fed cited the recently enacted tax reform legislation as among the reasons economic growth is expected to rise.

In addition to tax reform, President Trump's recently released Budget and Economic Report both emphasize that regulatory reform is a key component of rising productivity, wages, and economic growth.

By right-sizing regulation, the Committee's economic growth bill will improve access to capital for consumers and small businesses that help drive our economy.

Now that many are predicting a pickup in growth, a number of commentators have expressed sudden concerns about the economy overheating.

While the Federal Reserve should remain vigilant in monitoring inflation risks, we must also continue to pursue common-sense, pro-growth policies that will lead to increased innovation, productivity, and wages.

With respect to monetary policy, I am encouraged that the Federal Reserve is continuing on its gradual path to monetary policy normalization.

The Fed has begun to reduce its balance sheet by steadily decreasing the amount of principal it reinvests as assets as its portfolio matures.

I look forward to hearing more about the Fed's monetary policy outlook as part of Chairman Powell's testimony today.

I also look forward to hearing about the Federal Reserve's ongoing efforts to review, improve, and tailor existing regulations.

I know that you are working with Vice Chairman for Supervision Randy Quarles on all those issues, Mr. Chairman.

Vice Chairman Quarles has done an excellent job so far, and I urge Congress to confirm him for his full term on the Board as soon as possible.

With that, Senator Brown.

STATEMENT OF SENATOR SHERROD BROWN

Senator BROWN. Thank you, Mr. Chairman. And welcome to your first one of these, Mr. Chair. Nice to see you.

Welcome back to the Committee. You are leading the Federal Reserve at a crucial time in our Nation's history as the Fed normalizes interest rates and shrinks the balance sheet.

The country is in its ninth year of economic recovery, though, as we know, 2017 marked the worst year for job creation since 2010. And the recovery has not reached everyone. Wage growth has been slow and labor force participation has barely improved since 2014. Nine years of job growth have still not done much to narrow income inequality or address employment disparities.

Nationwide, the unemployment rate for African American workers is double that for whites workers—equal to the gap at the start of the civil rights movement. Looking more broadly, labor force participation is down for all minorities.

Statistics show that large pockets of people are waiting to share in the benefits from the recovery. Instead of addressing their problems, Republicans are working hard to make sure that Wall Street banks rake in even bigger profits.

Despite the fact that we are 9 years removed from the recession, the Administration has embarked on a substantial fiscal stimulus, permanently slashing the corporate tax rate, and providing the largest benefits to the wealthiest Americans. Over time, 81 percent of the benefits of that tax cut goes to the wealthiest 1 percent.

Of course, Wall Street, which is making record profits, will do well.

Instead of fighting for workers and making sure labor market opportunities are shared among those who have been struggling, Republicans push for tax cuts for corporations and the wealthy.

Those tax cuts are not free. As you know, Mr. Chairman, they will add over $1 trillion dollars to the deficit. The once and future deficit hawks on the other side of the aisle were more like marshmallow Peeps when confronted with tax cuts for the wealthy.

The ink was barely dry when we began to hear calls for spending cuts that will hurt families across the country. Eighty-one percent of the benefits going to the wealthiest 1 percent, then, alas, there is a budget deficit we have to address. Let us look at "entitlement reform" that everyone should understand means cuts to Medicare, Medicaid, and Social Security. It is the same playbook we have seen for years.

The claim was that it would all be worth it because workers would benefit.

I am happy for any Ohioan who gets a bonus or a raise, but we have seen how banks and corporations have responded to the tax cuts, and the numbers are staggering. In January, Wells Fargo—they have been in front of this Committee a number of times, and we have spent lots of time talking about their illegal behavior. Wells Fargo in January announced a $22 billion stock buyback—288 times what it will spend on pay raises for workers. A lot of discussion, a lot of news coverage on the benefits to workers on the bonuses or the pay raises, but 288 times that number went to stock buybacks for executives.

Companies this year will start disclosing CEO-to-worker pay ratios, as required under the Wall Street Reform Act. Honeywell announced an $8 billion stock buyback in December and just disclosed that its CEO is getting a 61-percent pay raise and makes 333 times the average worker's pay.

It is pretty simple: For each pay raise or bonus for workers, companies are spending 100, 150, 200 times as much on stock buybacks and executive compensation.

And it gets worse.

While the biggest banks lavish pay raises and stock giveaways on their executives, they continue to violate the law and abuse their customers. The Federal Reserve recently imposed an unprecedented—if belated—penalty on Wells Fargo following several scandals, including the opening of millions of fake accounts and improperly charging borrowers—even after that scandal was disclosed, charging borrowers for auto insurance they did not need.

The Fed told Wells Fargo it cannot grow until it has demonstrated that it has improved board oversight and risk management. It sounds like the Fed has come to the conclusion many of us on this Committee reached a year and half ago: Wells Fargo, simply put, is "too big to manage." I will be closely watching to make sure the new team at the Fed does not lift these penalties, as the Consumer Bureau did, without the bank making real changes.

It is not just Wells Fargo. Last week, Citigroup announced it illegally overcharged 2 million credit card accounts for over 5 years; it will refund $335 million to consumers.

Though Wall Street cannot seem to go a month without a new scandal, the Senate is set to take up a bill that would roll back critical financial stability protections and limit watchdogs' ability to police the largest banks.

We can expect the banks to spend any savings from less oversight the way they spent their tax cuts: more dividends, share buybacks, and mergers.

Many of us in this body are concerned about this deregulation bill that I mentioned a moment ago, especially when it comes to foreign banks, those banks that are huge, but their assets in this country are under $250 billion. They are both troubled and troubling banks in their international operations, yet Secretary Mnuchin sat at that table and said he plans to deregulate some of these banks, like Deutsche Bank and Santander. And we know the fines that they have paid and the problems that they have caused internationally.

Chair Powell, Wall Street may be focused on whether there are three or four rate hikes this year. I think your focus needs to be on ensuring the Fed does not once again permit the buildup of risk in the market and hubris at the Fed. The Great Moderation turned out to be not so great. We forget that lesson at our peril.

The Fed needs to take the side of consumers, making sure the financial system stays strong and regulations are enforced.

I look forward to your testimony.

Chairman CRAPO. Thank you very much.

Chairman Powell, once again we appreciate you being here. We look forward to your opening statement, and you may proceed.

STATEMENT OF JEROME H. POWELL, CHAIRMAN, BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM

Mr. POWELL. Thank you very much, Chairman Crapo, Ranking Member Brown, Members of the Committee. I am pleased to present the Federal Reserve's semiannual Monetary Policy Report to Congress today.

On the occasion of my first appearance before this Committee as Chairman of the Federal Reserve, I want to express my appreciation for my predecessor, Janet Yellen, and her important contributions. During her term as Chair, the economy continued to strengthen, and Federal Reserve policymakers began to normalize both the level of interest rates and the size of the balance sheet. Together, Chair Yellen and I have worked to ensure a smooth leadership transition and provide for continuity in monetary policy.

I also want to express my appreciation for my colleagues on the Federal Open Market Committee. And, finally, I want to affirm my continued support for the objectives assigned to us by the Congress—maximum employment and price stability—and for transparency about the Federal Reserve's policies and programs. Transparency is the foundation of our accountability, and I am committed to clearly explaining what we are doing and why we are doing it. Today I will briefly discuss the current economic situation and outlook before turning to monetary policy.

The U.S. economy grew at a solid pace over the second half of 2017 and into this year. Monthly job gains averaged 179,000 from July through December, and payrolls rose an additional 200,000 in January. This pace of job growth was sufficient to push the unemployment rate down to 4.1 percent, about three-quarters of a percentage point lower than a year earlier and the lowest level since December of 2000. In addition, the labor force participation rate remained roughly unchanged, on net, as it has for the past several years, and that is a sign of job market strength, given that retiring baby boomers are putting downward pressure on the participation rate.

Strong job gains in recent years have led to widespread reductions in unemployment across the income spectrum and for all major demographic groups. For example, the unemployment rate for adults without a high school education has fallen from about 15 percent in 2009 to 5 ½ percent in January of this year, while the jobless rate for those with a college degree has moved down from 5 percent to 2 percent over the same period. In addition, unemployment rates for African Americans and Hispanics are now at or below rates seen before the recession, although they are still significantly above the rate for whites. Wages have continued to grow moderately, with a modest acceleration in some measures, although the extent of the pickup likely has been held back in part by the weak pace of productivity growth in recent years.

Turning from the labor market to production, inflation-adjusted GDP rose at an annual rate of 2.8 percent in the second half of 2017, nearly a full percentage point faster than its pace in the first half of the year. Economic growth in the second half was led by solid gains in consumer spending, supported by rising household incomes and wealth and upbeat sentiment. In addition, growth in business investment stepped up sharply last year, which should support higher productivity growth in time. The housing market has continued to improve slowly. Economic activity abroad has also been solid in recent quarters, and the associated strengthening in the demand for U.S. exports has provided considerable support to our manufacturing industry.

Against this backdrop of solid growth and a strong labor market, inflation has been low and stable. In fact, inflation has continued to run below the 2 percent rate that the FOMC judges to be most consistent over the longer run with our congressional mandate. Overall consumer prices, as measured by the price index for personal consumption expenditures, or "PCE," as we call it, increased 1.7 percent in the 12 months ending in December, about the same as 2016. The core PCE price index, which excludes the prices of energy and food items and is a better indicator of future inflation, rose 1.5 percent over the same period, somewhat less than in the previous year. And we continue to view that some of the shortfall in inflation last year was likely reflecting transitory influences that we do not expect will repeat. And consistent with this view, the monthly readings were a little bit higher at the end of the year than in earlier months.

After easing substantially in 2017, financial conditions in the United States have reversed a bit of that easing, and at this point we do not see these developments as weighing heavily on the outlook for economic activity, the labor markets, and inflation. Indeed, the economic outlook remains strong. The robust job market should continue to support growth in household incomes and consumer spending, solid economic growth among our trading partners should lead to further gains in U.S. exports, and upbeat business sentiment and strong sales will likely continue to boost business investment. Moreover, fiscal policy has become more stimulative. In this environment, we anticipate that inflation on a 12-month basis will move up this year and stabilize around the FOMC's 2 percent objective over the medium term. Wages should increase at a faster pace as well. The Committee views the near-term risks to the economic outlook as roughly balanced but will continue to monitor inflation developments closely.

I will turn now to monetary policy. The Congress has assigned us the goals of promoting maximum employment and stable prices. Over the second half of 2017, the FOMC continued to gradually reduce monetary policy accommodation. Specifically, we raised the target range for the Federal funds rate by a quarter percentage point at our December meeting, bringing that target rate to a range of 1 ¼ percent to 1 ½ percent. In addition, in October we initiated a balance sheet normalization program to gradually reduce our securities holdings. That program has been proceeding smoothly. These interest rate and balance sheet actions reflect the Committee's view that gradually reducing monetary policy accommodation will sustain a strong labor market while fostering a return of inflation to 2 percent.

In gauging the appropriate path for monetary policy over the next few years, the FOMC will continue to try to strike a balance between avoiding an overheated economy and bringing PCE price inflation to 2 percent on a sustained basis. While many factors shape the economic outlook, some of the headwinds the U.S. economy faced in previous years have turned into tailwinds. In particular, fiscal policy has become more stimulative and foreign demand for U.S. exports is on a firmer trajectory. Despite the recent volatility, financial conditions remain accommodative. At the same time, inflation remains below our 2 percent longer-run objective. In the FOMC's view, further gradual increases in the Federal funds rate will best promote attainment of both of our objectives. As always, the path of monetary policy will depend on the economic outlook as informed by incoming data.

In evaluating the stance of monetary policy, the FOMC routinely consults monetary policy rules that connect prescriptions for the policy rate with variables associated with our mandated objectives. Personally, I find these prescriptions helpful. Careful judgments are required about the measurement of the variables used, as well as about the implications of the many issues these rules do not take into account. And I would note that this Monetary Policy Report provides further discussion of monetary policy rules and their role in our policy process, extending the analysis we introduced in July.

Thank you again. I look forward to our discussion.

Chairman CRAPO. Thank you, Mr. Chairman.

I am going to focus my questions on Senate bill 2155, which I referenced in my introductory remarks, but first, Mr. Chairman, you are familiar with that legislation, correct?

Mr. POWELL. Yes, I am.

Chairman CRAPO. In past hearings former Chair Yellen, former Federal Reserve Governor Tarullo, and former Comptroller of the Currency, among others, have all expressed support for changing the $50 billion threshold for enhanced prudential standards. Building on that feedback, Senate bill 2155 raises the threshold from $50 billion to $250 billion and requires the Fed to tailor regulations to a bank's business model and risk profile.

I would like to ask you some questions about this bill if it does become law, and there are five or six of them, so I would like to have you respond as briefly as you can, but fully answer the questions.

Is it accurate that the Federal Reserve would still be required to conduct a supervisory stress test for any bank with total assets between $100 billion and $250 billion to ensure that it has enough capital to weather economic downturns?

Mr. POWELL. Yes, it is.

Chairman CRAPO. And is it accurate that the Federal Reserve would still have sufficient authority to apply prudential standard to a bank with between $100 billion and $250 billion in total assets if the Fed determined that was appropriate?

Mr. POWELL. Yes, that is true.

Chairman CRAPO. Is it accurate that this provision does not weaken oversight of the largest globally systemic banks?

Mr. POWELL. That is correct.

Chairman CRAPO. Is it accurate that the Federal Reserve applies enhanced standards to international banks based on their global total consolidated assets, meaning this provision would not exempt banks such as Deutsche Bank and Santander from Section 165 of Dodd-Frank?

Mr. POWELL. That is correct.

Chairman CRAPO. Is it accurate that this provision does not in any way restrict the Fed's supervisory, regulatory, and enforcement authorities to ensure the safety and soundness of financial institutions?

Mr. POWELL. Yes.

Chairman CRAPO. And, finally, is it accurate that nothing in this provision would restrict the Fed's ability to ensure that large financial institutions are well capitalized?

Mr. POWELL. Yes.

Chairman CRAPO. Thank you. And to go on a little bit, as you know, the Dodd-Frank Act included a provision known as the Volcker rule, which placed restrictions on banks that trade for their own profit, otherwise known as "proprietary trading," and on certain relationships with certain private funds. As you also know, financial companies have incurred significant costs attempting to comply with the rule. Do you support addressing this confusion by exempting community banks with less than $10 billion in total assets and who are engaged in a small amount of trading activity?

Mr. POWELL. I think that is a sensible thing to do, yes.

Chairman CRAPO. All right. Thank you. And some have expressed concerns that this exemption would allow a community bank to purchase a hedge fund. Is it accurate that the Federal Reserve could use its existing authority to address any safety and soundness concerns arising from such an action?

Mr. POWELL. We would still apply all of our safety and soundness supervisory activities to that bank, and we would be looking for things like that and find them.

Chairman CRAPO. All right. Thank you. Finally—and I am shifting gears away from the legislation right now—I also mentioned in my opening statement that Randy Quarles has been confirmed as Vice Chairman for Supervision of the Federal Reserve but has not been confirmed for his full term as a Governor yet. I believe it is very critical that we do that confirmation and confirm Governor Quarles for his full term. Do you agree? And if you do, why is it critical for the Senate to confirm Vice Chairman Quarles as soon as possible?

Mr. POWELL. Thank you for raising this, Mr. Chairman. I absolutely agree. It is very important that Vice Chair Quarles get his full term. At this point he is working on an expired underlying Governor term, but he has a 4-year Chair term, and I think to have him fully installed, it is very important that he have this underlying Governor term.

Chairman CRAPO. All right. Thank you. I appreciate your emphasis on that, and hopefully that will help to encourage the full Senate to move more expeditiously on that nomination.

Senator Brown.

Senator BROWN. Thank you. I appreciate my friend and colleague Chairman Crapo's skillful, narrow, and leading questions about his legislation. I think it is important to point out that the question particularly about foreign banks, Deutsche Bank and Santander and those banks that have been both troubled and troubling, will be mostly deregulated under this bill because they are under 250. That is not really my question. I want to get to questions. But I also want to point out, in spite of this Chair of the Federal Reserve's general satisfaction with this bill, there have been serious, serious, serious questions raised against it, raised about it by former Fed Chair Volcker, by former Fed Governor and Deputy Treasury Secretary Sarah Bloom Raskin, but Bush appointee former FDIC Chair Sheila Bair, by former Counselor to the Treasury Secretary Antonio Weiss, and by the former Deputy Governor of the Bank of England Paul Tucker. And I think it is important to note that it is not all candy and roses here.

Let me talk about a couple other things. The unemployment rate has been steady at 4 percent, 4.1 percent; wage growth, as you know, Mr. Chair, has been slow to improve. At your confirmation hearing in November, you mentioned that labor force participation for prime-age workers was also lagging. I would like to see improvement across the board, as I know you would.

Two questions related to that. Do you think it is possible to achieve further improvement in wages and employment among workers that have been left behind without causing higher inflation? And will you commit to looking at all the data and considering the workers who have struggled the most so as to avoid raising rates preemptively and cutting off the chances for broader economic gains?

Mr. POWELL. Thank you, Senator. As you mentioned, there are a couple places where it looks like there may be additional slack in the labor force, and the biggest of those is that participation by prime-age workers is a full percentage point below where it was before the crisis. We do not see any strong evidence yet of a decisive move up in wages. We see wages by a couple of measures trending up a little bit, but most of them continuing to grow at about 2½ percent. So nothing in that suggests to me that wage inflation is at a point of acceleration, and so I would expect that some continued strengthening in the labor market can take place without causing inflation. We will, of course, be monitoring that, and I think the risks are much more two-sided than they were 2 or 3 years ago when there was a great deal of slack in the labor market.

Senator BROWN. I appreciate, as I told you in person, your interest and commitment to both mandates of inflation and employment. One Fed nominee that is still in abeyance, may or may not have the votes on the floor, does not take that position. Your position there is crucial, as Chair Yellen understood, as Chairman Bernanke understood.

Second question: Morgan Stanley and other Wall Street analysts have said that only 13 percent of the reduced taxes under the tax bill being paid by companies will go to workers' pay; 18 percent will go to mergers. If that ratio holds up for banks—18 percent will go to mergers, 13 percent for worker pay. If that ratio holds up for banks, whether it is the tax bill or the Chairman's bill he talked about, shouldn't we expect even more bank consolidation?

Mr. POWELL. First, I would say we do not really know yet how that will shake out, but taking your hypothetical, would it add to more consolidation among the banks? You know, bank consolidation has been going on for 30-plus years. It has got a lot to do with smaller banks and economic activity moving out of the rural areas into the city and interstate banking and things like that. I am not sure this would tend to change the trend.

Senator BROWN. I appreciate what you just said because I certainly heard the deregulators in this body, those that suffer this collective amnesia about what happened a decade ago, always blaming bank consolidation on Dodd-Frank when, as you point out, it has been going on for years.

Mr. Chairman, here is an American Banker article from November that discusses your bill. The title is "SIFI hike could kick-start bank M&A," and I ask to enter that in the record.

Chairman CRAPO. Without objection.

Senator BROWN. Thank you.

Senator BROWN. Last question. Most of the Wall Street—the big Wall Street bank offenders have—most of the Wall Street banks have been repeat offenders since the crisis. The Fed and other regulators have fined them. You were part of this, $243 billion in combined penalties, money laundering, market manipulation, deceiving customers, you name it. The Chairman's bank deregulation bill would mandate that the Fed further tailor rules for the largest banks. Meanwhile, Vice Chair Quarles is talking about the Fed's plans to make living wills less frequent, to reduce leverage rules to weaken the Volcker rule.

Why should big banks that have consistently failed to follow the rules benefit from statutory or regulatory rollbacks?

Mr. POWELL. I would just say that our focus is very much on the smaller and medium-size banks. We want the post-crisis regulatory initiatives like higher capital, higher liquidity, stress testing, resolution, we want those to apply in their strongest form to the largest institutions. We want to make sure we are doing that efficiently. And there are some changes we can make in that regard, but most of what we are doing really applies to banks——

Senator BROWN. Well, I hear you, but I sat with Senator Crapo and a number of others that are in this room on the Finance Committee, and I heard Republican after Republican say the tax cut was all about the middle class, yet 81 percent of the benefits went to the wealthiest 1 percent. I heard you and I hear the push for this S. 2155 being all about the community banks, but we know much of it is driven by what happens for the larger banks, the weaker stress tests, the periodic stress tests, what we are doing, instead of annual, what we are doing for the foreign banks. So I hear your talk about your interest primarily is the smaller banks, but I guess the question still stands. Why should anything in this bill—why should we do anything for the largest banks? As this bill does, why should we do anything for banks that have consistently failed to follow the rules? Why should they benefit from statutory and regulatory rules rollback?

Mr. POWELL. As I see the parts of the bill that I am familiar with, they really apply to banks 250 and under. And when you say "largest banks," I think you are talking about either the eight SIFIs—by the way, one of which is below $250 billion in assets, so we are very capable of reaching below 250 to apply enhanced prudential standards when it is appropriate. But it is really those institutions that I would call the large and complex institutions, and the focus there, again, is on sustaining the four pillars that I mentioned of post-crisis regulation and maybe looking at making them more efficient. They do not need to be—they should not be more burdensome than they need to be, but——

Senator BROWN. I agree with that.

Mr. POWELL.——we are looking to strengthen and hold onto those.

Senator BROWN. Well, I hope in your conversations with the Chair of Supervision, Mr. Quarles, that you will insist that this is about the banks under 250 and insist on that, that it is not about the banks over 250, as some on this podium have suggested.

Thank you.

Chairman CRAPO. Thank you.

Senator Shelby. And I do remind our colleagues that we need to stick to the 5-minute rule.

Senator SHELBY. That is prospective, isn't it, Mr. Chairman?

[Laughter.]

Senator SHELBY. Chairman Powell, you referred to price stability just a few minutes ago as one of the mandates for the Fed in your job. Let us talk a little about price stability and unemployment being real low. Prices, you mentioned earlier that inflation is, I assume, under control, whatever that is. You have got your eyes and you have got your hands on it, so to speak. But a lot of people believe that you will continue to raise interest rates at incremental levels in the future. Is that because of your concern about the specter of inflation, that being full employment, so to speak, you know, mostly, pressure on wages? Or where is it coming from, in other words? Or is it all of it?

Mr. POWELL. Senator, where we are now is we have got unemployment, as you know, at 4.1 percent, which is sort of at or near or even below most estimates of the natural rate of unemployment. But we have inflation that is still a little bit below, so by continuing to gradually raise interest rates over time, we are trying to balance those two things and, you know, achieve inflation moving up to target, but also make sure that the economy does not overheat.

Now, there is not a lot of evidence that—there is no evidence that the economy is currently overheating, but that is really the path that we have been on, and my expectation is that that will continue to be the appropriate path as long as the economy performs this way.

Senator SHELBY. Well, I think that is a substantive path, too. I agree with you.

Do you believe that there is going to be a push for higher wages? You know, you see a little of it now. The economy is good. People seem to be doing well. The tax cuts come in, which is probably going to help. We see that it is going to help at least confidence and everything in the economy. What do you see there?

Mr. POWELL. It is interesting. Unemployment has declined from 10 percent at the worst part of the crisis—and, actually, well after the crisis—down to 4.1 percent now, and wages have only really gradually started to track up. The increases are now up at about 2 ½ percent if you blend the various measures we look at, and we look at a bunch of them. And I will be honest. I would have thought that you would see more wage increases by this point, and I do expect that we will see more wage increases. We have got an economy with strong momentum. We have got strong job creation as a result of it. We have got low unemployment. And I do think you will begin to see wages coming up, but we have been feeling that way, and that is kind of what we are waiting to see. I hope we see it soon, expect to see it.

Senator SHELBY. How important to the economy and to the monetary policy is price stability?

Mr. POWELL. Price stability is one of our two mandates, at the very heart of what we do.

Senator SHELBY. It is key, isn't it? One of the keys.

Mr. POWELL. Absolutely at the very heart of what we do.

Senator SHELBY. OK. I would like to switch over to your other job, and that is, dealing with regulatory issues. Cost-benefit analysis unit, it is my understanding that the Fed has announced recently its intention to create what they call a "Policy Effectiveness and Assessment Unit" to conduct cost-benefit analysis on regulations. If that is so, I applaud that effort. A lot of us on this

Committee have pushed that for years, believing that there should be an analysis, a real cost-benefit analysis to every regulation. What is the status of this group's development, Mr. Chairman? And what do you hope will come out of this?

Mr. POWELL. As you know, Senator, we always try to implement regulations in the way that is least burdensome and also faithful to the intent of Congress. In this particular case, we are trying to raise our game here by having a specific group of, you know, quantitatively oriented people who are focusing just on that. We have lately published cost-benefit analysis on specific regulations like the SIFI surcharge, the long-term debt, and things like that. So, you know, we are trying to raise our game here.

By the way, whenever we go out for comment on a reg, we also ask for the public's view on costs and benefits. So it is really important to us, and as I said, as you pointed out, we are trying to raise our game.

Senator SHELBY. A lot of it, though, is letting the public know what all of this is about and what the costs will be to them as well as to the economy, is it not?

Mr. POWELL. It is, and that is our obligation, is to be transparent about those things.

Senator SHELBY. Thank you.

Thank you, Mr. Chairman.

Chairman CRAPO. Thank you.

Senator Tester.

Senator TESTER. Yes, thank you, Mr. Chairman and Ranking Member Brown. I appreciate you having this hearing. And welcome, Governor Powell. It is great to have you here.

There has been a perception being floated by some that the largest foreign banking organizations, such as Barclays, UBS—Deutsche Bank has been talked about today already—will be released from enhanced prudential standards under the economic package brought forward called S. 2155. I fundamentally disagree with that. I think those views are a myth, and certainly not the text that is in S. 2155. But I am a dirt farmer, OK? I just kind of read things as they are and do not read a lot of extra stuff into it. You are the man on the Fed, and so I need to know your opinion. Does S. 2155 require the Federal Reserve to weaken any of the Dodd-Frank enhanced prudential standards for the FBO such as Deutsche Bank, UBS, or Barclays?

Mr. POWELL. It does not, according to my reading of the text.

Senator TESTER. Can you elaborate, briefly if possible, on how those standards are applied to the largest FBOs?

Mr. POWELL. Well, currently what the bill does is it moves up to 250 for these institutions, but it looks at their global consolidated capital. We now have intermediate holding company requirements for these companies, and none of those would be affected by this. And what that means is that they are required to keep capital and liquidity here in the United States that is commensurate with their activities. They are also subject to living wills and things like that. So, it is a range of enhanced prudential standards. The intermediate holding company thing is an extra one that we gave them.

Senator TESTER. OK. Thank you.

I am also frustrated that some are jumping to conclusions about how or what might happen regarding international holding company requirements. So just to clarify, from your perspective, the creation of the IHS was not included in Dodd-Frank, correct?

Mr. POWELL. That is right. That was something that we added on independent of Dodd-Frank.

Senator TESTER. And the legislative language in S. 2155, the bill that we have been talking about this morning a lot, does not require any change to the IHC, correct?

Mr. POWELL. It does not.

Senator TESTER. OK. Thank you for clearing that up.

Now, I asked you this question during your confirmation right around the time that S. 2155 was released, and it has been nearly 3 month, and that bill has made its way through this Committee and has overwhelming bipartisan support and hopefully will see the floor next week. What I asked you at that juncture was: Do you believe S. 2155 puts our financial system at risk? At that moment in time you said no. So now you have had a little more time to get your feet on the ground. Do you continue to believe that?

Mr. POWELL. I do.

Senator TESTER. OK. Last—go ahead, go ahead.

Mr. POWELL. I can elaborate if you want.

Senator TESTER. Sure. Have at it.

Mr. POWELL. OK. The essence, probably the most significant piece of it is that you raise the threshold for enhanced prudential standards to 250, but you give us the ability to look below 250. We will publish a framework that addresses—and we will put it out for comment—that addresses how we will think about that. We have not been shy about reaching below 250. One of the eight SIFIs, in fact, is below $250 billion in assets. So I think it gives us the tools that we need to continue to protect financial stability.

Senator TESTER. Thank you. Last, I think it is important that folks remember that the Federal Reserve and Chairman Powell have a number of tools in their toolbox when it comes to regulating our financial institutions well beyond that we even created in Dodd-Frank. I think it is important to remember that things like advanced approaches, CCAR, and Basel were not created by Dodd-Frank, and if I am not mistaken, advanced approaches and CCAR were put in place during a Republican administration.

So I guess my question for you, Chairman Powell, is this: Can you remind folks what your safety and soundness authority means to the Federal Reserve and what authority it gives to you?

Mr. POWELL. Except in places where Congress has addressed particular areas, we have broad safety and soundness authority to do capital requirements of various kinds, liquidity requirements and things like that, and look after the safety and soundness of all depository institutions.

Senator TESTER. Thank you. I just want to close by saying that I do not for a second think that Dodd-Frank was the only reason we are seeing consolidation in banking. I think technology plays a big role in that, and population shifting plays a big role in that. On this Committee I can deal with Dodd-Frank.

Thank you, Mr. Chairman.

Chairman CRAPO. Thank you.

Senator Corker.

Senator CORKER. Thank you. Welcome, Mr. Chairman. It is good to have you here, and congratulations on your confirmation.

You have talked about the accommodative fiscal policy that is in place right now, and just out of curiosity—I know people predict you all are going to raise rates four times this year. You are definitely going to raise rates some. How much of the tax bill that was put in place, how much of that is affecting your desire or your likelihood of raising rates over this year?

Mr. POWELL. I would not single it out, Senator. I would say——

Senator CORKER. No, no. I am not trying to single it out. But just out of curiosity, it is, in fact, something that is going to be stimulative, so how much of a factor is it in looking at raising rates?

Mr. POWELL. Fiscal policy is one of many, many factors. As you know, we are looking at stable prices and maximum employment. That is what we are looking at. And everything that happens in the economy and financial conditions and fiscal policy affects that. We cannot really isolate one thing, you know, like fiscal policy. But I think, you know, I would expect that fiscal policy this year is going to add meaningfully to demand, and that is going to put upward pressure on inflation and downward pressure on unemployment. It is hard to quantify, but it would not be the main factor. The economy is strong, and it is even stronger now.

Senator CORKER. So then as it relates to growth, you said it was going to increase demand. How much of a factor is it in your growth projections, the passage of the tax legislation?

Mr. POWELL. As I mentioned, I think it will add meaningfully to growth for at least the next couple of years. The real question is: How much will it add to—and the amount of that is subject to very different estimates by different approaches, but I guess the bigger question is: How much will it add to longer-run growth? There are a couple channels through which that might happen. Higher investment should lead to higher productivity, which would raise potential growth. Lower tax rates on individuals should increase labor supply. These are highly, highly uncertain, but we hope the effects are meaningful there as well.

Senator CORKER. You know, we have been through a decade now, I guess, since the crisis, and many of us were here during that time. It was a pretty heady time trying to resolve those issues. And yet we went through periods of time when we were worried about deflation. Obviously, we had really accommodative monetary policy during that time. And here we are again at 4.1 percent unemployment, down from 10, as you mentioned, the economy is strong, and yet still, let us face it, 2 percent inflation—I know you all are combating anything getting out of control. Elaborate on the factors that in this day and age—in this economy in this world situation, what is it that is keeping inflation at such a low rate?

Mr. POWELL. It is a global phenomenon, and we do not perfectly understand it, but I would say since the crisis, a big factor that has been weighing down inflation has been just the weakness in the economy. You have had a lot of slack, and the economy has not been tight, and so it makes sense that that would press downward on inflation. We also had, you know, the strong dollar and lower oil prices in 2014 and 2015. That pushed down. So more lately, we would have expected inflation to come up by a few more tenths than it has, and we see identifiable idiosyncratic factors. There are other stories, though. There is the Amazon effect story. There is global slack, the idea that slack around the world is affecting, you know, the tightness of the U.S. labor market. It is really hard to tie those down from an empirical standpoint, but that may be having some sort of an effect on inflation as well. It is a global phenomenon, though, so it is not just tied to domestic factors.

Senator CORKER. I know that my friends on the other side tend to focus a lot on the tax bill, and there is hope that growth is going to overcome any kind of deficits there. It may or may not occur. But we are, in fact, getting ready to spend $2 trillion more that we do not have by passing the bill we just passed. We have got an omnibus coming up. Over the next 10 years, it is a minimum of $2 trillion in additional spending, almost twice what the President requested, and we have $21 trillion in debt today.

How much does the deficit picture for our country come into play relative to the Federal Reserve? And how concerning is it to you that we continue just to party like there is no time ending here in Congress?

Mr. POWELL. We are not on a sustainable fiscal path. We need to get on one. This is a good time to be doing that when the economy is strong. But that is a longer-run problem. It is not really—it is not a problem for today's monetary policy or economy. It becomes a problem gradually over time as we spend more and more of our expenditures on serving—on interest rate, on debt service, and we have less and less to do the things that we really need to do and as we pass along bills to future generations. But the unsustainability of our fiscal path is not something that has too much of an effect in the near term on our policies.

Senator CORKER. Thank you.

Mr. Chairman, thank you.

Chairman CRAPO. Senator Menendez.

Senator MENENDEZ. Thank you, Mr. Chairman. Welcome, Chairman Powell. Good to see you.

I want to follow up on some questions that my colleagues Senators Brown and Shelby asked you about. Inflation is continuing to run below the Fed's 2 percent target, which has prompted a majority of the regional Federal Reserve Bank Presidents to urge a study of the current inflation framework. And while we have seen significant economic gains since the worst days of the recession, most hardworking families are still waiting to see their paychecks rise. Real median wages increased by only 14 percent from 1979 to 2017, and any recent acceleration in wages is accruing to high-paid executives and managers with production and nonsupervisory workers simply not seeing those gains.

The Fed is projecting a minimum of three interest rate increases in 2018, and after your testimony on Tuesday, the markets are now anticipating as many as four hikes.

Do you agree that the achievement of full employment should be associated with strong and broad-based wage growth for average workers, not just increases for executives and managerial pay?

Mr. POWELL. I do, Senator.

Senator MENENDEZ. And if so, doesn't that argue for consideration of a monetary policy path that would allow wages to continue to grow prior to the Fed's pumping the brakes?

Mr. POWELL. I agree that it does, and I believe that is, in fact, the path we are on. These are gradual rate increases, and we do expect wages to move up.

Senator MENENDEZ. What would the cost to the economy of overshooting inflation in the 2 to 3 percent range versus the cost to the economy of choking off growth if the Fed continues to tighten without a clear indication that inflation is going to exceed its target be?

Mr. POWELL. The risk, one of the risk we are trying to avoid, I think as I mentioned earlier, the risks are more balanced than they used to be. For many years, it was clear there was a lot of slack in the economy, and, you know, I for one supported accommodative policy. At this point we have 4.1 percent unemployment, and the thing we do not want to avoid—that we do not want to have happen is to get behind the curve, have inflation move up, and have to raise rates too quickly, cause a recession. And recessions, they hit the most vulnerable groups, you know, the hardest, and so that is where unemployment goes up the fastest and that kind of thing. So to prolong the recovery, the Committee's view is that we should continue on this gradual path of rate increases which balances lower inflation and low wages against the need to make sure that we do not run too far past the natural rate of unemployment.

Senator MENENDEZ. Well, I hope you will continue to look at wage growth as part of your calibrations.

Let me ask you this: During the confirmation hearing—and I was pleased to vote for you—I asked you about the economic risks of adding an additional $1.5 trillion to the deficit, and I just heard your responses to my colleague from Tennessee that we are not on a sustainable path, we need to get one. Obviously, we were not on a sustainable path before we added $1.5 trillion to the debt in the tax cuts that were generated. And you then said in response, and I quote, "I think we need to be concerned with fiscal sustainability over the long term." And in the same hearing, you agreed with Senator Van Hollen when he asked you—you said adding $1.5 trillion to the deficit would make a bad situation worse.

Now, your predecessor previously testified before this Committee when she said, "I am personally concerned about the U.S. debt situation. Taking what is already a significant problem and making it worse is a concern to me."

Do you agree with former Chairman Yellen that there is reason to be concerned about mounting deficits and growing national debt?

Mr. POWELL. I do, and I will follow what my predecessors have done and not get too much into the details of fiscal policy, but I will say a couple things.

One is that, as I mentioned, we need to get on a sustainable fiscal path in the longer run. We know that we are not in the longer run.

The second thing is when we do fiscal policy, when you do fiscal policy, I think it is important to keep in mind measures that would increase the productive capacity of the United States of the economy, things that would increase productivity, that foster investment in people, in education and training, in R&D, and in plant and equipment as well. Those kinds of policies can help the whole economy grow faster on a sustainable basis.

Senator MENENDEZ. I agree with you. I would suggest that stock buybacks do not quite do that.

Let me ask you a last question. In January, the New York Federal Reserve Bank president said that tax legislation is likely to generate frictional costs that will mitigate its effects on growth, namely disparate impacts regionally. In particular, president Dudley was pointing out the gutting of the State and local income and property tax deduction, which would raise the cost of ownership and adversely affect prices and construction activity in States like New Jersey.

Do you agree with president Dudley's analysis that States like New Jersey will see regional economic disparities as a result of the tax bill?

Mr. POWELL. Senator, I hope you will allow me to say that I would rather not get into the particular details of any particular fiscal bill as Chairman, and I think that is—I am happy to talk about things at a high level, but getting into commenting on particular sections in a fiscal bill which is not our responsibility for me is probably not a good idea.

Senator MENENDEZ. Your president of the New York Reserve made that observation, so I would hope that we would look at the consequences to regional growth as part of your overall growth path. The region that I am from generates nearly 20 to 25 percent of GDP for the entire Nation. If we are going to have policies that ultimately affect the ability to be that engine for part of economic growth of the country, we should be considering that as well.

Thank you, Mr. Chairman.

Chairman CRAPO. Senator Cotton.

Senator COTTON. Thank you, Mr. Chairman. And, Mr. Powell, welcome in your first appearance as Chairman, first of many. I am sure you have them all circled on your calendar and look forward to them with eagerness, as a child does to Christmas, right?

Mr. POWELL. Indeed.

Senator COTTON. I want to talk about the labor market, in particular wage growth for America's workers. An article in the Harvard Business Review last October discussed wage trends since the 1970s and found that wage gains have mostly accrued to top earners while wages have declined or been stagnant for the bottom half of the income distribution. The bottom half of the income distribution is comprised of many Americans who do not have a 4-year degree, many who do not even have a high school diploma. Research from the Economic Policy Institute shows that American workers without a high school education have seen their wages decline by 17 percent since 1979 adjusted for inflation, and for workers with a high school education but no college, wages have declined by 2 percent.

The chart to my left displays this, shows what I am talking about. You can see the massive wage growth for those with a college degree or an advanced degree and wage declines in real terms for those with a high school degree or less. One of my top priorities is to ensure that hardworking Arkansans can share in the economic prosperity that we see in our country in ways that they have not over the course of my lifetime.

Mr. Chairman, you write—or I should say the entire Board writes on page 2 and 3 of the Monetary Policy Report, "Although there is no way to know with precision, the labor market appears to be near or a little beyond full employment at present." What is your personal assessment of this matter? Is the economy at full employment today?

Mr. POWELL. As we say in our statement of longer-run goals and policy strategy, we look at a number of—there is no place you can directly observe. We look at a range of indicators, and I would say most of those indicators say that we are either at or beyond full employment. There are a couple that suggest maybe we are not. I would point to wages and I would point to labor force participation by prime-age males. This is a long answer. It is hard to give a really clear answer, but we do not actually know precisely where full employment is. Put it all in the blender, it seems to me we are very close to full employment.

I would add that is not the case in every region.

Senator COTTON. To pick up on your point about labor force participation, while our unemployment rate is a bit of good news at 4.1 percent and jobless claims seem to be continuing to trend downward, it is somewhat surprising, given those economic conditions, that over the last year labor force participation continued to decline from 62.9 percent in January of 2017 to 62.7 percent in January of 2018. Even if you account for demographic change, for the aging of the baby-boom generation, many estimates say that 2 million workers are still missing from our economy.

