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MONETARY POLICY AND THE STATE OF THE ECONOMY

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MONETARY POLICY AND THE STATE OF THE ECONOMY

Wednesday, February 27, 2019

U.S. HOUSE OF REPRESENTATIVES,
COMMITTEE ON FINANCIAL SERVICES,
Washington, D.C.

The committee met, pursuant to notice, at 10:08 a.m., in room 2128, Rayburn House Office Building, Hon. Maxine Waters [chairwoman of the committee] presiding.

Members present: Representatives Waters, Velazquez, Sherman, Meeks, Green, Cleaver, Perlmutter, Himes, Foster, Beatty, Heck, Vargas, Gottheimer, Gonzalez of Texas, Lawson, San Nicolas, Tlaib, Porter, Axne, Casten, Pressley, Wexton, Dean, Garcia of Illinois, Garcia of Texas, Phillips; McHenry, Lucas, Posey, Luetkemeyer, Huizenga, Duffy, Stivers, Barr, Tipton, Williams, Hill, Emmer, Zeldin, Loudermilk, Davidson, Budd, Kustoff, Hollingsworth, Gonzalez of Ohio, Rose, Steil, Gooden, and Riggleman.

Chairwoman WATERS. The Committee on Financial Services will come to order.

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

Today's hearing is entitled, "Monetary Policy and the State of the Economy." And I will now recognize myself for 4 minutes to give an opening statement.

Chairman Powell, welcome back to the committee. I am concerned about some of the actions of President Trump and his Administration, and perhaps you may be asked some questions today about whether or not it is affecting the Federal Reserve's (Fed's) decisions.

President Trump has manufactured the longest government shutdown in our nation's history, which beyond the needless harm inflicted on effective government employees, contractors, and other businesses, also hurt our economy and outlook.

However, this President declared a trade war on allies and enemies alike, leveling tariffs on steel and aluminum, and threatening to rip up other deals. His trade war is bringing down consumer and business sentiment.

His tax scam, which was a giveaway to the wealthy and to corporate America, is slated to reduce government revenue by $1.8 trillion over the next 10 years. Each of these actions by the Trump Administration were noted in the minutes of the Fed's January policy meetings and may have weighed in on the Fed's decision to pause for the interest rate increases.

In the midst of what some fear is slowing growth, the Administration's economic policies are fueling the fire of a possible downturn. It is critical that the Federal Reserve remain vigilant in protecting this economy.

The last matter I want to raise pertains to the Federal Reserve's apparent efforts to modify the Dodd-Frank Act's (Dodd-Frank) safeguards that Congress and your predecessors at the Fed put in place following the financial crisis.

In particular, I am concerned that the Fed is following some of the Trump Treasury Department's deregulatory roadmap to weaken the capital and liquidity buffers on some of the largest banks. This is particularly troubling given that many economists, including many at the Federal Reserve, believe that bank capital levels are at the lower end of where they should be to weather another downturn.

Banks earned a record $236.7 billion in annual profits in 2018. The largest 6 banks alone raked in over $120 billion. Given these record profits, I do not believe there is a need for the Fed to further require capital and liquidity requirements. If anything, given your concerns about the economy, now is not the time to take the guardrails off of this industry.

The Fed should also be concerned with the growing economic inequality in this country. In 2016, the Fed survey of consumer finances stated that the top 1 percent of U.S. families own 38.6 percent of the wealth. The Minneapolis Federal Reserve Bank reported that over the last 70 years, virtually no progress has been made in reducing income and wealth inequalities between black and white households.

So I would urge you and the Federal Reserve to work to tackle the scourge of economic inequality. I know that we just had a moment to talk about some of these issues, and you have some information you shared with us just recently about some of the concerns that I have raised, and you may want to talk about those a little bit today.

So I look forward to your testimony and to discussing these matters with you.

The Chair now recognizes the ranking member of the committee, the gentleman from North Carolina, Mr. McHenry, for 4 minutes for an opening statement.

Mr. MCHENRY. Thank you. Thank you, Chairwoman Waters.

And thank you, Chairman Powell.

Since his confirmation last year as Fed Chairman, Mr. Powell has prioritized outreach to Members of Congress and public disclosure of Fed activities, and Members and the public have benefited from that outreach and that public-facing interaction.

I am hopeful that the Chairman will continue to pursue this approach, as it is important for the long-term integrity of the institution and highlights the open-book approach to Fed policy that is necessary for long-term market stability and understanding of Fed policymaking.

The economy over the last 2½ years has witnessed remarkable growth, and unemployment has reached lows that many once believed were impossible. Republican-led efforts for tax relief and regulatory reform have supported these trends with millions of Ameri-

cans benefiting as a result of those policies, and millions more seeing their wages grow as a result of that regulatory rightsizing and tax relief.

The Fed's interest in undertaking targeted rulemaking to provide regulatory rightsizing will help continue that trend. And it is important to economic growth and stability for the pace to be picked up.

At the same time, I share the Fed's concerns that global economic uncertainty could prove challenging here at home. As the minutes of the last Federal Open Market Committee (FOMC) meeting made clear, Europe and China in particular represent risks the Fed should continue to monitor and, where appropriate, work to mitigate.

In Europe, the specter of a no-deal Brexit not only impacts the EU–U.K. trading relationship, but it also entails spillover effects that may implicate domestic and financial institutions here at home. Further afield, chronic weakness in Italy remains a threat to eurozone economies, and new movements have emerged that seek to disrupt the continent's post-war politics as well.

As for China, the days of double-digit growth appear to be gone, but not Beijing's misguided, state-run economic management. China continues to suffer from the politicized allocation of capital, the cynicism towards international economic governance standards, opaque channels for decisionmaking, and, of course, the absence of the rule of law.

In sum, China poses a massive risk, but a risk that defies conventional forms of assessment because its regime lacks conventional forms of accountability and transparency. In both China and Europe, we are facing systemic risks that have few historic analogies.

China's growth is expected to decline to its lowest point since 1990, and European Union membership has only expanded, never shrunk, since its origins more than a half century ago. These are different times we are living through and different challenges certainly for the Fed and for the Fed Chair.

That means that the rearview mirror will be of limited usefulness for policymakers in the years ahead. We will need to confront new sources of uncertainty with new insights and ideas, and the Fed will be essential in detecting and interpreting these challenges.

While some of Mr. Powell's predecessors developed a reputation for ambiguity, I am hopeful that he will pursue a different path, and it is certain that he already has. As he himself noted last month, greater uncertainty calls for more clarity from the Fed, not less. In the face of risks that we have yet to fully understand, our central bank must be all the more articulate and predictable.

Chairwoman WATERS. The Chair now recognizes the subcommittee chair, Mr. Cleaver, for 1 minute.

Mr. CLEAVER. Thank you, Madam Chairwoman.

And thank you, Mr. Chairman, for being here today.

Some of what I would like to focus on in this short amount of time is what I have spoken about with you in casual conversations, but I intend to say it quite openly today, and it is this: The imperative that the Federal Reserve remain independent as it works to

fulfill its mandate of maximum employment and price stability is key.

I do hope that the Fed is able to resist the clamor of political murmurings and not allow that to drown out the critical deliberations that the Fed must have in order to head up our monetary policy in this country. The level of politicization and explicit pressure that you, the Federal Reserve members, have received is unprecedented and unnecessary.

Madam Chairwoman, thank you. I yield back the balance of my time.

Chairwoman WATERS. Thank you.

The Chair now recognizes the subcommittee ranking member, Mr. Stivers, for 1 minute.

Mr. STIVERS. Thank you, Chairwoman Waters, for holding this hearing.

And Chairman Powell, thank you for being here today. We are all looking forward to your testimony. It is a really important time, as you know, for your dual mandate. And we finally, through some policies of tax cuts and regulatory reform, achieved an economic growth rate in the 3 to 4 percent range. We have unemployment at about 4 percent.

But I have a gift for you to remind you of your dual mandate. Mark is going to bring it to you. It is a 100,000 Venezuelan bolivar note. And as you know, their inflation rate is about 65,000 percent, or was, and it is still growing. And they have people starving in one of the most resource-rich countries in the world.

We and 300 million Americans are depending on you to continue your hard work to give us full employment and stable prices, Mr. Chairman. And I look forward to talking to you today.

Chairwoman WATERS. I would now like to welcome to the committee our distinguished witness, Jerome Powell, Chairman of the Board of Governors of the Federal Reserve System. He has served on the Board of Governors since 2012 and as its Chair since 2017. Mr. Powell has testified before the committee before, so I do not believe he needs any further introduction.

Mr. Powell, you are now recognized to present your oral testimony, and without objection, your written statement will be made a part of the record.

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

Mr. POWELL. Thank you, and good morning.