I also would note that job growth continues to outpace population growth, which suggests that there is still slack in the labor market. And a lot of the slack appears to be in part on the lower end of the economic scale of those workers who have a high school degree or less than that.

Would you agree with that assessment?

Mr. POWELL. Generally, yes. Labor force participation has been essentially flat since the back half of 2013, so a little more than 4 years, and the downward trend might be 25 basis points a year. So I look at us as having made up probably the slack that emerged—probably fully made up the slack that emerged as part of the crisis.

Senator COTTON. And the wage growth we have seen over the last year, while good, I would suggest is still not good enough, especially as long as we have those missing workers. So I would hate to see—putting aside all the other reasons why you might see rate increases in the coming months ahead, rate increases because of continued increases in wages, especially for working-class Americans. And the labor market, like any other market, is a market that is driven by supply and demand, correct?

Mr. POWELL. Yes.

Senator COTTON. So if the supply of labor exceeds the demand of labor, then you would see downward pressure on wages. That is one reason why I and some other Senators, like Senator Perdue, have been so focused on our immigration system. You know, if you could magically convert a million high school graduates in this country to a million Stanford graduates that could go to work in our high-tech industry, then presumably that would be good for the wages of working-class Americans. Well, that is essentially what we do every single year in reverse as we bring in a million unskilled and low-skilled workers that are competing against the very people who have not shared in prosperity and, for that matter, competing against the previous generation of immigrants. I do not think that is good for American citizens. I do not think that is good for our economy, and I will continue to work hard to make sure that those workers share in the prosperity that all Americans in the upper-income brackets, college educated and more, have shared in the past.

Thank you.

Chairman CRAPO. Senator Schatz.

Senator SCHATZ. Thank you. Chairman, thank you for being here, and thank you for being willing to serve.

I want to talk about student loan debt. There is currently $1.4 trillion in outstanding student loan debt, the highest category of consumer debt behind mortgages. It is also the most delinquent, with 11 percent of borrowers seriously delinquent or in default. The Fed estimates that this number is likely closer to 22 percent once you take into account the number of borrowers who are in forbearance.

In contrast, at the height of the financial crisis, mortgage delinquency was just under 5 percent, and currently that rate is around 1 percent. According to the Federal Reserve's data, high levels of student debt have contributed to lower rates of home ownership and new business starts.

So, in your view, does the high level of student debt create a drag on the economy?

Mr. POWELL. On student loan debt, I think it is important that people be able to borrow to make what may be the most important investment of their lives, which is in their education. So, overall, I think borrowing to invest in yourself is something we should foster, subject to a couple of important caveats.

First, it is very important that people understand the nature of the borrowing and the risk that they are taking and the possible payoffs and that sort of thing so that they make informed decisions.

The second thing is I think alone among all kinds of debt, we do not allow student loan debt to be discharged in bankruptcy.

Senator SCHATZ. Right.

Mr. POWELL. I would be at a loss to explain why that should be the case. So it is something—and this is fiscal policy. This is something for you, not something for the Fed. But we do see and Fed research shows and other research shows you do start to see longer-term negative effects on people who cannot pay off their student loans. It hurts their credit rating. It impacts the entire path of their economic life.

Senator SCHATZ. So that is the public policy argument for us to do something about student loan debt and the way we structure higher education financing. My question for you is: Do you see this as a macroeconomic risk?

Mr. POWELL. It will over time. It is not something you can pick up in the data right now, but as this goes on and as student loan continues to grow and becomes larger and larger, then it absolutely could hold back growth.

Senator SCHATZ. OK. Thank you. And I want to thank you for your willingness to have an open mind on the question of the economic impacts of climate change. I appreciated your answers in the questions for the record, and so I am glad you are willing to talk about it. Your position is that the Fed is only concerned with, and I will quote, "short- and medium-term developments that may change materially over quarters in a relatively small number of years rather than decades associated with the pace of climate change."

Now, there are experts within the Government that would strongly disagree that the problem of climate change is measured in decades. They would say we are seeing the economic impacts now. NOAA reported 16 separate billion-dollar climate events in 2017. Combined, these events cost the United States economy $300 billion, 1.5 percent of GDP. Two-thousand seventeen was a record-breaking year, but according to NOAA's science, it will get worse. The number and cost of these events has more than doubled over the last decade, and it has increased eightfold in the last 30 years.

So I understand that your aperture is short- and medium-term. That is sort of a premise of how you operate. What I am not accepting as a premise of how you operate is the assumption that climate change belongs in the long-term category because I think you are—you are analysts. You believe in data. And what I would like for you to do is challenge that assumption that climate only belongs in the long-term category, because the Federal Government scientists are starting to indicate that that is not the case.

So the question is: Are you willing to relook at that basic assumption that climate is just outside of your window, to sit down with our office and with Federal Government researchers to at least examine the question of whether or not as you do your planning, it continues to belong in this long-term category which is outside of your aperture?

Mr. POWELL. Senator, as we discussed in your office, I guess last fall, you know, climate change is something that is entrusted to other agencies. We have particular responsibilities and particular tools: interest rate supervision, looking out for the financial system. It is just not clear that it is really in our ambit as opposed to in the ambit of other parts of the Government. But we are obviously always going to be willing to discuss it with you, but I do not know exactly how it would fit into what we do with our tools.

Senator SCHATZ. I guess the question—I mean, I understand what you are saying, but I am trying to figure out why a 1.5 percent hit to GDP last year and the agency that knows about such things is telling us to expect more and more of it, why that wouldn't be in your ambit? That is the first time I have ever used that word.

[Laughter.]

Mr. POWELL. Well, our ambit involves, you know, moving interest rates up and down and supervising financial institutions, so I do not know—I am not sure how it would enter into that.

Senator SCHATZ. OK. I look forward to continuing the discussion. Thank you.

Mr. POWELL. As do I. Thanks.

Chairman CRAPO. Senator Perdue.

Senator PERDUE. Thank you, Mr. Chairman. I am Googling "ambit" over here in the meantime. Sorry.

[Laughter.]

Senator PERDUE. Chairman, thank you for being here again. I have a question. You mentioned in your opening comments that foreign demand for U.S. exports is up, and I happen to believe that if we are going to be north of 3 percent GDP growth, we have got to grow our exports. And I think you have made those comments publicly as well.

But the low interest rate environment over the last decade has shown a proliferation of new lending, really a binge of new debt issuance in the Third World, or developing world, let me say that. And just this year—and a lot of that is short term, so this year alone, there is some almost $2 trillion of that developing world debt coming due this year, and about 15 percent of that is denominated in U.S. dollars.

Do you see that as we normalize rates here in the United States, with the U.S. dynamics that we are talking about between inflation and unemployment, that the impact that that could have on the developing world could in effect have some systemic risk on not only the global economy but on our own recovery?

Mr. POWELL. Senator, what we can do is we can be transparent, we can be predictable, and the markets can, therefore, understand what we are doing and be ready for it. And I think if we do that, we use our tools to achieve stable prices and maximum employment here in the United States, and financial stability, and so what we try to do for the world financial markets is be really clear about what we are doing, predictable, transparent.

As I look at the state of the emerging market countries and their financial markets and financial regulation, they are in a much better place than they were 10, 15 years ago, even 5 years ago. There is not as much dollar-denominated debt, foreign currency-denominated debt. They have better institutions—not everywhere, but it is a much better picture than it was 20 years ago, let us say.

Senator PERDUE. So following up on that, you talked earlier about reducing the size of your balance sheet, and that has been an ongoing effort even before you took office, as I understand it. So the question is: The four big central bank—China, Japan, United States, and the European Union—all have similar sized balance sheets, somewhere between $4 and $5 trillion. As you normalize or as you begin to consider taking our balance sheet down to a more normal level, what actions do you monitor of these other central banks? Or is it totally independent when you make those decisions?

Mr. POWELL. Well, we monitor all financial conditions and economic conditions in what we do. The normalization plan that we adopted through the summer and then put into place in the fall has been accepted very well by the markets. There is no obvious reaction at all. It is a gradual decline. We have said we are not interested in deviating from that unless, you know, unusual circumstances arise. And I think that should be the path, and I think we get to a more normal balance sheet size within about 4 years, give or take a year, let us say.

The other large central banks that are talking about normalizing their balance sheets, they are behind that schedule. Our economy recovered sooner. We are raising rates sooner. So, you know, there is going to be some—it is not going to be a synchronized thing. It is going to be something that is happening more seriatim. But we will be watching that very carefully. We are very mindful of the issue that you raise.

Senator PERDUE. Good. Thank you. One last question. It is a technical question, but it has to do with the leverage capital ratio that requires banks to hold capital against all assets, regardless of the risk of those individual assets, an operation that has created kind of a risk-blind rule. And I understand the overall rationale behind creating this risk-blind rule. But the question I have is ultimately I have a hard time understanding why assets like Treasury securities and funds on deposit in the Federal Reserve are also in that calculation. Can you defend that and answer the question if you are reviewing that practice?

Mr. POWELL. Sure. My view is that the binding capital requirement should be the risk-based capital requirement, and that would take into account Treasurys and reserves and how risky they are. The issue is that over time banks have figured out ways to game risk-based capital, so we want a hard backstop, and that hard backstop should be high and hard. It should be the leverage ratio. We do not want the leverage ratio to be the binding constraint most of the time because that, frankly, encourages people to take more risk. If you are bound by the leverage ratio, it is really saying you could probably use some riskier assets. So we like leverage—particularly risk-based capital has been vastly improved since the crisis. So that is how we think about it.

Senator PERDUE. So how would you view right now, in the few seconds we have got left, just very quickly, what is your view of the general health of the entire banking industry in the United States, the capital formation arm of our economic effort in a free enterprise system? What is your assessment of the health of that industry today?

Mr. POWELL. I think our banking system is quite healthy. I think we have high capital, high liquidity. We have banks that are much more aware of and capable of managing the risks that they face. They are much more ready to face failure if they do because they have living wills, and I think we are seeing profitability. We are seeing returns on capital. And I think it is a good time in our system.

Senator PERDUE. Thank you, sir.

Thank you, Mr. Chairman.

Senator BROWN. [Presiding.] Senator Cortez Masto.

Senator CORTEZ MASTO. Thank you, Ranking Member and Chair for this Committee. And welcome, Chairman Powell. It is good to see you again.

I want to follow up on the conversation that you had with one of my colleagues, Senator Shelby, on the Policy Effectiveness and Asset Unit that you have created. Can you speak to how many people will work in the unit and how the importance of data will inform the decisions you make?

Mr. POWELL. I think it is five or six people now. I do not know how big it will be, but it is going to be something in that range, maybe a little bigger. But the idea is that we will have, you know, a strong quantitative approach that is tightly focused on cost-benefit analysis. I would stress we already do cost-benefit analysis in everything we do, but we hear outside that there is interest in doing more of that, and we are actively pursuing it.

Senator CORTEZ MASTO. And the reason why you are doing this is so that it can inform your enforcement and policy decisions, correct?

Mr. POWELL. Well, yes. And the calibration of our regulations, you know, we want to be able to implement regulations in the least burdensome way we can, consistent with, you know, safety and soundness.

Senator CORTEZ MASTO. And the data is key for your ability to do so, correct?

Mr. POWELL. Very much so.

Senator CORTEZ MASTO. And so I am glad to hear you speak about the importance of data collection. I always support that, and that is critical to the work of the Federal Reserve. As I am sure you are aware, the legislation that we have been talking about that is pending in the Senate, it would exempt 85 percent of depository institutions from full reporting of loan data under the Home Mortgage Disclosure Act. Can you speak to how this might impact the ability of the Federal Reserve to properly conduct its obligations under the Community Reinvestment Act and whether the loss of this data might hinder CRA supervisory exams?

Mr. POWELL. I will be glad to. As I understand it, the CFPB writes the HMDA rules and regulations, and we use that data in what we do, in supervising the banks we supervise, which is a smaller group. In addition to that, we—sorry. I lost my train of thought.

What Dodd-Frank did was that it took the base of historical data collection and it significantly increased that. So my understanding is that what is being looked at in a bill is to create a broader exemption just from the Dodd-Frank additions. And so, you know, I think we traditionally get almost everything we need from the historical data, and I think we can continue to work on that basis.

Senator CORTEZ MASTO. Right, and that is my concern. The more data, the better. I mean, you are creating a data unit because data is key to your decisionmaking, and my understanding is that the data that is used in the CRA supervisory exams seems to exclude relevant data points. Loans under $1 million are designated small business loans, even if they were not loans administered to small businesses. There is no analysis made whatsoever of whether lending is occurring in communities of color, despite easing accessible data via the Home Mortgage Disclosure Act.

And so my question is: Has the Fed considered broadening that criteria in its CRA supervisory exams? And what factors do you think would be helpful in determining whether small businesses, communities of color, and low-income areas are truly receiving the support that the law intended?

Mr. POWELL. Are we still talking about HMDA data?

Senator CORTEZ MASTO. Correct.

Mr. POWELL. Again, HMDA data is really an issue for the CFPB. They were given authority under Dodd-Frank to write the HMDA regulations, and we generally defer to them in terms of what their view is on that.

Senator CORTEZ MASTO. So you do not think that data is going to be informative in what you do with the Community Reinvestment Act and the oversight of that to ensure that that Act is being enforced under the law to protect communities of color, to make sure there is no discrimination, to make sure that the loans are being sent to small businesses, and ensure that the money gets where it needs to go? That data is not going to be helpful for you?

Mr. POWELL. I do not say that it would not be helpful. What I would say is that, first of all, that is an issue that the CFPB actually has the lead authority on. In addition, we will still have—my understanding is that we will still have under this bill the information that we have traditionally relied upon for just about everything we do under HMDA. So we may not have the additional data from some institutions, but we think we will be able to function.

Senator CORTEZ MASTO. Well, let me just tell you—and my time is running out, so I do not have enough time to ask the additional questions that I want to ask you. But let me just say this: As a former Attorney General in the State of Nevada, my concern was discrimination against certain communities of color, and the reason why we increased that data criteria is to ensure there was no discrimination and ensure that the money was going to where it was supposed to be going under the Act and Federal authorities. And so I do not understand why we are rolling back that data and those data criteria if we need—you have said it yourself—to be better informed. You are creating a data unit for analytical purposes to create and collect data. It informs us in everything we do. And so my concern is just that. How can we say we do not want the data when we know it informs every decision that we are making, particularly to ensure the money is going where it is going and there is no discrimination?

Mr. POWELL. We have been talking about data. Let me take a step back and say that any kind of discrimination by race or gender or any other unfair basis in lending is completely unacceptable, and we are committed as an institution to finding it and using all of our tools to stop it.

Senator CORTEZ MASTO. Thank you. I know my time has run out. Thank you very much.

Senator BROWN. Senator Kennedy.

Senator KENNEDY. Thank you, Mr. Chairman. Good morning, Mr. Chairman.

Mr. POWELL. Good morning.

Senator KENNEDY. Do stock buybacks contribute to economic growth?

Mr. POWELL. Well, if I can trace that out, when you buy back your stock, the money goes to the shareholder. They lose their stock. They could take that money, and they do with it what they will. They can spend it. They can reinvest it. It does not disappear. So there should be some effect. I have asked this question. It is essentially impossible to really track that on a micro basis, but I would think intuitively it would go back into the economy and either be spent or reinvested.

Senator KENNEDY. Well, if a company buys back its stock and the value of the stock goes up, then somebody has extra money, right?

Mr. POWELL. That is right. There would be a wealth effect as well, as you point out.

Senator KENNEDY. And they could invest that money?

Mr. POWELL. They could. They could spend it, invest it, and you are right, there would be a wealth effect from higher stock prices, too.

Senator KENNEDY. And the stock going up is better than the stock going down in terms of economic growth.

Mr. POWELL. It is, although I am a little hesitant to—you know, I would want to say that it is not our job, as you know, to stop people from losing money or making money in the stock market.

Senator KENNEDY. Right. In the last 60 days, the bond market has been going down a little bit. What is that telling you?

Mr. POWELL. Well, I think longer-term interest rates have been going up, and, you know, there are probably many reasons behind that, and I would just offer a couple in my thinking. It is the expectation of higher growth. It is probably the expectation of inflation moving up a little bit closer to our target. It is probably also a realization that growth around the world is quite strong. So we have strong recovery in continental Europe and in Asia, and so, you know, we are not the only game in town now. If money goes to other kinds of safe assets, that will tend to mean higher rates here. But these are all generally positive signs.

Senator KENNEDY. Could it be a sign of inflation?

Mr. POWELL. It could be a sign of slightly higher inflation, and we seek slightly higher inflation. Inflation has been below our target since I joined the Fed almost 6 years ago.

Senator KENNEDY. You talked about us being at or near full employment. We are not at or near the optimum labor participation rate, though, are we?

Mr. POWELL. The truth is we are not far from the longer-run trend. We have models that—papers published 8 or 10 years ago, and they pretty much tell you that the labor force participation rate will be right about here. That is not really the answer to your question. Labor force participation by prime-age males, for example, has been declining for 60 years. And there may be some good reasons for that, but there are a significant number of reasons that are not good reasons for that. So we as a country——

Senator KENNEDY. What are good reasons for that?

Mr. POWELL. So we may be on our longer-run trend, but the trend is not a great trend. You know, there are many prime-age males, and women, out of the labor force whose lives would be better if they were in the labor force. And, you know, these are not—we do not have the tools to really address that, but it would be——

Senator KENNEDY. In 2008, the labor force participation rate was a tad over 66 percent. Today it is a tad over 62 percent. That is not good for the economy, right?

Mr. POWELL. It would be great to have labor force participation at a higher level, as most advanced economy countries do. Our labor force participation rate is now, you know, not even at the median of comparably wealthy countries.

Senator KENNEDY. Right. And why is that?

Mr. POWELL. It really is this trend of prime-age workers leaving the labor force. A lot of that burden has been borne, as Senator Cotton was pointing out, by people with high school educations and below, the less skilled and lower-wage jobs. And it has been going on a long, long time. It is, as I said, a 60-year decline.

Senator KENNEDY. But why, in your opinion?

Mr. POWELL. I think it probably has to do with, you know, the evolution of technology. It certainly has to do with the flattening out in the U.S. educational attainment. U.S. educational attainment went up for many, many years, and then it started flattening out in the 1970s. And right about that time, U.S. wages flattened out, and labor force participation starts to get weak. So we kind of reached a point as a country where we could not increase educational attainment, and really many things started happening right about then, the stagnation of median incomes, for example.

Senator KENNEDY. If we could jack the rate up to pre-2008 levels, that would be an enormous stimulus to the economy, would it not?

Mr. POWELL. It would. And, of course, there is an underlying trend, too, of the aging of the population. So even though older people work more than they used to after the crisis, older people still work less than younger people. So as the population ages, that is going—that is why labor force participation goes down 25 basis points each year.

Senator KENNEDY. Thank you, Mr. Chairman. Thank you, sir.

Chairman CRAPO. [Presiding.] Senator Warren.

Senator WARREN. Thank you, Mr. Chairman. And it is good to see you again, Chairman Powell.

As you know, a few weeks ago, on Chair Yellen's last day in charge, the Fed issued a consent order against Wells Fargo prohibiting the bank from growing any larger until it made certain improvements. Now, the Fed also effectively forced Wells to remove an additional four board members this year. I have pushed the Fed for real accountability on Wells Fargo and its board for repeatedly cheating its customers, and I was glad to see the Fed take action. But I want to understand how the Fed intends to enforce the consent order now that you are in charge.

The Fed requires Wells to submit two plans for approval by early April: one on improving the effectiveness of the board and one on improving the board's risk management practices. This is not clear from the order. Will the Fed Board of Governors vote on whether to accept these plans?

Mr. POWELL. So we have delegated that approval, I believe, to the head of Supervision, but, of course, that will——

Senator WARREN. Your staff?

Mr. POWELL. But that will take place—I assure you that will take place in serious consultation with the Board.

Senator WARREN. Consultation, but the Board is not going to vote on this?

Mr. POWELL. That is not the plan.

Senator WARREN. Well, you know, I do not understand this. The Fed has issued a major unprecedented consent order against one of the biggest banks in the world, and the Fed Board, the people who are actually appointed by the President and confirmed by the Senate, are not going to vote on whether the order is actually being followed?

Mr. POWELL. Well, of course, we did vote unanimously on the measures themselves.

Senator WARREN. No. Whether or not the order is actually being followed, because that is the big question here. In my view, staff is not good enough, Chairman Powell. Fed Board members are supposed to make the big decisions, and Fed Board members are supposed to be accountable for these decisions. Will you consider requiring a vote of the Fed Board before these plans are approved?

Mr. POWELL. Yes.

Senator WARREN. Good. Thank you. I appreciate it.

The next steps it that an independent third party must review Wells' implementation of these plans by the end of September. Will you commit to making that independent review public, redacting any confidential supervisory information that is necessary? I think the public deserves a chance to understand how Wells is working to fix the mistakes that it has committed.

Mr. POWELL. I cannot make that commitment to you without discussing it with my colleagues and with staff who are implementing this thing.

Senator WARREN. Will you——

Mr. POWELL. I will look into it, yes.

Senator WARREN. Will you look into it? Will you urge your colleagues to consider making this public?

Mr. POWELL. If it can be made public——

Senator WARREN. I am fine about redacting confidential supervisory information. But my view here is that the American public, given all that Wells has done, the American public has a right to see it, and all of those Wells customers who were cheated have a right to see whether or not Wells is actually following through on its promises. You can see why some people might lack a little confidence in that?

Mr. POWELL. Right, so we will—I will look at that, and if there is a way to do it that is faithful to our obligations and our practices, then——

Senator WARREN. Thank you. Good. And, last, the consent order says that the growth restriction remains in effect until Wells Fargo "adopts and implements" the plans that were approved by the Fed. So I want to be really clear on this. To lift the growth restriction, the Fed needs to see that the plans have been fully implemented, right? It is not enough that Wells has taken some preliminary steps toward implementing the plans. Is that right?

Mr. POWELL. No. I do not think that is right. I think the thought was that once we have approved the plans and they begin to implement them, we see them on track, the growth restriction could then be addressed. No guarantee there, but we would then be prepared to look at it.

Senator WARREN. You know, I am actually—then tell me, how much progress along that line is enough to remove the growth restriction?

Mr. POWELL. Well, I think, again, we will have to be happy with the plan itself. We will have to be assured that the company has made these really significant measures and suffered, you know, a significant period of growth cap. And, you know, we will not lightly lift it, but I think that is our understanding of how we are going to do it.

Senator WARREN. You know, the growth restriction is your really big stick here, and I hope that you will not consider lifting it just because Wells makes some marginal progress. Wells should fix its problems before it is permitted to grow any bigger. The consent order sent a powerful message to big banks that there could be real consequences, including consequences for senior officials if they break the law. But that message will be lost if the Fed does not enforce the order strictly and show the public and the banking industry that they mean business. Thank you.

Thank you, Mr. Chairman.

Chairman CRAPO. Senator Tillis.

Senator TILLIS. Thank you, Mr. Chairman. Chairman Powell, welcome. Thank you, and our congratulations on your confirmation.

Can you just explain—because I was watching a lot of the hearing in my office before I came up here, and you talked about global slack a couple of times. Can you explain to me what that really means?

Mr. POWELL. The thought is that it has become over the last 30, 40 years during our adult lifetime possible to make just about anything just about anywhere. Technology has enabled that, and rising living standards and capabilities in emerging market countries has created that opportunity. And the thought is that that capacity outside the United States is in a sense a form of slack so that if you are, for example, a worker bargaining for higher wages, you are held back by this overhang of knowing that, you know, you can lose your job in that kind of thing.

The issue is that, you know, globalization, most measures of globalization sort of plateaued out at about the time of the crisis, and yet it does not—that story makes a lot of intuitive sense, but it does not actually link up very well with the path of wages over the past few years. So it is something we have looked at, and it gets written about a lot.

Senator TILLIS. Actually, I think that is a very important point because there is a lot of latent productivity that could be globally deployed that, as we talk about wages and we want to do a good job of moving wages in the right direction, they reach a certain point to where we could plateau again because that capability to deliver could go outside of our jurisdiction. I think that is a very important point.

On productivity, a couple of years ago I met with former Chair Greenspan, and he was talking about—the one thing that he was most concerned with at this time was the kind of static growth in capital investment, and he was saying, you know, a healthy percentage of GDP is somewhere around 8 percent, and we were trending down in the 4 percent range. Do you view that as a key indicator that we have to increase? And what, if any, trends are you seeing that give you some sense that we are getting to a healthy percentage of capital investment as a percentage of GDP?

Mr. POWELL. We do not know how to predict productivity growth very well, but we do think it links up over time with things like investment, investment in people but also investment in plant and equipment, R&D, and that kind of thing.

Unfortunately, what the financial crisis did was it generated very weak demand conditions for a long time, and that created weak investment, and that itself then furthers weak demand. So it is kind of a bad, self-reinforcing cycle that we had there for a while. That is why it is so heartening to see investment, business investment, moving up last year and perhaps continuing a strong performance this year, is our expectation. It is ultimately only productivity that raises living standards, and investment is one of the keys, not just investment in plant and equipment, but certainly in the skills and aptitudes of our people as well.

Senator TILLIS. Do you get a sense that what we have done with tax reform is a potential positive contributor to seeing that investment move up?

Mr. POWELL. I do think it is a potential positive contributor in the sense that when you lower the corporate tax rate, you lower the user cost of capital. You know, like you, I have spent a lot of time working with private sector companies, and that is one of the factors they consider. It is not the only factor. But lower user cost of capital is something that should spur more investment over time, and that should add to productivity. Hard to quantify, but I think it is there.

Senator TILLIS. You and I talked about this once or twice in my office, and in my remaining time, I would like for you to talk a little bit about the job that Mr. Quarles has and post-crisis regulatory right-sizing, I would be interested in your thoughts on Basel IV and regulatory tailoring. I know people asked you—I was watching in my office. On the Committee I think some asked you about the banking regulatory reform bill that passed out of here, which provides some regulatory and I think responsible regulatory relief for a portion of our banking sector. But what more can we expect to see that are within your lanes and within your authorities on right-sizing regulations?

The other thing I remember with Mr. Greenspan, he said the most troubling job creation growth that he saw at that time—this was 2 or 3 years ago, post-crisis, about 300,000 jobs that had been created under the tide of regulatory reform, which in my world that is by definition a nonproductive job. So I am kind of curious to see what kind of—how are we going to get to a more tailored—I think Senator Perdue asked this question. How are we going to get to a more tailored, more reasonable regulatory burden on this industry that still manages the risks that you have to be concerned with?

Mr. POWELL. I think our concern is to maintain and strengthen but make more efficient the big improvements we think we made after the crisis—that is, higher capital, higher liquidity, stress testing, and resolution planning—and those are going to apply and continue to apply to the largest, most complex institutions in the strongest form. Our effort then is to tailor that at every level as we move down and make sure—and we did a lot of tailoring along the way, but we are now going back through each level to make sure that we have got that tailoring just about right. Not everything that we need the eight systemically important institutions to do needs to be done by every bank, and many of them have much simpler business models that are much more traditional banking, and different regulatory strictures should apply to those companies. So it is something we are working on.

Senator TILLIS. Mr. Chairman, the only thing I would say, as somebody who worked in a firm that helped prepare CCAR and stress tests results, it still is unimaginable to me how a properly tailored environment could result in 60,000- and 100,000-page submissions. There has got to be a better way to do it, even at the high end of the spectrum, and I just look forward to you all continuing to look at it and manage the risk but right-size it.

Chairman CRAPO. Senator Jones.

Senator JONES. Thank you, Mr. Chairman. Chairman Powell, thank you for being here and welcome.

I would like to go back to a couple questions. I think it is pretty obvious that folks on the Committee are concerned about wage growth in addition to unemployment. You said in your testimony that with the economy growing the way it is, you expect to see wage growth continue, but that has been on a fairly modest trend over the last few years. So you see that wage growth increasing over the next couple of years as opposed to the very modest trend that we have seen?

Mr. POWELL. That is my expectation, Senator. As we have moved from 10 percent unemployment down to 4.1 percent, we have seen some gradual increase in wages, but, frankly, not what I would have seen. I think as you look back over the last 3 or 4 years, you can kind of tell the story about why that was the case. Now we are at 4.1 percent unemployment, labor force participation is higher relative to trend than it was, and I guess I would have expected to see higher wages now. And I do continue to expect them to rise as the labor market continues to tighten.

Senator JONES. Well, assuming the economy continues to grow as you expect, are there factors that we need to be on the lookout for that could prevent the wage growth that you would anticipate as opposed to the very kind of—not flat but very, very modest wage growth? Are there factors that we need to be concerned about or looking about in the future?

Mr. POWELL. I think ultimately sustainable wage growth is a function of productivity. Wages should equal, you know, inflation plus productivity. And so to get wages to go up sustainably over a long period of time, we need higher productivity. That is a function of investment in people, investment in plant and equipment, R&D, all those things that drive us to be more productive. That is really the only way to have sustainable wage growth.

Senator JONES. OK. Well, that kind of leads me to another area, and I do not want to misrepresent your testimony of the other day, so if I characterize something wrong, just please tell me. It will not be the first time I have been told I am wrong about things. But I think you said on Tuesday to some extent that limiting immigration could limit our productivity growth in the coming years. Chairman Yellen, your predecessor, also told this Committee in the past that limits on immigration could limit GDP growth. And so without putting you on the spot to try to get you to wade into very specific hot-button issues that we have got here, can you talk a little bit about why immigration may boost productivity and GDP growth?

Mr. POWELL. So to go back to what I was saying, you can think of growth being a function of growth in the labor force plus productivity. Those are really the only two ways the economy can grow—more hours worked and more output per hour.

Now, if you look at our labor force growth, it used to be 2, 2½ percent, you know, 25 years ago, 30 years ago. Now it is about 0.5 percent as the population ages, and some part of that 0.5 percent is immigration. So I think those of you who have the decision rights around immigration, this is a factor that you ought to consider. It does not directly affect productivity, but it affects potential growth through the labor force.

Senator JONES. All right. And I do not know if this would be an appropriate question, but is our current immigration policy in any way contributing to the lack of wage growth, as you see it today?

Mr. POWELL. You know, immigration is one of those issues that we do not really have authority over, and, you know, I can speak to it as it relates to things like potential growth, but I am loath to get into current policy and things like that. I think I will follow my predecessors in sticking to our knitting on that.

Senator JONES. All right. I kind of thought that would be the answer, but I was going to ask anyway.

Going back to wage growth, what can we do, as wage growth continues, to try to decrease the disparities that women have in the labor force, that the minority population, you know, whether they be Hispanic or the African American population, have in the labor force?

Mr. POWELL. Any kind of discrimination in our society, in our labor force, is, of course, unacceptable and not something that we can tolerate. Having said that, you know, we do not have the tools, broadly speaking, to address those things.

The tools we do have, though, the biggest thing we can do is to take seriously our statutory mandate of maximum employment. As you can see, when we go into a recession, it is the most vulnerable populations whose unemployment rates go up the fastest and the highest, and you can see that they come down the most in the recovery. They tend to not get down as low as people with college degrees and things like that. But at the same time, that is really how we can contribute.

Senator JONES. All right. Last, there were comments made in your testimony on the House side concerning the appropriations process and potentially having Congress appropriate your budgets for nonsupervisory type activities of the Fed, and I would like your quick opinion on that, and also how a potential Government shutdown might affect that should you have that appropriations—I have been fairly critical of the way that the budgetary process here has been taking place, and so we have had five—you know, we have had a couple of shutdowns in the last couple of weeks. How would that have affected your ability to supervise?

Mr. POWELL. Legislatures all around the world, governments all around the world have seen fit to give central banks an independent source of funding, and I would say that that is a wise decision. The things that we do may not always be politically popular, and I think it is wise to give us just a little bit of degree of separation. Of course, we are transparent; of course, we are accountable. And that is not just for monetary policy. Here in the United States, all three of the bank regulatory agencies have an independent source of funding. This is a decision for Congress, that Congress has made for the last 40 years. It has not stopped Congress from providing, you know, appropriate oversight of our activities and regulations. So I would just say that I do not see what problem we are solving here.

Senator JONES. It seems to be working. If it is not broken, do not fix it.

Thank you, Mr. Chairman. I appreciate that.

Chairman CRAPO. Thank you. And before I turn to Senator Moran, I would note to our Members we have a series of three votes being started in about 5 or 6 minutes, and we have four speakers left here. If you are all very concise and stick to your 5 minutes, I think we can probably wrap this up at the tail end of the first vote and go over. So please pay attention to the clock. We will not be able to go over and come back because of the three votes.

Senator Moran.

Senator MORAN. I am glad I am next, Mr. Chairman.

[Laughter.]

Chairman CRAPO. Five minutes.

Senator MORAN. Mr. Chairman, thank you very much for joining us today. You are new at your job. I would tell you that, listening to you in previous settings and today, you are reassuring, seemingly competent, perhaps exactly the right thing we need at the Federal Reserve in today's economic and political world. So thank you very much for your service to the country. I hope I do not have to change my comments about you in the future, so we look forward to working with you.

Let me go through three things. A Treasury report recently indicated that the current exposure method, CEM, may not appropriately measure the economic exposure of a listed options contract, and that a risk-adjusted approach for valuing options for purpose of capital rules such as weighing the options by their delta might be in order. I think this issue need a quicker fix, and perhaps there is a long-term fix, but are you in a position to make the changes that you at least at times have said it is important to make?

Mr. POWELL. Yes, we are, Senator. I think we are in the middle of a changeover from CEM to SACCR, which is the other way to do it, and we are also looking at the calibration of the enhanced leverage ratio. Both of those things should help.

Senator MORAN. What kind of timeframe do you believe you are on?

Mr. POWELL. I would be loath to give you an exact date. Why don't we come back to your office on that? But this is an active thing, I think fairly soon.

Senator MORAN. Very good. I would welcome the follow-through. Tomorrow I will meet with Esther George at the Kansas City Fed, and I look forward to that conversation. Part of what I will talk to her about is agriculture and particularly the rural economies of our region. Let me highlight for you something that I think is important for you in your regulatory role to remember.

Farmers and ranchers often come to me and ask about the safety net that comes from a farm bill. Farm policy is designed to help farmers and ranchers in difficult times, generally difficult economic times. We are experiencing those times now. The challenge is significant for someone trying to earn a living in agriculture. But there is a safety net that I think is often forgotten, and that is the relationship between the lender in their community, a relationship banker, a financial institution, and that family farmer. And I just want to highlight once again the importance that we do not get to the circumstance in which the examiners, the regulations prohibit bankers from making decisions about lending or access to credit by agriculture based upon some very restrained, restrictive method. Let the issue of character, relationship, history between what is often a family owned bank and a family farm continue. That is one of the most important safety nets in difficult times, the relationship between our lenders and our bankers, and where I see the threat of that diminishing or being eliminated is through the regulatory process in which a bank is written up for making a decision that they feel comfortable with but a regulator may not.

Any response to that?

Mr. POWELL. I will just take that very much to heart, Senator.

Senator MORAN. Thank you very much.

And then, finally, let me ask a question about education. If we are looking for economic growth, it seems that a highly motivated, trained, and educated workforce is a significant component of that. Do you have in your understandings of the circumstance that we face in the employment market where we should be focusing our support for education or where we should be emphasizing for students and adults—those two things are not different—for those who need an education and additional training, where we ought to be focusing our resources to meet the economy's needs for that highly motivated, educated, and trained workforce?

Mr. POWELL. You know, I am probably not the right person to get down into the details of exactly where to focus. I will just say, though, that my view is that in the long run the only way we can sort of win in the international competition is by having the best educated, most productive workforce in the world. There is really no way to hide from that requirement, and that is education. It is also training. It is not just college education. It is also, you know, apprenticeship programs and that kind of thing, which also can be very successful.

Senator MORAN. Tax rates are an important component in making business decisions, but meeting workforce requirements is there as well. Is that true?

Mr. POWELL. Yes.

Senator MORAN. Thank you.

Mr. Chairman, thank you.

Chairman CRAPO. Thank you.

Senator Warner.

Senator WARNER. Thank you, Mr. Chairman. Let the record show your timeliness in starting meetings meant that me being 6 minutes late really was——

Chairman CRAPO. I noted that and felt bad for you.

Senator WARNER. It was quite a challenge. But I wanted to stay because I wanted to ask the Chairman two very important questions. Let me preface this by saying, you know, in my first year here, one of the most important pieces of legislation I have ever worked on was the Dodd-Frank legislation. I think Dodd-Frank, for all its challenges, has made our system remarkably stronger. But we are 8 years later, and there is a broad, bipartisan group of us who are going to debate on the floor next week legislation that would make some modifications.

In this legislation, S. 2155, we have not changed the requirements that the Fed perform annual Dodd-Frank stress tests on banks above $250 billion. I think that is terribly important to maintain. We do give the Fed, after an appropriate period to do a rulemaking, the ability to look at those banks between $100 and $250 billion—and this is very important—to continue to undergo stress tests on a periodic basis. My view is that stress testing is the most important prudential standard and that frequent stress tests are some of the best tools we have to prevent another financial crisis.

Can you give us your views on stress testing, including how rigorous they should remain and how frequent they should remain, on banks between $100 and $250 billion in assets if this legislation passed?

Mr. POWELL. I would be glad to. Let me just echo what you said. We do believe that supervisory stress testing is probably the most successful regulatory innovation of the post-crisis era. We are strong believers in this tool, including for institutions of $100 to $250 billion. So it would be our intent, if this bill is enacted, to continue, that these institutions would continue to have meaningful, strong, regular, periodic stress tests, frequent stress tests. And, again, we see it as a very important tool for these institutions.

Senator WARNER. I hope, again, folks will be listening to this. We are not touching anything on the largest institutions in terms of the annual stress test on folks above 250, and as the Chairman of the Fed has indicated, even amongst those banks between 100 and 250, we are still going to have frequent, periodic stress tests that are still going to be strong, and the legislation lays out in some detail some of the requirements that we would have in those stress tests.

My last question is this: In terms of overall enhanced prudential standards, we do move in this legislation from $50 billion to $100 billion. But we give you then in the group of institutions between $100 and $250 billion an 18-month period to essentially tailor those standards more appropriately. And as you have indicated, we already have an institution below $250 billion that still qualifies as a SIFI. So I would just like to say again for the record, for folks who are watching and who will watch the debate next week, that you will take this responsibility of this 18-month rulemaking and do a thorough examination of the banks that fall in that category, and those that are claiming that somehow all enhanced prudential regulations of banks that fall into that category are going to suddenly magically disappear sure as heck is not the intent of this individual in terms of that legislation and I hope is not the intent of the Fed.

Mr. POWELL. What I see us doing is creating a framework—we will be looking at all the institutions that are in that area and all the risks that might arise in banks between 250 and 100, and we will create a framework for assessing where systemic risk might be, where there might be regional risks. We will look at everything. And that framework will then be in place in 18 months, and if there are institutions that are currently in that population or that over time become systemically risky or even risky to themselves, the way the legislation gives us a lot of flexibility to do that, then we will have that in place. And as you point out, we have not been shy about finding systemic risk under 250. We are perfectly happy to do that. So we will feel comfortable doing this job, I believe.

Senator WARNER. Listen, I look forward to a fair and spirited debate next week. A lot of Members have different views. But I think it is very, very important when people go about talking about doing away with stress tests or eliminating any kind of enhanced prudential regulations, that is not our intent. There may be some tailoring that goes on in this new category, but particularly for the larger institutions, status quo is going to remain.

Thank you, Mr. Chairman.

Chairman CRAPO. Thank you. And Senator Heitkamp is next. I will let our Senators know we are 5 minutes on our way to the vote, so we have got to really go.

Senator Heitkamp.

Senator HEITKAMP. Thank you. I just want to follow up a little bit on HMDA and clarify what—I was not able to attend because I had other hearings, but what I understand has been discussed has been a clarification from you that nothing in this bill that will be debated next week undermines the Fed's ability to enforce fair lending laws. Is that correct, Mr. Chairman?