Chairwoman Waters, Ranking Member McHenry, and other members of the committee, I am happy to present the Federal Reserve's semiannual Monetary Policy Report to the Congress.

Let me start by saying that my colleagues and I strongly support the goals Congress has set for monetary policy: maximum employment; and price stability. We are committed to providing transparency about the Federal Reserve's policies and programs.

Congress has entrusted us with an important degree of independence so that we can pursue our mandate without concern for short-term political considerations. We appreciate that our independence brings with it the need to provide transparency so that Americans

and their Representatives in Congress understand our policy actions and can hold us accountable.

We are always grateful for opportunities such as today's hearing to demonstrate the Fed's deep commitment to transparency and accountability. Today, I will review the current economic situation and outlook before turning to monetary policy. I will also describe several recent improvements to our communications practices to enhance our transparency.

The economy grew at a strong pace on balance last year, and employment and inflation remain close to the Federal Reserve's statutory goals. Based on the available data, we estimate that gross domestic product rose a little less than 3 percent last year following a 2.5-percent increase in 2017. Last year's growth was led by strong gains in consumer spending and increases in business investment.

Growth was supported by increases in employment and wages, optimism among households and businesses, and fiscal policy actions. In the last couple of months, some data have softened but still point to spending gains this quarter. While the partial government shutdown created significant hardship for government workers and many others, the negative effects on the economy are expected to be fairly modest and to largely unwind over the next several months.

The job market remains strong. Monthly job gains averaged 223,000 in 2018, and payrolls increased an additional 304,000 in January. The unemployment rate stood at 4 percent in January, a very low level by historical standards, and job openings remain abundant.

Moreover, the ample availability of job opportunities appears to have encouraged some people to join the workforce and some who otherwise might have left to remain in the workforce. As a result, the labor force participation rate for people in their prime working years, that is ages 25 to 54, who are either working or actively looking for work, has continued to increase over the past year. And in another welcome development, we are seeing signs of stronger wage growth.

The job market gains in recent years have benefited a wide range of families and individuals. Indeed, recent wage gains have been strongest for lower-skilled workers. That said, disparities persist across various groups of workers in different parts of the country.

For example, unemployment rates for African Americans and Hispanics are still well above the jobless rates for whites and Asians. Likewise, the percentage of the population with a job is noticeably lower in rural communities than in urban areas, and that gap has widened over the past decade. The February Monetary Policy Report provides additional information on employment disparities between rural and urban areas.

Overall, consumer price inflation, as measured by the 12-month change in the price index for personal consumption expenditures, is estimated to have been 1.7 percent in December held down by recent declines in energy prices. Core PCE inflation, which excludes food and energy prices and tends to be a better indicator of future inflation, is estimated at 1.9 percent. At our January meeting, my colleagues and I generally expected economic activity to ex-

pand at a solid pace, albeit somewhat slower than in 2018, and the job market to remain strong. Recent declines in energy prices will likely push headline inflation further below the FOMC's longer-run goal of 2 percent for a time, but aside from those transitory effects, we expect that inflation will run close to 2 percent.

While we view current economic conditions as healthy and the economic outlook as favorable, over the past few months we have seen some crosscurrents and conflicting signals. Financial markets have become more volatile toward year end, and financial conditions are now less supportive of growth than they were earlier last year. Growth has slowed in some major foreign economies, particularly China and Europe, and uncertainty is elevated around several unresolved government policy issues, including Brexit and ongoing trade negotiations. We will carefully monitor these issues as they evolve.

In addition, our nation faces important longer-run challenges. For example, productivity growth, which is what drives rising real wages and living standards over the longer term, has been too low. Likewise, in contrast to 25 years ago, labor force participation among prime age men and women is now lower in the United States than most other advanced economies. Other longer-run trends, such as relatively stagnant incomes for many families and a lack of upward economic mobility among people with lower incomes, also remain important challenges. And it is widely agreed that Federal Government debt is on an unsustainable path. As a nation, addressing these pressing issues could contribute greatly to the longer-run health and vitality of the United States economy.

Over the second half of 2018, as the labor market kept strengthening and economic activity continued to expand strongly, the FOMC gradually moved interest rates toward levels that are more normal for a healthy economy. Specifically, at our September and December meetings, we decided to raise the target range for the Federal funds rate by one quarter percentage point at each, putting the current range at 2¼ to 2½ percent.

At our December meeting, we stressed that the extent and timing of any further rate increases would depend on incoming data and the evolving outlook. We also noted that we would be paying close attention to global economic and financial developments and assessing their implications for the outlook. In January, with inflation pressures muted, the FOMC determined that the cumulative effect of these developments, along with ongoing government policy uncertainty, warranted taking a patient approach with regard to future policy changes. Going forward, our policy decisions will continue to be data-dependent and will take into account new information as economic conditions and the outlook evolve.

For guideposts on appropriate policy, the FOMC routinely looks at monetary policy rules that recommend a level for the Federal funds rate based on measures of inflation and the cyclical position of the U.S. economy. The February Monetary Policy Report gives an update on monetary policy rules. I continue to find these rules to be helpful benchmarks, but, of course, no simple rule can adequately capture the full range of factors the Committee must assess in conducting policy. We do, however, conduct monetary policy in a systematic manner to promote our long-run goals of maximum

employment and stable prices. As part of this approach, we strive to communicate clearly about our monetary policy decisions.

We have also continued to gradually shrink the size of our balance sheet by reducing our holdings of Treasury and agency securities. The Federal Reserve's total assets declined about $310 billion since the middle of last year and currently stand at close to $4 trillion. Relative to their peak in 2014, banks' reserve balances with the Federal Reserve have declined by around $1.2 trillion, a drop of more than 40 percent.

In light of the substantial progress we have made in reducing reserves, and after extensive deliberations, the Committee decided at our January meeting to continue over the longer run to implement policy with our current operating procedure. That is, we will continue to use our administered rates to control the policy rate with an ample supply of reserves so that active management of reserves is not required. Having made this decision, the Committee can now evaluate the appropriate timing and approach for the end of balance sheet runoff. I would note that we are prepared to adjust any of the details for completing balance sheet normalization in light of economic and financial developments. In the longer run, the size of the balance sheet will be determined by demand for Federal Reserve liabilities, particularly currency and bank reserves. The February Monetary Policy Report describes these liabilities and reviews the factors that influence their size over the longer run.

I will conclude by mentioning some further progress we have made in improving transparency. Late last year, we launched two new publications: the first, our Financial Stability Report, shares our assessment of the resilience of the U.S. financial system; and the second, the Supervision and Regulation Report, provides information about our activities as a bank supervisor and regulator. Last month, we began conducting press conferences after every FOMC meeting instead of every other one. The change will allow me to more fully and more frequently explain the committee's thinking. Last November, we announced a plan to conduct a comprehensive review of the strategies, tools, and communications practices we use to pursue our congressionally assigned goals for monetary policy. This review will include outreach to a broad range of stakeholders across the country. The February Monetary Policy Report provides further discussion of these initiatives.

Thank you very much. I will be happy to respond to your questions.

[The prepared statement of Chairman Powell can be found on page 58 of the appendix.]

Chairwoman WATERS. Thank you very much, Mr. Powell.

Last Congress, I and other Democrats warned that S.2155, which Republicans claimed to be a bill to benefit community banks, was in fact a broader deregulatory giveaway to large banks that would fuel mergers, accelerate industry consolidation, and make it more difficult for community banks to compete.

Now, we have SunTrust and BB&T proposing to merge and become the sixth largest bank. Furthermore, even though banks made record profits of $237 billion last year, you said yesterday implementing S.2155 was your highest priority, and the Fed has

made several proposals that would reduce bank capital and liquidity reserves for our largest banks.

Board Governor Brainard voted against these proposals, noting that the Fed's tailoring proposal would reduce high-quality liquid assets held by large banks by about $70 billion. The FDIC originally opposed the Fed's leverage proposal as it would reduce bank capital by more than $120 billion.

The Fed is also looking at making stress testing more transparent, which could undermine the purpose of the test. And former Fed Chair Fischer has called these deregulatory efforts, "something I find extremely worse."

So, Chairman Powell, please explain, will easing big bank capital and liquidity requirements as the Treasury Department has proposed, and your agency appears to be following through with, not undermine safeguards that have been carefully built up over the last decade to protect our economy and which made the U.S. framework the gold standard that others around the world follow?

Should we expect to see further industry consolidation if deregulating big banks is a top priority for the Federal Reserve? It was discussed in the Senate Banking Committee yesterday how the Fed has accelerated its merger reviews and appears to be rubberstamping them.

SunTrust-BB&T claim their proposed merger will be approved by September. But can you assure us that the Fed will not rush the process, will consult with all affected parties, will hold field hearings, and will focus on the public's interest, even if it means rejecting the application?