Mr. POWELL. That is generally right. CFPB really writes these rules, and you should seek comment from them, if you like.

Senator HEITKAMP. But you would acknowledge that our bill preserves the traditional HMDA data collection on race?

Mr. POWELL. It does, yes.

Senator HEITKAMP. So while the bill does not undermine fair lending, it does meaningfully reduce substantial costs imposed on small lenders from HMDA data collection. I think this is the motivation. These costs can reach into the hundreds of thousands of dollars per year. One small institution estimates that the cost of HMDA quality assurance for their bank equals approximately $400,000 per year and involves five associates. So when it comes to regulation, we have to look at the benefits and the costs.

One of the things that I think I just want to impress on people is that when you do not respond to these kinds of concerns, legitimate concerns from small lenders, there is a resentment to the overall policy that, you know, we tend to throw the baby out with the bath water because of the level of frustration.

Wouldn't you agree that we could, in fact, reduce costs to small lenders and still maintain the protections provided by HMDA?

Mr. POWELL. Yes, I do agree.

Senator HEITKAMP. So when we are looking at going forward, I think it is important that we have a very spirited debate about this, but I think it also is very important that we put it in perspective and that we not exaggerate the results here or the purpose of this bill. And so, Chairman Powell, just one question, and I know you have been answering a lot of questions about the economy, writ large, but I wanted to just get your sense of economic growth as we look at—again, no big surprise I am going to ask a question about trade. I know you guys do not always like answering those questions. But it seems to me that we are now looking at a potential of tariffs being imposed on aluminum and steel for which there will be retaliation. We have, in fact, retreated somewhat from the commitments on NAFTA, and we no longer have a pathway into TPP.

How concerned are you about the impacts of this trade policy of this Administration on our opportunity for economic growth long term?

Mr. POWELL. I will not comment directly on the Administration's policies, but I will say about trade that I think the record is clear that over long periods of time for many, many countries, trade is a net positive. It spreads productivity. It forces our companies to compete. It gives businesses and people the ability to buy and sell things in the world market. So, overall, the studies all show and theory would suggest that it is a good thing.

But the benefits do not fall equally. There can be communities, there can be individuals who are negatively affected by trade, and we have seen a fair amount of that. I think it is more of that than probably was expected. And I think it is important that we address that as well so that you can sustain public support for trade.

I think, you know, as Chairman Bernanke said, the tariff approach is not the best approach there. The best approach is to deal directly with the people who are affected rather than falling back on tariffs, but, again, these are not measures that are consigned to us. They are really for you and for the Administration.

Senator HEITKAMP. But I think that these are measures that are going to have an effect on the kind of economic analysis that you do that is going to lead to monetary policy. I do not think there is any doubt that trade will have a dramatic impact on economic growth, and I am very, very concerned about making sure that our trade policy is consistent with economic growth and also very concerned about the speed at which systems today can react to trade policy as opposed to maybe 20 or 30 years ago when it was kind of, you know, plodding along. It was OK if the WTO took 10 years. Today I do not think that is true, and I do not think it is true that it is OK that it takes 10 years to get back into TPP. I think things will move a lot quicker, and they are going to have—it is going to have a dramatic effect on our ability to be competitive in this country and to encourage investment and growth.

Thank you, Mr. Chairman.

Chairman CRAPO. Thank you.

Senator Reed.

Senator REED. Well, thank you very much, Mr. Chairman. And thank you, Mr. Chairman, for being here today.

One of the things that we have noticed over the last many years is the decline in workforce participation of prime-age men. In fact, the Kansas City Fed has done a lot of good analytical work on this. One reason is automation. Those are particularly the types of jobs, it seems, that are easily replaced by some type of technology—machines and computers, *et cetera.* As we go forward, I would assume that that trend will continue, and it raises the question of how does the Fed plan to forecast these effects of automation with your mandate for full employment? We could find ourselves technically at full employment but with millions of Americans who are out of luck and out of jobs and technically not in the workforce. How are you going to deal with that?

Mr. POWELL. The long history of this, as I am sure you know, is technology comes in and it can displace people, but ultimately if society—if the people in society have the skills and aptitudes to benefit from technology, then the advent of technology lifts all boats. So for 200 years really, since the Industrial Revolution, we have faced this problem, and over longer periods of time, it has always been the case that technology lifts all boats in a way.

Now, I do not think there is any law of nature that says that that has to continue, and the reason—the part of it that we control is skills and aptitude of our labor force. To the extent people have the skills and aptitudes to benefit from technology, to operate technology, then they will benefit from it. And to the extent they do not, it is people with the high school degree and less who have really experienced the worst of this. You know, that is where wages are low, that is where labor force participation is low, all those things.

So it is a really easy thing to say and a really hard thing to do, but it comes down to education.

Senator REED. Do you think we are doing enough in terms of education, in terms of Federal, State, local investment? We just saw West Virginia shut down for 2 days because their teachers felt they were not being compensated well enough, and we have a situation I think in Oklahoma where they are only going to school 4 days a week because of budget problems. So I agree with you, education is a key. We just do not seem to get that message.

Mr. POWELL. There is nothing in the productivity data or any other economic data that suggests we are handling this problem well. All around the world, others are catching up and passing.

Senator REED. And exceeding us.

Mr. POWELL. Yes.

Senator REED. Yes. One other point, and this is sort of a passionate issue with me, and that is the Military Lending Act. The Federal Reserve has the responsibility among many agencies to enforce it. The Department of Defense promulgated regulations in 2015 which I think are tougher. It essentially says you cannot charge someone in uniform over 36 percent interest. That seems to me a pretty fair rule. And having just come back from Somalia and being with Special Forces people and their families back home, I think this has to be enforced aggressively. Can you tell me what you are doing to make sure that your responsibilities under this rule are vigorous and proactive and relentless?

Mr. POWELL. Well, we share your view about the importance and value of enforcing this, I assure you, and this is one where—as I think we have discussed, this is a very important regulation, and it will get aggressive enforcement from us.

Senator REED. And you will get the message out to your regulated entities that this is really at the top of your list?

Mr. POWELL. Yes, we will.

Senator REED. Thank you, sir.

Chairman CRAPO. Thank you.

Senator Van Hollen.

Senator VAN HOLLEN. Thank you, Mr. Chairman. And welcome, Mr. Chairman. Good to have you here in the Banking Committee in your official capacity.

I know there has been some discussion about stock buybacks. Stock buybacks are primarily a way for corporations to increase the share price. Isn't that right?

Mr. POWELL. Yes. I mean, it works in that way, yes. It is a way for companies to distribute cash to shareholders as well.

Senator VAN HOLLEN. Exactly. So I do think it is worth pointing out that since the tax bill was passed, which was in large part advertised as a way to dramatically increase wages of workers—in fact, the predictions were $4,000-a-year pay increases. We have seen the overwhelming amount of the money that has gone to corporations used for stock buybacks, in fact, $200 billion of stock buybacks just in the first 2 months of this year alone, including a $20 billion stock buyback from Wells Fargo, a major financial institution that we have had a lot of discussion about in this Committee, primarily because of a violation of consumer protection issues.

I do think it is also worth pointing out that over 35 percent of the stock owned is actually owned by foreigners and foreign entities, which is why the Prime Minister of Norway, when she visited a short time ago, thanked President Trump for the tax bill because it dramatically boosted the stock value of the Norwegian Government and its holdings. But it means money not going into the economy, generally speaking, direct investment by those corporations.

I wanted to ask you about the issue of cybersecurity and the impact of cyber attacks on our overall economy. We have seen big banks that have been victims of cyber attacks like JPMorgan. I believe the Fed in the past has been the victim of some cyber intrusions. And the Council for Economic Advisers just put out a report indicating that malicious cyber activity cost the economy between $57 billion and $109 billion in 2016—a big number—and the Chairman of the Committee has spent a lot of time focusing on this issue, and we had a hearing specifically on the Equifax breach.

This evening, I am going to be teaming up with our Maryland State Attorney General, Brian Frosh, to have a forum on consumer protection. Seven hundred people have already signed up for this, and we expect many of them to have been victims of the Equifax breach.

My understanding is there has been reporting, first of all, just this morning, that Equifax found an additional 2.4 million people impacted by the breach, and there was also a February 4th report saying that U.S. consumer protection official puts Equifax probe on ice, and the article says that the CFPB, under the leadership of Mr. Mulvaney, has "rebuffed bank regulators at the Federal

Reserve, the FDIC, and the OCC when they offered to help with onsite exams of credit bureaus in connection with the Equifax investigation."

Can you confirm whether or not the Consumer Financial Protection Bureau has rebuffed offers by the Fed to help them get to the bottom of the Equifax——

Mr. POWELL. No, I cannot. I had not heard that.

Senator VAN HOLLEN. If you could get back to us—I mean, this is a publicly reported document. Would you be willing to get back to us and let us know, confirm or say one way or another?

Mr. POWELL. Sure.

Senator VAN HOLLEN. I appreciate that very much.

In terms of the impact on banks, you have the direct impact—banks are also impacted when those that have less cyber protections—you know, Target, for example—are hacked, and as a result of that, the banks have to pay the credit card cost directly to consumers. And then they have got to go recoup that money from other entities. And so one of the things I have been focused on and the Committee has talked about is to try to get the SEC to increase its oversight with respect to cyber attacks and especially their responsibilities to disclose to the public in a timely manner. And I would just ask you if you could work with us and the other regulators in trying to come up with disclosure requirements that provide the public with adequate notice of these cyber breaches so they can protect themselves from the cost, not just the public but banks and others as well. I would appreciate that if you could do that.

Mr. POWELL. We would be glad to.

Senator VAN HOLLEN. Thank you.

Mr. POWELL. Thanks.

Chairman CRAPO. Thank you. And, Chairman Powell, Senator Brown has said——

Senator BROWN. I will be very brief, respecting your time and our getting to the vote. I heard you say a number of times in response to questions that there will be no relaxing of the rules for foreign banks, and I want to just—I just do not agree with that. A Treasury report last year, the Administration made it clear it wanted to lower standards. Secretary Mnuchin testified, sitting where you are right now, in January that he believed the bill would accomplish the goal. Paul Volcker has said it does. Sarah Bloom Raskin said that there will be less regulation of the foreign banks. Antonio Weiss said the same.

I had an amendment during the markup on that issue, and it was defeated. Foreign banks lobbied against that amendment. The bill's supporters rejected it.

I have three very related questions. I will ask the three consecutively, and you can either answer them now or get them in writing to me, if you would. Promises she will push back against foreign bank lobbyists and Secretary Mnuchin to ensure that no foreign bank with more than $50 billion in U.S. assets will benefit from any deregulation. I would like that promise from you that you will push back against foreign bank lobbyists and Secretary Mnuchin.

I would like to know what you plan to do when a foreign bank sues the Fed for not treating it equally to a U.S.-based bank that falls in that 50 to 250 category.

And I guess my final question: Wouldn't it better to amend this bill to avoid litigation and make sure it does not benefit large foreign banks? So if you want to respond now, or you can respond in writing.

Mr. POWELL. Why don't we take those under advisement and give you a clear response in writing quickly.

Senator BROWN. Fair enough. OK.

Thank you, Mr. Chairman.

Chairman CRAPO. All right. Thank you. And that does conclude the questioning. Again, I want to thank you, Chairman Powell, for being here and for the service you are giving to our country.

For Senators who wish to submit questions for the record, those questions are due on Thursday, March 8th, and I encourage you, Chairman Powell, if you receive additional questions, to respond to them promptly.

I also apologize that because of the pressure we have on the vote I am going to have to conclude this hearing and then run to the floor, so I will not be able to visit with you privately or more personally after your testimony, but we will have plenty of opportunities to do so.

With that, the hearing is adjourned.

Mr. POWELL. Thank you, Mr. Chairman.

[Whereupon, at 12:06 p.m., the hearing was adjourned.]

[Prepared statements, responses to written questions, and additional material supplied for the record follow:]

PREPARED STATEMENT OF CHAIRMAN MIKE CRAPO

Welcome, Chairman Powell, for your first appearance before this Committee as Chairman of the Federal Reserve Board of Governors, and congratulations on your confirmation.

Today's hearing is an important opportunity to examine the current state of monetary and regulatory policy.

Over the past few years, the Humphrey-Hawkins hearing has often served as an opportunity for Members of this Committee to review the new regulations imposed in the wake of the financial crisis.

While I did not always agree with former Chairman Bernanke and former Chair Yellen, I appreciated their willingness to engage with the Committee and discuss possible improvements to the regulatory regime.

These discussions were helpful in building common ground for our banking bill, S. 2155, particularly for provisions like the threshold for enhanced standards under Section 165 of Dodd-Frank.

This bipartisan bill now has 13 Republican and 13 Democratic and Independent co-sponsors.

The bill was the result of a thoughtful, deliberative process over several years that included hearings, briefings, meetings and written submissions from hundreds of commentators and stakeholders.

The primary purpose of the bill is to make targeted changes to simplify and improve the regulatory regime for community banks, credit unions, midsize banks and regional banks to promote economic growth.

Economic growth has been a key priority for this Committee and this Administration this Congress.

The U.S. economy has failed to grow by more than 3 percent annually for more than a decade, by far the longest stretch since GDP has been officially calculated.

But now, there are widespread expectations that growth is finally picking up.

According to the January FOMC meeting minutes, the Federal Reserve increased its expectations for real GDP growth going forward, after 4th quarter growth exceeded expectations.

The Fed cited the recently enacted tax reform legislation as among the reasons economic growth is expected to rise.

In addition to tax reform, President Trump's recently released Budget and Economic Report both emphasize that regulatory reform is a key component of rising productivity, wages and economic growth.

By right-sizing regulation, the Committee's economic growth bill will improve access to capital for consumers and small businesses that help drive our economy.

Now that many are predicting a pickup in growth, a number of commentators have expressed sudden concerns about the economy overheating.

While the Federal Reserve should remain vigilant in monitoring inflation risks, we also must continue to pursue commonsense, pro-growth policies that will lead to increased innovation, productivity, and wages.

With respect to monetary policy, I am encouraged that the Federal Reserve is continuing on its gradual path to monetary policy normalization.

The Fed has begun to reduce its balance sheet by steadily decreasing the amount of principal it reinvests as assets in its portfolio mature.

I look forward to hearing more about the Fed's monetary policy outlook as part of Chairman Powell's testimony today.

I also look forward to hearing about the Federal Reserve's ongoing efforts to review, improve and tailor existing regulations.

I know that you are working with Vice Chairman for Supervision Randy Quarles on those issues.

Vice Chairman Quarles has done an excellent job so far, and I urge Congress to confirm him for his full term on the Board as soon as possible.

PREPARED STATEMENT OF SENATOR SHERROD BROWN

Chairman Crapo, thank you for holding this hearing.

Chair Powell, welcome back to the Committee, and for the first time in your new role. You are leading the Federal Reserve at a crucial time, as the Fed normalizes interest rates and shrinks its balance sheet.

The country is in its ninth year of economic recovery, though 2017 marked the worst year for job creation since 2010. And the recovery has not reached everyone. Wage growth has been slow and labor force participation has barely improved since 2014. Nine years of job growth have still not done much to narrow income inequality or address employment disparities.

Nationwide, the unemployment rate for black workers is double that for whites-equal to the gap at the start of the civil rights movement. Looking more broadly, labor force participation is down for all minorities.

Statistics show that large pockets of people are waiting to share in the benefits from the recovery. Instead of addressing their problems, Republicans are working hard to help Wall Street banks that are raking in profits.

Despite the fact that we are 9 years removed from the recession, this Administration has embarked on a substantial fiscal stimulus, permanently slashing the corporate tax rate and providing the largest benefits to the wealthiest Americans. Of course, Wall Street, which is making record profits, will do well.

Instead of fighting for workers and making sure labor market opportunities are shared among those who have been struggling, Republicans would rather push for tax cuts for corporations and the wealthy.

Those tax cuts are not free-they will add over a trillion dollars to the deficit. The once and future deficit hawks on the other side of the aisle were more like marshmallow Peeps when confronted with tax cuts for the wealthy.

The ink was barely dry when we began to hear calls for spending cuts that will hurt families across the country-the so-called "entitlement reform" that everyone should understand means cuts to Medicare, Medicaid, and Social Security.

The claim was that it would all be worth it, because workers would benefit.

I'm happy for any Ohioan who gets a raise, but we have seen how banks and corporations have responded to the tax cuts, and the numbers are staggering. In January, Wells Fargo announced a $22.5 billion stock buyback-288 times what it will spend on pay raises for its workers.

This year, companies will start disclosing CEO-to-worker pay ratios, as required under the Wall Street Reform Act. Honeywell, which announced an $8 billion stock buyback in December, just disclosed that its CEO is getting a 61 percent pay raise and makes 333 times the average worker's pay.

It's pretty simple—for each pay raise or bonus for workers, companies are often spending a hundred or two hundred times as much on stock buybacks and executive compensation.

It gets worse.

While the biggest banks lavish pay raises and stock giveaways on their executives, they continue to violate the law and abuse their customers. The Fed recently imposed an unprecedented-if belated-penalty on Wells Fargo following several scandals, including the opening of millions of fake accounts and improperly charging borrowers for auto insurance they didn't need.

The Fed told Wells Fargo it can't grow until it demonstrates that it has improved board oversight and risk management. It sounds like the Fed has come to the conclusion many of us on this Committee reached a year and half ago-Wells Fargo is "too big to manage". I'll be closely watching to make sure the new team at the Fed doesn't lift these penalties, without the bank making real changes.

And, it's not just Wells Fargo. Last week, Citigroup announced it illegally overcharged nearly two million credit card accounts for over 5 years, and that it will refund $335 million to customers.

Though Wall Street can't seem to go a month without a new scandal, the Senate is set to take up a bill that would roll back critical financial stability protections and limit watchdogs' ability to police the largest banks.

We can expect the banks to spend any savings from less oversight the same way they spent their tax cuts-more dividends, share buybacks, and mergers.

Chair Powell, Wall Street may be focused on whether there are three or four rate hikes this year, but I think your focus needs to be on ensuring the Fed doesn't once again permit the buildup of risk in the market and hubris at the Fed. The Great Moderation turned out to be not so great, and we forget that lesson at our peril.

The Fed needs to take the side of consumers-making sure the financial system stays strong and regulations are enforced. Chair Powell, I look forward to your testimony.

Thank you, Mr. Chairman.

PREPARED STATEMENT OF JEROME H. POWELL

CHAIRMAN, BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM

MARCH 1, 2018

Chairman Crapo, Ranking Member Brown, and Members of the Committee, I am pleased to present the Federal Reserve's semiannual Monetary Policy Report to the Congress.

On the occasion of my first appearance before this Committee as Chairman of the Federal Reserve, I want to express my appreciation for my predecessor, Chair Janet Yellen, and her important contributions. During her term as Chair, the economy continued to strengthen and Federal Reserve policymakers began to normalize both the level of interest rates and the size of the balance sheet. Together, Chair Yellen and I have worked to ensure a smooth leadership transition and provide for continuity in monetary policy. I also want to express my appreciation for my colleagues on the Federal Open Market Committee (FOMC). Finally, I want to affirm my continued support for the objectives assigned to us by the Congress—maximum employment and price stability—and for transparency about the Federal Reserve's policies and programs. Transparency is the foundation for our accountability, and I am committed to clearly explaining what we are doing and why we are doing it. Today I will briefly discuss the current economic situation and outlook before turning to monetary policy.

Current Economic Situation and Outlook

The U.S. economy grew at a solid pace over the second half of 2017 and into this year. Monthly job gains averaged 179,000 from July through December, and payrolls rose an additional 200,000 in January. This pace of job growth was sufficient to push the unemployment rate down to 4.1 percent, about ¾ percentage point lower than a year earlier and the lowest level since December 2000. In addition, the labor force participation rate remained roughly unchanged, on net, as it has for the past several years—that is a sign of job market strength, given that retiring baby boomers are putting downward pressure on the participation rate. Strong job gains in recent years have led to widespread reductions in unemployment across the income spectrum and for all major demographic groups. For example, the unemployment rate for adults without a high school education has fallen from about 15 percent in 2009 to 5 ½ percent in January of this year, while the jobless rate for those with a college degree has moved down from 5 percent to 2 percent over the same period. In addition, unemployment rates for African Americans and Hispanics are now at or below rates seen before the recession, although they are still significantly above the rate for whites. Wages have continued to grow moderately, with a modest acceleration in some measures, although the extent of the pickup likely has been damped in part by the weak pace of productivity growth in recent years.

Turning from the labor market to production, inflation-adjusted gross domestic product rose at an annual rate of about 3 percent in the second half of 2017, 1 percentage point faster than its pace in the first half of the year. Economic growth in the second half was led by solid gains in consumer spending, supported by rising household incomes and wealth, and upbeat sentiment. In addition, growth in business investment stepped up sharply last year, which should support higher productivity growth in time. The housing market has continued to improve slowly. Economic activity abroad also has been solid in recent quarters, and the associated strengthening in the demand for U.S. exports has provided considerable support to our manufacturing industry.

Against this backdrop of solid growth and a strong labor market, inflation has been low and stable. In fact, inflation has continued to run below the 2 percent rate that the FOMC judges to be most consistent over the longer run with our congressional mandate. Overall consumer prices, as measured by the price index for personal consumption expenditures (PCE), increased 1.7 percent in the 12 months ending in December, about the same as in 2016. The core PCE price index, which excludes the prices of energy and food items and is a better indicator of future inflation, rose 1.5 percent over the same period, somewhat less than in the previous year. We continue to view some of the shortfall in inflation last year as likely reflecting transitory influences that we do not expect will repeat; consistent with this view, the monthly readings were a little higher toward the end of the year than in earlier months.

After easing substantially during 2017, financial conditions in the United States have reversed some of that easing. At this point, we do not see these developments as weighing heavily on the outlook for economic activity, the labor market, and inflation. Indeed, the economic outlook remains strong. The robust job market should continue to support growth in household incomes and consumer spending, solid economic growth among our trading partners should lead to further gains in U.S. exports, and upbeat business sentiment and strong sales growth will likely continue to boost business investment. Moreover, fiscal policy is becoming more stimulative. In this environment, we anticipate that inflation on a 12-month basis will move up this year and stabilize around the FOMC's 2 percent objective over the medium term. Wages should increase at a faster pace as well. The Committee views the near-term risks to the economic outlook as roughly balanced but will continue to monitor inflation developments closely.

Monetary Policy

I will now turn to monetary policy. The Congress has assigned us the goals of promoting maximum employment and stable prices. Over the second half of 2017, the FOMC continued to gradually reduce monetary policy accommodation. Specifically, we raised the target range for the Federal funds rate by ¼ percentage point at our December meeting, bringing the target to a range of 1 ¼ to 1 ½ percent. In addition, in October we initiated a balance sheet normalization program to gradually reduce the Federal Reserve's securities holdings. That program has been proceeding smoothly. These interest rate and balance sheet actions reflect the Committee's view that gradually reducing monetary policy accommodation will sustain a strong labor market while fostering a return of inflation to 2 percent.

In gauging the appropriate path for monetary policy over the next few years, the FOMC will continue to strike a balance between avoiding an overheated economy and bringing PCE price inflation to 2 percent on a sustained basis. While many factors shape the economic outlook, some of the headwinds the U.S. economy faced in previous years have turned into tailwinds: In particular, fiscal policy has become more stimulative and foreign demand for U.S. exports is on a firmer trajectory. Despite the recent volatility, financial conditions remain accommodative. At the same time, inflation remains below our 2 percent longer-run objective. In the FOMC's view, further gradual increases in the Federal funds rate will best promote attainment of both of our objectives. As always, the path of monetary policy will depend on the economic outlook as informed by incoming data.

In evaluating the stance of monetary policy, the FOMC routinely consults monetary policy rules that connect prescriptions for the policy rate with variables associated with our mandated objectives. Personally, I find these rule prescriptions helpful. Careful judgments are required about the measurement of the variables used, as well as about the implications of the many issues these rules do not take into account. I would like to note that this Monetary Policy Report provides further discussion of monetary policy rules and their role in the Federal Reserve's policy process, extending the analysis we introduced in July.

Thank you. I would be pleased to take your questions.

RESPONSES TO WRITTEN QUESTIONS OF SENATOR SCOTT FROM JEROME H. POWELL

Q.1. Unemployment is at 4.1 percent. Wages are up 2.9 percent compared to a year ago—that's the biggest hike since June 2009. The economy's growing at a healthy rate—3.2 percent during Q3 and 2.6 percent in Q4. Tax reform is going to boost that number back above 3 percent. Despite all the positive indicators, the market had several down days last month. Most of them were around your swearing in. If look back at the recent past, the Federal Reserve and your predecessors have cited stock market volatility as a reason to not raise interest rates. The Fed backed down so many times that this became learned behavior: stock market volatility means no hike in interest rates. Congress says to seek maximum employment and stable prices . . . no more and no less. Please answer the following with specificity:

Q.1.a. Is a rising stock market a pillar of monetary policy?

A.1.a. My colleagues on the Federal Open Market Committee (FOMC) and I set monetary policy with the sole purpose of achieving and sustaining our statutory objectives of maximum employment and price stability. Because monetary policy affects the economy and inflation with a lag, we need to be forward looking in setting policy. That is why, each time the FOMC meets, we assess the implications of incoming information, including information about financial conditions broadly defined, for the economic outlook. Our current assessment, based on all available information, is that further gradual increases in our target for the Federal funds rate will prove most appropriate for achieving and sustaining the objectives the Congress has assigned to the FOMC. We do not have a target for asset prices and we recognize that asset price fluctuations do not necessarily alter the economic outlook. Moreover, financial conditions are only one of many factors that can affect the outlook for the economy.

Q.1.b. Has recent stock market volatility deterred you from your plan to raise rates later this year?

A.1.b. After carefully considering all available information necessary to assess where the economy stood relative to the goals of maximum employment and price stability, and how it was likely to evolve, the FOMC concluded, on March 21, that it would be appropriate to raise the target range for the Federal funds rate by a further 25 basis points. Moreover, FOMC participants generally saw the economic outlook as somewhat stronger than was the case in December, and continued to judge that further gradual increases in the Federal funds rate are likely to be warranted if the economy continues to evolve as expected. Indeed most participants anticipated that, in light of the stronger outlook, the Federal funds rate might rise slightly more, in coming years, than they had anticipated in December. Please bear in mind that we do not have a fixed plan for the path of the Federal funds rate. We will be watching how the economy evolves in the months and years ahead relative to our maximum employment and price stability objectives. If the outlook changes, we will adjust monetary policy appropriately.

Q.2. I sold insurance for over 20 years, and I've said it many times: our State-based system of insurance regulation is the best in the world. The President's Executive order on financial regulation and other Administration reports favor a deferential approach by the Fed to working with primary financial regulators. When it comes to the business of insurance that means State-based insurance regulators. Please answer the following with specificity:

How will you and the Federal Reserve integrate State-based insurance regulators into your work?

A.2. The State-based system of insurance regulation provides an invaluable service in protecting policyholders. The Federal Reserve's principal supervisory objectives for all of the insurance holding companies that we oversee include protecting the safety and soundness of the consolidated firms and protecting any subsidiary depository institution, which encompasses protecting the depositors and taxpayer-backed deposit insurance fund. The Federal Reserve also undertakes supervision, through reporting, examination, and other engagement, of entities in an insurance enterprise that are not subject to financial regulation in order to protect against extant or emerging threats to the consolidated enterprise's safety and soundness.

The Federal Reserve's consolidated supervision thus is complementary to, and supplements, existing entity-level supervision by the primary functional regulators, with a perspective that considers the risks across the entire firm. We conduct our consolidated supervision of all insurance firms in coordination with State departments of insurance (DOIs), who continue their established oversight of the insurance subsidiaries. In order to maximize efficiencies and eliminate supervisory duplication or "layering," we rely upon the work and supervisory findings of the State DOIs to the greatest extent possible. We intend to continue to do so. Federal Reserve supervisors regularly meet, share supervisory information, and collaborate with State DOIs. We remain open to input from supervised firms, State DOIs, and other interested parties on how we can further tailor and better coordinate our supervision while achieving our supervisory objectives.

Moreover, in the ongoing development of a Federal Reserve capital standard for savings and loan holding companies significantly engaged in insurance activities (described as the Building Block Approach (BBA) in the Federal Reserve's advance notice of proposed rulemaking of June 2016), Federal Reserve staff have engaged, and continues to engage, with State regulators and the National Association of Insurance Commissioners in their development of the group capital calculation, a capital assessment that is structurally similar to the BBA. This ongoing dialogue aims to achieve harmonious frameworks to the greatest extent possible and minimize burden upon insurance firms supervised by both the States and Federal Reserve.

RESPONSES TO WRITTEN QUESTIONS OF SENATOR SASSE FROM JEROME H. POWELL

Q.1. As you know, the Administration has invoked Section 201 of the Trade Act of 1974 to impose significant tariffs on solar panels and washing machines.

Q.1.a. As Federal Reserve Chairman, your job is to stay abreast on the state of our economy. These tariffs will almost certainly impact our economy, I believe for the worse. What economic indicators are you consulting to evaluate the economic impact of these tariffs?

Q.1.b. What has been the international response to these tariffs and the initial economic impact of these tariffs?

A.1.a.–b. The Federal Reserve is entrusted to achieve its congressionally mandated objectives of price stability and maximum sustainable employment. Matters of trade policy are the responsibility of Congress and the Administration.

Although the implemented trade actions do have consequences for specific industries, these trade actions are targeted enough that they are likely to have small effects on aggregate price stability and national employment. Federal Reserve staff closely monitor data on U.S. trade flows as well as domestic price developments, both of which could be affected by tariff rate increases.

The international response has been consistent with World Trade Organization (WTO) rules. Canada, China, the European Union, Japan, South Korea, and Taiwan have been holding consultations with the United States under the World Trade Organization rules to protest the measures. China has claimed the right to suspend tariff concessions immediately equal to the amount of trade affected, and did so the week of April 2. The affected countries will likely proceed with the filing of WTO cases against the United States.

Q.2. The Administration has announced that it will impose 25 percent tariffs on steel and 10 percent tariffs on aluminum under Section 232 of the Trade Expansion Act of 1962.

Q.2.a. Can you identify any historical examples where tariffs have helped the United States economy or otherwise fixed the problem it was intended to address?

Q.2.b. Based on the record of the Bush administration's 2002–2003 steel tariffs and other historical examples, how would you expect this 25 percent tariff on steel and aluminum to impact the U.S. economy?

Q.2.c. Would this answer change if countries responded with economic retaliation against the United States, such as through tariffs? For example, I hear constantly from Nebraskan agriculture and manufacturing stakeholders of their concern that other countries will respond to the potential trade barriers by retaliating against agriculture.

Q.2.d. Historically, what industries would be most impacted by this economic retaliation? For example, would agriculture be impacted?

Q.2.e. In 12 months, what economic data would you consult to evaluate the net economic impact of these tariffs in the United States?

A.2.a.–e. International trade, facilitated by low barriers to trade, is likely beneficial to the U.S. economy on net. History has shown that countries that are open to trade often are more productive and grow faster than countries that are relatively closed to trade. The challenge is that the gains from trade are not guaranteed to be distributed as to make everyone better off. It is important to realize that openness to trade can cause dislocation and impose costs on some industries and workers. In part because of these costs, effort should be taken to ensure that trade occurs on a level playing field.

Higher tariffs on products such as steel and aluminum would tend to reduce imports of these products, and shift demand toward U.S.-produced steel and aluminum. Although U.S. producers may benefit from increased domestic demand, other U.S. firms likely would have to pay more for these products when used as an intermediate input, increasing their production costs. Currently, most of the major exporters of steel and aluminum to the United States are subject to exemptions from the tariffs, including Canada, the European Union, and Mexico. As such, the effects may be muted.

The granted exemptions are more extensive than in past episodes. For example, during the 2002 safeguard tariffs on steel, the European Union, a significant supplier of steel to the United States, was not excluded. Even so, the effects on employment and inflation from the 2002 measures were fairly muted.

If countries retaliate by increasing their tariffs on U.S. goods, this will likely hurt exporting industries in the United States by reducing their competitiveness and demand for their products. Retaliation is typically equivalent in size to the affected sales to the United States.

China's announcement of retaliatory tariffs on products such as fruit and pork on April 1 were in direct response to the steel and aluminum tariffs, and the total amount subject to tariffs was picked to match the total amount of Chinese exports of these products (about $3 billion). China also has threatened to retaliate against a larger list of products, depending on what measures the United States Government takes in response to its investigation under section 301 of the Trade Act of 1974 into China's policies related to technology transfer, intellectual property, and innovation.

In calibrating retaliation, foreign countries often target industries in which the United States has a comparative advantage, such as agriculture. In part, this reflects that the United States tends to export more from sectors in which it is relatively productive. In addition, agriculture can make an appealing target for retaliation as agricultural products tend to be relatively homogenous, allowing the retaliating country to shift purchases away from the United States toward alternative producers with less disruption to local consumers.

The Federal Reserve looks at a wide range of data to assess the state of the economy. Data which might be used to evaluate the effects of the tariffs would include import and export data, as well as the prices of imports and exports. In addition, domestic employment and overall retail prices might be informative.

RESPONSES TO WRITTEN QUESTIONS OF SENATOR SCHATZ FROM JEROME H. POWELL

Q.1. I would like to follow up on our ongoing conversation on the economic impacts of climate change. I understand that the Federal Reserve's mandate and tools are entirely focused on monetary policy. However, the Federal Reserve's implementation of monetary policy is informed by its assessment of the U.S. economy, including future economic trends and risks. According to your answer to a question I posed during your confirmation, your position is that the Federal Reserve is only concerned with "short- and medium-term developments that may change materially over quarters and a relative small number of years, rather than the decades associated with the pace of climate change."

Q.1.a. How did you arrive at the determination that there are no short- or medium-term impacts of climate change?

Q.1.b. Have you or your staff considered or reviewed data from our Government's scientific agencies about the rate of climate change?

Q.1.c. In 2017, NOAA reported 16 separate billion-dollar climate events. Combined, these events cost the U.S. economy over $300 billion—roughly 1.5 percent of U.S. GDP. Do you think that severe weather events that cost the equivalent of 1.5 percent of GDP qualify as short- and medium-term developments that the Federal Reserve should be concerned about?

Q.1.d. Will you commit to having a staff-level conversation about these data sources to consider whether they should be a resource the Federal Reserve uses when assessing the national economic outlook and future economic risks?

A.1.a.–d. Each and every severe weather event reported by the National Oceanographic and Atmospheric Administration (NOAA) is consequential for the individuals and communities that are directly affected. The most severe of these events can seriously damage the lives and livelihoods of many individuals and families, devastate local economies, and even temporarily affect national economic statistics such as GDP and employment. In that sense, severe weather events do have important short-term effects on economic conditions. And in assessing current economic conditions, such as our published statistics on industrial production, we take into account information on the severity of weather events. For example, we relied on information from the Federal Emergency Management Agency and the Department of Energy to gauge the disruptions to oil and gas extraction, petroleum refining, and petrochemical and plastic resin production caused by last fall's hurricanes. Likewise, we frequently use daily measures of temperatures and snowfall at weather stations throughout the country from the NOAA to assess the short-run economic impact associated with unusually large snowfall events.

However, severe weather events are difficult to predict very far in advance. Moreover, the historical regularity has been that these type of events have not materially affected the business cycle trajectory of the national economy, both because the disruptions to production have tended to be relatively short-lived and because such events tend to affect specific geographic areas rather than the United States as a whole. In contrast, monetary policy has broad-based effects on the U.S. economy and tends to influence macroeconomic conditions with a lag. As a result, monetary policy is not well suited to address the economic disruptions associated with severe weather events. That said, the most severe of these events have imposed a significant drain on public resources. If such events become much more frequent or more severe, the fiscal cost would likely mount, and that would be an important issue for the Congress to consider.

My staff is available to discuss these issues further if you would find that helpful.

Q.2. There is currently $1.4 trillion in outstanding student loan debt, the highest category of consumer debt behind mortgages. It is also the most delinquent, with 11 percent of borrowers seriously delinquent or in default. The Federal Reserve Board of New York estimates this number is likely twice that rate, once borrowers who are in forbearance are taken into account. At the hearing, you agreed that student loan debt could create a drag on the economy as student loan debt continues to grow.

Q.2.a. What indicators should we track to determine when student loan debt is starting to have a real impact on the economy?

Q.2.b. What are the ways in which student loan debt could hold back the economy and how much of an effect do you think it could have?

A.2.a.–b. Student loan debt can potentially hold back the economy through several mechanisms. First, high levels of student loan debt (and the financial burden associated with repaying such debt) may hold back student loan borrowers' savings and therefore affect decisions such as home purchases, investment, marriage, and starting a family. Second, high levels of student loan debt may increase debt-to-income ratios or reduce credit scores, leaving some borrowers with more limited access to mortgage, auto, and credit card loans. In addition, unlike other types of household debt, student loans are not dischargeable in bankruptcy, which can make these loans more burdensome in times of financial hardship. Third, if student loan debt becomes exceedingly burdensome, students may be discouraged from taking loans to go to college, thereby dampening human capital accumulation in the economy.

One important caveat to underscore is that if student loan borrowers earn more over their lifetimes as a result of obtaining more education, student loans would likely help strengthen the economy, instead of holding it back.

Accordingly, there are several indicators one could track to gauge the possible impact of student loan debt on the economy. Such indicators include auto purchases, home ownership and household formation rates, as well as savings and investment behavior, especially among young adults with student loan debt. In addition, one could track the credit performance of student loan borrowers, not only on their student debt, but also on other types of debt.

Q.3. So far, companies benefiting from the recent tax cuts have announced over $200 billion in stock buybacks. In contrast, companies have announced only $6 billion in worker bonuses and raises.

Q.3.a. As far as possible investments go, do you think stock repurchases offer the greatest potential for boosting productivity and economic growth?

Q.3.b. How do they compare to investments in capital, innovation, or worker compensation in terms of the potential for increases in productivity and economic growth?

Q.3.c. If companies put the vast majority of their gains from the new tax law into stock repurchases, would you expect to see an increase in economic growth and wages from the tax law?

A.3.a.–c. Investments in new capital equipment or innovative technologies are important factors for improving productivity and economic growth. Similarly, increased worker compensation can be a factor in encouraging individuals to join or remain in the labor force and to develop new skills, which can further increase productivity and growth. Comparing the economic effects of these investments to the eventual effects of stock buybacks is difficult because we cannot be sure where the gains from buybacks will ultimately turn up. When a company buys back its shares or pays higher dividends, the resources do not disappear. Rather, they are redistributed to other uses in the economy. For instance, shareholders may decide to invest the windfall in another company, which may in turn make productivity-enhancing investments. Or they may decide to spend the windfall on goods and services that are produced by other companies, who may in turn hire new workers. In these ways, stock repurchases would also be likely to boost economic growth.

Companies themselves are the best judges of what to do with their after-tax profits, whether it is to invest in their business, raise worker compensation, or increase returns to shareholders through dividends or share buybacks.

RESPONSES TO WRITTEN QUESTIONS OF SENATOR CORTEZ MASTO FROM JEROME H. POWELL

Q.1. The Federal Reserve has the responsibility for monetary policy. The Congress has the responsibility for fiscal policy. In the past few months, Congress spent more than a trillion dollars. The majority did not spend it on investments to build our outdated bridges, roads or electrical grids. The majority did not spend it on transit to reduce gridlock and reduce pollution and improve our air quality. The trillions of dollars did not provide housing for families struggling to pay rent. Or subsidies to help parents afford the cost of child care. Nor did we invest in pre-K education. Or research and development.

Instead, multi-national corporations will see their incomes go up substantially: Warren Buffet's Berkshire Hathaway will make $29 billion more in profit. The seven largest banks will increase their income by 12 percent or more. Meanwhile, some families will see big tax increases because they can't deduct their alimony payments or all of their property and State income taxes.

Our national debt is already twice the historic average and higher than it has been at any time in history since World War II. Today, it consumes more than 77 percent of the economy. The President's proposed budget would increase that level to as much as 93 percent of our entire economy by 2028 according to the Committee for a Responsible Federal Budget.