The Office of the Comptroller of the Currency (OCC) unilaterally released an Advance Notice of Proposed Rulemaking (ANPRM) to modernize the Community Reinvestment Act, or CRA. The Fed and the FDIC did not join in that release. I was troubled to see that Comptroller Otting recently said that if he could not reach agreement with your two agencies, the OCC would go on its own with CRA reform. Would that be a good outcome? Could two different CRA regimes lead to regulatory arbitrage of our banks?

And, lastly, a minute on diversity. I believe diversity in the Federal Reserve's leadership, including at the Reserve Banks, is crucial because it is hard to stay committed to all communities in the country when the leadership lacks an understanding of those communities that comes from experience. That is why I, and so many on this side of the aisle, have encouraged you to continually push to diversify in order to more closely represent the American public.

The Center for Popular Democracy recently found that the current Board Directors are 76 percent banking or business, 74 percent white, and 62 percent male. They also cite that, in 2013, 12 of the 105 Board Directors were African American. That number has increased to 22 out of 108 today. This is an improvement, but it still does not look good.

Federal Reserve Governor Brainard recently spoke about increasing diversity efforts through a better pipeline at the inaugural Sadie T.M. Alexander Conference for Economics over the weekend.

Right now, even before a search is underway for new Directors, how is the Federal Reserve trying to build the pipeline for more diverse candidates? When you lead with Reserve Bank leaderships,

how are you encouraging a focus on increasing director diversity? Why do you believe increasing diversity is a challenge?

In your testimony, again, you stated that current economic conditions were healthy and the economic outlook favorable but noted that over the past few months, "uncertainty is elevated around several unresolved government policy issues."

I won't put it as delicately as you have. President Trump's policies are damaging our economy, and are challenging growth. This is why you have had to pause rate hikes. This lack of an economic agenda that changes with the wind is presenting market volatility and incredible consumer and business uncertainty.

Just yesterday, you said that uncertainty is the enemy of business. That is why former Federal Reserve Chair Janet Yellen says the President doesn't understand macroeconomic policy. If he did, he would understand that only a stable, inclusive, economic agenda will support an even economic expansion.

So, Chairman Powell, the President is engaged in a trade war with an uncertain outcome that seems to change every other week. He has also forced the longest government shutdown in our nation's history. How are these actions affecting the U.S. economy, in your estimation? How can you continue to achieve full employment and stable prices if this erratic economic agenda persists?

Lastly, on monetary policy, in the minutes released for the January 29th and 30th FOMC policy meeting, participants discussed moving forward with monetary policy while having a large balance sheet. In what can be seen as a course change from the gradual balance sheet reduction that began in October 2017, the FOMC now noted that it is likely to stop reducing the balance sheet which now stands at approximately $3.9 trillion.

I believe—and correct me if I am wrong—the thought is to allow the gradual reduction to continue until the FOMC is comfortable with the size of the still elevated balance sheet later in the year. In an interest rate environment where the Fed funds rate is still low, between 2.25 and 2.50 percent, how is the FOMC likely to use a large balance sheet as a monetary policy tool in the case of an unexpected downturn?

For instance, San Francisco Federal Reserve Bank President Mary Daly has suggested that you could use your balance sheet as a monetary policy tool. Does this mean that QE could become routine in this low-interest-rate environment? If so, does this entail buying securities as the Fed did during the financial crisis and at a similar size and pace, or could you consider smaller scale purchases and types of securities?

With that, I will now recognize the distinguished ranking member, Mr. McHenry, for 5 minutes for questions.

Mr. MCHENRY. Good morning.

Chairman Powell, I have a series of questions for you, and I would love to have your answers on these questions. You testified yesterday regarding the bank's balance sheet, which stands at roughly $4 trillion, and you gave an answer about sort of normalizing the balance sheet and what your view of that normalization looks like. And you referenced the demand for reserves as a reference point for that. Can you elaborate on that?

Mr. POWELL. Sure, I would be glad to.

So, before the financial crisis, the size of the Fed's balance sheet was a function of demand for our liabilities, principally currency and, to a far less extent, reserves. Quantitative easing comes along. We hit the zero lower bound. The Fed buys a lot of assets. That was about buying assets.

And the size of the balance sheet as a percent of GDP went from 6 percent to 25 percent, and that was really driven by a desire to buy longer-term credit assets or rather Federal Government debt and drive down longer-term interest rates.

So now we are normalizing the balance sheet, and normalizing it really means going back to a situation where the size of the balance sheet is driven by demand for our liabilities, which has evolved, so currency and reserves mainly.