If we had chosen to invest $1.5–$2.3 trillion in rebuilding our infrastructure, investing in research and development and in our children and families, what is the Federal Reserve's estimates of the effect on wages, productivity and economic growth?

A.1. The Federal Reserve has not prepared an estimate of the economic effects of a large investment of the kind that you describe. Any such estimate would depend critically on the particular assumptions one made about the allocation of the investment among the purposes that you describe, as well as the efficiency with which investments could be targeted to high-rate-of-return projects. The Congressional Budget Office is well situated to provide economic analysis of this kind.

Q.2. I appreciated your statements opposing discrimination in mortgage lending during your testimony. However, I remain concerned that if the Economic Growth, Regulatory Relief, and Consumer Protection Act, (S. 2155), becomes law the Federal Reserve will not have adequate information on the quality of mortgage loans made by 85 percent of the banks and credit unions in the United States. At the hearing, you told me the Federal Reserve relies primarily on historical Home Mortgage Disclosure Act data but that data does not include specific information on mortgage loan quality or borrower characteristics. In the run up to the Financial Crisis, the Federal Reserve and other regulators missed rampant discrimination in the mortgage market; African Americans and Latinos were more than twice as likely as a white family to receive a subprime mortgage. Even if Latinos and African Americans had higher incomes and credit scores, they still received worse loans.

The Federal Reserve has oversight authority of banks with fewer than $10 billion in assets.

- How will you ensure that those banks are not engaged in redlining or other types of discrimination if you do not have information about the loan characteristics, the borrower's credit score or other information in the expanded HMDA requirements?

A.2. With respect to fair lending, the Fair Housing Act (FHA) and Equal Credit Opportunity Act are critical to ensuring consumers are treated fairly when offered financial products and services. Discrimination has no place in a fair and transparent marketplace. Discriminatory practices can close off opportunities and limit consumers' ability to improve their economic circumstances, including through access to home ownership and education.

The Federal Reserve's fair lending supervisory program reflects our commitment to promoting financial inclusion and ensuring that the financial institutions under our jurisdiction fully comply with applicable Federal consumer protection laws and regulations. For all State member banks, we enforce the FHA, which means we review all Federal Reserve-regulated institutions for potential discrimination in mortgages, including potential redlining, pricing, and underwriting discrimination. For State member banks of $10 billion dollars or less in assets, we also enforce the Equal Credit Opportunity Act, which means we review these State member banks for potential discrimination in any credit product. Together, these laws prohibit discrimination on the basis of race, color, national origin, sex, religion, marital status, familial status, age, handicap/disability, receipt of public assistance, and the good faith exercise of rights under the Consumer Credit Protection Act (collectively, the "prohibited basis").

We evaluate fair lending risk at every consumer compliance exam based on the risk factors set forth in the interagency fair lending examination procedures. The procedures include risk factors related to potential discrimination in redlining, pricing, and underwriting. While we find that the vast majority of our institutions comply with the fair lending laws, we are committed to identifying and remedying violations when they have occurred. Pursuant to the Equal Credit Opportunity Act, if we determine that a bank has engaged in a pattern or practice of discrimination, we refer the matter to the U.S. Department of Justice (DOJ). Federal Reserve referrals have resulted in DOJ public actions in critical areas, such as redlining and mortgage pricing discrimination. For example, in our redlining referrals, the Federal Reserve found that the banks treated majority-minority areas less favorably than non-minority areas, such as through Community Reinvestment Act (CRA) assessment-area delineations, branching, lending patterns, and marketing. For our mortgage-pricing discrimination referrals, the Federal Reserve found that the banks charged higher prices to African American or Hispanic borrowers than they charged to similarly situated non-Hispanic white borrowers and that the higher prices could not be explained by legitimate pricing criteria.[1]

We also work proactively to support financial institutions in their efforts to guard against fair lending risks through outreach efforts that actively promote sound compliance management practices and programs. The outreach efforts include Consumer Compliance Outlook, a widely subscribed Federal Reserve System publication focused on consumer compliance issues, and its companion webinar series, Outlook Live.[2] For example, in 2017, we sponsored an interagency webinar on fair lending supervision with almost 6,000 registrants. Several of the webinars and articles described the key risk factors related to redlining and pricing discrimination, as well as information about what banks should do to mitigate those risks.

With respect to potential discrimination in the pricing or underwriting mortgages, if warranted by risk factors, the Federal Reserve will request data beyond the public Home Mortgage Disclosure Act (HMDA) data, including any data related to relevant pricing or underwriting criteria, such as applicant interest rates and credit scores. The analysis then incorporates the additional data to determine whether applicants with similar characteristics received different pricing or underwriting outcomes on a prohibited basis

[1] See, *e.g.*, DOJ public fair lending settlements with Midwest BankCentre; SunTrust Mortgage Inc.; and Countrywide Financial Corporation. The public actions were based on referrals from the Federal Reserve, and can be found at: *https://www.justice.gov/crt/housing-and-civil-enforcement-section-cases-1#lending*. More information about recent referrals to the DOJ can be found in the Federal Reserve's annual report at *www.federalreserve.gov/publications/2016-ar-consumer-and-community-affairs.htm#14890*.

[2] See *https://www.consumercomplianceoutlook.org/* and *https://www.consumercompliance outlook.org/outlooklive/*.

(for example, on the basis of race), or whether legitimate pricing or underwriting criteria can explain the differences.[3]

With respect to potential redlining discrimination, the current data analysis does not rely on an evaluation of the additional data fields, but rather the number of HMDA mortgage applications and originations generated in majority-minority tracts by the bank and similar lenders. More specifically, the analysis reviews whether the bank's record of HMDA mortgage applications and originations in majority-minority tracts[4] shows statistically significant disparities when compared with the lending record of similar lenders. Thus, although additional fields from the exempted institutions could enhance the data analysis, provisions in the recently enacted bill, S. 2155, related to HMDA data collection requirements would not impact the Federal Reserve's ability to fully evaluate the risk of redlining discrimination. Moreover, as explained further below, the data analysis is only one aspect of the redlining analysis.

Q.3. Historical HMDA data does not collect information on certain racial and ethnic populations at a finer level of granularity. For instance, expanded HMDA requirements that would be rolled back by S. 2155 require reporting within the Asian community (Asian Indian, Chinese, Filipino, Japanese, Korean, and Vietnamese, among others) and within the Hispanic or Latino communities (Mexican, Puerto Rican, among Cuban, among others).

Q.3.a. How will you monitor and ensure that banks are not engaged in redlining specifically against some of these subgroups without collecting this data?

Q.3.b. With historic HMDA data only, do you have the capacity to discern whether lenders are charging single female borrowers higher interest rates or more expensive points and fees on mortgages compared to single men?

A.3.a.–b. Consistent with the interagency fair lending examination procedures, the Federal Reserve's redlining review evaluates whether the bank treated majority-minority census tracts less favorably with respect to the following risk factors:

- CRA assessment area,
- branching strategy,
- lending record for HMDA-reportable mortgage applications and originations,
- marketing and outreach, and
- complaints.

[3] A recent study of publicly available HMDA data conducted by The Center for Investigative Reporting and published by Reveal News concluded that African Americans, Latinos, and other individuals of color were more likely to be denied loans for home purchases and home remodeling than white borrowers. See Aaron Glantz and Emmanuel Martinez, "Kept Out," Reveal News, Feb. 15, 2018, available at: *https://www.revealnews.org/article/for-people-of-color-banks-are-shutting-the-door-to-homeownership/*. Studies such as these put much-needed focus on racial disparities and Federal Reserve staff carefully review them. However, as noted, HMDA data have limitations. These data do not include important underwriting criteria, such as credit scores and loan-to-value ratios. If concerns arise regarding a Federal Reserve-regulated institution, we will request additional data beyond the publicly available HMDA data to fully evaluate whether applicants with similar characteristics received different underwriting outcomes on a prohibited basis (for example, on the basis of race), or whether legitimate underwriting criteria can explain the differences.

[4] Majority-minority tracts are defined as census tracts that are more than 50 percent African American and Hispanic.

With respect to the lending record, the data analysis reviews the HMDA-reportable mortgage applications and originations generated in majority-minority census tracts. The definition of majority-minority tract is based on the census data classifications for the race and/or ethnicity of the residents of the census tract, rather than on HMDA data classifications. Thus, although the additional data fields from the exempted institutions could enhance the data analysis, provisions in the recently enacted bill, S. 2155, related to HMDA data collection requirements would not impact the Federal Reserve's ability to fully evaluate the risk of redlining discrimination.

Also consistent with the interagency fair lending examination procedures, the Federal Reserve's pricing review evaluates the following key risk factors:

- financial incentives to charge higher prices,
- loan originator discretion to determine pricing criteria and set the price,
- disparities in pricing on a prohibited basis, and
- complaints.

The analysis of potential pricing disparities includes the review of potential disparities in the annual percentage rate, interest rate, and fees. Although not included in the public HMDA data, if warranted by risk factors, the Federal Reserve will request these data as well as any other data related to relevant pricing criteria, such as the interest rate and credit score.

Also, the Federal Reserve analyzes the disparity on a prohibited basis, including potential discrimination for single females. The current HMDA data classifications allow for an analysis of potential discrimination against single females. Thus, provisions in the recently enacted bill, S. 2155, related to HMDA data collection requirements would not impact the Federal Reserve's ability to fully evaluate the risk of mortgage pricing discrimination, including for single females.

Please also see the response to question 2.

Q.4. In your testimony, you stated that data collected under HMDA's original requirements was adequate for the Federal Reserve when examining financial institutions for compliance with the Community Reinvestment Act. Wall Street Reform's expansion of HMDA requirements included a number of critical requirements that were motivated by the financial crisis, including quality of loan, interest rate and providing the legal entity identifier (LEI) of the lender.

Without the expanded requirements under Wall Street Reform, how is the Federal Reserve examining the quality of the loans being given to borrowers, particularly female borrowers and borrowers of color?

A.4. To determine the risk of potential pricing or underwriting discrimination in mortgages on a prohibited basis (such as, sex, race, color, or national origin), the Federal Reserve evaluates State member banks for compliance with the FHA (and the Equal Credit Opportunity Act for State member banks with $10 billion or less in assets). Although not included in the public HMDA data, if warranted by risk factors, the Federal Reserve will request any data related to relevant pricing and underwriting criteria, such as the interest rate and credit score. Thus, provisions in the recently enacted bill, S. 2155, related to HMDA data collection requirements for certain institutions would not impact the Federal Reserve's ability to fully evaluate the risk of mortgage pricing or underwriting discrimination, including for female borrowers or borrowers of color.

While we find that the vast majority of institutions regulated by the Federal Reserve comply with the fair lending laws, we sometimes find violations of the laws and regulations. If we determine that a bank has engaged in a pattern or practice of discrimination, we refer the matter to the DOJ, pursuant to the Equal Credit Opportunity Act. We also take evidence of discrimination into account when assigning consumer compliance ratings and CRA ratings, consistent with regulations and supervisory guidance.

Please also see the response to questions 2 and 3.

Q.5. Wall Street Reform also expanded on requirements when reporting ethnicity. For example, for Asian American Pacific Islander, lenders should also provide an ethnic breakdown.

Without this specific data of race and ethnicity, will the Federal Reserve be able to identify discrimination against specific ethnic groups, such as Filipino or Hmong?

A.5. Reviews of potential pricing or underwriting discrimination based on the race or ethnicity of the borrower may be impacted by HMDA data classifications, but other risk factors can be used to evaluate potential discrimination, such as loan policies and procedures, marketing, and complaints.

Please also see the response to question 2.

Q.6. A 2014 analysis of OneWest Bank—which was then owned by Treasury Secretary Steve Mnuchin—found that the Bank had a "low satisfactory" on its last CRA evaluation; that only 15 percent of the banks' branches were located in low- and moderate-income census tracts; and that the majority of "small business" loans made by OneWest were to businesses with more than $1 million in revenue.

Q.6.a. What recourse does the Community Reinvestment Act give to the Federal Reserve and other regulators when banks have this kind of record?

Q.6.b. How can banks that consistently receive low ratings for their lending to small businesses and communities of color be better incentivized to improve their record?

A.6.a.–b. The CRA regulations define the ratings and recognize that a "low satisfactory" rating under the CRA lending test and/or service test is indicative of "adequate" performance in responding to the credit needs in its assessment areas(s), taking into account the number and amount of home mortgage, small business, small farm, and consumer loans, as well as an adequate geographic distribution of loans in its assessment area(s).

The CRA ratings are publicly available, which motivates some institutions to seek to improve their rating. Regulators encourage and support banks in this aim by pointing out ways they can improve their CRA performance, which would meet supervisory expectations and enhance how their record is viewed by the public. Further, an overall CRA rating of less than satisfactory can be an impediment to favorable action on an application or notice submitted to the Federal Reserve.

Q.7. I agree with you that sound data is critically important in informing the policy and enforcement decisions you'll be making. However, I am very concerned that such analysis fails to capture the human and economic cost of massive financial system failure. For example, in 2009, when I was Attorney General, Nevada had 165,983 people unemployed. Also that year, in a State of 3 million people, we had 28,223 personal bankruptcies, 366,606 mortgage delinquencies and 421,445 credit card delinquencies.[5] In addition, 121,000 Nevada children's lives and educations were disrupted by the foreclosure crisis. And, we had more than 219,000 foreclosures between 2007–2016.

Q.7.a. Do you agree the Fed underestimated the human costs of the financial crisis prior to 2008?

A.7.a. The recent financial crisis took a devastating toll on consumers, families, and businesses, as well as revealing weaknesses in our financial system. The fragilities that arose in the U.S. financial system by the mid-2000s resulted in the worst U.S. recession since the Great Depression and a painfully slow economic recovery.

We have worked hard in the aftermath of the crisis to make sure we have a financial system that is safer, sounder, has more capital, higher quality capital, and is less prone to crises. Financial crises are immensely costly to the well-being of households, families, individuals, and businesses. It is important to make sure we do everything we can to reduce the odds of another devastating crisis.

Q.7.b. How will your analysts accurately ensure you'll get it right this time?

A.7.b. The Federal Reserve has substantially increased its efforts to assess risks to financial stability on an ongoing basis, in conjunction with other U.S. agencies (through, for example, discussions at the Financial Stability Oversight Council). These efforts may provide insight into the buildup of risks and allow the appropriate regulatory agencies to take steps to mitigate risks to financial stability.

At the same time, we are aware of the challenges facing anyone trying to predict rare events such as financial crises. In part because of these challenges, the Federal Reserve has focused on increasing the resilience of the financial system, so that when detrimental, unforeseen events occur, the system absorbs, rather than amplifies, them. An important part of increased resilience is a set of higher standards for key institutions. These standards are higher for the largest, most systemic firms and include capital regulation, liquidity regulation, steps to enhance the resolvability of large bank-holding companies, and stress testing of large bank-holding companies.

[5] See Center for American Progress. "10 Years Later: The Financial Crisis State by State." February 22, 2018. Available at: *https://www.americanprogress.org/issues/economy/news/2018/02/22/447031/10-years-later-financial-crisis-state-state/*.

We have implemented these standards as a response to the increased awareness among economists of the risks and costs of financial crises. Research, including research by staff within the Federal Reserve System, has documented the large adverse effects of financial crises and the benefits associated with regulatory standards that raise the resilience of the financial system.[6]

Q.7.c. What concerns do you have that cost-benefit analysis requirements allow financial institutions the ability to sue regulators to avoid regulation?

A.7.c. The Federal Reserve Board (Board) takes seriously the importance of evaluating the costs and benefits of its rulemaking efforts.

Under the Board's current practice, consideration of costs and benefits occurs at each stage of the rule or policymaking process. Before the Board develops a regulatory proposal, the Board often collects information directly from parties that it expects will be affected by the rulemaking through surveys of affected parties and meetings with interested parties and their representatives. In the rulemaking process, the Board also specifically seeks comment from the public on the costs and benefits of the proposed approach as well as on a variety of alternative approaches to the proposal. In adopting the final rule, the Board seeks to adopt a regulatory alternative that faithfully reflects the statutory provisions and the intent of Congress while minimizing regulatory burden. The Board also provides an analysis of the costs to small depository organizations of our rulemaking consistent with the Regulatory Flexibility Act and computes the anticipated cost of paperwork consistent with the Paperwork Reduction Act. Increasingly, the Board has published quantitative analyses in connection with its rulemakings. Recent examples include the global systemically important banks surcharge rule, the single-counterparty credit limit rule, and the long-term debt rule. To further these efforts, the Board recently established an office and hired additional staff to focus on analyzing the costs and benefits associated with its rulemakings.

The Administrative Procedure Act (APA), which the Board follows, provides for judicial review of final regulations. Affected firms have the right to challenge the actions of an administrative agency under the APA, including whether the agency has engaged in reasoned decisionmaking. Litigation, of course, imposes certain costs on the litigants including an agency and delays the rulemaking process.

Q.8. I am very concerned about forcing more than 800,000 men and women—Dreamers—out of the country. It is a cruel betrayal of the promises we've made to them. In Nevada, we have more than 13,000 Dreamers. If our neighbors, friends, and colleagues are deported, some estimate that Nevada would lose more than $600 million in annual economic growth.

Q.8.a. Organizations, on both sides of the spectrum, estimate that detaining and deporting DACA recipients could cost the U.S.

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[6] For example, the following research paper discusses these issues and related research: Firestone, Simon, Amy Lorenc, and Ben Ranish (2017). "An Empirical Economic Assessment of the Costs and Benefits of Bank Capital in the U.S.," Finance and Economics Discussion Series 2017–034. Board of Governors of the Federal Reserve System (U.S.).

economy between $280 and $460 billion a year. The United States Chamber of Commerce called ending DACA "a nightmare for America's economy."

Q.8.b. Has the Federal Reserve published any information on how the deportation of the Dreamers will affect our Nation's economy?

Q.8.c. What do you think the economic impact of deporting 800,000 Dreamers—90 percent or about 720,000 of whom are employed—would be on labor force participation, economic growth and productivity?

A.8.a.–c. Over long periods of time, economic growth generally reflects the trend rate of growth of the population, the trend in labor force participation, and the trend in productivity growth. A large deportation of individuals currently living in the United States would probably reduce the level of economic output, for the simple reason that the population—and hence the workforce—would be smaller. That being said, the Federal Reserve has not published information pertaining to your questions. The manner in which economic output per capita would be affected is a more difficult question; the answer would depend on such factors as how the labor-force participation of the deported individuals compared with that of the remaining population; how the productivity of the deported individuals compared with that of the remaining population; and the question of whether problems of job matching would arise (if, for example, deported individuals were concentrated in particular industries, occupations, or geographic areas, and whether non-deposited individuals were available and willing to fill the resulting vacancies).

Q.9. Neel Kashkari, the president of the Federal Reserve Bank of Minneapolis recently wrote an op-ed in the Wall Street Journal on why immigration is the key to economic growth. The Minneapolis Fed estimates that boosting legal immigration by one million people a year would grow the economy by at least 0.5 percent a year, even under the most conservative assumptions.

Do you agree with the president of the Federal Reserve of Minneapolis that increasing legal immigration will grow our economy?

A.9. Growth in the labor force is all important determinant of the longer-run growth rate of the U.S. economy. Because many legal immigrants actively participate in the workforce, challenges in the pace of immigration can affect economic growth. Having said that, however, the issue of immigration is well outside of the remit of the Federal Reserve System, and it would be more prudent for others to decide how best to address that issue.

Q.10. I represent Nevada, which is within the San Francisco Federal Reserve District. We are one of the most diverse districts in the Nation—with many Latino and Asian Pacific American families.

We value that diversity because it leads to innovation, economic growth and stronger connections with other nations in our globally connected world.

A recent report by Fed Up, Working People Still Need a Voice at the Fed: 2018 Diversity Analysis of Federal Reserve Bank Directors, found that there is inadequate diversity at the Federal

Reserve. It specifically cited the San Francisco Federal Reserve as one of system's least diverse regional banks. The report states, "Despite covering some of the most demographically diverse counties in the United States, 100 percent of the San Francisco Fed's Board of Directors come from the banking and financial sector. The directors are 78 percent white and 78 percent male."

Q.10.a. How will you work with Director Clark to improve the gender and racial diversity of the Board of Directors at the 12 regional Reserve Banks? And specifically the San Francisco Fed?

Q.10.b. How will you work to end the outsized representation and influence of the banking and business sectors among the Regional Bank Boards of Directors?

Q.10.c. Have you identified directors with nonprofit, academic, and labor backgrounds that could also serve?

A.10.a.–c. Diversity is a critical aspect of all successful organizations, and I am committed to fostering diversity and inclusion throughout the Federal Reserve System. In my experience, we make better decisions when we have a wide range of backgrounds and voices around the table. I assure you that diversity is a high priority objective for the Federal Reserve.

The Federal Reserve Board (Board) focuses particular attention on increasing gender, racial, and sector diversity among directors because we believe that the System's boards function most effectively when they are constituted in a manner that encourages a variety of perspectives and viewpoints. Monetary policymaking also benefits from having directors who effectively represent the communities they serve because we rely on directors to provide meaningful grassroots economic intelligence. Because all directors serve in this role, we believe it is important to consider the characteristics of both Reserve Bank and Branch boards.

Each year, the Board carefully reviews the demographic characteristics of Reserve Bank and Branch boards. This information is shared with Reserve Bank leadership, including the current Chair and Deputy Chair of each board, and areas for improvement are highlighted.

The Board thoroughly vets all candidates for Class C and Board-appointed Branch director vacancies, taking into consideration factors such as professional experience, leadership skills, and community engagement. The Board also evaluates a candidate's ability to contribute meaningful insights into economic conditions of significance to the District and the Nation as a whole. As part of this process, the Board focuses considerable attention on whether a candidate is likely to provide the perspective of historically underrepresented groups, such as consumer/community and labor organizations, minorities, and women.

Although there is room for improvement, the System has made significant progress in recent years in recruiting highly qualified women and minorities for director positions. For example, in 2018, approximately 56 percent of all System directors are diverse in terms of gender and/or race (with a racially diverse woman counted only one time), which represents a 16 percentage point increase in the share of directors since 2014. With respect to the San Francisco District, 21 of 37 directors, or approximately 57 percent of all

Reserve Bank and Branch directors, are diverse. On the Reserve Bank's head-office board, 4 of 9 directors, or approximately 44 percent of Reserve Bank directors, are diverse. We also have numerous directors who represent consumer/community and labor organizations serving on boards throughout the System. In addition, we gain invaluable insight and perspective from directors who are affiliated with other types of organizations, including major health care providers, universities and colleges, and regional chambers of commerce, among others.

Q.11. Chair Yellen was the first chair in Federal Reserve history to share data with this Committee about racial economic disparities during her semi-annual testimony. When she presented that data, she touted significant progress, and indeed, black unemployment fell from 11.8 percent at the beginning of her term to the current historically low figure of 6.8 percent.

Q.11.a. What do you attribute this trend to?

Q.11.b. Do you think the attention that Chair Yellen paid to this issue and the policies of the Federal Reserve deserve some credit for the progress that has been made?

A.11.a.–b. The improvement in the black unemployment rate in recent years reflects the general strengthening in labor-market conditions during that time period; and the credit for the general strengthening, in turn, goes to the millions of individuals who go to work day in and day out and work hard, and to those who run businesses, take risks, and generate creative new ideas and new products.

Chair Yellen deserves great credit for shining light on the important differences in economic well-being across different segments of the population; I intend to continue that practice. As a Nation, we have a long way to go before we will have achieved the objective of full economic inclusion of all segments of the population.

Q.12. At that same testimony where Janet Yellen presented information about racial economic disparities, she said, quote "it is troubling that unemployment rates for these minority groups remain higher than for the Nation overall, and that the annual income of the median African American household is still well below the median income of other U.S. households."

Though African American unemployment is lower today, Chair Yellen's point remains true.

Q.12.a. Do you think the recent progress is sufficient?

Q.12.b. What more can be done to ensure that unemployment among African Americans is equal to white unemployment?

Q.12.c. And, how do you plan to respond to reports that African Americans with a college degree have lower employment and wealth than whites with the less education? African American women and Latinos are graduating from college in record numbers but are still having a harder time finding a job.

A.12.a.–c. I do not think that recent progress has been sufficient. As I noted earlier, we have a long way to go before we will have achieved the objective of full economic inclusion of all segments of the population. The steps that will be necessary to attain full economic inclusion span virtually the entire spectrum of economic policy areas. These are important issues for Congress' consideration.

Q.13. For years, many of my colleagues have suggested that the Fed is unfairly hurting savers through low interest rates. On the subject of seniors, savers, and depositors, I want to ask about a proposal by a nominee to the Board of Governors, Marvin Goodfriend. For decades, Mr. Goodfriend promoted the Fed to incentivize spending by placing a tax on currency. He does admit that "the regressivity of the tax" is a concern.

If Mr. Goodfriend's proposal were to be implemented, can you estimate what the impact would be on savers and low-income depositors?

A.13. Nominations to serve on the Board of Governors are made by the President and require consent of the Senate. It is up to the President and Senate to evaluate the views and qualifications of potential members of the Board. I do not want to comment on a specific nominee.

The Federal Reserve has not considered and is not planning to consider a tax on U.S. currency. Our Nation's currency plays an important role as a means of payment and store of value worldwide and taking any action that could diminish its role in the domestic or global economy would need to be very carefully thought through after a thorough review and analysis of relevant data.

Q.14. Chair Powell, at your nomination hearing, you told me that you supported strong consumer protections. Since that time, the Consumer Financial Protection Bureau has endured new leadership that is hostile to its mission.

Q.14.a. If the Bureau continues to drop lawsuits against predatory online loan companies, like Golden Valley Lending or drop investigations against companies like World Acceptance Corporation, one of the biggest payday lenders, will the Federal Reserve's consumer protection staff pick up the slack and protect people from fraud and abuse?

Q.14.b. If the Consumer Financial Protection Bureau's leadership refuses to ask for adequate funding, will you let us know if predatory and deceptive practices start going unaddressed by a weaker Consumer Financial Protection Bureau?

Q.14.c. Has the Federal Reserve weighed in on the impact from the Consumer Bureau's decision to weaken fair lending enforcement, suspend the civil penalties fund and stop investigating the hack of 145 million people's information held by Equifax?

Q.14.d. What have you shared with the leadership of the Bureau?

A.14.a.–d. While the Board plays a consultative role in CFPB rulemakings and coordinates in the examinations as appropriate, we do not have any oversight of the CFPB organizational or structural design, which is defined in statute, nor of CFPB enforcement priorities. By statute, the organizational structure and prioritization of the CFPB's fair lending work is up to the CFPB's director to decide.

For our part, the Federal Reserve continues to carry out our supervisory and enforcement responsibilities for the financial institutions and for the laws and regulations under our authority.

We remain committed to ensuring that the financial institutions under our jurisdiction fully comply with all applicable Federal consumer protection laws and regulations. For example, in the last few years, the Federal Reserve has addressed unfair and deceptive practices through public enforcement actions that have collectively benefited hundreds of thousands of consumers and provided millions of dollars in restitution. In addition, our examiners evaluate fair lending risk at every consumer compliance exam. Pursuant to the Equal Credit Opportunity Act, if we determine that a bank has engaged in a pattern or practice of discrimination, we refer the matter to the DOJ. Federal Reserve referrals have resulted in DOJ public actions in critical areas, such as redlining and mortgage-pricing discrimination.

With respect to the Equifax data breach, the Federal Reserve's authority is limited. The Board, the Federal Deposit Insurance Corporation, and the Office of the Comptroller of the Currency (agencies) have authority to examine and regulate bank service companies under the Bank Service Company Act (BSCA).[1] Additionally, the BSCA provides the agencies with limited authority to regulate and examine the activities of other films that provide certain services to the institutions we supervise.[2] The three largest credit reporting agencies in the United States (Equifax, Experian, and TransUnion) are not owned by insured depository institutions and are thus not bank service companies. Accordingly, any authority the agencies have under the BSCA with respect to the activities of these companies would arise under the BSCA in so far as insured depository institutions (or their subsidiaries or affiliates) are outsourcing services authorized under the BSCA. To date, none of the agencies has concluded that the credit reports that credit reporting agencies sell to the institutions we supervise are services within the scope of the BHCA.

However, the Federal Reserve expects financial institutions to follow vendor management guidance issued by the Board and the Federal Financial Institutions Examination Council, which includes conducting an assessment of the relationships with third parties and their handling and protection of sensitive personal information of individuals. As such, the Federal Reserve holds the institutions we supervise accountable for conducting appropriate due diligence and risk management with respect to their relationships with third-parties, including credit reporting agencies. Our examiners regularly assess banking organizations' programs for due diligence, contract management, ongoing monitoring, and overall risk management of third-party and vendor relationships as part of Federal Reserve examinations. In addition, the Board, along with the other banking agencies and the Federal Trade Commission have jointly issued rules under the Fair Credit Reporting Act that require financial institutions to maintain identity theft prevention programs.

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[1] See 12 U.S.C. § 1867(a). A "bank service company" is defined as a company that is organized to provide services authorized under the BSCA and that is owned exclusively by one or more insured depository institutions. 12 U.S.C. § 1861(b)(2).

[2] Whenever an insured depository institution, or any subsidiary or affiliate of such insured depository institution, causes to be performed for itself services authorized under the BSCA, such performance is subject to regulation and examination to the same extent as if such services were being performed by the insured depository institution itself on its own premises. 12 U.S.C. § 1867(c).

These programs must include policies and procedures for detecting, preventing, and mitigating identity theft, and we examine the banks we supervise for compliance with these rules. Finally, under the Gramm-Leach-Bliley Act, the Board and other banking agencies have issued guidelines to institutions containing standards for safeguarding their customers' data.

Q.15. In recent years, Federal Reserve policymakers have warned that we should raise interest rates to counter asset bubbles destabilizing the financial system. Board of Governor nominee Marvin Goodfriend has suggested replacing liquidity coverage ratios and a host of other regulations with tighter monetary policy.

Q.15.a. Do you believe that the blunt tool of monetary policy can be a substitute for sound financial protections? What is your reading of the historical evidence surrounding the relationship between monetary policy and asset bubbles?

A.15.a. As stated above, it is up to the President and Senate to evaluate the views and qualifications of potential members of the Board. I do not want to comment on a specific nominee.

Strong regulatory and supervisory standards are critical for financial stability. In the years leading up to 2007–2008, excessive leverage and maturity transformation left the U.S. and global economy vulnerable to a deterioration in the U.S. housing market and an increase in investor concerns regarding the solvency and liquidity of large, interconnected financial institutions. Reforms since that time, enacted by Congress and implemented by the appropriate agencies, have raised loss-absorbing capacity within the financial sector and reduced the susceptibility of the financial system to destabilizing runs. Monetary policy, already tasked with the goals of price stability and full employment, should not be considered a substitute for strong financial and supervisory standards. Moreover, asset-price swings owe to many factors, and monetary policy has not generally been a prime factor in historical episodes involving large movements in asset prices.

Q.15.b. Besides monetary policy, what other tools are available to temper asset bubbles?

A.15.b. It is difficult to identify whether an asset price has reached an unsustainably high (or low) level. For this reason, it is important to monitor asset price developments and to consider whether, for example, unusually rapid increases in asset prices are leading to vulnerabilities in the U.S. economy that could jeopardize financial stability, price stability, or full employment. If a rapid increase in nonfinancial borrowing, leverage in the financial sector, or maturity transformation accompanied a rapid rise in asset prices, tools aimed directly at mitigating such vulnerabilities could be appropriate. For example, the Countercyclical Capital Buffer is a regulatory tool that requires the largest, most systemic bank-holding companies to build additional loss absorbing capacity when the Board identifies a need for such additional resilience.

However, the difficulties associated with the detection of vulnerabilities as they emerge highlight the need for strong regulatory and supervisory standards at all times. The capital and liquidity regulations and supervisory policies adopted by the

Federal Reserve, including stress testing, represent such an approach to maintaining resilience at a level that limit excessive risk.

Q.15.c. Isn't it true that countries with tighter monetary policy than the United States also experienced housing bubbles in the early 2000s?

A.15.c. The housing boom during the early 2000s was global in nature, with house prices rising across most advanced economies. Although the availability of mortgage financing at favorable rates coincided with strong housing markets in some countries, there were particularly rapid house price gains in several economies whose key monetary policy rates never declined below 3 ½ percent, including Australia, New Zealand, Norway, and the United Kingdom. Each of those economies experienced house price declines, to varying degrees of severity, during the global financial crisis that followed. Subsequent studies, including at the International Monetary Fund, have found that the stance of monetary policy is not generally a good leading indicator of future house price bubbles and busts.

Q.15.d. Can you speak to the scale of interest rate increases that would be needed to rein in an asset bubble?

A.15.d. As noted in the second answer to question 15, it is difficult to detect whether an asset price has reached an unsustainable level. A corollary of this challenge is that it is hard to determine what factors are driving unsustainable asset-price movements. The condition of markets is one of many factors that could influence the underlying economy, but efforts to influence asset prices in a manner that is not consistent with the Federal Reserve's employment and price-stability objectives could compromise the achievement of those objectives.

For use at 11:00 a.m., EST
February 23, 2018

Monetary Policy Report

February 23, 2018

Board of Governors of the Federal Reserve System

Letter of Transmittal

Board of Governors of the
Federal Reserve System

Washington, D.C., February 23, 2018

The President of the Senate
The Speaker of the House of Representatives

The Board of Governors is pleased to submit its *Monetary Policy Report* pursuant to section 2B of the Federal Reserve Act.

Sincerely,

Jerome H. Powell, Chairman

Statement on Longer-Run Goals and Monetary Policy Strategy

Adopted effective January 24, 2012; as amended effective January 30, 2018

The Federal Open Market Committee (FOMC) is firmly committed to fulfilling its statutory mandate from the Congress of promoting maximum employment, stable prices, and moderate long-term interest rates. The Committee seeks to explain its monetary policy decisions to the public as clearly as possible. Such clarity facilitates well-informed decisionmaking by households and businesses, reduces economic and financial uncertainty, increases the effectiveness of monetary policy, and enhances transparency and accountability, which are essential in a democratic society.

Inflation, employment, and long-term interest rates fluctuate over time in response to economic and financial disturbances. Moreover, monetary policy actions tend to influence economic activity and prices with a lag. Therefore, the Committee's policy decisions reflect its longer-run goals, its medium-term outlook, and its assessments of the balance of risks, including risks to the financial system that could impede the attainment of the Committee's goals.

The inflation rate over the longer run is primarily determined by monetary policy, and hence the Committee has the ability to specify a longer-run goal for inflation. The Committee reaffirms its judgment that inflation at the rate of 2 percent, as measured by the annual change in the price index for personal consumption expenditures, is most consistent over the longer run with the Federal Reserve's statutory mandate. The Committee would be concerned if inflation were running persistently above or below this objective. Communicating this symmetric inflation goal clearly to the public helps keep longer-term inflation expectations firmly anchored, thereby fostering price stability and moderate long-term interest rates and enhancing the Committee's ability to promote maximum employment in the face of significant economic disturbances. The maximum level of employment is largely determined by nonmonetary factors that affect the structure and dynamics of the labor market. These factors may change over time and may not be directly measurable. Consequently, it would not be appropriate to specify a fixed goal for employment; rather, the Committee's policy decisions must be informed by assessments of the maximum level of employment, recognizing that such assessments are necessarily uncertain and subject to revision. The Committee considers a wide range of indicators in making these assessments. Information about Committee participants' estimates of the longer-run normal rates of output growth and unemployment is published four times per year in the FOMC's Summary of Economic Projections. For example, in the most recent projections, the median of FOMC participants' estimates of the longer-run normal rate of unemployment was 4.6 percent.

In setting monetary policy, the Committee seeks to mitigate deviations of inflation from its longer-run goal and deviations of employment from the Committee's assessments of its maximum level. These objectives are generally complementary. However, under circumstances in which the Committee judges that the objectives are not complementary, it follows a balanced approach in promoting them, taking into account the magnitude of the deviations and the potentially different time horizons over which employment and inflation are projected to return to levels judged consistent with its mandate.

The Committee intends to reaffirm these principles and to make adjustments as appropriate at its annual organizational meeting each January.

Contents

Note: This report reflects information that was publicly available as of noon EST on February 22, 2018. Unless otherwise stated, the time series in the figures extend through, for daily data, February 21, 2018; for monthly data, January 2018; and, for quarterly data, 2017:Q4. In bar charts, except as noted, the change for a given period is measured to its final quarter from the final quarter of the preceding period.

Summary

Economic activity increased at a solid pace over the second half of 2017, and the labor market continued to strengthen. Measured on a 12-month basis, inflation has remained below the Federal Open Market Committee's (FOMC) longer-run objective of 2 percent. The FOMC raised the target range for the federal funds rate twice in the first half of 2017, resulting in a range of 1 to 1¼ percent by the end of its June meeting. With the federal funds rate rising toward more normal levels, at its September meeting, the FOMC decided to initiate a program of gradually and predictably reducing the size of its balance sheet. At its meeting in December, the Committee judged that current and prospective economic conditions called for a further increase in the target range for the federal funds rate, to 1¼ to 1½ percent.

Economic and Financial Developments

The labor market. The labor market has continued to strengthen since the middle of last year. Payroll employment has posted solid gains, averaging 182,000 per month in the seven months starting in July 2017, about the same as the average pace in the first half of 2017. Although net job creation last year was slightly slower than in 2016, it has remained considerably faster than what is needed, on average, to absorb new entrants into the labor force. The unemployment rate declined from 4.3 percent in June to 4.1 percent in January—somewhat below the median of FOMC participants' estimates of its longer-run normal level. Other measures of labor utilization also suggest that the labor market has tightened since last summer. Nonetheless, wage growth has been moderate, likely held down in part by the weak pace of productivity growth in recent years.

Inflation. Consumer price inflation has remained below the FOMC's longer-run objective of 2 percent. The price index for personal consumption expenditures increased 1.7 percent over the 12 months ending in December 2017, about the same as in 2016. The 12-month measure of inflation that excludes food and energy items (so-called core inflation), which historically has been a better indicator of where overall inflation will be in the future than the headline figure, was 1.5 percent in December—0.4 percentage point lower than it had been one year earlier. However, monthly readings on core inflation were somewhat higher during the last few months of 2017 than earlier in the year. Measures of longer-run inflation expectations have, on balance, been generally stable, although some measures remain low by historical standards.

Economic growth. Real gross domestic product (GDP) is reported to have increased at an annual rate of nearly 3 percent in the second half of 2017 after rising slightly more than 2 percent in the first half. Consumer spending expanded at a solid rate in the second half, supported by job gains, rising household wealth, and favorable consumer sentiment. Business investment growth was robust, and indicators of business sentiment have been strong. The housing market has continued to improve slowly. Foreign activity remained solid and the dollar depreciated further in the second half, but net exports subtracted from real U.S. GDP growth as imports of consumer and capital goods surged late in the year.

Financial conditions. Financial conditions for businesses and households have eased on balance since the middle of 2017 amid an improving global growth outlook. Notwithstanding financial market developments in recent weeks, broad measures of equity prices are higher, and spreads of yields on corporate bonds over those of comparable-maturity Treasury securities have narrowed. Most types of consumer loans remained widely available, though credit was still difficult to access in credit card and mortgage markets for borrowers with low credit scores or harder-to-document incomes. Longer-term nominal Treasury yields and mortgage rates have moved up on net. The dollar depreciated, on average, against the currencies of our trading partners. In foreign financial markets, equity prices generally increased in the second half of 2017, and most of those indexes remain higher, on net, despite recent declines. Most longer-term yields rose noticeably.

Financial stability. Vulnerabilities in the U.S. financial system are judged to be moderate on balance. Valuation pressures continue to be elevated across a range of asset classes even after taking into account the current level of Treasury yields and the expectation that the reduction in corporate tax rates should generate an increase in after-tax earnings. Leverage in the nonfinancial business sector has remained high, and net issuance of risky debt has climbed in recent months. In contrast, leverage in the household sector has remained at a relatively low level, and household debt in recent years has expanded only about in line with nominal income. Moreover, U.S. banks are well capitalized and have significant liquidity buffers.

Monetary Policy

Interest rate policy. The FOMC continued to gradually increase the target range for the federal funds rate. After having raised it twice in the first half of 2017, the Committee raised the target range for the federal funds rate again in December, bringing it to the current range of 1¼ to 1½ percent. The decision to increase the target range for the federal funds rate reflected the solid performance of the economy. Even with this rate increase, the stance of monetary policy remains accommodative, thereby supporting strong labor market conditions and a sustained return to 2 percent inflation.

The FOMC expects that, with further gradual adjustments in the stance of monetary policy, economic activity will expand at a moderate pace and labor market conditions will remain strong. Inflation on a 12-month basis is expected to move up this year and to stabilize around the Committee's 2 percent objective over the next few years. The federal funds rate is likely to remain, for some time, below levels that are expected to prevail in the longer run. Consistent with this outlook, in the most recent Summary of Economic Projections (SEP), which was compiled at the time of the December FOMC meeting, the median of participants' assessments for the appropriate level of the federal funds rate through the end of 2019 remains below the median projection for its longer-run level. (The December SEP is presented in Part 3 of this report.) However, as the Committee has continued to emphasize, the actual path of the federal funds rate will depend on the economic outlook as informed by incoming data. In particular, with inflation having persistently run below the 2 percent longer-run objective, the Committee will carefully monitor actual and expected inflation developments relative to its symmetric inflation goal.

Balance sheet policy. In the second half of 2017, the Committee initiated the balance sheet normalization program that is described in the Addendum to the Policy Normalization Principles and Plans the Committee issued in June.[1] Specifically, since October, the Federal Reserve has been gradually reducing its holdings of Treasury and agency securities by decreasing the reinvestment of principal payments it receives from these securities.

Special Topics

How tight is the labor market? Although there is no way to know with precision, the

1. The June addendum is available on the Board's website at https://www.federalreserve.gov/monetarypolicy/files/FOMC_PolicyNormalization.20170613.pdf.

labor market appears to be near or a little beyond full employment at present. The unemployment rate is somewhat below most estimates of its longer-run normal rate, and the labor force participation rate is relatively close to many estimates of its trend. Although employers report having more difficulties finding qualified workers, hiring continues apace, and serious labor shortages would likely have brought about larger wage increases than have been evident to date. (See the box "How Tight Is the Labor Market?" in Part 1.)

Low global inflation. Inflation has generally come in below central banks' targets in the advanced economies for several years now. Resource slack and commodity prices—as well as, for the United States, movements in the U.S. dollar—appear to explain inflation's behavior fairly well. But our understanding is imperfect, and other, possibly more persistent, factors may be at work. Resource slack at home and abroad might be greater than it appears to be, or inflation expectations could be lower than suggested by the available indicators. Moreover, some observers have pointed to increased competition from online retailers or international developments—such as global economic slack or the integration of emerging economies into the world economy—as contributing to lower inflation. Policymakers remain attentive to the possibility of such forces leading to continued low inflation; they also are watchful regarding the opposite risk of inflation moving undesirably high. (See the box "Low Inflation in the Advanced Economies" in Part 1.)

Monetary policy rules. Monetary policymakers consider a wide range of information on current economic conditions and the outlook before deciding on a policy stance they deem most likely to foster the FOMC's statutory mandate of maximum employment and stable prices. They also routinely consult monetary policy rules that connect prescriptions for the policy interest rate with variables associated with the dual mandate. The use of such rules requires careful judgments about the choice and measurement of the inputs into these rules as well as the implications of the many considerations these rules do not take into account. (See the box "Monetary Policy Rules and Their Role in the Federal Reserve's Policy Process" in Part 2.)

Part 1
Recent Economic and Financial Developments

Domestic Developments

The labor market strengthened further during the second half of 2017 and early this year

Payroll employment has continued to post solid gains, averaging 182,000 per month in the seven months starting in July 2017, about the same pace as in the first half of 2017.[2] Although net job creation last year was slightly slower than in 2016, it has remained considerably faster than what is needed, on average, to absorb new entrants to the labor force and is therefore consistent with the view that the labor market has strengthened further (figure 1). The strength of the labor market is also evident in the decline in the unemployment rate to 4.1 percent in January, ¼ percentage point below its level in June 2017 and about ½ percentage point below the median of Federal Open Market Committee (FOMC) participants' estimates of its longer-run normal level (figure 2).

Other indicators also suggest that labor market conditions have continued to tighten. The labor force participation rate (LFPR)—that is, the share of adults either working or actively looking for work—was 62.7 percent in January. The LFPR is little changed, on net, since early 2014 (figure 3). However, the average age of the population is continuing to increase. In particular, the members of the baby-boom cohort increasingly are moving into their retirement years, a time when labor force participation typically is low. That development implies that a sustained period in which the demand for and supply of labor were in balance would be associated with a downward trend in the overall participation rate. Accordingly, the flat profile of the LFPR during the past few years is consistent with an overall picture of improving labor market conditions. In line with this perspective, the LFPR for individuals aged 25 to 54—which is much less sensitive to population aging—has been rising since 2015. The employment-to-population ratio for individuals 16 and older—that is, the share of people who are working—was 60.1 percent in January and has been increasing since 2011; this gain primarily reflects the decline in the unemployment rate. (The box "How Tight Is the Labor Market?" describes the available measures of labor market slack in more detail.)

Other indicators are also consistent with continuing strong labor demand. The number of people filing initial claims for unemployment insurance has remained near its lowest level in decades.[3] As reported in the Job Openings and Labor Turnover Survey, the rate of job openings remained elevated in the second half of 2017, while the rate of layoffs remained low. In addition, the rate of quits stayed high, an indication that workers are able to obtain a new job when they seek one.

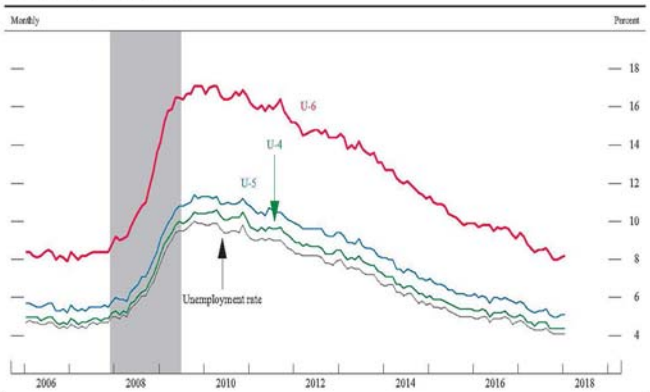
2. The hurricanes that struck the United States during the second half of last year caused substantial variation in the month-to-month pattern of job gains, but the average performance over the period as a whole was probably substantially unaffected.

3. Initial claims jumped in the fall of 2017 as a consequence of disruptions from the hurricanes and then returned to a low level.

1. Net change in payroll employment

Source: Bureau of Labor Statistics via Haver Analytics.

2. Measures of labor underutilization



NOTE: Unemployment rate measures total unemployed as a percentage of the labor force. U-4 measures total unemployed plus discouraged workers, as a percentage of the labor force plus discouraged workers. Discouraged workers are a subset of marginally attached workers who are not currently looking for work because they believe no jobs are available for them. U-5 measures total unemployed plus all marginally attached to the labor force, as a percentage of the labor force plus persons marginally attached to the labor force. Marginally attached workers are not in the labor force, want and areavailable for work, and have looked for a job in the past 12 months. U-6 measures total unemployed plus all marginally attached workers plus total employed part time for economic reasons, as a percentage of the labor force plus all marginally attached workers. The shaded bar indicates a period of business recession as defined by the National Bureau of Economic Research.

SOURCE: Bureau of Labor Statistics via Haver Analytics.

3. Labor force participation rates and employment-to-population ratio

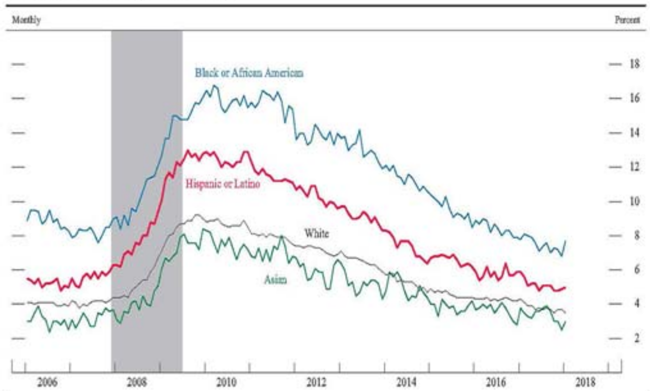
NOTE: The data are monthly. The prime-age labor force participation rate is a percentage of the population aged 25 to 54. The labor force participation rate and the employment-to-population ratio are percentages of the population aged 16 and over.

SOURCE: Bureau of Labor Statistics via Haver Analytics.

Unemployment rates have declined across demographic groups, but unemployment remains high for some groups

Unemployment rates have trended downward across racial and ethnic groups (figure 4). The decline in the unemployment rate for blacks or African Americans over the past few years has been particularly notable. This broad pattern is typical: The unemployment rates for blacks and Hispanics tend to rise considerably more than the rates for whites and Asians during recessions, and then they decline more rapidly during expansions. Yet even with the recent narrowing, the disparities in unemployment rates across demographic groups remain substantial and largely the same as before the recession. The unemployment rate for whites has averaged 3.7 percent since the middle of 2017 and the rate for Asians has been about 3.3 percent, while the unemployment rates for Hispanics or Latinos (5.0 percent) and blacks (7.3 percent) have been substantially higher. In addition, the labor force participation rates for blacks, Hispanics, and Asians have generally been lower than those for whites of the same age group. As the labor market

4. Unemployment rate by race and ethnicity



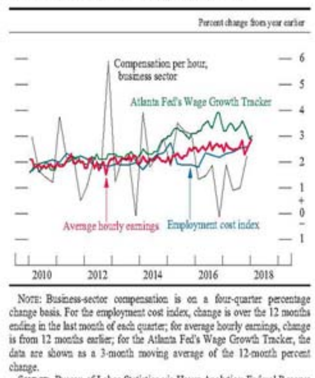
NOTE: Unemployment rate measures total unemployed as a percentage of the labor force. Persons whose ethnicity is identified as Hispanic or Latino may be of any race. The shaded bar indicates a period of business recession as defined by the National Bureau of Economic Research.
SOURCE: Bureau of Labor Statistics via Haver Analytics.

has strengthened over the past few years, the participation rates for prime-age individuals in each of these groups have risen.

Growth of labor compensation has been moderate . . .

Despite the strong labor market, the available indicators generally suggest that the growth of hourly compensation has been moderate. Growth of compensation per hour in the business sector—a broad-based measure of wages, salaries, and benefits that is quite volatile—was 2¼ percent over the four quarters ending in 2017:Q4 (figure 5), well above the low reading in 2016 but about in line with the average annual increase from 2010 to 2015.[4] The employment cost index—which also measures both wages and the cost to employers of providing benefits—was up about 2½ percent in the fourth quarter of 2017 relative to its year-ago level, roughly

5. Measures of change in hourly compensation



NOTE: Business-sector compensation is on a four-quarter percentage change basis. For the employment cost index, change is over the 12 months ending in the last month of each quarter; for average hourly earnings, change is from 12 months earlier; for the Atlanta Fed's Wage Growth Tracker, the data are shown as a 3-month moving average of the 12-month percent change.
SOURCE: Bureau of Labor Statistics via Haver Analytics; Federal Reserve Bank of Atlanta, Wage Growth Tracker.

4. The compensation per hour measure of wages and salaries declined at the end of 2016, possibly reflecting the shifting of bonuses or other types of income into 2017 in anticipation of a possible cut in personal income tax rates.

How Tight Is the Labor Market?

Any assessment of labor market tightness is inherently uncertain, as it involves comparing current labor market conditions with an estimate of conditions that would prevail under full employment, where the latter circumstance cannot be directly observed or measured and can change over time. Many economists would describe the labor market as being at full employment when the unemployment rate has reached an "equilibrium" level, sometimes called the natural rate of unemployment or the longer-run normal rate of unemployment. In judging the level of full employment, one may also consider additional margins of labor utilization—including the labor force participation rate (LFPR), the share of workers employed part time who would like to be working full time, and individuals who are classified as marginally attached to the labor force—as compared with trends in these measures. While the uncertainty around the "normal" trends in all of these variables is substantial, the labor market in early 2018 appears to be near or a little beyond full employment.

The unemployment rate is now somewhat below most estimates of its natural rate. Specifically, the unemployment rate in January, at 4.1 percent, is ½ percentage point below the median of Federal Open Market Committee (FOMC) participants' estimates of the longer-run normal rate of unemployment, which was reported to have been 4.6 percent as of the December 2017 FOMC meeting. The unemployment rate is also about ½ percentage point below the Congressional Budget Office's (CBO) current estimate of the natural rate; by this measure, the labor market is about as tight as it was in the late 1980s but less tight than in the late 1990s (figure A). That said, the median of FOMC participants' estimates of the longer-run normal rate of unemployment and the CBO's estimate of the natural rate of unemployment have both been revised down by about 1 percentage point over the past few years, one indication of the substantial uncertainty surrounding estimates of the "full employment" rate of unemployment.[1]

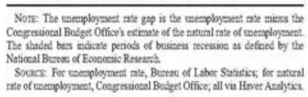
As discussed in the main text, the LFPR has been roughly unchanged, on net, over the past four years, representing an important cyclical improvement relative to its declining trend. While estimates of the trend LFPR are subject to substantial uncertainty and differ among analysts, the current level of the LFPR is relatively close to many estimates of its trend.[2] The fact that the LFPR for prime-age men remains below its pre-recession levels might suggest that slack remains along this dimension; however, the lower level of the LFPR for prime-age men primarily seems to reflect the continuation of a decades-long secular decline rather than a cyclical shortfall in their LFPR. In addition, the U-6 measure of labor utilization—which includes the unemployed, those marginally attached to the labor force, and those employed part time who would like full-time work—rose even more steeply than the unemployment rate during and immediately after the recession and has since recovered to near its pre-recession level. Although there is substantial uncertainty about the trends in each of the components of U-6, its current level can be cautiously interpreted as consistent with a labor market close to full employment.

One can also look at less-direct indicators of labor market tightness. For example, the share of small businesses with at least one job opening that they view as hard to fill is now close to its record levels in the late 1990s (as seen in the black line in figure B), consistent with the notion that as the labor market tightens, businesses find it increasingly difficult to hire additional workers. Similarly, survey measures of households'

1. As another indication of this uncertainty, the range of FOMC participants' estimates of the longer-run normal rate of unemployment was 4.3 to 5.0 percent in December 2017.

2. For a variety of approaches to assessing the level of trend LFPR and the associated range of estimates, see Stephanie Aaronson, Tomaz Cajner, Bruce Fallick, Felix Galbis-Reig, Christopher Smith, and William Wascher (2014), "Labor Force Participation: Recent Developments and Future Prospects," *Brookings Papers on Economic Activity*, Fall, pp. 197–275, https://www.brookings.edu/wp-content/uploads/2016/07/Fall2014BPEA_Aaronson_et_al.pdf. Estimates of trend LFPR are also provided by the CBO in their recurring publication The Budget and Economic Outlook and its updates.

A. Unemployment rate gap



Note: The unemployment rate gap is the unemployment rate minus the Congressional Budget Office's estimate of the natural rate of unemployment. The shaded bars indicate periods of business recession as defined by the National Bureau of Economic Research.

Source: For unemployment rate, Bureau of Labor Statistics; for natural rate of unemployment, Congressional Budget Office; all via Haver Analytics.

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perceptions about job availability are currently at high levels, as shown by the blue line in figure B.

However, despite reports that employers are now having more difficulties finding qualified workers, hiring has continued apace. Although payroll employment gains have gradually slowed over time from about 250,000 per month, on average, in 2014 to about 180,000 per month, on average, in 2017, job growth remains consistent with further strengthening in the labor market.[3] Finally, the pace of wage gains has been moderate; while wage gains have likely been held down by the sluggish pace of productivity growth in recent years, serious labor shortages would probably bring about larger increases than have been observed thus far.

It is possible that labor shortages have arisen in certain pockets of the economy, which could be an early indication of bottlenecks that are not yet readily apparent in the aggregate labor market. However, even at the industry level it is difficult to see much evidence of emerging supply constraints.[4] In some industries, such as trade and transportation as well as leisure and hospitality, employment growth has slowed markedly and it has taken longer for businesses to find workers in recent years, yet wage growth has remained steady or slowed.

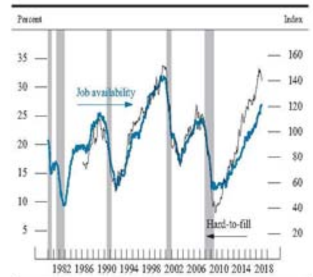
Finally, while the aggregate labor market appears to be modestly tight at the moment, not all individuals have benefited equally from these developments. As discussed in the main text, noticeable differences in labor market outcomes remain present across racial and ethnic groups. Moreover, the labor market improvement in recent years has not been sufficient to make important progress in narrowing income inequality. Finally, regional disparities are also striking, and in certain aspects these disparities have widened in recent years; for example, the employment-to-population ratio for prime-age individuals has recovered less for those outside of metro areas than for those in metro areas (figure C).[5]

3. Payroll gains in the range of about 90,000 to 120,000 per month are estimated to be consistent with a constant unemployment rate and a decline in the labor force participation rate in line with its demographically driven trend.

4. The analysis behind this statement considered six broad industries—construction, manufacturing, trade and transportation, health and education, leisure and hospitality, and professional and business services.

5. See Alison Weingarden (2017), "Labor Market Outcomes in Metropolitan and Non-metropolitan Areas: Signs of Growing Disparities," FEDS Notes (Washington: Board of Governors of the Federal Reserve System, September 25), https://www.federalreserve.gov/econres/notes/feds-notes/labor-market-outcomes-in-metropolitan-and-non-metropolitan-areas-signs-of-growing-disparities-20170925.htm.

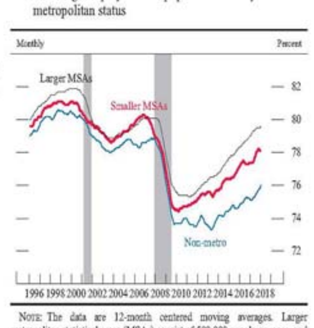
B. Job availability and hard-to-fill positions



NOTE: Job availability is the proportion of households believing jobs are plentiful minus the proportion believing jobs are hard to get, plus 100. Hard-to-fill is the three-month moving average of the percent of small businesses surveyed with at least one hard-to-fill job opening, and it is seasonally adjusted by Federal Reserve Board staff. Monthly hard-to-fill data from the National Federation of Independent Business start in January 1986. The shaded bars indicate periods of business recession as defined by the National Bureau of Economic Research. Data are monthly.

SOURCE: For job availability, Conference Board; for hard-to-fill, National Federation of Independent Business.

C. Prime-age employment-to-population ratio by metropolitan status



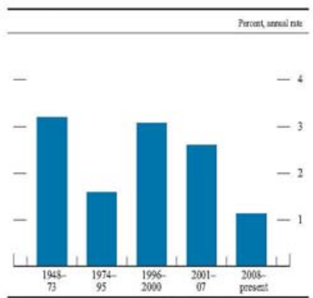
NOTE: The data are 12-month centered moving averages. Larger metropolitan statistical areas (MSAs) consist of 500,000 people or more, and smaller MSAs consist of 100,000 to 500,000 people. The shaded bars indicate periods of business recession as defined by the National Bureau of Economic Research.

SOURCE: Alison Weingarden (2017), "Labor Market Outcomes in Metropolitan and Non-metropolitan Areas: Signs of Growing Disparities," FEDS Notes (Washington: Board of Governors of the Federal Reserve System, September 25), www.federalreserve.gov/econres/notes/feds-notes/labor-market-outcomes-in-metropolitan-and-non-metropolitan-areas-signs-of-growing-disparities-20170925.htm. Calculations use data from the U.S. Census Bureau, Current Population Survey; note that the Bureau of Labor Statistics is involved in the survey process for the Current Population Survey.

½ percentage point faster than its gain a year earlier. Among measures that do not take account of benefits, average hourly earnings rose slightly less than 3 percent through January of this year, a gain that was somewhat faster than the average increase in the preceding few years. Similarly, the measure of wage growth computed by the Federal Reserve Bank of Atlanta that tracks median 12-month wage growth of individuals reporting to the Current Population Survey showed an increase of about 3 percent in January, similar to its readings from the past three years and above the average increase in the preceding few years.[5]

. . . and likely was restrained by slow growth of labor productivity

6. Change in business-sector output per hour



NOTE: Changes are measured from Q4 of the year immediately preceding the period through Q4 of the final year of the period. The final period is measured from 2007:Q4 through 2017:Q4.
SOURCE: Bureau of Labor Statistics via Haver Analytics.

These moderate rates of compensation gain likely reflect the offsetting influences of a tightening labor market and persistently weak productivity growth. Since 2008, labor productivity has increased only a little more than 1 percent per year, on average, well below the average pace from 1996 through 2007 and also below the gains in the 1974–95 period (figure 6). Considerable debate remains about the reasons for the general slowdown in productivity growth and whether it will persist. The slowdown may be partly attributable to the sharp pullback in capital investment during the most recent recession and the relatively long period of modest growth in investment that followed, but a reduced pace of capital deepening can explain only a portion of the step-down. Beyond that, some economists think that more recent technological advances, such as information technology, have been less revolutionary than earlier general-purpose technologies, such as electricity and internal combustion. Others have pointed to a slowdown in the speed at which capital and labor are reallocated toward their most productive uses, which is reflected in fewer business start-ups and a reduced

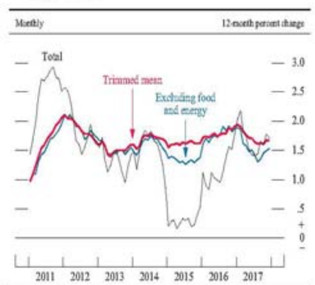
5. The Atlanta Fed's measure differs from others in that it measures the wage growth only of workers who were employed both in the current survey month and 12 months earlier.

pace of hiring and investment by the most innovative firms. Still others argue that there have been important innovations in many fields in recent years, from energy to medicine, often underpinned by ongoing advances in information technology, which augurs well for productivity growth going forward. However, those economists note that such productivity gains may appear only slowly as new firms emerge to exploit the new technologies and as incumbent firms invest in new vintages of capital and restructure their businesses.

Price inflation remains below 2 percent, but the monthly readings picked up toward the end of 2017

Consumer price inflation, as measured by the 12-month change in the price index for personal consumption expenditures (PCE), remained below the FOMC's longer-run objective of 2 percent during most of 2017. The PCE price index increased 1.7 percent over the 12 months ending in December 2017, about the same as in 2016 (figure 7). Core inflation, which typically provides a better indication than the headline measure of where overall inflation will be in the future, was 1.5 percent over the 12 months ending in December 2017—0.4 percentage point lower than it had been one year earlier.

7. Change in the price index for personal consumption expenditures

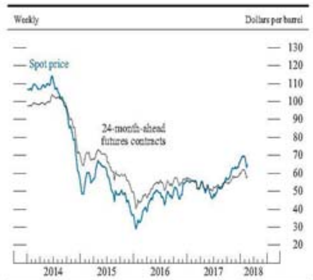


NOTE: The data extend through December 2017; changes are from one year earlier.

SOURCE: For trimmed mean, Federal Reserve Bank of Dallas; for all else, Bureau of Economic Analysis; all via Haver Analytics.

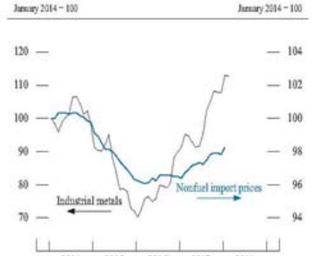
Both measures of inflation reflected some weak readings in the spring and summer of 2017. A portion of those weak readings seemed attributable to idiosyncratic events, such as a steep 1-month decline in the price index for wireless telephone services. However, the monthly readings on core inflation were somewhat higher during the last few months of 2017, in contrast to the more typical pattern that has prevailed in recent years in which readings around the end of the year have tended to be slightly below average. Moreover, the 12-month change in the trimmed mean PCE price index—an alternative indicator of underlying inflation produced by the Federal Reserve Bank of Dallas that may be less sensitive to idiosyncratic price movements—was 1.7 percent in December 2017 and has slowed by less than core PCE price inflation

8. Brent spot and futures prices



NOTE: The data are weekly averages of daily data and extend through February 21, 2018.
SOURCE: ICE Brent Futures via Bloomberg.

9. Nonfuel import prices and industrial metals indexes



NOTE: The data for nonfuel import prices are monthly. The data for industrial metals are a monthly average of daily data and extend through February 21, 2018.
SOURCE: For nonfuel import prices, Bureau of Labor Statistics; for industrial metals, S&P GSCI Industrial Metals Spot Index via Haver Analytics.

over the past 12 months.[6] (For more discussion of inflation both in the United States and abroad, see the box "Low Inflation in the Advanced Economies.")

Oil and metals prices increased notably

Headline inflation was a little higher than core inflation last year, which reflected a rise in consumer energy prices. The price of crude oil rose from $48 per barrel at the end of June to a peak of about $70 per barrel early in the year and, even after recent declines, remains more than 30 percent above its mid-2017 level (figure 8). The upswing in oil prices appears to have been driven primarily by strengthening global demand as well as OPEC's decision to further extend its November 2016 production cuts through the end of 2018. The higher oil prices fed through to moderate increases in the cost of gasoline and heating oil.

Inflation momentum was also supported by nonfuel import prices, which rose throughout 2017 in part because of dollar depreciation (figure 9). That development marked a turn from the past several years, during which nonfuel import prices declined or held flat. In addition to the decline in the dollar, nonfuel import prices were driven higher by a substantial increase in the price of industrial metals. Despite recent volatility, metals prices remain higher, on net, boosted primarily by improved prospects for global demand and also by government policies that restrained production in China.

In contrast, headline inflation has been held down by consumer food prices, which increased only about ½ percent in 2017 after having declined in 2016. Food prices have

6. The trimmed mean index excludes whatever prices showed the largest increases or decreases in a given month; for example, the sharp decline in prices for wireless telephone services in March 2017 was excluded from this index.

been restrained by softness in the prices of farm commodities, which in turn has reflected robust supply in the United States and abroad. Although the harvests for many crops in the United States declined in 2017, they were larger than had been expected earlier in the year.

Survey-based measures of inflation expectations have been generally stable . . .

Expectations of inflation likely influence actual inflation by affecting wage- and price-setting decisions. Survey-based measures of inflation expectations at medium- and longer-term horizons have remained generally stable. In the Survey of Professional Forecasters conducted by the Federal Reserve Bank of Philadelphia, the median expectation for the annual rate of increase in the PCE price index over the next 10 years has been around 2 percent for the past several years (figure 10). In the University of Michigan Surveys of Consumers, the median value for inflation expectations over the next 5 to 10 years—which had drifted downward starting in 2014—has held about flat since the end of 2016 at a level that is a few tenths lower than had prevailed through 2014.

. . . and market-based measures of inflation compensation have increased in recent months but remain relatively low

Inflation expectations can also be gauged by market-based measures of inflation compensation, though the inference is not straightforward because market-based measures can be importantly affected by changes in premiums that provide compensation for bearing inflation and liquidity risks. Measures of longer-term inflation compensation—derived either from differences between yields on nominal Treasury securities and those on comparable Treasury Inflation-Protected Securities (TIPS) or from inflation swaps—have increased since June, returning to levels seen in early 2017, but

10. Median inflation expectations

NOTE: The Michigan survey data are monthly and extend through February; the February data are preliminary. The SPF data for inflation expectations for personal consumption expenditures are quarterly and extend from 2007:Q1 through 2018:Q1.

SOURCE: University of Michigan Surveys of Consumers; Federal Reserve Bank of Philadelphia, Survey of Professional Forecasters (SPF).

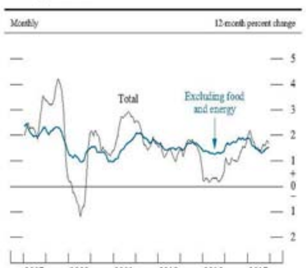
Low Inflation in the Advanced Economies

Inflation has been persistently low in recent years across many advanced economies. In the United States, both overall inflation and core (excluding food and energy prices) inflation, as measured by the price index for personal consumption expenditures, have run below 2 percent for most of the period since 2008 (figure A). In other advanced economies, measures of core inflation have run even lower in some cases, with core inflation in the euro area currently at around 1 percent and in Japan at close to zero (figure B).

What explains this period of low inflation? Across the advanced economies, the main factors holding inflation down likely include the extended period of economic slack following the Great Recession and the falling prices of oil and other commodities from around mid-2014 to early 2016. In the United States, inflation also has been held down by the rise in the foreign exchange value of the dollar from mid-2014 through 2016. The low core U.S. inflation in 2017 has been more of a puzzle (albeit modest in magnitude) and harder to associate with an identifiable cause.[1] As is discussed in the December 2017 Summary of Economic Projections (Part 3 of this report), most Federal Reserve policymakers view these recent low inflation readings as likely to prove transitory and project U.S. inflation this year to move closer to their 2 percent objective. Many private forecasters appear to share this view.

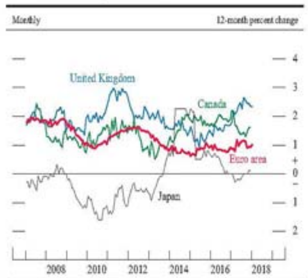
1. For additional discussion of the reasons for low inflation in the United States, see Janet Yellen (2017), "Inflation, Uncertainty, and Monetary Policy," speech delivered at "Prospects for Growth: Reassessing the Fundamentals," 59th Annual Meeting of the National Association for Business Economics, Cleveland, Ohio, September 26, https://www.federalreserve.gov/newsevents/speech/yellen20170926a.htm.

A. Change in the price index for personal consumption expenditures



Note: The data extend through December 2017; changes are from one year earlier.
Source: Bureau of Economic Analysis via Haver Analytics.

B. Inflation excluding food and energy in selected advanced foreign economies



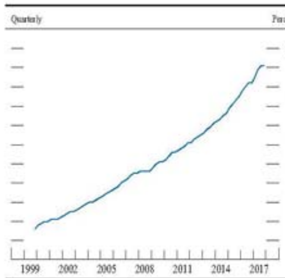
Note: The data for the euro area incorporate the flash estimate for January 2018. The data for Canada and Japan extend through December 2017.
Source: For the United Kingdom, Office for National Statistics; for Japan, Ministry of International Affairs and Communications; for the euro area, Statistical Office of the European Communities; for Canada, Statistics Canada; all via Haver Analytics.

But our understanding of the forces that drive inflation is imperfect, and the fact that many advanced economies are experiencing low inflation at the same time suggests that other, possibly more persistent, factors may be at work. As one possibility, the natural rate of unemployment—the rate at which labor markets exert neither upward nor downward pressure on inflation—is highly uncertain, and it could be lower in many economies than most economists estimate. Alternatively, inflation expectations could be lower than suggested by the available indicators.

More-fundamental changes in the global economy could also be contributing to the recent stretch of lower inflation. First, anecdotal reports suggest that technological changes could be reducing pricing power in many industries, holding down inflation as that occurs.[2] For example, the increased prevalence of Internet shopping allows consumers to compare prices more easily across sellers, possibly implying greater competition that could be putting downward pressure on consumer prices (figure C). While this hypothesis is certainly plausible, it does not easily square with the observation that, at least within the United States, profit margins have been high (figure D).[3]

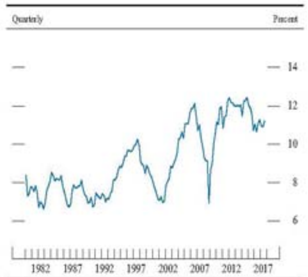
2. Goldman Sachs (2017), "The Amazon Effect in Perspective," *U.S. Economics Analyst* (New York: Goldman Sachs, September 30).
3. See Council of Economic Advisers (2016), "Benefits of Competition and Indicators of Market Power," Council of Economic Advisers Issue Brief (Washington: CEA, April), https://obamawhitehouse.archives.gov/sites/default/files/page/files/20160414_cea_competition_issue_brief.pdf.

C. E-commerce sales as a share of retail sales



NOTE: E-commerce sales are sales of goods and services where an order is placed by the buyer or where the price and terms of sale are negotiated over an online system. Payment may or may not be made online.
SOURCE: Retail Indicators Branch, U.S. Census Bureau.

D. Corporate profits as a share of gross national product



NOTE: The data extend through 2017:Q3. Corporate profits include inventory valuation and capital consumption adjustments.
SOURCE: Bureau of Economic Analysis via Haver Analytics.

Second, some observers have pointed to global developments as helping to explain persistent low inflation across countries. These developments include economic slack abroad or the integration of emerging economies into the world economy, leading to increased competition or downward pressures on wages.[4] But the evidence that global slack can help explain inflation in a given country, beyond its effect on commodity and import prices, is mixed at best.[5] Moreover, measures of integration, such as global trade as a fraction of gross domestic product or the participation in global value chains, appear to have leveled off in recent years.

A number of other explanations for low global inflation have been advanced as well. These explanations include some tentative evidence suggesting that the aging of the population could be exerting downward pressure on trend inflation, perhaps because retirees may tend to be more price conscious than other consumers.[6] Others have pointed to a slowdown in medical services price increases across countries, possibly associated with either health-care reform or fiscal austerity.[7] This slowdown has had a material effect on U.S. inflation, though the extent to which these declines will persist is uncertain.

In summary, while standard economic models appear to explain much of the post–Great Recession period of low inflation, they do not preclude other explanations. Even as most policymakers expect inflation in their economies to move back to their targets over time, they remain attentive to the possibility that factors not included in those models, such as those described here, may keep inflation low. At the same time, they are attentive to the opposite risk of inflation moving undesirably high, should tightening demand conditions lead to faster rises in wages and prices than currently anticipated.

4. See Claudio Borio and Andrew Filardo (2007), "Globalisation and Inflation: New Cross-Country Evidence on the Global Determinants of Domestic Inflation," BIS Working Papers 227 (Basel, Switzerland: Bank for International Settlements, May), www.bis.org/publ/work227.pdf; and Raphael Auer, Claudio Borio, and Andrew Filardo (2017), "The Globalisation of Inflation: The Growing Importance of Global Value Chains," BIS Working Papers 602 (Basel, Switzerland: Bank for International Settlements, January), www.bis.org/publ/work602.pdf.

5. See Jane Ihrig, Steven B. Kamin, Deborah Lindner, and Jaime Marquez (2010), "Some Simple Tests of the Globalization and Inflation Hypothesis," International Finance, vol. 13 (Winter), pp. 343–75; and European Central Bank (2017), "Domestic and Global Drivers of Inflation in the Euro Area," *ECB Economic Bulletin*, no. 4 (June), pp. 72–96, https://www.ecb.europa.eu/pub/pdf/other/ebart201704_01.en.pdf.

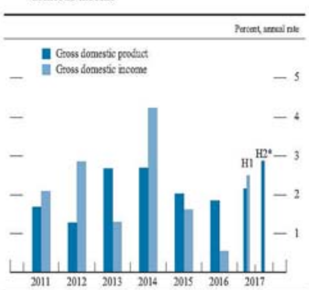
6. See Jong-Won Yoon, Jinill Kim, and Jungjin Lee (2014), "Impact of Demographic Changes on Inflation and the Macroeconomy," IMF Working Paper WP/14/210 (Washington: International Monetary Fund, November), https://www.imf.org/external/pubs/ft/wp/2014/wp14210.pdf. However, other evidence suggests increased inflationary pressure from an aging population; see Mikael Juselius and Előd Takáts (2015), "Can Demography Affect Inflation and Monetary Policy?" BIS Working Papers 485 (Basel, Switzerland: Bank for International Settlements, February), https://www.bis.org/publ/work485.pdf.

7. See Tim Mahedy and Adam Shapiro (2017), "What's Down with Inflation?" FRBSF Economic Letter 2017-35 (San Francisco: Federal Reserve Bank of San Francisco, November), https://www.frbsf.org/economic-research/publications/economic-letter/2017/november/contribution-to-low-pce-inflation-from-healthcare); and Goldman Sachs (2017), "What Can We Learn from Lower Inflation Abroad?" *U.S. Economics Analyst* (New York: Goldman Sachs, November 12)

11. 5-to-10-year-forward inflation compensation

NOTE: The data are weekly averages of daily data and extend through February 16, 2018. TIPS is Treasury Inflation-Protected Securities.
SOURCE: Federal Reserve Bank of New York; Barclays; Federal Reserve Board staff estimates.

12. Change in real gross domestic product and gross domestic income



* Gross domestic income is not yet available for 2017:H2.
SOURCE: Bureau of Economic Analysis via Haver Analytics.

nevertheless remain relatively low (figure 11).[7] The TIPS-based measure of 5-to-10-year-forward inflation compensation and the analogous measure of inflation swaps are now slightly lower than 2¼ percent and 2½ percent, respectively, with both measures below the ranges that persisted for most of the 10 years before the start of the notable declines in mid-2014.

Real gross domestic product growth picked up in the second half of 2017

Real gross domestic product (GDP) is reported to have risen at an annual rate of nearly 3 percent in the second half of 2017 after increasing slightly more than 2 percent in the first half of 2017 (figure 12). Much of that faster growth reflects the stabilization of inventory investment, which had slowed considerably in the first half of last year. Private domestic final purchases—that is, final purchases by U.S. households and businesses, which tend to provide a better indication of future GDP growth than most other components of overall spending—rose at a solid annual rate of about 3½ percent in the second half of the year, similar to the first-half pace.

The economic expansion continues to be supported by steady job gains, rising household wealth, favorable consumer sentiment, strong economic growth abroad, and accommodative financial conditions, including the still low cost of borrowing and easy access to credit for many households and businesses. In addition to these factors, very

7. Inflation compensation implied by the TIPS breakeven inflation rate is based on the difference, at comparable maturities, between yields on nominal Treasury securities and yields on TIPS, which are indexed to the headline consumer price index (CPI). Inflation swaps are contracts in which one party makes payments of certain fixed nominal amounts in exchange for cash flows that are indexed to cumulative CPI inflation over some horizon. Focusing on inflation compensation 5 to 10 years ahead is useful, particularly for monetary policy, because such forward measures encompass market participants' views about where inflation will settle in the long term after developments influencing inflation in the short term have run their course.

upbeat business sentiment appears to have supported solid growth over the past year.

Ongoing improvement in the labor market and gains in wealth continue to support consumer spending . . .

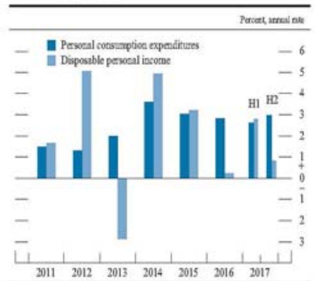
Supported by ongoing improvement in the labor market, real consumer spending rose at a solid annual rate of 3 percent in the second half of 2017, a somewhat faster pace than in the first half. Real disposable personal income—that is, income after taxes and adjusted for price changes—increased at a modest average rate of 1 percent in 2016 and 2017, as real wages changed little over this period (figure 13). With spending growth estimated to have outpaced income growth, the personal saving rate has declined considerably since the end of 2015 (figure 14).

Consumer spending has also been supported by further increases in household net wealth. Broad measures of U.S. equity prices rose robustly last year, though markets have been volatile in recent weeks; house prices have also continued to climb, strengthening the wealth of homeowners (figure 15). As a result of the increases in home and equity prices, aggregate household net worth rose appreciably in 2017. In fact, at the end of the third quarter of 2017, household net worth was 6.7 times the value of disposable income, the highest-ever reading for that ratio, which dates back to 1947 (figure 16).

. . . borrowing conditions for consumers remain generally favorable . . .