What has happened is demand for currency has grown—currency outstanding has grown much faster than the economy, and demand for reserves is now much higher than it was because really we require banks to hold very high levels of high-quality liquid assets, and they choose to hold reserves.

We can't go back to that very small balance sheet. So what we think is that—the Committee has been working on this carefully for the last three FOMC meetings and devising a plan. We are close to agreeing on a plan which would lay out—would sort of light the way to the end of the process.

Mr. MCHENRY. And do you plan to communicate that?

Mr. POWELL. Very much.

Mr. MCHENRY. That plan?

Mr. POWELL. Yes, we do. When it is agreed upon. We found it is good to be very careful with the balance sheet and—

Mr. MCHENRY. But your reference point was about $1 trillion in bank reserves at the Fed would be the reference point for when you sort of end the reduction of the balance sheet. Do you have a timeframe on that?

Mr. POWELL. Yes. There is a lot of uncertainty around the actual level. What I did was I cited public estimates and said those appear reasonable. We actually don't know when the equilibrium demand will be. We are going to have to find it over time. And my guess is we will be announcing something fairly soon.

Mr. MCHENRY. So, in light of yesterday's housing figures, in which housing starts fell to the lowest number in more than 2 years, what impact do those housing figures from yesterday have on your timing on holding rates steady, or do they have any impact?

Mr. POWELL. In terms of what we said is we are going to be patient and watch as the economy evolves and also as the evolving risk picture changes and how that affects the—will affect the outlook. And we will be looking at a full range of data. It would include housing starts. It would include anything that could affect our achievement of the dual mandate, principally growth and then, of course, the labor markets and inflation. So we will be looking at a wide range of data. That is one piece of it, but it is one of many pieces.

Mr. MCHENRY. So, related to that, housing finance reform, you know, Fannie Mae and Freddie Mac are more than a decade into nationalization. You are a major holder. The Fed is a major holder

of these assets. Do you think it is important for Congress to prioritize housing finance reform for the American economy?

Mr. POWELL. I do. I very much do. This is a big, unfinished piece of business for sort of the post-crisis era, and I think it will be good for the economy to move to a system where a lot of private capital is there supporting housing risk again, and it is not just all winding up on the Federal balance sheet.

Mr. MCHENRY. Okay. Pivoting to a result of some recent statements, there are a lot of crosscurrents, conflicting signals in the terminology the Fed has used in the U.S. economy and global economy. How do you respond to those who say you are making financial market stability an unofficial mandate to the Fed's decision-making?

Mr. POWELL. No, I wouldn't say that is what we are doing. First, I think financial stability has been part of the Fed's role, and in fact, it really was our original role. Central banks generally evolved out of a desire to support the stability of the financial system. It has always been something that we have done.

Our mandate from you is maximum employment and stable prices. That is the mandate. We also look after financial stability and particularly as it supports the dual mandate.

Mr. MCHENRY. Financial stability but not necessarily stock market stability?

Mr. POWELL. No. By financial stability, we are really talking about the capacity of the financial system, particularly banks but also other aspects of the financial system, to perform their role and intermediate between savers and borrowers and support economic activity.

Mr. MCHENRY. So what do you say to those folks who claim there is a now a "Powell Put" in the market.

Mr. POWELL. Anything that matters for the dual mandate matters for us. And financial conditions—our tools work through financial conditions. So I would say that when there are major changes in broader financial conditions, as you point out, not any one market or set of markets, but when there are, for a sustained period, important changes in broader financial conditions, that matters for the macro economy. It matters for achievement of the dual mandate, and we will, of course, take that into account.

Mr. MCHENRY. You mentioned the headwinds internationally, the softening in the EU, the softening in the Chinese economy, the risk of Brexit. We see what is happening internationally for global terror and things of that sort, but I want to talk specifically about China and ask you, how does China's use of state-run banks to allocate credit affect financial stability for the rest of the world?

Mr. POWELL. I don't know that there are important implications for global financial stability. It is a part of their system. I know they are trying to move to a more market-based system over time, and that is a challenging transition.

Mr. MCHENRY. More to this point, it is an opaque market. So getting numbers and getting a solid understanding of that allocation of capital is much more difficult in China than it is in the rest of the first world, is it not?

Mr. POWELL. That is right. In addition, so much of their economic activity in effect has the backing of the central government.

Mr. MCHENRY. Let me just wrap up with a broader question. You mentioned our national debt. The debt and deficit challenge is a real one. I firmly believe we have to right-size our spending, commensurate with long-run obligations that we have to the American people. But fundamentally, our deficit does have an impact on your dual mandate, does it not?

Mr. POWELL. I would say in the longer run.

Mr. MCHENRY. In the longer run. And our national debt too in the longer run has an impact in Fed policymaking as it results in stability and full employment, does it not?

Mr. POWELL. You know, I would say the unsustainable path of the Federal Government is a longer-run problem. It doesn't really affect—most of our thinking is about business cycle frequencies and supporting the economy when it is weak and holding it back when it is overheating.

But that is just in general and not so much about fiscal unsustainability. But we worry about in the longer run what will happen is we will wind up spending our money on interest payments rather than on the things we really need.

Mr. MCHENRY. I yield back.

Chairwoman WATERS. Thank you very much.

Mr. Chairman, as you answer the questions, they will be overlapping. Feel free to expound on some of the questions that I put before you. I took up all the time, and I didn't give you an opportunity to answer those questions. But as you answer questions from the others, feel free to include in those answers some of those concerns.

Now, the gentlelady from New York, Ms. Velazquez, is recognized for 5 minutes.

Ms. VELAZQUEZ. Thank you, Madam Chairwoman.

Chairman Powell, thank you so very much for being here today.

I have heard from several constituents who have expressed concern about the impact the current expected credit loss methodology could have on lending to consumers and small businesses. They tell me the proposal, while well-intended, could be more procyclical than the current incurred loss method, especially in a downturn, and would disproportionately impact consumer lending and LMI borrowers, who, as you know, can least afford an increase in the cost of credit or a complete loss altogether.

Much of the talk thus far has been about accounting policy, but what about economic policy? Has the Fed conducted a review of the economic impact of current expected credit losses (CECL) particularly in a downturn?

Mr. POWELL. So we have tried to think carefully about the questions that have been raised by banks about this, and we have thought a lot about this over time. We have tried to work with banks so that they will be able to implement this FASB decision in ways that are not too disruptive and too expensive and too complicated.

We have also allowed banks to start a 3-year phase-in of this beginning, I guess, next year. So we are doing everything we can to avoid a big change that is disruptive to lending. And in addition, we will be watching carefully to see what the actual results are.

Ms. VELAZQUEZ. But, Mr. Chairman, I am not concerned about how the banks will be handling this. I am concerned about the economic impact that it could have on mortgages for a segment of our population who is already—who have been not participating in capital access, such as low-income borrowers or small businesses. Have you conducted any economic impact on that? Because I know that the Financial Stability Oversight Council (FSOC), at their December meeting, they discussed this issue.

Mr. POWELL. Yes.

Ms. VELAZQUEZ. How do you—

Mr. POWELL. We are aware of those concerns, and we will be watching to see whether there is any such effect. We don't expect that there will be such an effect, but we will be watching carefully to see.

Ms. VELAZQUEZ. Chairman Powell, you recently gave a speech at Mississippi Valley State University that addressed economic development challenges in rural areas. While New York City is certainly not rural, I believe many of the challenges you spoke about could also apply to urban centers, particularly those of color.

In that speech, you noted the importance of workforce training due to the loss of key industries and the resulting mismatch between the skill of local workers and those demanded by new employers. As Federal banking regulators contemplate updating CRA regulations, should banks receive CRA credit for supporting or participating in such workforce development programs?

Mr. POWELL. That is a good question, and I don't know how—I don't know whether that would get CRA credit or not. It is certainly—I was speaking at a conference that was looking at basically broad measures to alleviate poverty, and I will check into that and get back to you.

Ms. VELAZQUEZ. Thank you.

Recently, and the Chair already alluded to this, Comptroller Otting said that he was hopeful that all three bank regulators will join the proposed CRA reforms by the summer. But he also indicated that if you were not all able to agree, the OCC will be willing to propose the reforms on its own. This is counter to statements made recently by Governor Brainard when she stated that Federal regulators should speak with one voice on CRA. What is your view?

Mr. POWELL. I think ideally we would like to have a unified view. It would be better to have one agreed-upon framework for CRA. That is obviously the best outcome, and we are going to be working toward that. But I want to add, though, that we are very committed at the Fed to the mission of CRA, and we are looking to make it more effective.

Ms. VELAZQUEZ. Should there be a joint rulemaking, and do you believe the Fed will ultimately sign onto the OCC's proposal?