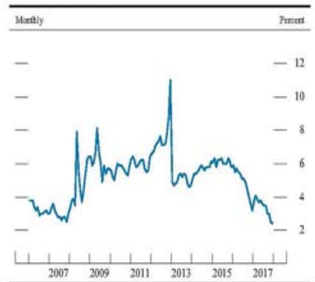
Consumer credit expanded in 2017 at about the same pace as in 2016 (figure 17). Financing conditions for most types of consumer loans are generally favorable. However, banks have continued to tighten standards on credit card and auto loans for borrowers with low credit scores, possibly in response to some upward drift in delinquency rates for those borrowers. Mortgage credit has remained readily available for households with solid credit profiles, but it was still difficult to access for households with low credit scores or harder-to-document incomes.

13. Change in real personal consumption expenditures and disposable personal income



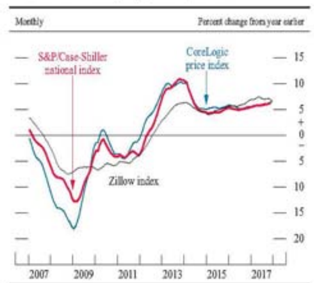
SOURCE: Bureau of Economic Analysis via Haver Analytics.

14. Personal saving rate



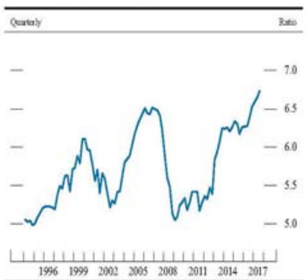
NOTE: Data are through December 2017.
SOURCE: Bureau of Economic Analysis via Haver Analytics.

15. Prices of existing single-family houses



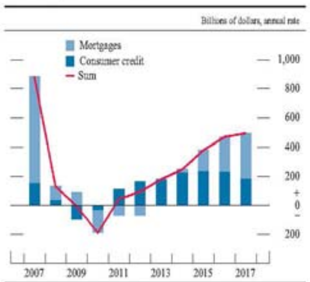
NOTE: The data for the S&P/Case-Shiller index extend through November 2017. The data for the Zillow index and the CoreLogic index extend through December 2017.
SOURCE: CoreLogic Home Price Index; Zillow; S&P/Case-Shiller U.S. National Home Price Index. The S&P/Case-Shiller Index is a product of S&P Dow Jones Indices LLC and/or its affiliates. (For Dow Jones Indices licensing information, see the note on the Contents page.)

16. Wealth-to-income ratio



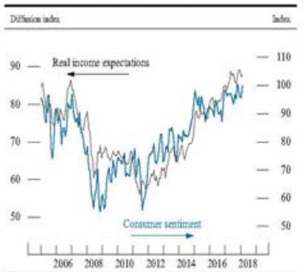
NOTE: The data extend through 2017:Q3. The series is the ratio of household net worth to disposable personal income.
SOURCE: For net worth, Federal Reserve Board, Statistical Release Z.1, "Financial Accounts of the United States"; for income, Bureau of Economic Analysis via Haver Analytics.

17. Changes in household debt



NOTE: The values for 2017 are the averages of the seasonally adjusted annualized quarterly flows through 2017:Q3.
SOURCE: Federal Reserve Board, Statistical Release Z.1, "Financial Accounts of the United States."

18. Indexes of consumer sentiment and income expectations



NOTE: The data extend through February 2018; the February data are preliminary. The consumer sentiment data are monthly and are indexed to 100 in 1966. The real income expectations data are calculated as the net percentage of survey respondents expecting family income to go up more than prices during the next year or two plus 100 and are shown as a three-month moving average.
SOURCE: University of Michigan Surveys of Consumers.

Although household borrowing continued to increase last year, the household debt service burden—the ratio of required principal and interest payments on outstanding household debt to disposable income, measured for the household sector as a whole—remained low by historical standards.

. . . and consumer confidence is strong

Consumers have remained optimistic about their economic situation. As measured by the Michigan survey, consumer sentiment was solid throughout 2017, likely reflecting rising income, job gains, and low inflation (figure 18). Furthermore, the share of households expecting real income to rise over the next year or two has continued to strengthen and now exceeds its pre-recession level.

Activity in the housing sector has improved modestly

Real residential investment spending increased around 2 percent in 2017, about the same modest gain that was seen in 2016. Housing activity was soft in the spring and summer, possibly reflecting the rise in mortgage interest rates early in the year, and then picked up toward the end of the year. For the year as a whole, sales of new and existing homes gained, and single-family housing starts increased (figures 19 and 20). In contrast, multifamily housing starts continued to edge down from the solid pace seen in 2016. Going forward, lean inventories are likely to support further gains in homebuilding activity, as the months' supply of homes for sale has remained near low levels.

Business investment has continued to rebound . . .

Real outlays for business investment—that is, private nonresidential fixed investment—rose at an annual rate of about 6 percent in the second half of 2017, a bit below the gain in the first half but still notably faster than the unusually weak pace recorded in 2016 (figure 21). Business spending on equipment and intangibles (such as research and development) advanced at a solid pace in the second half of the year, and forward-looking indicators of business spending are generally favorable: Orders and shipments of capital goods have posted net gains in recent months, and indicators of business sentiment and activity remain very upbeat. That said, business outlays on structures turned down in the second half of 2017, as investment growth in drilling and mining structures retreated from a very rapid pace in the first half and investment in other nonresidential structures declined.

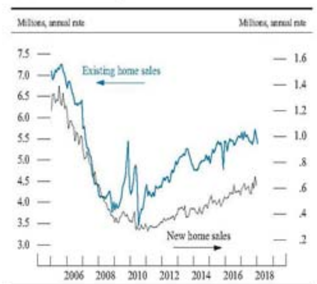
. . . while corporate financing conditions have remained accommodative

Aggregate flows of credit to large nonfinancial firms remained solid through the third quarter, supported in part by continued low interest rates (figure 22). The gross issuance of corporate bonds stayed robust during the second half of 2017, and yields on both investment-grade and high-yield corporate bonds remained low by historical standards (figure 23).

Despite solid growth in business investment, outstanding commercial and industrial (C&I) loans on banks' books continued to rise only modestly in the third quarter of 2017. Respondents to the Senior Loan Officer Opinion Survey on Bank Lending Practices, or SLOOS, reported that demand for C&I loans declined in the third quarter and was little changed in the fourth quarter even as lending standards and terms on such loans eased.[8] Respondents attributed this decline in demand in part to firms drawing on internally generated funds or using alternative sources of financing. Financing conditions for small businesses appear to have remained favorable, and although credit growth has remained sluggish, survey data suggest this sluggishness is largely due to continued weak demand for credit by small businesses.

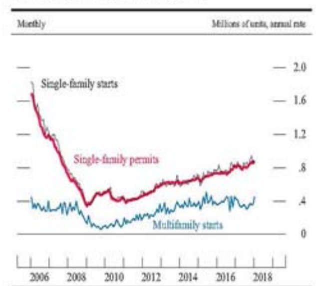
8. The SLOOS is available on the Board's website at https://www.federalreserve.gov/data/sloos/sloos.htm.

19. New and existing home sales



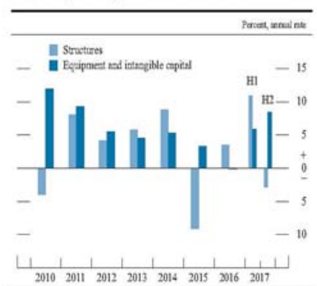
NOTE: Data are monthly. New home sales extend through December 2017 and include only single-family sales. Existing home sales includes single-family, condo, townhome, and co-op sales.
SOURCE: For new home sales, U.S. Census Bureau; for existing home sales, National Association of Realtors; all via Haver Analytics.

20. Private housing starts and permits



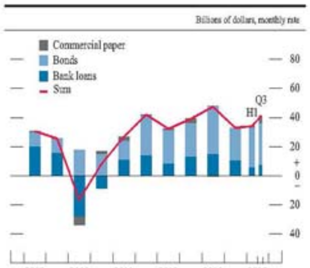
SOURCE: U.S. Census Bureau via Haver Analytics.

21. Change in real private nonresidential fixed investment



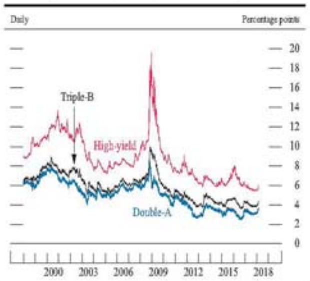
SOURCE: Bureau of Economic Analysis via Haver Analytics.

22. Selected components of net debt financing for nonfinancial businesses



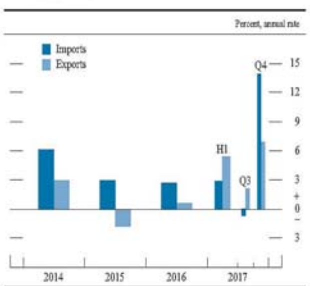
SOURCE: Federal Reserve Board, Statistical Release Z.1, "Financial Accounts of the United States."

23. Corporate bond yields, by securities rating



NOTE: The yields shown are yields on 10-year bonds.
SOURCE: ICE Bank of America Merrill Lynch Indices, used with permission.

24. Change in real imports and exports of goods and services



SOURCE: Bureau of Economic Analysis via Haver Analytics.

Net exports subtracted from GDP growth in the fourth quarter after providing a modest addition during the rest of the year

U.S. real exports expanded at a moderate pace in the second half of last year after having increased more rapidly in the first half, supported by solid foreign growth (figure 24). At the same time, real imports surged in the fourth quarter following a slight contraction in the third quarter. As a result, real net exports moved from modestly lifting U.S. real GDP growth during the first three quarters of 2017 to subtracting more than 1 percentage point in the fourth quarter. Although the nominal trade and current account deficits narrowed in the third quarter of 2017, the trade deficit widened in the fourth quarter (figure 25).

Federal fiscal policy actions had a roughly neutral effect on economic growth in 2017 . . .

Federal government purchases rose 1 percent in 2017, and policy actions had little effect on federal taxes or transfers (figure 26). Under currently enacted legislation, which includes the Tax Cuts and Jobs Act (TCJA) and the Bipartisan Budget Act, federal fiscal policy will likely provide a moderate boost to GDP growth this year.[9]

The federal unified deficit continued to widen in fiscal year 2017, reaching 3½ percent of nominal GDP. Although expenditures as a share of GDP were relatively stable at a little under 21 percent, receipts moved lower in 2017 to roughly 17 percent of GDP (figure 27). The ratio of federal debt held by the public to nominal GDP was 75¼ percent at the end of fiscal year 2017 and remains quite elevated relative to historical norms (figure 28).

9. The Joint Committee on Taxation estimates that the TCJA will reduce average annual tax revenue by a little more than 1 percent of GDP over the next few years. This revenue estimate does not account for the potential macroeconomic effects of the legislation.

. . . and the fiscal position of most state and local governments is stable

The fiscal position of most state and local governments is stable, although there is a range of experiences across these governments. Many state governments are experiencing lackluster revenue growth, as income tax collections have only edged up, on average, in recent quarters. In contrast, house price gains have continued to push up property tax revenues at the local level. Employment in the state and local government sector only inched up in 2017, while outlays for construction by these governments continued to decline on net (figure 29).

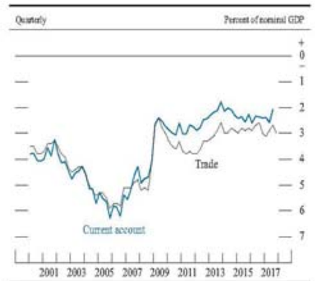
Financial Developments

The expected path of the federal funds rate has moved up

The path of the expected federal funds rate implied by market quotes on interest rate derivatives has moved up on net since the middle of last year amid an improving global growth outlook (figure 30). Part of the upward shift occurred around FOMC communications in the fall that were interpreted as implying a somewhat quicker pace of policy rate increases than had been previously anticipated. The expected policy path also moved higher around the time when the U.S. tax legislation was finalized.

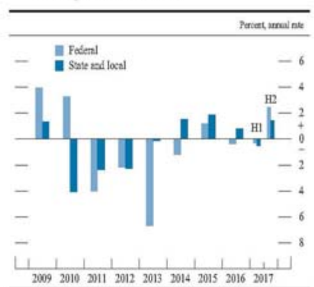
Survey-based measures of the expected path of the policy rate have been generally little changed on net, suggesting that part of the rise in the market-implied path reflected higher term premiums. In the Federal Reserve Bank of New York's Survey of Primary Dealers and Survey of Market Participants, which were conducted just before the January 2018 FOMC meeting, the median respondents expected three 25 basis point increases in the FOMC's target range for the federal funds rate as the most likely outcome for this year, unchanged from what they had expected in surveys conducted before the June FOMC meeting. Market-based measures of uncertainty about

25. U.S. trade and current account balances



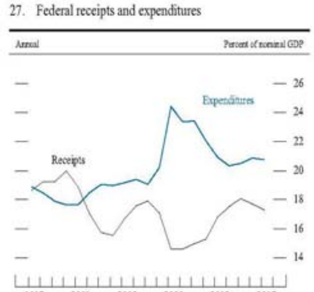
NOTE: GDP is gross domestic product. Current account data extend through 2017:Q3.
SOURCE: Bureau of Economic Analysis via Haver Analytics.

26. Change in real government expenditures on consumption and investment



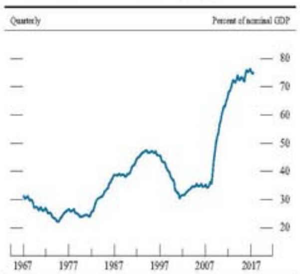
SOURCE: Bureau of Economic Analysis via Haver Analytics.

27. Federal receipts and expenditures



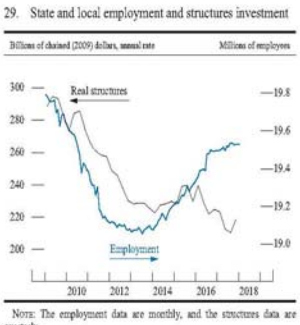
NOTE: The receipts and expenditures data are on a unified-budget basis and are for fiscal years (October through September); gross domestic product (GDP) data are for the four quarters ending in Q4.
SOURCE: Office of Management and Budget via Haver Analytics.

28. Federal government debt held by the public



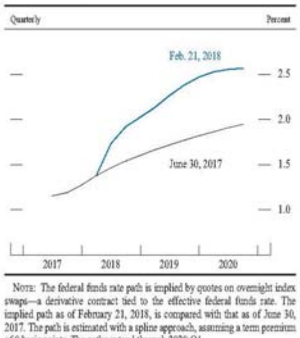
NOTE: The data extend through 2017:Q3. The data for gross domestic product (GDP) are at an annual rate. Federal debt held by the public equals federal debt less Treasury securities held in federal employee defined benefit retirement accounts, evaluated at the end of the quarter.
SOURCE: For GDP, Bureau of Economic Analysis via Haver Analytics; for federal debt, Federal Reserve Board, Statistical Release Z.1, "Financial Accounts of the United States."

29. State and local employment and structures investment



NOTE: The employment data are monthly, and the structures data are quarterly.
SOURCE: For employment data, Bureau of Labor Statistics; for structures data, Bureau of Economic Analysis; all via Haver Analytics.

30. Market-implied federal funds rate



NOTE: The federal funds rate path is implied by quotes on overnight index swaps—a derivative contract tied to the effective federal funds rate. The implied path as of February 21, 2018, is compared with that as of June 30, 2017. The path is estimated with a spline approach, assuming a term premium of 0 basis points. The paths extend through 2020:Q4.
SOURCE: Bloomberg; Federal Reserve Board staff estimates.

the policy rate approximately one to two years ahead have, on balance, edged up from their levels in the middle of 2017.

The nominal Treasury yield curve has shifted up

The nominal Treasury yield curve has shifted up on net since the middle of 2017, owing to greater optimism about the global growth outlook and investors' perceptions of higher odds for the removal of monetary policy accommodation (figure 31). Yields on shorter-term nominal Treasury securities increased relatively more than those on longer-term nominal Treasury securities, thus resulting in some flattening of the yield curve. According to market participants, among the factors contributing to this outcome has been the Treasury Department's stated intention to increase its reliance on issuance of short-dated securities, as discussed in the two most recent releases of the Treasury's quarterly financing statement.

Consistent with the changes in Treasury yields, yields on 30-year agency mortgage-backed securities (MBS)—an important determinant of mortgage interest rates—increased but remain quite low by historical standards (figure 32).

Broad equity price indexes have increased further . . .

Broad U.S. equity indexes, despite some declines seen in recent weeks, have, on balance, increased further since June 2017, with most of the net gains occurring during the final quarter of last year (figure 33). Equity prices were reportedly supported in part by an increase in investors' confidence that changes to the federal tax law will boost corporate earnings. Stock prices generally increased across industries outside utilities and real estate, two sectors for which the increases in interest rates described earlier are likely to have weighed more heavily on stock prices; stock prices of banks rose more than the broader market. Implied volatility for the S&P 500 index, as calculated from options prices, increased notably in early February, ending the period close to the median of its historical distribution.

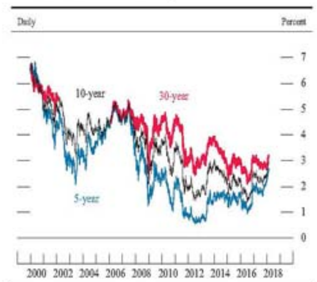
. . . while risk spreads on corporate bonds have continued to decrease

Spreads on both high-yield and investment-grade corporate bond yields over comparable-maturity Treasury yields have decreased further since the middle of last year, with spreads for high-yield bonds moving closer to the bottom of their historical ranges. The narrowing of the spreads since the middle of 2017 appears to reflect both an anticipation that the losses from defaults on these bonds will be smaller and a lower compensation being charged for bearing the risk of such losses. (For a discussion of financial stability issues, see the box "Developments Related to Financial Stability.")

Markets for Treasury securities, mortgage-backed securities, municipal bonds, and short-term funding have functioned well

Available indicators of Treasury market functioning have generally remained stable over the second half of 2017 and early 2018, with a variety of liquidity metrics—including bid-ask spreads, bid sizes, and estimates of transaction costs—mostly unchanged over the period. Liquidity conditions in the agency MBS market have also been generally stable. In recent months, the functioning of Treasury and agency MBS markets has not been notably affected by the implementation of the Federal Reserve's balance sheet normalization program and the resulting reduction in reinvestment of principal payments from the Federal Reserve's securities holdings. In early February, amid financial market volatility, liquidity conditions in the Treasury market deteriorated but have recovered somewhat since. Credit conditions in municipal bond markets have also remained generally stable since June 2017. Over that period, yield spreads on 20-year general obligation municipal bonds over comparable-maturity Treasury securities have narrowed on balance. Nevertheless, significant financial strains were still evident for some issuers.

31. Yields on nominal Treasury securities



NOTE: The Treasury ceased publication of the 30-year constant maturity series on February 18, 2002, and resumed that series on February 9, 2006.
SOURCE: Department of the Treasury.

32. Yield and spread on agency mortgage-backed securities

NOTE: The data are daily. Yield shown is for the Fannie Mae 30-year current coupon, the coupon rate at which new mortgage-backed securities would be priced at par, or face, value. Spread shown is to the average of the 5- and 10-year nominal Treasury yields. The data extend through February 16, 2018.
SOURCE: Department of the Treasury; Barclays.

33. Equity prices

SOURCE: Standard & Poor's Dow Jones Indices via Bloomberg. (For Dow Jones Indices licensing information, see the note on the Contents page.)

Developments Related to Financial Stability

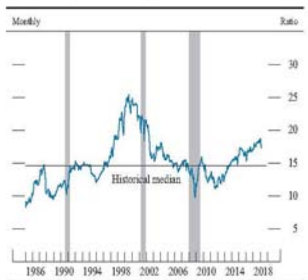
Overall vulnerabilities in the U.S. financial system remain moderate on balance.[1] Valuation pressures continue to be elevated across a range of asset classes, including equities and commercial real estate. Vulnerabilities from leverage in the financial sector appear low, reflecting in part capital and liquidity ratios of banks that have continued to improve from already strong positions. However, there are signs that nonbank financial leverage has been increasing in some areas—for example, in the provision of margin credit to equity investors such as hedge funds. Vulnerabilities from nonfinancial leverage are judged to be moderate. While household debt balances have been increasing modestly, the leverage of the business sector is elevated, particularly among speculative-grade firms. Vulnerabilities related to maturity and liquidity transformation remain low on net.

Over the second half of 2017, valuation pressures edged up from already elevated levels. In general, valuations are higher than would be expected based solely on the current level of longer-term Treasury yields. In part reflecting growing anticipation of the boost to future (after-tax) earnings from a corporate tax rate cut, price-to-earnings ratios for U.S. stocks rose through January and were close to their highest levels outside of the late 1990s (figure A); ratios dropped back somewhat in early February. In a sign of increasing valuation pressures in commercial real estate markets, net operating income relative to property values (referred to as capitalization rates) have been declining relative to Treasury yields of comparable maturity for multifamily and industrial properties. While these spreads narrowed further from already low levels, they are wider than in 2007. Even though the aggregate residential house price-to-rent ratio has been increasing faster than its long-run trend, it is only slightly elevated at present. In corporate credit markets, spreads of corporate bond yields over those of Treasury securities with comparable maturities fell, and the high-yield spread is now near the bottom of its historical distribution. Spreads on leveraged loans and collateralized loan obligations—which are a significant funding source for the corporate sector—stayed compressed. In addition, nonprice terms eased on these types of loans, indicating weaker investor protection than at the peak of the previous credit cycle in 2007. Consistent with elevated risk appetite, virtual currencies experienced sharp price increases in 2017.

Vulnerabilities related to financial-sector leverage appear low. Leverage at insurance companies and at broker-dealers is on the low end of its historical range, and most indicators of leverage at other nonbank financial firms are stable. However, there is some evidence that dealers have eased price terms to hedge funds and real estate investment trusts, and that hedge funds have gradually increased their use of leverage, in particular margin credit for equity trades. Although such easing of price terms has taken place against the backdrop of building valuation pressures, the strong capital position of bank holding companies reduces the risk that sudden drops in asset prices could significantly affect bank-affiliated dealers. Risk-based regulatory capital ratios for most of the largest bank holding companies continued to increase from already high levels.

If interest rates were to increase unexpectedly, banks' strong capital position should help absorb the consequent losses on securities. About one-third of the losses that could be experienced by banks would affect held-to-maturity securities. While these losses

A. Forward price-to-earnings ratio of S&P 500 firms



NOTE: The February 2018 value is based on a mid-month estimate. The data depict the aggregate forward price-to-earnings ratio of S&P 500 firms. The historical median is based on data from 1985 to the present. Shaded bars indicate periods of recession as defined by the National Bureau of Economic Research. Data are based on 12-month-ahead expected earnings per share.
SOURCE: Staff estimates based on Thomson Reuters, IBES.

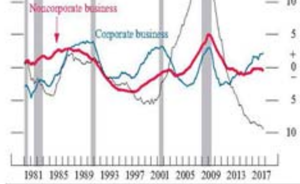
1. An overview of the framework for assessing financial stability in the United States is provided in Stanley Fischer (2017), "An Assessment of Financial Stability in the United States," speech delivered at the IMF Workshop on Financial Surveillance and Communication: Best Practices from Latin America, the Caribbean, and Advanced Economies, Washington, June 27, www.federalreserve.gov/newsevents/speech/fischer20170627a.htm.

would not reduce regulatory capital, they could still have a variety of negative consequences—for example, by worsening banks' funding terms. The large share of deposits in bank liabilities is also likely to soften the effect of an unexpected rise in interest rates on banks, because deposit rates tend to adjust with a delay and bank profitability would improve in the meantime.

Overall vulnerabilities arising from leverage in the nonfinancial sector continue to be moderate. Continuing its pattern in recent years, household debt has expanded about in line with nominal income, and the household credit-to-GDP gap remains sizable and negative (figure B). Leverage in the nonfinancial business sector remains high, with net issuance of risky debt climbing in recent months. However, the share of the lowest-quality debt in total issuance declined, and relatively low interest expenses mitigated some of the vulnerabilities associated with elevated leverage.

In part attributable to regulations introduced since the financial crisis, vulnerabilities associated with liquidity and maturity transformation—that is, the financing of illiquid or long-maturity assets with short-maturity debt—continue to be low. The reliance of global systemically important banks (G-SIBs) on short-term wholesale funding has risen only slightly from post-crisis lows, while their holdings of high-quality liquid assets stand at high levels and exceed those required by the Liquidity Coverage Ratio. The share of core deposits in total liabilities at G-SIBs also remains at historically high levels. More than one year after the money market fund reform, which reduced run risk as investors shifted from prime to government funds, the growth in alternative short-term investment vehicles has been limited. Regarding securitized products, although the issuance of asset-backed securities (ABS) was strong, overall issuance has remained well below pre-crisis levels for most asset classes, and securitizations appear to involve limited maturity or liquidity transformation. Nonetheless, ABS issuance was boosted by the securitization of assets that were rarely securitized in the past, such as aircraft leases and mobile phone contracts. In addition, certain nontraditional liabilities of life insurers, including funding-agreement-backed securities, have grown notably recently, although levels remain low relative to the broader market for securitizations.

B. Private nonfinancial sector credit-to-GDP gap



NOTE: The data extend through 2017:Q3 and are smoothed using a Hodrick-Prescott filter. The shaded bars indicate periods of business recession as defined by the National Bureau of Economic Research. Gaps have been weighted by their share of overall credit. GDP is gross domestic product.

SOURCE: Federal Reserve Board, Statistical Release Z.1, "Financial Accounts of the United States"; Bureau of Economic Analysis via Haver Analytics, national income and product accounts, Table 1.1.5: Gross Domestic Product; Board staff calculations.

Financial vulnerabilities in foreign economies are moderate overall. Advanced foreign economies, many of which have strong financial and real linkages to the United States, continue to struggle with elevated valuations, the disposal of legacy assets, and, in some cases, worrisome rises in mortgage debt. Some major emerging market economies harbor more pronounced vulnerabilities, reflecting one or more of the following: substantial corporate leverage, fiscal concerns, or excessive reliance on foreign funding.

The countercyclical capital buffer (CCyB) is a macroprudential tool the Federal Reserve Board can use to increase the resilience of the financial system by raising capital requirements on internationally active banking organizations. The CCyB is activated when there is an elevated risk of above-normal future losses and when the banking organizations for which capital requirements would be raised by the buffer are exposed to or are contributing to this elevated risk—either directly or indirectly. The financial stability developments, assessments, and framework described and used here bear importantly on the Board's setting of the CCyB.[2] In December 2017, the Board voted to affirm the CCyB at its level of 0 percent.

(continued on next page)

2. See Board of Governors of the Federal Reserve System (2016), "Regulatory Capital Rules: The Federal Reserve Board's Framework for Implementing the U.S. Basel III Countercyclical Capital Buffer," final policy statement (Docket No. R-1529), *Federal Register*, vol. 81 (September 16), pp. 63682–88.

Developments Related to Financial Stability *(continued)*

Over the second half of 2017, the Federal Reserve Board has taken some key steps to reduce regulatory burden while promoting the financial stability of the United States. The Federal Reserve Board, Office of the Comptroller of the Currency, and Federal Deposit Insurance Corporation jointly proposed amendments to the banking agencies' commercial real estate appraisal regulations that raised the threshold price for mandating appraisals from \$250,000 to \$400,000, thereby reducing the number of required appraisals.[3] In addition, the federal banking agencies issued a proposal to simplify aspects of community banking organizations' regulatory capital rules, with the goal of reducing regulatory burden on smaller institutions while maintaining the safety and soundness of the banking system.[4]

The Board requested comment on a corporate governance proposal to enhance the effectiveness of financial firms' boards of directors. The proposal refocuses the Federal Reserve's supervisory expectations for the largest firms' boards of directors on their core responsibilities and would also reduce unnecessary burden for the boards of smaller institutions.[5] The Board also adopted a final rule to improve the resolvability and resilience of G-SIBs and their subsidiaries to restrictions regarding the terms of their noncleared qualified financial contracts.[6] In addition, the Board proposed changes to its supervisory rating system for large financial institutions to better align with the post-crisis supervisory program for these firms; smaller institutions, including community banks, would continue to use the current rating system.[7] Finally, the Board requested comment on a package of proposals that would increase the transparency of its stress-testing program. In particular, the proposals would provide more information about the models used to estimate hypothetical losses in the stress tests while maintaining the Board's ability to test the resilience of the nation's largest and most complex banks.[8]

3. See Office of the Comptroller of the Currency, Board of Governors of the Federal Reserve System, and the Federal Deposit Insurance Corporation (2017), "Real Estate Appraisals," notice of proposed rulemaking and request for comment (Docket No. R-1568), *Federal Register*, vol. 82 (July 31), pp. 35478–93.

4. See Office of the Comptroller of the Currency, Board of Governors of the Federal Reserve System, and the Federal Deposit Insurance Corporation (2017), "Simplifications to the Capital Rule Pursuant to the Economic Growth and Regulatory Paperwork Reduction Act of 1996," notice of proposed rulemaking (Docket No. R-1576), *Federal Register*, vol. 82 (October 27), pp. 49984–50044.

5. See Board of Governors of the Federal Reserve System (2017), "Federal Reserve Board Invites Public Comment on Two Proposals; Corporate Governance and Rating System for Large Financial Institutions," press release, August 3, https://www.federalreserve.gov/newsevents/pressreleases/bcreg20170803a.htm.

6. See Board of Governors of the Federal Reserve System (2017), "Restrictions on Qualified Financial Contracts of Systemically Important U.S. Banking Organizations and the U.S. Operations of Systemically Important Foreign Banking Organizations; Revisions to the Definition of Qualifying Master Netting Agreement and Related Definitions," final rule (Docket No. R-1538), *Federal Register*, vol. 82 (September 12), pp. 42882–926.

7. See Board of Governors, "Federal Reserve Board Invites Public Comment on Two Proposals," in note 5.

8. See Board of Governors of the Federal Reserve System (2017), "Federal Reserve Board Requests Comment on Package of Proposals That Would Increase the Transparency of Its Stress Testing Program," press release, December 7, www.federalreserve.gov/newsevents/pressreleases/bcreg20171207a.htm.

In particular, prices for Puerto Rico general obligation bonds fell notably after Hurricane Maria hit the island and its economic outlook deteriorated even further. However, these developments left little imprint in broader municipal bond markets. Conditions in domestic short-term funding markets have remained stable since the middle of last year.

Bank credit continued to expand and bank profitability remained stable

Aggregate credit provided by commercial banks continued to expand in the second half of 2017 at a pace similar to the one seen earlier in the year but more slowly than in 2016. Its pace was also slower than that of nominal GDP, thus leaving the ratio of total commercial bank credit to current-dollar GDP slightly lower than earlier in 2017 (figure 34). Measures of bank profitability were little changed at levels below their historical averages (figure 35).

International Developments

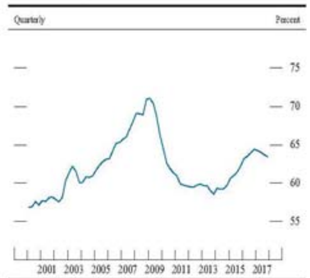
Economic activity in most foreign economies continued at a healthy pace in the second half of 2017

Foreign real GDP appears to have expanded notably in the second half of 2017, extending the period since mid-2016 when the pace of economic growth picked up broadly around the world.

Growth in advanced foreign economies was solid, and unemployment fell to multidecade lows . . .

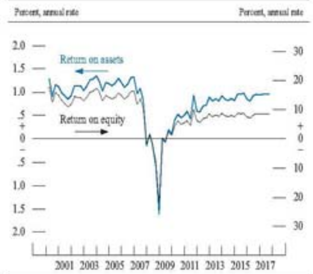
In the advanced foreign economies (AFEs), the economic recovery has continued to firm. Real GDP in the euro area and the United Kingdom expanded at a solid pace in the second half of the year (figure 36). Economic activity also continued to expand in Japan, though real GDP growth slowed sharply in the fourth quarter. In Canada, data through November indicate that economic growth moderated somewhat in the second half following a very rapid expansion earlier in the year. Unemployment declined further as

34. Ratio of total commercial bank credit to nominal gross domestic product



SOURCE: Federal Reserve Board, Statistical Release H.8, "Assets and Liabilities of Commercial Banks in the United States"; Bureau of Economic Analysis via Haver Analytics.

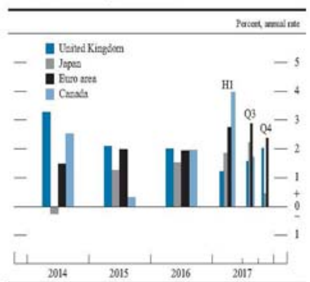
35. Profitability of bank holding companies



NOTE: The data are quarterly and are seasonally adjusted. The data extend through 2017:Q3.

SOURCE: Federal Reserve Board, Form FR Y-9C, Consolidated Financial Statements for Bank Holding Companies.

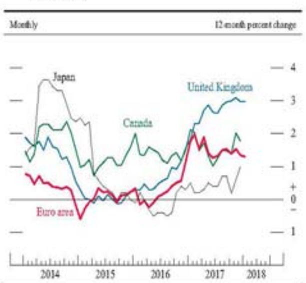
36. Real gross domestic product growth in selected advanced foreign economies



NOTE: The data for the United Kingdom and the euro area incorporate flash estimates for 2017:Q4. The data for Japan incorporate the preliminary estimate for 2017:Q4. The data for Canada extend through 2017:Q3.

SOURCE: For the United Kingdom, Office for National Statistics; for Japan, Cabinet Office, Government of Japan; for the euro area, Eurostat; for Canada, Statistics Canada; all via Haver Analytics.

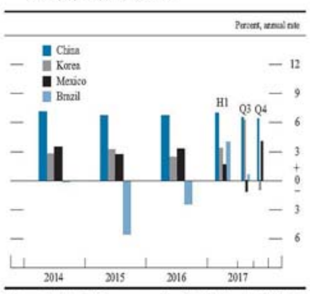
37. Consumer price inflation in selected advanced foreign economies



NOTE: The data for the euro area incorporate the flash estimate for January 2018. The data for Canada and Japan extend through December 2017.

SOURCE: For the United Kingdom, Office for National Statistics; for Japan, Ministry of International Affairs and Communications; for the euro area, Statistical Office of the European Communities; for Canada, Statistics Canada; all via Haver Analytics.

38. Real gross domestic product growth in selected emerging market economies



NOTE: The data for China are seasonally adjusted by Board staff. The data for Korea, Mexico, and Brazil are seasonally adjusted by their respective government agencies. The data for Mexico incorporate the flash estimate for 2017:Q4. The data for Brazil extend through 2017:Q3.

SOURCE: For China, China National Bureau of Statistics; for Korea, Bank of Korea; for Mexico, Instituto Nacional de Estadistica y Geografia; for Brazil, Instituto Brasileiro de Geografia e Estatistica; all via Haver Analytics.

well, reaching 40-year lows in Canada and the United Kingdom, while growth in labor compensation ticked up only modestly.

. . . but inflation remained subdued . . .

Consumer price inflation rose somewhat in most AFEs, boosted by the rise in commodity prices (figure 37). However, headline and especially core inflation remained below the central banks' targets in the euro area and Japan. In contrast, U.K. inflation rose further above the Bank of England's (BOE) 2 percent target as the substantial sterling depreciation observed since the June 2016 Brexit referendum continued to provide some uplift to import prices. (For more discussion of inflation both in the United States and abroad, see the box "Low Inflation in the Advanced Economies" in the Domestic Developments section.)

. . . leading AFE central banks to maintain accommodative monetary policies

The Bank of Japan kept its policy rates at historically low levels, with the target for 10-year government bond yields around zero. In October, the European Central Bank extended its asset purchase program until September 2018, albeit at a reduced pace. The Bank of Canada and the BOE both raised their policy rates but also indicated that they intend to proceed gradually with further removal of policy accommodation.

In emerging Asia, growth remained solid...

Economic growth in China remained relatively strong in the second half of 2017 even as the authorities enacted policies to limit production in heavily polluting industries, tighten financial regulations, and curb house price growth (figure 38). Most other emerging Asian economies registered very strong growth in the third quarter of 2017, fueled by solid external demand, but slowed in the fourth quarter.

. . . while the largest Latin American economies continued to struggle

In Mexico, real GDP declined in the third quarter as two major earthquakes and a hurricane significantly disrupted economic activity, but rebounded in the fourth quarter. Following a prolonged period of contraction, the Brazilian economy continues to recover, but only at a weak pace. Private investment has remained sluggish amid corporate deleveraging and continued uncertainty about government policies, although it turned positive in the third quarter for the first time in nearly four years.

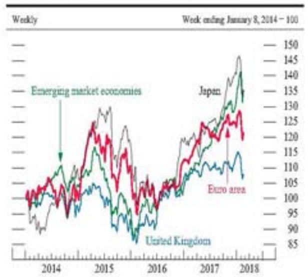
Foreign equity prices rose further on net . . .

Solid macroeconomic data and robust corporate earnings helped broad AFE and emerging market economies (EMEs) equity indexes extend their 2016 gains through the start of this year (figure 39). Declines since the end of January have erased some of these gains, and volatility in foreign stock markets increased. On balance, most AFE stock prices are higher, and EME equity markets significantly outperformed those of AFEs. Capital flows into emerging market mutual funds generally remained robust as higher commodity prices added to optimism about the economic outlook (figure 40).

. . . and government bond yields increased

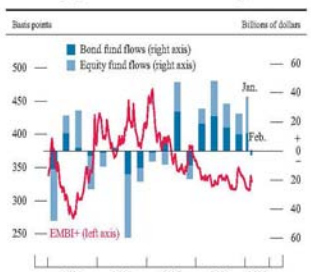
Longer-term government bond yields in most AFEs were noticeably higher than their mid-2017 levels, reflecting strengthening growth and mounting prospects for the normalization of monetary policies (figure 41). In Canada, where the central bank has raised its policy interest rate 75 basis points since June, the rise in longer-term yields was particularly notable. On balance, spreads of dollar-denominated emerging market sovereign bonds over U.S. Treasury securities were stable around the levels observed in mid-2017 (as shown in figure 40).

39. Equity indexes for selected foreign economies



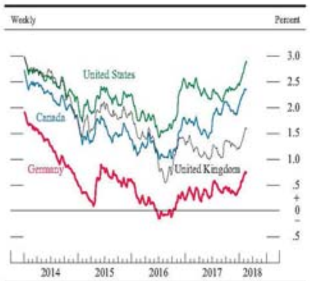
NOTE: The data are weekly averages of daily data and extend through February 21, 2018.
SOURCE: For euro area, DJ Euro Stoxx Index; for Japan, TOPIX Stock Index; for United Kingdom, FTSE 100 Stock Index; for emerging market economies, MSCI Emerging Markets Local Currency Index; all via Bloomberg.

40. Emerging market mutual fund flows and spreads



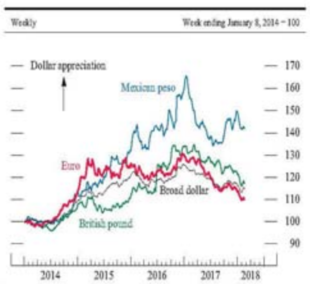
NOTE: The bond and equity fund flow data are quarterly sums of weekly data from January 1, 2014, to December 31, 2017, and monthly sums of weekly data from January 1, 2018, to February 14, 2018. The fund flows data exclude funds located in China. The J.P. Morgan Emerging Markets Bond Index Plus (EMBI+) data are weekly averages of daily data and extend through February 20, 2018.
SOURCE: For bond and equity fund flows, EPFR Global; for EMBI+, J.P. Morgan Emerging Markets Bond Index Plus via Bloomberg.

41. Nominal 10-year government bond yields in selected advanced economies



NOTE: The data are weekly averages of daily benchmark yields and extend through February 21, 2018.
SOURCE: Bloomberg.

42. U.S. dollar exchange rate indexes



NOTE: The data, which are in foreign currency units per dollar, are weekly averages of daily data and extend through February 21, 2018. As indicated by the arrow, increases in the data represent U.S. dollar appreciation, and decreases represent U.S. dollar depreciation.
SOURCE: Federal Reserve Board, Statistical Release H.10, "Foreign Exchange Rates."

The dollar depreciated on net

The broad dollar index—a measure of the trade-weighted value of the dollar against foreign currencies—fell roughly 5 percent in the first half of 2017. Notwithstanding some appreciation in early February, the currency has depreciated further since the end of June, partially reversing substantial appreciation realized over the period from 2014 to 2016 (figure 42). The weakness in the dollar mostly reflects a broad-based improvement in the outlook for foreign economic growth. Brexit-related headlines weighed on the British pound at times during the second half of 2017, but progress regarding the terms of the U.K. separation from the European Union boosted the currency later in the year. In contrast, the dollar appreciated against the Mexican peso, on net, amid uncertainty around North American Free Trade Agreement negotiations.

Part 2
Monetary Policy

The Federal Open Market Committee raised the federal funds rate target range in December

For more than two years, the Federal Open Market Committee (FOMC) has been gradually increasing its target range for the federal funds rate as the labor market strengthened and headwinds in the aftermath of the recession continued to abate. After having raised the target range for the federal funds rate twice in the first half of 2017, the Committee raised it again in December, bringing the target range to 1¼ to 1½ percent (figure 43).[10] As on previous occasions, the decision to increase the federal funds rate in December reflected realized and expected labor market conditions and inflation relative to the FOMC's objectives. Information available at that time indicated that economic activity had been rising at a solid rate and the labor market had continued to strengthen. In addition, although inflation had continued to run below the FOMC's 2 percent longer-run objective, the Committee expected that it would stabilize around that target over the medium term. At its most recent meeting, which concluded on January 31, the Committee kept the target range for the federal funds rate unchanged.[11]

Monetary policy continues to support economic growth

Even with the gradual increases in the federal funds rate to date, the Committee judges that the stance of monetary policy remains accommodative, thereby supporting strong labor market conditions and a sustained return to 2 percent inflation. The federal funds rate remains somewhat below most estimates of its neutral rate—that is, the level of the federal funds rate that is neither expansionary nor contractionary.

In evaluating the stance of monetary policy, policymakers routinely consult prescriptions from a variety of policy rules, which can serve as useful benchmarks. However, the

10. See Board of Governors of the Federal Reserve System (2017), "Federal Reserve Issues FOMC Statement," press release, December 13, https://www.federalreserve.gov/newsevents/pressreleases/monetary20171213a.htm.

11. See Board of Governors of the Federal Reserve System (2018), "Federal Reserve Issues FOMC Statement," press release, January 31, https://www.federalreserve.gov/newsevents/pressreleases/monetary20180131a.htm.

43. Selected interest rates

Note: The 2-year and 10-year Treasury rates are the constant-maturity yields based on the most actively traded securities.
Source: Department of the Treasury; Federal Reserve Board.

use and interpretation of such prescriptions require careful judgments about the choice and measurement of the inputs to these rules as well as the implications of the many considerations these rules do not take into account (see the box "Monetary Policy Rules and Their Role in the Federal Reserve's Policy Process").

Future changes in the federal funds rate will depend on the economic outlook as informed by incoming data

The Committee has continued to emphasize that, in determining the timing and size of future adjustments to the target range for the federal funds rate, it will assess realized and expected economic conditions relative to its objectives of maximum employment and 2 percent inflation. This assessment will take into account a wide range of information, including measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial and international developments. The FOMC has emphasized that it will carefully monitor actual and expected inflation developments relative to its symmetric inflation goal, as inflation has been running persistently below the 2 percent longer-run objective.

The Committee expects that the ongoing strength in the economy will warrant further gradual increases in the federal funds rate, and that the federal funds rate will likely remain, for some time, below the levels that the Committee expects to prevail in the longer run. Consistent with this outlook, in the most recent Summary of Economic Projections, which was compiled at the time of the December FOMC meeting, the median of participants' assessments for the appropriate level of the midpoint of the target range for the federal funds rate at year-end rises gradually over the period from 2018 to 2020, remaining below the median projection for its longer-run level through the end of 2019.[12]

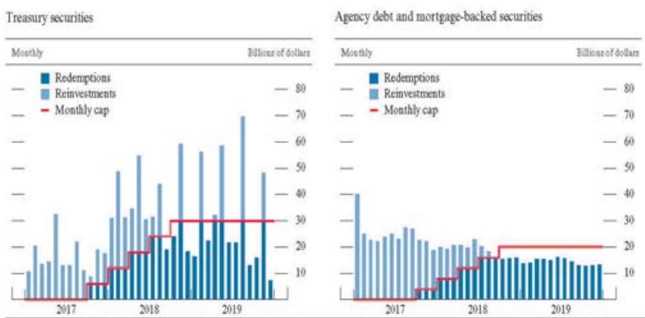
The size of the Federal Reserve's balance sheet has begun to decrease

The Committee had communicated for some time that it intended to reduce the size of the Federal Reserve's balance sheet once normalization of the level of the federal funds rate was well under way. At its meeting in September, the FOMC decided to initiate the balance sheet normalization program described in the June 2017 Addendum to the Policy Normalization Principles and Plans. This program is gradually and predictably reducing the Federal Reserve's securities holdings by decreasing the reinvestment of the principal payments it receives from securities held in the System Open Market Account (SOMA). Since October, such payments have been reinvested only to the extent that they exceeded gradually rising caps (figure 44).

In the fourth quarter, the Open Market Desk at the Federal Reserve Bank of New York, as directed by the Committee, reinvested principal payments from the Federal Reserve's holdings of Treasury securities maturing during each calendar month in excess of $6 billion. The Desk also reinvested in agency mortgage-backed securities (MBS) the amount of principal payments from the Federal Reserve's holdings of agency debt and agency MBS received during each calendar month in excess of $4 billion. Since January, payments of principal from maturing Treasury securities and from the Federal Reserve's holdings of agency debt and agency MBS have been reinvested to the extent that they have exceeded $12 billion and $8 billion, respectively. The Committee has indicated that the cap for Treasury securities will continue to increase in steps of $6 billion at three-month intervals until it reaches $30 billion per month, and that the cap for agency debt and agency MBS will continue to increase in steps of $4 billion at three-month intervals until it reaches $20 billion per month. These caps will remain in place until the Committee judges that the Federal Reserve is holding no more securities

12. See the December Summary of Economic Projections, which appeared as an addendum to the minutes of the December 12–13, 2017, meeting of the FOMC and is presented in Part 3 of this report.

44. Principal payments on SOMA securities



Note: Reinvestment and redemption amounts of agency mortgage-backed securities are projections starting in January 2018. The data extend through December 2019.

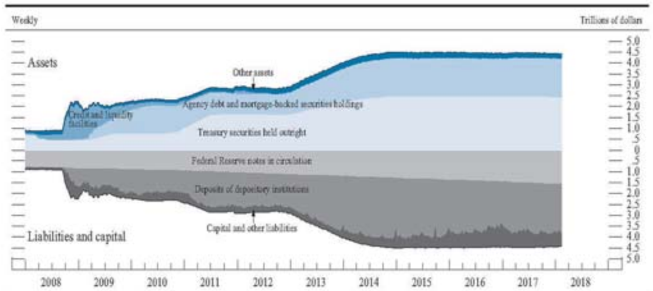
Source: Federal Reserve Bank of New York; Federal Reserve Board staff calculations.

than necessary to implement monetary policy efficiently and effectively.

The initiation of the balance sheet normalization program was widely anticipated and therefore did not elicit a notable reaction in financial markets. Subsequently, the implementation of the program has proceeded smoothly without materially affecting Treasury and MBS markets. With the caps having been set thus far at relatively low levels, the reduction in SOMA securities has represented a small fraction of the SOMA securities holdings. Consequently, the Federal Reserve's total assets have declined somewhat to about $4.4 trillion, with holdings of Treasury securities at approximately $2.4 trillion and holdings of agency debt and agency MBS at approximately $1.8 trillion (figure 45).

Interest income on the SOMA portfolio has continued to support substantial remittances to the U.S. Treasury. Preliminary financial statement results indicate that the Federal

45. Federal Reserve assets and liabilities



Note: "Credit and liquidity facilities" consists of primary, secondary, and seasonal credit; term auction credit; central bank liquidity swaps; support for Maiden Lane, Bear Stearns, and AIG; and other credit facilities, including the Primary Dealer Credit Facility, the Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility, the Commercial Paper Funding Facility, and the Term Asset-Backed Securities Loan Facility. "Other assets" includes unamortized premiums and discounts on securities held outright. "Capital and other liabilities" includes reverse repurchase agreements, the U.S. Treasury General Account, and the U.S. Treasury Supplementary Financing Account. The data extend through February 14, 2018.

Source: Federal Reserve Board, Statistical Release H.4.1, "Factors Affecting Reserve Balances."

Reserve remitted about $80.2 billion of its estimated 2017 net income to the Treasury.

The Federal Reserve's implementation of monetary policy has continued smoothly

In December 2017, the Federal Reserve raised the effective federal funds rate by increasing the interest rate paid on reserve balances along with the interest rate offered on overnight reverse repurchase agreements (ON RRPs). Specifically, the Federal Reserve increased the interest rate paid on required and excess reserve balances to 1½ percent and the ON RRP offering rate to 1¼ percent. In addition, the Board of Governors approved an increase in the discount rate (the so-called primary credit rate) to 2 percent. Yields on a broad set of money market instruments moved higher in response to the FOMC's policy action in December. The effective federal funds rate rose in line with the increase in the FOMC's target range and generally traded near the middle of the new target range amid orderly trading conditions in money markets. Usage of the ON RRP facility has declined on net since the middle of 2017, reflecting relatively attractive yields on alternative investments.

Although the normalization of the monetary policy stance has proceeded smoothly, the Federal Reserve has continued to test the operational readiness of other policy tools as part of prudent planning. Two operations of the Term Deposit Facility were conducted in the second half of 2017; seven-day deposits were offered at both operations with a floating rate of 1 basis point over the interest rate on excess reserves. In addition, the Desk conducted several small-value exercises solely for the purpose of maintaining operational readiness.

Monetary Policy Rules and Their Role in the Federal Reserve's Policy Process

What are monetary policy rules?

Monetary policy rules are formulas that prescribe the setting of a policy rate, such as the federal funds rate, that should prevail in relation to the values of a small number of other variables—typically including the gap between actual and target inflation along with an estimate of resource slack in the economy. Policy rules can provide helpful guidance for policymakers. Indeed, since 2004, prescriptions from policy rules have been part of the information regularly reported to the Federal Open Market Committee (FOMC) ahead of its meetings.[1] However, interpretation of the prescriptions of policy rules requires careful judgment about the measurement of the inputs to the rules and the implications of the many considerations the rules do not take into account.

Policy rules can incorporate key principles of good monetary policy. One key principle is that monetary policy should respond in a predictable way to changes in economic conditions. A second key principle is that monetary policy should be accommodative when inflation is below the desired level and employment is below its maximum sustainable level; conversely, monetary policy should be restrictive when the opposite holds. A third key principle is that, to stabilize inflation, the policy rate should be adjusted by more than one-for-one in response to persistent increases or decreases in inflation.

Economists have analyzed many monetary policy rules, including the well-known Taylor (1993) rule as well as other rules that will be discussed later: the "balanced approach" rule, the "adjusted Taylor (1993)" rule, the "price level" rule, and the "first difference" rule (figure A).[2] These policy rules generally embody the three key principles of good monetary policy noted earlier. Each rule takes into account estimates of how far away the economy is from achieving the Federal Reserve's dual-mandate goals of maximum employment and price stability. Specifically, most of the rules include the difference between the rate of unemployment that is sustainable in the longer run (u^{LR}) and the current unemployment rate (the unemployment gap); the first-difference rule includes the change in the unemployment gap rather than its level.[3] In addition, most of the rules include the difference between inflation and its longer-run objective (2 percent as measured by the annual change in the price index for personal consumption expenditures (PCE), in the case of the Federal Reserve), while the price-level rule includes the gap between the level of prices today and the level of prices that would be observed if inflation had been constant at 2 percent from a specified starting year.

The Taylor (1993), balanced-approach, adjusted Taylor (1993), and price-level rules provide prescriptions for the *level* of the federal funds rate and require an estimate of the neutral real interest rate in the longer run (r^{LR})—that is, the level of the real federal

(continued on next page)

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1. Prescriptions from monetary policy rules are included in the Board staff's Tealbook (previously the Bluebook); the precise set of rules presented has changed from time to time. The transcripts and briefing materials for FOMC meetings through 2012 are available on the Board's website at https://www.federalreserve.gov/monetarypolicy/fomc_historical.htm. In the materials from 2012, the policy rule prescriptions are contained in the Monetary Policy Strategies section of Tealbook B. The briefing materials that FOMC policymakers review regularly also include the Board staff's baseline forecast for the economy and model simulations of a variety of alternative scenarios intended to provide a sense of the effects of other plausible developments that were not included in the staff's baseline forecast.

2. The Taylor (1993) rule was first suggested in John B. Taylor (1993), "Discretion versus Policy Rules in Practice," *Carnegie-Rochester Conference Series on Public Policy*, vol. 39 (December), pp. 195–214. The balanced-approach rule was analyzed in John B. Taylor (1999), "A Historical Analysis of Monetary Policy Rules," in John B. Taylor, ed., *Monetary Policy Rules* (Chicago: University of Chicago Press), pp. 319–41. The adjusted Taylor (1993) rule was studied in David Reifschneider and John C. Williams (2000), "Three Lessons for Monetary Policy in a Low-Inflation Era," *Journal of Money, Credit, and Banking*, vol. 32 (November), pp. 936–66. A price-level rule was discussed in Robert E. Hall (1984), "Monetary Strategy with an Elastic Price Standard," in *Price Stability and Public Policy*, proceedings of a symposium sponsored by the Federal Reserve Bank of Kansas City, held in Jackson Hole, Wyo., August 2–3 (Kansas City: Federal Reserve Bank of Kansas City), pp. 137–59, https://www.kansascityfed.org/publicat/sympos/1984/s84.pdf. Finally, the first-difference rule was introduced by Athanasios Orphanides (2003), "Historical Monetary Policy Analysis and the Taylor Rule," *Journal of Monetary Economics*, vol. 50 (July), pp. 983–1022. A comprehensive review of policy rules is in John B. Taylor and John C. Williams (2011), "Simple and Robust Rules for Monetary Policy," in Benjamin M. Friedman and Michael Woodford, eds., *Handbook of Monetary Economics*, vol. 3B (Amsterdam: North-Holland), pp. 829–59. The same volume of the *Handbook of Monetary Economics* also discusses approaches other than policy rules for deriving policy rate prescriptions.

3. The Taylor (1993) rule represented slack in resource utilization using an output gap (the difference between the current level of real gross domestic product (GDP) and what GDP would be if the economy was operating at maximum employment). The rules in figure A represent slack in resource utilization using the unemployment gap instead, because that gap better captures the FOMC's statutory goal to promote maximum employment. Movements in these alternative

Monetary Policy Rules and Their Role *(continued)*

A. Monetary policy rules

Taylor (1993) rule	$R_t^{T93} = r_t^{LR} + \pi_t + 0.5(\pi_t - \pi^{LR}) + (u_t^{LR} - u_t)$
Balanced-approach rule	$R_t^{BA} = r_t^{LR} + \pi_t + 0.5(\pi_t - \pi^{LR}) + 2(u_t^{LR} - u_t)$
Taylor (1993) rule, adjusted	$R_t^{T93adj} = \boldsymbol{maximum}\ \{R_t^{T93} - Z_t, 0\}$
Price-level rule	$R_t^{PL} = \boldsymbol{maximum}\ \{r_t^{LR} + \pi_t + (u_t^{LR} - u_t) + 0.5(PLgap_t), 0\}$
First-difference rule	$R_t^{FD} = R_{t-1} + 0.5(\pi_t - \pi^{LR}) + (u_t^{LR} - u_t) - (u_{t-4}^{LR} - u_{t-4})$

NOTE: R_t^{T93}, R_t^{BA}, R_t^{T93adj}, R_t^{PL}, and R_t^{FD} represent the values of the nominal federal funds rate prescribed by the Taylor (1993), balanced-approach, adjusted Taylor (1993), price-level, and first-difference rules, respectively.

R_t denotes the actual nominal federal funds rate for quarter t, π_t is four-quarter price inflation for quarter t, u_t is the unemployment rate in quarter t, and r_t^{LR} is the level of the neutral real federal funds rate in the longer run that, on average, is expected to be consistent with sustaining maximum employment and inflation at its 2 percent longer-run objective, π^{LR}. In addition, u_t^{LR} is the rate of unemployment in the longer run. Z_t is the cumulative sum of past deviations of the federal funds rate from the prescriptions of the Taylor (1993) rule when that rule prescribes setting the federal funds rate below zero. $PLgap_t$ is the percent deviation of the actual level of prices from a price level that rises 2 percent per year from its level in a specified starting period.

The Taylor (1993) rule and other policy rules are generally written in terms of the deviation of real output from its full capacity level. In these equations, the output gap has been replaced with the gap between the rate of unemployment in the longer run and its actual level (using a relationship known as Okun's law) in order to represent the rules in terms of the FOMC's statutory goals. Historically, movements in the output and unemployment gaps have been highly correlated. Footnote 2 provides references for the policy rules.

funds rate that is expected to be consistent in the longer run with sustained maximum employment and stable inflation.[4] In contrast, the first-difference rule prescribes how the level of the federal funds rate at a given time should be altered from its previous level—that is, it indicates how the existing rate should be increased or decreased in a particular period.

The adjusted Taylor (1993) rule recognizes that the federal funds rate cannot be reduced materially below zero, and that following the prescriptions of the Taylor (1993) rule after a period when interest rates have been constrained may not provide enough policy accommodation. To make up for the cumulative shortfall in accommodation (Z_t), the adjusted rule prescribes only a gradual return of the policy rate to the (positive) levels prescribed by the unadjusted Taylor (1993) rule as the economy recovers.

In four of the rules, the interest rate responds to deviations of inflation from its longer-run value of 2 percent; in the price-level rule, however, the interest rate responds to the price-level gap ($PLgap_t$). This gap measures how far the price level is from where it would have been had it been increasing at 2 percent each year.[5] The price-level rule thereby takes account of deviations of inflation from the longer-run objective in earlier periods as well in the current period. Thus, if inflation has been running persistently above the central bank's objective, the price-level rule would prescribe a higher policy interest rate than rules that use the current inflation gap. Likewise, if inflation has been running persistently below the central bank's objective, a price-level rule would prescribe setting the policy rate lower than rules that use the current inflation gap. The purpose of this dependence on previous inflation

measures of resource utilization are highly correlated. For more information, see the note below figure A.

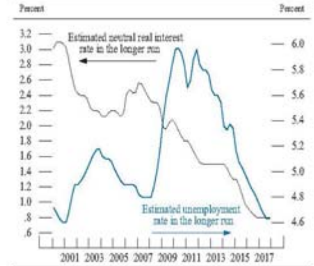
4. Taylor-type rules—including John Taylor's original rule—have often been estimated assuming that the value of the neutral real interest rate in the longer run, r^{LR}, is equal to 2 percent, which roughly corresponds to the average historical value of the real federal funds rate before the financial crisis.

5. Estimation of the price-level rule requires selecting a starting year for the price level from which to cumulate the 2 percent annual inflation. For the U.S. economy, 1998 is used as the starting year; around that time, the underlying trend of inflation and longer-term inflation expectations stabilized at a level consistent with PCE price inflation being close to 2 percent.

behavior is to bring the price level back into line with where it would be if it had been running at a constant 2 percent per year. Like the adjusted Taylor (1993) rule, the price-level rule recognizes that the federal funds rate cannot be reduced materially below zero. If inflation runs below the 2 percent objective during periods when the rule prescribes setting the federal funds rate well below zero, the price-level rule will make up for past inflation shortfalls as the economy recovers.

The adjusted Taylor (1993) and price-level rules may prescribe more appropriate policy settings than the other rules following a period when the policy rate falls below zero. However, all of the rules shown are highly simplified and do not capture the substantial complexity of the U.S. economy. Furthermore, both the level of the neutral real interest rate in the longer run and the level of the unemployment rate that is sustainable in the longer run are difficult to estimate precisely, and estimates made in real time may differ substantially from estimates made later on, after the relevant economic data have been revised and additional data have become available.[6] For example, since 2000, respondents to the Blue Chip survey have markedly reduced their projections of the longer-run level of the real short-term interest rate (figure B). Survey respondents have also made considerable changes over time to their estimates of the rate of unemployment in the longer run, with consequences for the unemployment gap. Revisions of this magnitude to the neutral real interest rate and the rate of unemployment in the longer run can have important implications for the federal funds rate prescribed by monetary policy rules. Policy rules must be adjusted to take into account these changes in the projected values of longer-run rates as they occur over time.

B. Real-time estimates of the neutral real interest rate and the unemployment rate in the longer run



NOTE: The data are biannual and have been interpolated to yield quarterly values. The estimated neutral real interest rate in the longer run equals the three-month Treasury bill rate projected in the long run deflated by the long-run projected annual change in the price index for gross domestic product.

SOURCE: Wolters Kluwer, Blue Chip Economic Indicators.

Accounting for risks to the economic outlook

Monetary policy rules do not take account of broader risk considerations. In the years following the financial crisis, with the federal funds rate still close to zero, the FOMC has recognized that it would have limited scope to respond to an unexpected weakening in the economy by lowering short-term interest rates. This asymmetric risk has, in recent years, provided a sound rationale for following a more gradual path of rate increases than that prescribed by policy rules.[7] In these circumstances, increasing the policy rate quickly in order to have room to cut rates during an economic downturn could be counterproductive because it would make the downturn more likely to happen.

Estimates of the neutral real interest rate in the longer run (such as those in figure B), taken together with the FOMC's inflation objective of 2 percent, suggest that the neutral level of the federal funds rate that can be expected to prevail in the longer run is currently around 3 percent, well below the average federal funds rate of 6 percent from 1960 to 2007. With the neutral federal funds rate so low, there is a likelihood that the policy interest rate will hit its lower limit of zero more frequently than in the past. Historically, the FOMC has cut the federal funds rate by 5 percentage points, on average, during downturns in the economy—cutting the policy rate by this much starting from a neutral level of 3 percent would not be feasible. Under these circumstances, the prescriptions from many policy rules would lead to poor economic performance, with inflation averaging below the

(continued on next page)

6. The first-difference rule shown in figure A reduces the need for good estimates of longer-run rates because it does not require an estimate of the neutral real interest rate in the longer run. However, this rule has its own shortcomings. For example, research suggests that this sort of rule will result in greater volatility in employment and inflation relative to what would be obtained under the Taylor (1993) and balanced-approach rules unless the estimates of the neutral real federal funds rate in the longer run and the rate of unemployment in the longer run are sufficiently far from their true values.

7. Asymmetric risk need not always provide a rationale for a more gradual path; if the risks were strongly tilted toward substantial and persistent overheating and too-high inflation, the asymmetric risk could argue for higher rates than prescribed by simple rules.

Monetary Policy Rules and Their Role *(continued)*

Committee's 2 percent objective.[8] Rules that try to offset the cumulative shortfall of accommodation posed by the zero bound on interest rates, such as the adjusted Taylor (1993) rule, or make up the cumulative shortfall in the level of prices, such as the price-level rule, are intended to help achieve average inflation at or near 2 percent over time.[9]

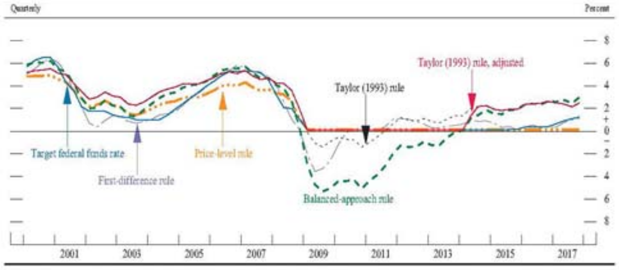
Different monetary policy rules often offer quite different prescriptions for the federal funds rate, and there is no unambiguous metric for favoring one rule over another. While monetary policy rules often agree about the direction (up or down) in which policymakers should move the federal funds rate, they frequently disagree about the appropriate level of that rate. Historical prescriptions from policy rules differ from one another and also differ from the Committee's target for the federal funds rate, as shown in figure C. (These prescriptions are calculated using both the actual data and the estimates of the neutral real interest rate in the longer run and of the rate of unemployment in the longer run—data and estimates that were available to FOMC policymakers at the time.) Moreover, the rules sometimes prescribe setting short-term interest rates well below zero—a setting that is not feasible. With the exception of the adjusted Taylor (1993) and price-level rules, which impose a lower limit of zero, all of the rules shown in figure C called for the federal funds rate to turn negative in 2009 and to stay below zero for several years thereafter. Thus, these rules indicated that the Federal Reserve should provide more monetary stimulus than could be achieved by setting the federal funds rate at zero. Almost all of the policy rules have called for rising values of the federal funds rate in recent years, but the pace of tightening that the rules prescribe has varied widely. Prescriptions from these rules for the level of the federal funds rate in the fourth quarter of 2017 ranged from 0 basis points (price-level rule) to 3.0 percent (balanced-approach rule).[10]

8. For further discussion of these issues, see Michael T. Kiley and John M. Roberts (2017), "Monetary Policy in a Low Interest Rate World," *Brookings Papers on Economic Activity,* Spring, pp. 317–72, https://www.brookings.edu/wp-content/uploads/2017/08/kileytextsp17bpea.pdf.

9. Economists have found that a "makeup" policy can be the best response in theory when the policy interest rate is constrained at zero. See Ben S. Bernanke (2017), "Monetary Policy in a New Era," paper presented at "Rethinking Macroeconomic Policy," a conference held at the Peterson Institute for International Economics, Washington, October 12–13, https://www.brookings.edu/wp-content/uploads/2017/10/bernanke_rethinking_macro_final.pdf; and Michael Woodford (1999), "Commentary: How Should Monetary Policy Be Conducted in an Era of Price Stability?" in *New Challenges for Monetary Policy,* proceedings of a symposium sponsored by the Federal Reserve Bank of Kansas City, held in Jackson Hole, Wyo., August 26–28 (Kansas City: Federal Reserve Bank of Kansas City), pp. 277–316, https://www.kansascityfed.org/publications/research/escp/symposiums/escp-1999.

10. As noted earlier, the price-level rule makes up for the cumulative shortfall in the price level when inflation runs below 2 percent. Because inflation has been below 2 percent in recent years, the price-level rule calls for the federal funds rate to remain at zero.

C. Historical federal funds rate prescriptions from simple policy rules



Note: The rules use real-time historical values of inflation, the federal funds rate, and the unemployment rate. Inflation is measured as the four-quarter percent change in the price index for personal consumption expenditures excluding food and energy. Quarterly projections of long-run values for the federal funds rate and the unemployment rate are derived through interpolations of biannual projections from Blue Chip Economic Indicators. The long-run value for inflation is taken as 2 percent. The target value of the price level is the average level of the price index for personal consumption expenditures excluding food and energy in 1998, extrapolated at 2 percent per year.

Source: Federal Reserve Bank of Philadelphia; Wolters Kluwer, Blue Chip Economic Indicators; Federal Reserve Board staff estimates.

Part 3
Summary of Economic Projections

The following material appeared as an addendum to the minutes of the December 12–13, 2017, meeting of the Federal Open Market Committee.

In conjunction with the Federal Open Market Committee (FOMC) meeting held on December 12–13, 2017, meeting participants submitted their projections of the most likely outcomes for real gross domestic product (GDP) growth, the unemployment rate, and inflation for each year from 2017 to 2020 and over the longer run.[13] Each participant's projection was based on information available at the time of the meeting, together with his or her assessment of appropriate monetary policy—including a path for the federal funds rate and its longer-run value—and assumptions about other factors likely to affect economic outcomes. The longer-run projections represent each participant's assessment of the value to which each variable would be expected to converge, over time, under appropriate monetary policy and in the absence of further shocks to the economy.[14] "Appropriate monetary policy" is defined as the future path of policy that each participant deems most likely to foster outcomes for economic activity and inflation that best satisfy his or her individual interpretation of the statutory mandate to promote maximum employment and price stability.

All participants who submitted longer-run projections expected that, under appropriate monetary policy, growth in real GDP in 2018 would be somewhat stronger than their individual estimates of its longer-run rate. All participants projected that real GDP growth would moderate in 2019, and nearly all predicted that it would ease further in 2020; a solid majority of participants thought that growth in real GDP would be at or close to their individual estimates of the economy's longer-run growth rate by 2020. All participants who submitted longer-run projections expected that the unemployment rate would run below their estimates of its longer-run normal level through 2020. Participants generally projected that inflation, as measured by the four-quarter percentage change in the price index for personal consumption expenditures (PCE), would step up toward the Committee's 2 percent objective in 2018 and be at or close to that objective by 2019. Most participants indicated that prospective changes in federal tax policy were a factor that led them to boost their projections of real GDP growth over the next couple of years; some participants, however, noted that they had already incorporated at least some effects of future tax cuts in their September projections. Several also noted the possibility that changes to tax policy could raise the level of potential GDP in the longer run.[15] Table 1 and figure 1 provide summary statistics for the projections.

As shown in figure 2, participants generally expected that the evolution of the economy relative to their objectives of maximum employment and 2 percent inflation would

13. Four members of the Board of Governors were in office at the time of the December 2017 meeting, the same number as in September 2017. However, since the September meeting, one member, Stanley Fischer, resigned from the Board and another, Randal K. Quarles, joined. The incoming president of the Federal Reserve Bank of Richmond is scheduled to assume office on January 1, 2018; First Vice President Mark L. Mullinix submitted economic projections at this meeting as he did in September.

14. One participant did not submit longer-run projections for real output growth, the unemployment rate, or the federal funds rate.

15. Participants completed their submissions for the Summary of Economic Projections before the reconciliation of the House and Senate tax bills in the Congress.

Table 1. Economic projections of Federal Reserve Board members and Federal Reserve Bank presidents, under their individual assessments of projected appropriate monetary policy, December 2017

Percent

Variable	Median[1]					Central tendency[2]					Range[3]				
	2017	2018	2019	2020	Longer run	2017	2018	2019	2020	Longer run	2017	2018	2019	2020	Longer run
Change in real GDP	2.5	2.5	2.1	2.0	1.8	2.4–2.5	2.2–2.6	1.9–2.3	1.7–2.0	1.8–1.9	2.4–2.6	2.2–2.8	1.7–2.4	1.1–2.2	1.7–2.2
September projection	2.4	2.1	2.0	1.8	1.8	2.2–2.5	2.0–2.3	1.7–2.1	1.6–2.0	1.8–2.0	2.2–2.7	1.7–2.6	1.4–2.3	1.4–2.0	1.5–2.2
Unemployment rate	4.1	3.9	3.9	4.0	4.6	4.1	3.7–4.0	3.6–4.0	3.6–4.2	4.4–4.7	4.1	3.6–4.0	3.5–4.2	3.5–4.5	4.3–5.0
September projection	4.3	4.1	4.1	4.2	4.6	4.2–4.3	4.0–4.2	3.9–4.4	4.0–4.5	4.5–4.8	4.2–4.5	3.9–4.5	3.8–4.5	3.8–4.8	4.4–5.0
PCE inflation	1.7	1.9	2.0	2.0	2.0	1.6–1.7	1.7–1.9	2.0	2.0–2.1	2.0	1.5–1.7	1.7–2.1	1.8–2.3	1.9–2.2	2.0
September projection	1.6	1.9	2.0	2.0	2.0	1.5–1.6	1.8–2.0	2.0	2.0–2.1	2.0	1.5–1.7	1.7–2.0	1.8–2.2	1.9–2.2	2.0
Core PCE inflation[4]	1.5	1.9	2.0	2.0		1.5	1.7–1.9	2.0	2.0–2.1		1.4–1.5	1.7–2.0	1.8–2.3	1.9–2.3	
September projection	1.5	1.9	2.0	2.0		1.5–1.6	1.8–2.0	2.0	2.0–2.1		1.4–1.7	1.7–2.0	1.8–2.2	1.9–2.2	
Memo: Projected appropriate policy path															
Federal funds rate	1.4	2.1	2.7	3.1	2.8	1.4	1.9–2.4	2.4–3.1	2.6–3.1	2.8–3.0	1.1–1.4	1.1–2.6	1.4–3.6	1.4–4.1	2.3–3.0
September projection	1.4	2.1	2.7	2.9	2.8	1.1–1.4	1.9–2.4	2.4–3.1	2.5–3.5	2.5–3.0	1.1–1.6	1.1–2.6	1.1–3.4	1.1–3.9	2.3–3.5

NOTE: Projections of change in real gross domestic product (GDP) and projections for both measures of inflation are percent changes from the fourth quarter of the previous year to the fourth quarter of the year indicated. PCE inflation and core PCE inflation are the percentage rates of change in, respectively, the price index for personal consumption expenditures (PCE) and the price index for PCE excluding food and energy. Projections for the unemployment rate are for the average civilian unemployment rate in the fourth quarter of the year indicated. Each participant's projections are based on his or her assessment of appropriate monetary policy. Longer-run projections represent each participant's assessment of the rate to which each variable would be expected to converge under appropriate monetary policy and in the absence of further shocks to the economy. The projections for the federal funds rate are the value of the midpoint of the projected appropriate target range for the federal funds rate or the projected appropriate target level for the federal funds rate at the end of the specified calendar year or over the longer run. The September projections were made in conjunction with the meeting of the Federal Open Market Committee on September 19–20, 2017. One participant did not submit longer-run projections for the change in real GDP, the unemployment rate, or the federal funds rate in conjunction with the September 19–20, 2017, meeting, and one participant did not submit such projections in conjunction with the December 12–13, 2017, meeting.

1. For each period, the median is the middle projection when the projections are arranged from lowest to highest. When the number of projections is even, the median is the average of the two middle projections.
2. The central tendency excludes the three highest and three lowest projections for each variable in each year.
3. The range for a variable in a given year includes all participants' projections, from lowest to highest, for that variable in that year.
4. Longer-run projections for core PCE inflation are not collected.

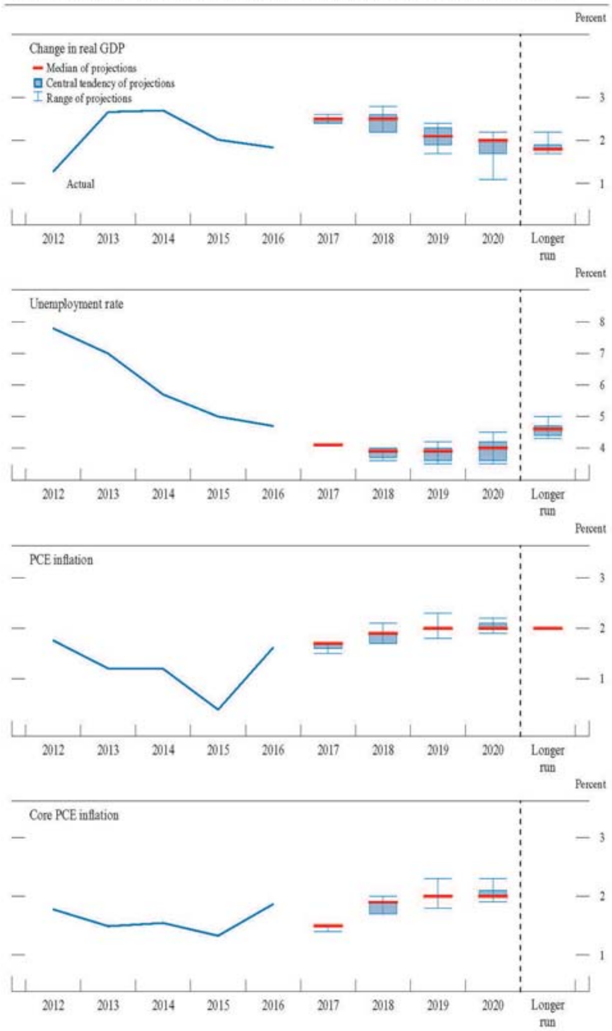
likely warrant further gradual increases in the federal funds rate. Compared with the projections they submitted in September, some participants raised their federal funds rate projections for 2018 and 2019, while several others lowered their projections, leaving the median projection for the federal funds rate in those years unchanged; the median projection for 2020 was slightly higher, and the median projection for the longer-run normal level of the federal funds rate was unchanged. Nearly all participants saw it as likely to be appropriate for the federal funds rate to rise above their estimates of its longer-run normal level at some point during the forecast period. Participants generally noted several sources of uncertainty about the future course of the federal funds rate, including the details of potential changes in tax policy, how those changes would affect the economy, and the range of factors influencing inflation over the medium term.

In general, participants viewed the uncertainty attached to their economic projections as broadly similar to the average of the past 20 years, and all participants saw the uncertainty associated with their projections for real GDP growth, the unemployment rate, and inflation as essentially unchanged from September. As in September, most participants judged the risks around their projections for economic growth, the unemployment rate, and inflation as broadly balanced.

The Outlook for Economic Activity

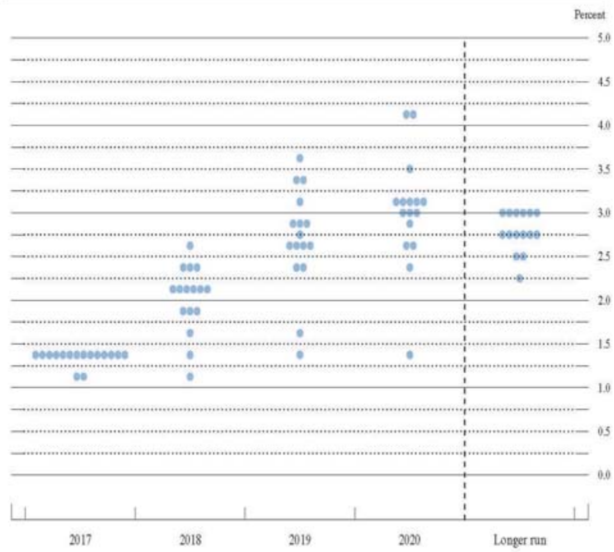
The median of participants' projections for the growth rate of real GDP for 2018, conditional on their individual assessments of appropriate monetary policy, was 2.5 percent, the same as for 2017. The median projections for GDP growth in 2019 and 2020 were slightly lower, at 2.1 and 2.0 percent, respectively. Compared with the Summary of Economic Projections (SEP) from September, the median of the projections for real GDP growth for 2018 was notably higher, while the medians for real GDP growth for 2019 and 2020 were modestly higher. The median of projections for the

Figure 1. Medians, central tendencies, and ranges of economic projections, 2017–20 and over the longer run



NOTE: Definitions of variables and other explanations are in the notes to table 1. The data for the actual values of the variables are annual.

Figure 2. FOMC participants' assessments of appropriate monetary policy: Midpoint of target range or target level for the federal funds rate



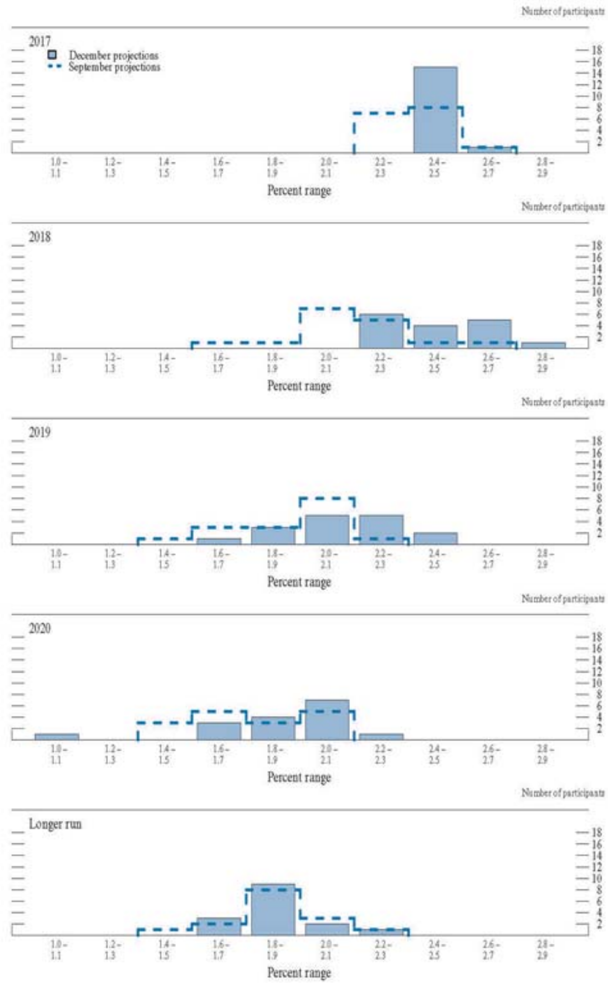
Note: Each shaded circle indicates the value (rounded to the nearest 1/8 percentage point) of an individual participant's judgment of the midpoint of the appropriate target range for the federal funds rate or the appropriate target level for the federal funds rate at the end of the specified calendar year or over the longer run. One participant did not submit longer-run projections for the federal funds rate.

longer-run normal rate of real GDP growth remained at 1.8 percent. Most participants pointed to changes in tax policy as likely to provide some boost to real GDP growth over the forecast period; in September, fewer than half of the participants incorporated prospective tax policy changes in their projections. Several participants indicated that they had marked up their estimates of the magnitude of tax cuts, relative to their assumptions in September.

The medians of projections for the unemployment rate in the fourth quarter of both 2018 and 2019 were 3.9 percent, 0.2 percentage point below the medians from September and about ¾ percentage point below the median assessment of its longer-run normal level. The median projection for the unemployment rate ticked up slightly to 4.0 percent in 2020.

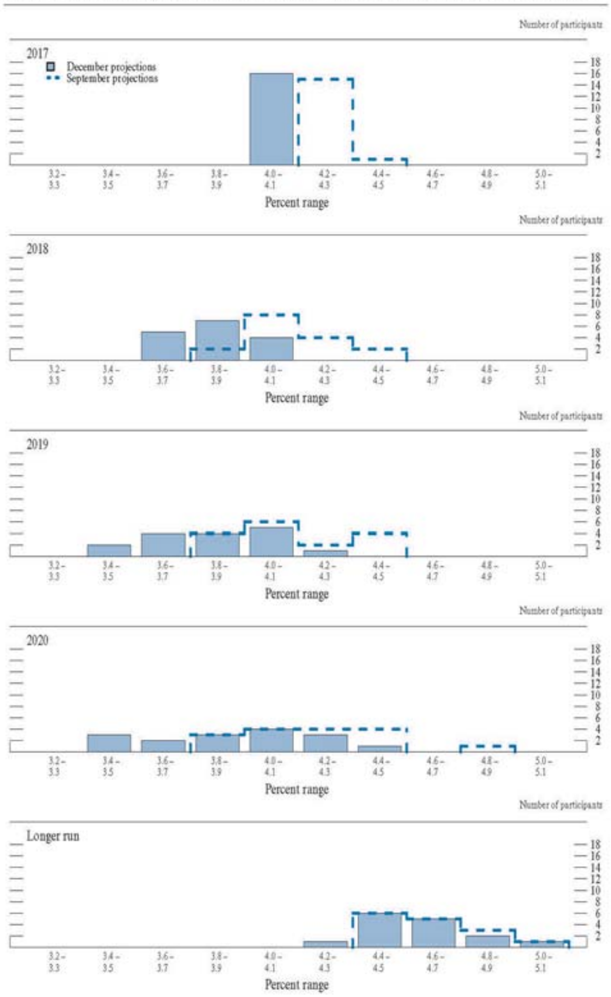
Figures 3.A and 3.B show the distributions of participants' projections for real GDP growth and the unemployment rate from 2017 to 2020 and in the longer run. The distribution of individual projections for real GDP growth for 2018 shifted up, with more than half of the participants now expecting real GDP growth of 2.5 percent or more and none seeing it below 2.2 percent. The distribution of projected real GDP growth in 2019 and 2020 also shifted up, albeit only slightly. The distribution for the longer-run normal rate of GDP growth was little changed from September. The distributions of individual projections for the unemployment rate in 2018 and 2019 shifted down relative to those

Figure 3.A. Distribution of participants' projections for the change in real GDP, 2017–20 and over the longer run



NOTE: Definitions of variables and other explanations are in the notes to table 1.

Figure 3.B. Distribution of participants' projections for the unemployment rate, 2017–20 and over the longer run



Note: Definitions of variables and other explanations are in the notes to table 1.

in September, broadly consistent with the changes in the distributions for real GDP growth.

The Outlook for Inflation

The median of projections for headline PCE price inflation was 1.9 percent in 2018 and 2 percent in 2019 and 2020, the same as in the September SEP. Most participants anticipated that inflation would continue to run a bit below 2 percent in 2018, and only one participant expected inflation above 2 percent that year. A majority of participants projected that inflation would be equal to the Committee's objective in 2019 and 2020. Several participants projected that inflation would slightly exceed 2 percent in 2019 or 2020. The medians of projections for core PCE price inflation over the 2018–20 period were the same as those for headline inflation.

Figures 3.C and 3.D provide information on the distributions of participants' views about the outlook for inflation. On the whole, the distributions of projections for headline PCE price inflation and core PCE price inflation beyond 2017 were little changed from September.

Appropriate Monetary Policy

Figure 3.E provides the distribution of participants' judgments regarding the appropriate target—or midpoint of the target range—for the federal funds rate at the end of each year from 2017 to 2020 and in the longer run. Overall, the distributions differed in only small ways from those reported in the September SEP. There was a moderate reduction in the dispersion of the distribution for 2020 and for the longer run; some of the lower-end projections for those horizons from the September SEP were revised up in the current projections.

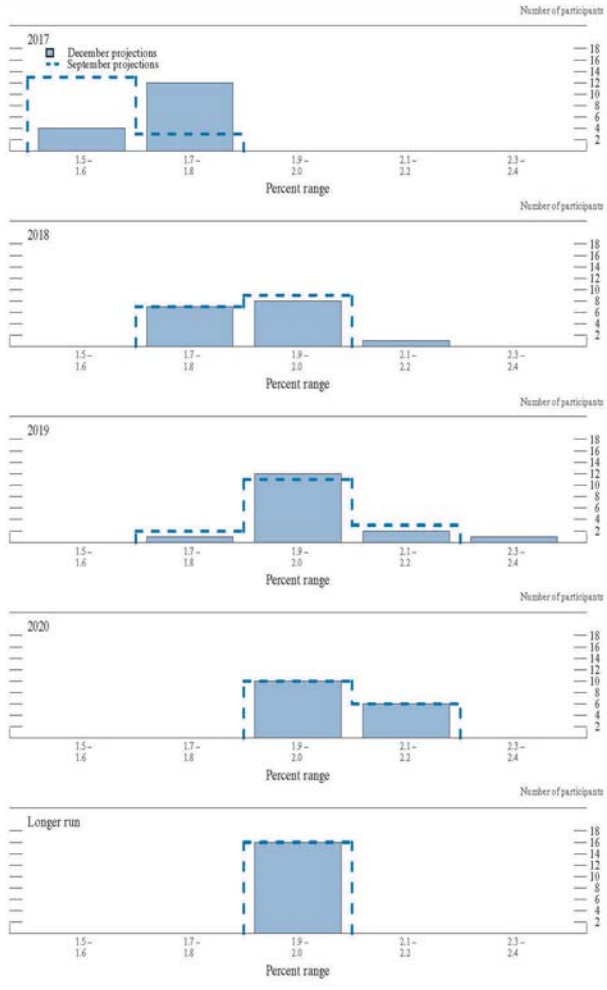
The median projection of the year-end federal funds rate continued to rise gradually over the 2018–20 period. The median projection for the end of 2018 was 2.13 percent; the medians of the projections were 2.69 percent at the end of 2019 and 3.07 percent at the end of 2020. Nearly all participants projected that it would likely be appropriate for the federal funds rate to rise above their individual estimates of the longer-run normal rate at some point over the forecast period. Compared with their projections prepared for the September SEP, a few participants raised their projections for the federal funds rate in the longer run and one lowered it; the median was unchanged at 2.75 percent.

In discussing their projections, many participants once again expressed the view that the appropriate trajectory of the federal funds rate over the next few years would likely involve gradual increases. This view was predicated on several factors, including a judgment that the neutral real interest rate was currently low and would move up only slowly, as well as the balancing of risks associated with, among other things, the possibility that inflation pressures could build if the economy expands well beyond its long-run sustainable level, and the possibility that the forces depressing inflation could prove to be more persistent than currently anticipated. As always, the actual path of the federal funds rate will depend on evolving economic conditions and their implications for the economic outlook.

Uncertainty and Risks

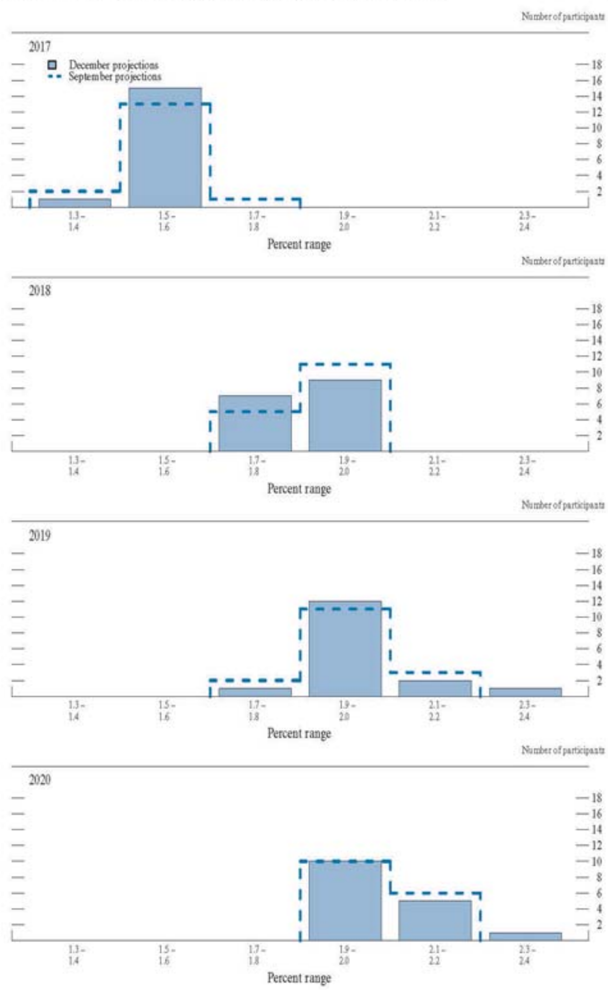
In assessing the path for the federal funds rate that, in their view, is likely to be appropriate, FOMC participants take account of the range of possible economic outcomes, the likelihood of those outcomes, and the potential benefits and costs should they occur. As a reference, table 2 provides a measure of forecast uncertainty, based on the forecast errors of various private and government forecasts over the past 20 years, for real GDP growth, the unemployment rate, and total consumer price inflation. That measure is incorporated graphically in the top panels of figures 4.A, 4.B, and 4.C, which display "fan charts" plotting the median SEP

Figure 3.C. Distribution of participants' projections for PCE inflation, 2017–20 and over the longer run



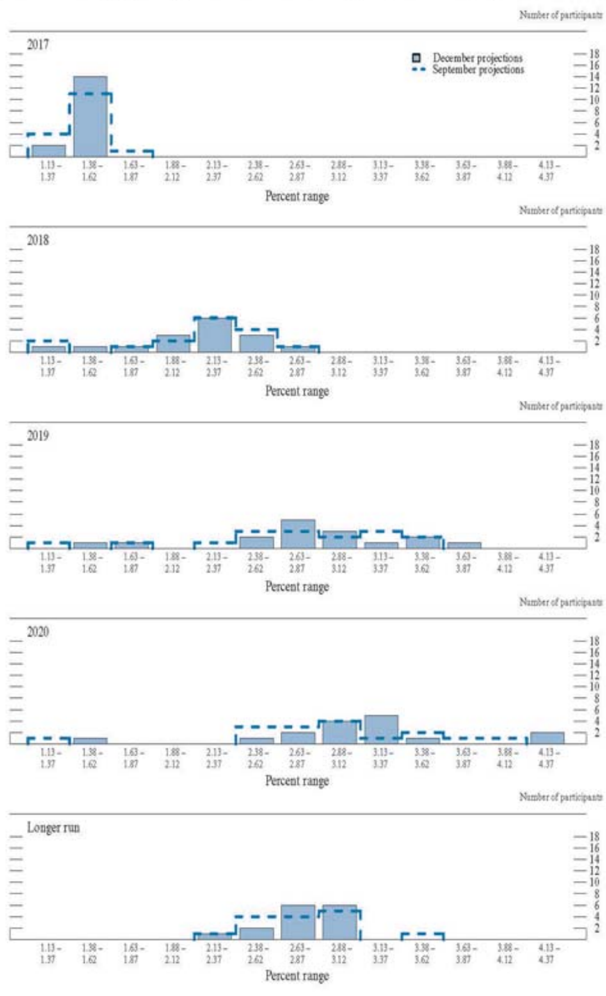
NOTE: Definitions of variables and other explanations are in the notes to table 1.

Figure 3.D. Distribution of participants' projections for core PCE inflation, 2017–20



Note: Definitions of variables and other explanations are in the notes to table 1.

Figure 3.E. Distribution of participants' judgments of the midpoint of the appropriate target range for the federal funds rate or the appropriate target level for the federal funds rate, 2017–20 and over the longer run



NOTE: Definitions of variables and other explanations are in the notes to table 1.

projections for the three variables surrounded by symmetric confidence intervals derived from the forecast errors presented in table 2. If the degree of uncertainty attending these projections is similar to the typical magnitude of past forecast errors and the risks around the projections are broadly balanced, future outcomes of these variables would have about a 70 percent probability of occurring within these confidence intervals. For all three variables, this measure of projection uncertainty is substantial and generally increases as the forecast horizon lengthens.

Participants' assessments of the level of uncertainty surrounding their economic projections are shown in the bottom-left panels of figures 4.A, 4.B, and 4.C. Nearly all participants viewed the degree of uncertainty attached to their economic projections about GDP growth, the unemployment rate, and inflation as broadly similar to the average of the past 20 years, a view that was essentially unchanged from September.[16] About half of the participants who commented on this topic suggested that uncertainties about the details of the pending tax legislation had raised their assessment of uncertainty for GDP growth, albeit not by enough to tip their assessments into the higher-than-average category.

Because the fan charts are constructed to be symmetric around the median projection, they do not reflect any asymmetries in the balance of risks that participants may see in their economic projections. Accordingly, participants' assessments of the balance of risks to their economic projections are shown in the bottom-right panels of figures 4.A, 4.B, and 4.C. As in September, most participants judged the risks to their projections of real GDP growth, the unemployment rate, headline inflation and core inflation as broadly balanced—in other words, as broadly

16. At the end of this summary, the box "Forecast Uncertainty" discusses the sources and interpretation of uncertainty in the economic forecasts and explains the approach used to assess the uncertainty and risks attending the participants' projections.

Table 2. Average historical projection error ranges
Percentage points

Variable	2017	2018	2019	2020
Change in real GDP[1]	±0.8	±1.7	±2.1	±2.2
Unemployment rate[1]	±0.1	±0.8	±1.5	±1.9
Total consumer prices[2]	±0.2	±1.0	±1.1	±1.0
Short-term interest rates[3]	±0.1	±1.4	±1.9	±2.4

Note: Error ranges shown are measured as plus or minus the root mean squared error of projections for 1997 through 2016 that were released in the winter by various private and government forecasters. As described in the box "Forecast Uncertainty," under certain assumptions, there is about a 70 percent probability that actual outcomes for real GDP, unemployment, consumer prices, and the federal funds rate will be in ranges implied by the average size of projection errors made in the past. For more information, see David Reifschneider and Peter Tulip (2017), "Gauging the Uncertainty of the Economic Outlook Using Historical Forecasting Errors: The Federal Reserve's Approach," Finance and Economics Discussion Series 2017-020 (Washington: Board of Governors of the Federal Reserve System, February), www.federalreserve.gov/econresdata/feds/2017/files/2017020pap.pdf.

1. Definitions of variables are in the general note to table 1.

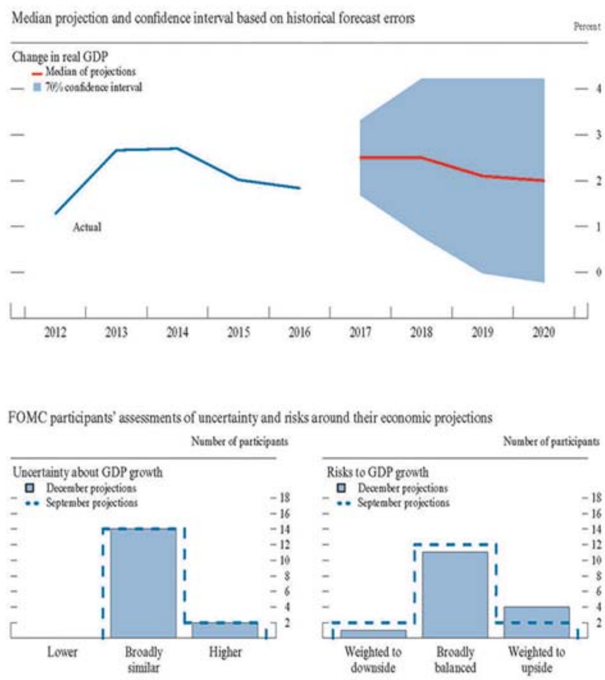
2. Measure is the overall consumer price index, the price measure that has been most widely used in government and private economic forecasts. Projections are percent changes on a fourth quarter to fourth quarter basis.

3. For Federal Reserve staff forecasts, measure is the federal funds rate. For other forecasts, measure is the rate on 3-month Treasury bills. Projection errors are calculated using average levels, in percent, in the fourth quarter.

consistent with a symmetric fan chart. The balance of risks to the economic outlook shifted slightly in the direction of strength, with two more participants seeing upside risks to growth in real GDP than in September and one more seeing risks to the unemployment rate as weighted to the downside. In addition, one more participant than before saw risks to inflation as weighted to the upside.

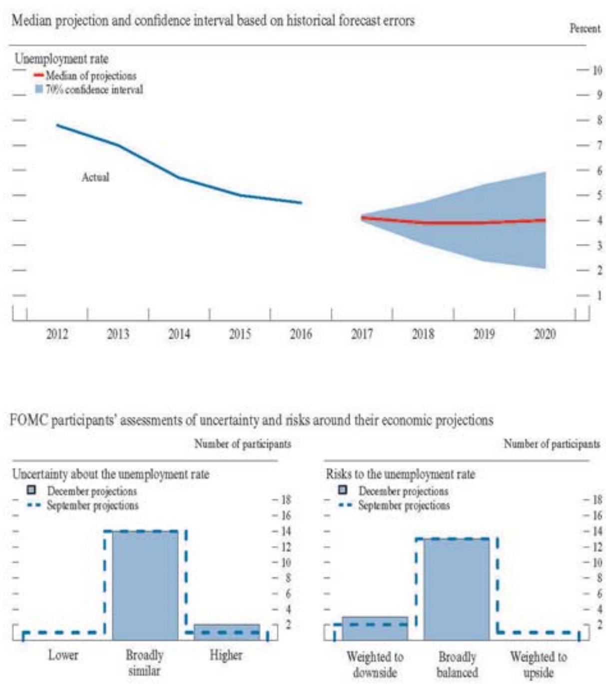
Participants' assessments of the future path of the federal funds rate consistent with appropriate policy are also subject to considerable uncertainty. Because the Committee adjusts the federal funds rate in response to actual and prospective developments over time in real GDP growth, unemployment, and inflation, uncertainty surrounding the projected path for the funds rate importantly reflects the uncertainties about the path for those key economic variables. Figure 5 provides a graphical representation of this uncertainty, plotting the median SEP projection for the federal funds rate surrounded by confidence intervals derived from the results presented in table 2. As with the macroeconomic variables, forecast uncertainty is substantial and increases for longer horizons.

Figure 4.A. Uncertainty and risks in projections of GDP growth



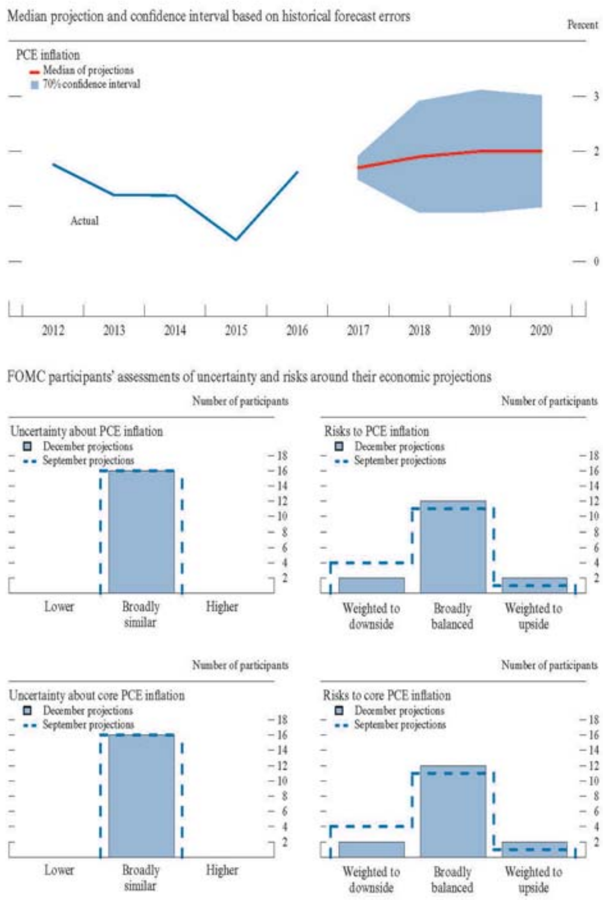
NOTE: The blue and red lines in the top panel show actual values and median projected values, respectively, of the percent change in real gross domestic product (GDP) from the fourth quarter of the previous year to the fourth quarter of the year indicated. The confidence interval around the median projected values is assumed to be symmetric and is based on root mean squared errors of various private and government forecasts made over the previous 20 years; more information about these data is available in table 2. Because current conditions may differ from those that prevailed, on average, over the previous 20 years, the width and shape of the confidence interval estimated on the basis of the historical forecast errors may not reflect FOMC participants' current assessments of the uncertainty and risks around their projections; these current assessments are summarized in the lower panels. Generally speaking, participants who judge the uncertainty about their projections as "broadly similar" to the average levels of the past 20 years would view the width of the confidence interval shown in the historical fan chart as largely consistent with their assessments of the uncertainty about their projections. Likewise, participants who judge the risks to their projections as "broadly balanced" would view the confidence interval around their projections as approximately symmetric. For definitions of uncertainty and risks in economic projections, see the box "Forecast Uncertainty."

Figure 4.B. Uncertainty and risks in projections of the unemployment rate



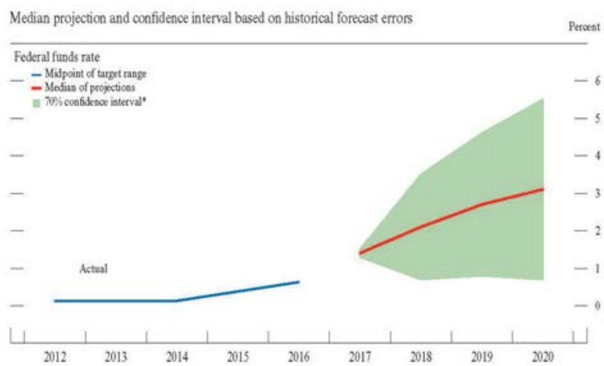
Note: The blue and red lines in the top panel show actual values and median projected values, respectively, of the average civilian unemployment rate in the fourth quarter of the year indicated. The confidence interval around the median projected values is assumed to be symmetric and is based on root mean squared errors of various private and government forecasts made over the previous 20 years; more information about these data is available in table 2. Because current conditions may differ from those that prevailed, on average, over the previous 20 years, the width and shape of the confidence interval estimated on the basis of the historical forecast errors may not reflect FOMC participants' current assessments of the uncertainty and risks around their projections; these current assessments are summarized in the lower panels. Generally speaking, participants who judge the uncertainty about their projections as "broadly similar" to the average levels of the past 20 years would view the width of the confidence interval shown in the historical fan chart as largely consistent with their assessments of the uncertainty about their projections. Likewise, participants who judge the risks to their projections as "broadly balanced" would view the confidence interval around their projections as approximately symmetric. For definitions of uncertainty and risks in economic projections, see the box "Forecast Uncertainty."

Figure 4.C. Uncertainty and risks in projections of PCE inflation



NOTE: The blue and red lines in the top panel show actual values and median projected values, respectively, of the percent change in the price index for personal consumption expenditures (PCE) from the fourth quarter of the previous year to the fourth quarter of the year indicated. The confidence interval around the median projected values is assumed to be symmetric and is based on root mean squared errors of various private and government forecasts made over the previous 20 years; more information about these data is available in table 2. Because current conditions may differ from those that prevailed, on average, over the previous 20 years, the width and shape of the confidence interval estimated on the basis of the historical forecast errors may not reflect FOMC participants' current assessments of the uncertainty and risks around their projections; these current assessments are summarized in the lower panels. Generally speaking, participants who judge the uncertainty about their projections as "broadly similar" to the average levels of the past 20 years would view the width of the confidence interval shown in the historical fan chart as largely consistent with their assessments of the uncertainty about their projections. Likewise, participants who judge the risks to their projections as "broadly balanced" would view the confidence interval around their projections as approximately symmetric. For definitions of uncertainty and risks in economic projections, see the box "Forecast Uncertainty."

Figure 5. Uncertainty in projections of the federal funds rate



NOTE: The blue and red lines are based on actual values and median projected values, respectively, of the Committee's target for the federal funds rate at the end of the year indicated. The actual values are the midpoint of the target range; the median projected values are based on either the midpoint of the target range or the target level. The confidence interval around the median projected values is based on root mean squared errors of various private and government forecasts made over the previous 20 years. The confidence interval is not strictly consistent with the projections for the federal funds rate, primarily because these projections are not forecasts of the likeliest outcomes for the federal funds rate, but rather projections of participants' individual assessments of appropriate monetary policy. Still, historical forecast errors provide a broad sense of the uncertainty around the future path of the federal funds rate generated by the uncertainty about the macroeconomic variables as well as additional adjustments to monetary policy that may be appropriate to offset the effects of shocks to the economy.

The confidence interval is assumed to be symmetric except when it is truncated at zero—the bottom of the lowest target range for the federal funds rate that has been adopted in the past by the Committee. This truncation would not be intended to indicate the likelihood of the use of negative interest rates to provide additional monetary policy accommodation if doing so was judged appropriate. In such situations, the Committee could also employ other tools, including forward guidance and large-scale asset purchases, to provide additional accommodation. Because current conditions may differ from those that prevailed, on average, over the previous 20 years, the width and shape of the confidence interval estimated on the basis of the historical forecast errors may not reflect FOMC participants' current assessments of the uncertainty and risks around their projections.

* The confidence interval is derived from forecasts of the average level of short-term interest rates in the fourth quarter of the year indicated; more information about these data is available in table 2. The shaded area encompasses less than a 70 percent confidence interval if the confidence interval has been truncated at zero.

Forecast Uncertainty

The economic projections provided by the members of the Board of Governors and the presidents of the Federal Reserve Banks inform discussions of monetary policy among policymakers and can aid public understanding of the basis for policy actions. Considerable uncertainty attends these projections, however. The economic and statistical models and relationships used to help produce economic forecasts are necessarily imperfect descriptions of the real world, and the future path of the economy can be affected by myriad unforeseen developments and events. Thus, in setting the stance of monetary policy, participants consider not only what appears to be the most likely economic outcome as embodied in their projections, but also the range of alternative possibilities, the likelihood of their occurring, and the potential costs to the economy should they occur.

Table 2 summarizes the average historical accuracy of a range of forecasts, including those reported in past *Monetary Policy Reports* and those prepared by the Federal Reserve Board's staff in advance of meetings of the Federal Open Market Committee (FOMC). The projection error ranges shown in the table illustrate the considerable uncertainty associated with economic forecasts. For example, suppose a participant projects that real gross domestic product (GDP) and total consumer prices will rise steadily at annual rates of, respectively, 3 percent and 2 percent. If the uncertainty attending those projections is similar to that experienced in the past and the risks around the projections are broadly balanced, the numbers reported in table 2 would imply a probability of about 70 percent that actual GDP would expand within a range of 2.2 to 3.8 percent in the current year, 1.3 to 4.7 percent in the second year, 0.9 to 5.1 percent in the third year, and 0.8 to 5.2 percent in the fourth year. The corresponding 70 percent confidence intervals for overall inflation would be 1.8 to 2.2 percent in the current year, 1.0 to 3.0 percent in the second year, 0.9 to 3.1 percent in the third year, and 1.0 to 3.0 percent in the fourth year. Figures 4.A through 4.C illustrate these confidence bounds in "fan charts" that are symmetric and centered on the medians of FOMC participants' projections for GDP growth, the unemployment rate, and inflation. However, in some instances, the risks around the projections may not be symmetric. In particular, the unemployment rate cannot be negative; furthermore, the risks around a particular projection might be tilted to either the upside or the downside, in which case the corresponding fan chart would be asymmetrically positioned around the median projection.

Because current conditions may differ from those that prevailed, on average, over history, participants provide judgments as to whether the uncertainty attached to their projections of each economic variable is greater than, smaller than, or broadly similar to typical levels of forecast uncertainty seen in the past 20 years, as presented in table 2 and reflected in the widths of the confidence intervals shown in the top panels of figures 4.A through 4.C. Participants' current assessments of the uncertainty surrounding their projections are summarized in the bottom-left panels of those figures. Participants also provide judgments as to whether the risks to their projections are weighted to the upside, are weighted to the downside, or are broadly balanced. That is, while the symmetric historical fan charts shown in the top panels of figures 4.A through 4.C imply that the risks to participants' projections are balanced, participants may judge that there is a greater risk that a given variable will be above rather than below their projections. These judgments are summarized in the lower-right panels of figures 4.A through 4.C.

As with real activity and inflation, the outlook for the future path of the federal funds rate is subject to considerable uncertainty. This uncertainty arises primarily because each participant's assessment of the appropriate stance of monetary policy depends importantly on the evolution of real activity and inflation over time. If economic conditions evolve in an unexpected manner, then assessments of the appropriate setting of the federal funds rate would change from that point forward. The final line in table 2 shows the error ranges for forecasts of short-term interest rates. They suggest that the historical confidence intervals associated with projections of the federal funds rate are quite wide. It should be noted, however, that these confidence intervals are not strictly consistent with the projections for the federal funds rate, as these projections are not forecasts of the most likely quarterly outcomes but rather are projections of participants' individual assessments of appropriate monetary policy and are on an end-of-year basis. However, the forecast errors should provide a sense of the uncertainty around the future path of the federal funds rate generated by the uncertainty about the macroeconomic variables as well as additional adjustments to monetary policy that would be appropriate to offset the effects of shocks to the economy.

If at some point in the future the confidence interval around the federal funds rate were to extend below zero, it would be truncated at zero for purposes of the fan chart shown in figure 5; zero is the bottom of the lowest target range for the federal funds rate that has been adopted by the Committee in the past. This approach to the construction of the federal funds rate fan chart would be merely a convention; it would not have any implications for possible future policy decisions regarding the use of negative interest rates to provide additional monetary policy accommodation if doing so were appropriate. In such situations, the Committee could also employ other tools, including forward guidance and asset purchases, to provide additional accommodation.

While figures 4.A through 4.C provide information on the uncertainty around the economic projections, figure 1 provides information on the range of views across FOMC participants. A comparison of figure 1 with figures 4.A through 4.C shows that the dispersion of the projections across participants is much smaller than the average forecast errors over the past 20 years.

Abbreviations

AFE	advanced foreign economy
BOE	Bank of England
C&I	commercial and industrial
EME	emerging market economy
FOMC	Federal Open Market Committee; also, the Committee
GDP	gross domestic product
LFPR	labor force participation rate
MBS	mortgage-backed securities
Michigan survey	University of Michigan Surveys of Consumers
ON RRP	overnight reverse repurchase agreement
OPEC	Organization of the Petroleum Exporting Countries
PCE	personal consumption expenditures
SEP	Summary of Economic Projections
SLOOS	Senior Loan Officer Opinion Survey on Bank Lending Practices
SOMA	System Open Market Account
S&P	Standard & Poor's
TCJA	Tax Cuts and Jobs Act
TIPS	Treasury Inflation-Protected Securities

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The Latest (0/5)

SIFI hike could kick-start bank M&A

By Jackie Stewart
Published November 14 2017, 4:12pm EST

More in Regional banks, M&A, SIFIs, Dodd-Frank

Print Reprint

Sweeping regulatory changes could nudge more big banks to consider acquisitions.

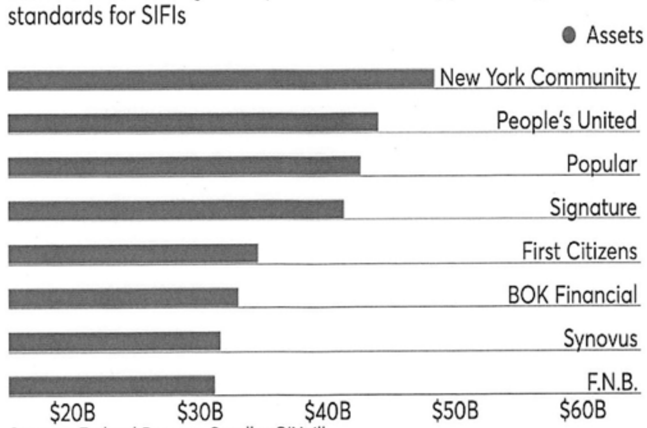
A big part of a deal between Senate Banking Committee Chairman Mike Crapo and a key group of Democrats to amend the Dodd-Frank Act involves raising the systemically important financial institution threshold from $50 billion in assets to $250 billion.

That could immediately free a handful of banks from enhanced oversight, including capital requirements, while giving institutions nearing the current threshold more confidence that organic growth and acquisitions will not lead to added regulatory burden.

"All of those banks that are interested could be more active" with acquisitions, said Brian Klock, an analyst at Keefe, Bruyette & Woods.

Dwellers on the threshold

These banks could get a reprieve from fast-approaching standards for SIFIs



Sources: Federal Reserve, Sandler O'Neill

Optimism has been building among bankers that lawmakers would eventually increase the SIFI threshold.

Washington's outlook on regulatory relief seems "a lot more favorable today than it was a year ago" in terms of compliance issues such as the $50 billion-asset mark, David Rosato, chief financial officer at People's United Financial in Bridgeport, Conn., said during a conference call last month to discuss the $44 billion-asset company's financial results.

Still, People's United continues to act as though no relief is imminent, Rosato said, noting that the company continues to prepare for the stress testing required for SIFIs.

The Crapo-led plan could allow SVB Financial Group to "focus even more on lending and job growth," Greg Becker, the $48 billion-asset company's CEO, said in a statement issued Tuesday.

People's United and SVB are among a cluster of about a dozen banks with $35 billion to $50 billion in assets that should benefit greatly from the plan, said Greyson Tuck, an investment banking adviser at the law firm Gerrish Smith Tuck. The proposal would let institutions, especially those with less than $100 billion of assets, avoid annual stress tests, higher capital and leverage requirements and other heightened standards.

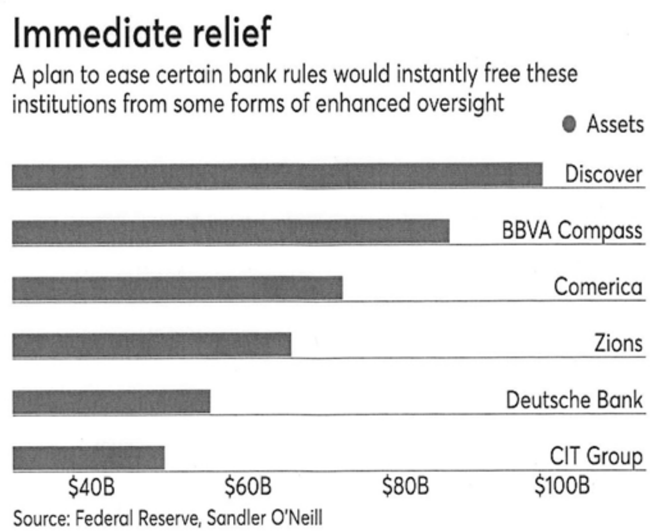
Only one bank — CIT Group — has clearly crossed the SIFI threshold with an acquisition. A significant increase from $50 billion could open up more options for banks that were keen on deals but concerned about becoming a SIFI.

"If you're a $45 billion-asset institution and you want to [buy] a $15 billion bank ... you can increase your size by a third but not pick up everything that goes along with becoming a SIFI," Tuck said of the proposed legislation.

For some, the $48 billion-asset New York Community Bancorp's effort to become a SIFI by buying Astoria Financial was a test case for the industry. The deal, however, fell apart late last year over regulatory concerns. For many quarters, the Westbury company has been actively managing its assets to stay below $50 billion.

"While we believe SIFI status should not be determined by size, but by individual bank risk analysis, we certainly welcome raising the threshold to $250 billion, as has been reported," Joseph Ficalora, New York Community's president and CEO, said in a statement Tuesday. "It is a critical first step in the right direction and will be a positive for our company and beneficial to the industry, and the greater economy, as a whole."

Banks that are already considered SIFIs should benefit, too. The annual Comprehensive Capital Analysis and Review has constrained banks' deployment of capital; it also influences how they approach a number of decisions, including acquisitions, industry experts said.



Giving more control of capital management back to CEOs could spur more acquisitions.

"I think it is a capital management issue," said Scott Siefers, an analyst at Sandler O'Neill. "Rather than ask permission once a year, you can probably more in real time advise [regulators about] what you're doing rather than asking to do it."

Though the plan raises hopes for more consolidation, some industry experts remain skeptical.

While the proposed legislation could remove one impediment to M&A, Charles Crowley, a managing director at Boenning & Scattergood, said it is unlikely to lead to a "huge wave" of big deals. "Sometimes investment bankers and attorneys say there will be a wave — and it is just wishful thinking," he said.

At the same time, there are limited options for big banks to gain significant scale with just one acquisition, industry experts said. And there are two roughly dozen bank holding companies with assets of $50 billion to $250 billion.

Larger bank deals will likely continue to be highly scrutinized by regulators, and community groups are more apt to rally against bigger mergers since such deals typically impact many markets. Several big banks are still working through issues tied to the Bank Secrecy Act, the Community Reinvestment Act and fair-lending laws.

Many of the nation's biggest banks are likely to steer clear of acquisitions altogether, Tom Michaud, KBW's president and CEO, said during a panel discussion last month hosted by the University of Mississippi.

Banks that have crossed the SIFI threshold are unlikely to see compliance costs meaningfully decline, industry experts said. It is doubtful that management teams would dismantle systems and processes just because of a legislative change.

"You might be able to push a few consultants out of the building," said Jeff Davis, managing director of Mercer Capital's financial institutions group. "But I don't see how you turn it off."

Bankers may remain cautious even if a law is passed in order to find out how regulators will implement any changes. For instance, the Crapo-led plan would let the Federal Reserve target companies with less than $250 billion in assets if they are viewed as a risk.

The $41 billion-asset Signature Bank in New York is on track to become a SIFI by early 2020.

"We're going to wait and see what changes" regulators might make, Signature President and CEO Joseph DePaolo said when asked during a recent quarterly conference call about the potential benefits of a raised threshold. "Then we'll be able to give better guidance."

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Jackie Stewart covers community banks and mergers and acquisitions for American Banker.

Comment