Mr. POWELL. We will have to see. I think it would be ideal for the three regulators to get together, and we are working with the other two agencies on that. I think the goal is to get to a joint answer.

Ms. VELAZQUEZ. I yield back.

Chairwoman WATERS. The gentleman from Oklahoma, Mr. Lucas, is recognized for 5 minutes.

Mr. LUCAS. Thank you, Madam Chairwoman.

Chairman Powell, thank you for being here today. And I believe that my colleagues will do an outstanding job of covering the broader issues and with a number of inquiries. So, as has been my custom in recent years, I would like to focus in on some particular issues, and if we could once again converse about the joys of derivatives, so to speak.

My questions will deal with those issues that are within the Fed's role. First, turning to an issue I have raised several times, which is inter-affiliate margin, as you know, transactions between affiliates are risk management tools and do not expose counterparties to each other's risks.

I have pushed with my colleagues on the Agriculture Committee to exempt those inter-affiliate transactions from initial margin requirements. The CFTC and European regulators agree with me, and yet the Fed hasn't changed its policy to be consistent with those regulations when it comes to bank swap dealers.

I understand these issues predate your tenure, but, Mr. Chairman, I would like to know if you intend to administratively pursue a more risk-reflective approach on initial margin for inter-affiliate swaps.

Mr. POWELL. I know we haven't made a decision on that, but we are looking at the inter-affiliate margin question, and we will get back to you on that.

Mr. LUCAS. And hopefully that is something in the near view as opposed to the longer view, perhaps, Mr. Chairman?

Mr. POWELL. Yes, sir.

Mr. LUCAS. I think that is a leading question, so to speak.

Mr. POWELL. That is a "yes."

Mr. LUCAS. Thank you, sir.

Speaking frankly, I hear a lot of good things from both you and Mr. Quarles on this issue, and I appreciate that very much. But the lack of formal action still concerns me, and I think it is time to quickly move onto this. These rules currently capture a whopping $38.8 billion for capital in transactions that are not inherently risky, and I would certainly ask you and your staff to move forward soon on this please.

Now, moving to something else I raised with Mr. Quarles last year in this space, you are currently engaged in a joint comment period with the OCC and the FDIC about the Standardized Approach for Counterparty Risks (SA-CCR) proposal. That framework asked to hear from other industry stakeholders about the need for an offset for client margin in the supplemental leverage ratio.

If I may, I would like to offer you a few thoughts here. The number of firms providing clearing services has declined from 88 to 55. This affects farmers and ranchers and other end users in derivative markets. They are steadily losing options for clearing activity. This part of the SLR contributes to the closing of these markets to folks I mentioned. For what it is worth, the CFTC Commissioners agree with me and have submitted a joint comment raising the same concerns.

Now, Mr. Chairman, I know I can't ask you to comment on any action now considering the recent extension of the comment period, but as you proceed through this comment period, I would like to make sure you know about those concerns and that you would be

able to take my concerns into consideration as you move through that joint comment process.

Mr. POWELL. We are in the process of reviewing the comments, as you point out.

Mr. LUCAS. Thank you. I have one more note, Mr. Chairman, on the SA-CCR proposal. I understand that the framework would significantly raise the capital requirements for over-the-counter on-margin swaps. As you know, Congress was very explicit in allowing nonfinancial end users to continue trading in the OTC market. We were this explicit in making hedging affordable to the enemies. I am concerned that a significant increase in capital requirements associated with these swaps will make them far more expensive, and this would, of course, frustrate congressional intent.

In particular, it is my understanding that the capital requirements will essentially be high for commodity derivatives, such as those uses to hedge oil and natural gas cost. Where I am from, access to risk-management products for the energy and agriculture sectors are critical, and I want to make sure that we don't come under pressure by way of excessive requirements imposed on those bank counterparties.

Mr. Chairman, I have spent a lot of time on these issues, as you know, and I would very much appreciate it if you would be willing to bear these concerns in mind, which are shared by the end-user community as we move forward. I have always found you would be a practical person, and I like to think that I use my time and efforts to address practical issues that impact not only my economy back home in Oklahoma but the whole country.

And, with that, unless you have a thought, Mr. Chairman, I will yield back the balance of my time.

Mr. POWELL. Thanks.

Mr. LUCAS. I yield back, Madam Chairwoman.

Chairwoman WATERS. Thank you very much.

Mr. Sherman, the gentleman from California, is recognized for 5 minutes.

Mr. SHERMAN. First, in responding to the ranking member, I think it is important that Fannie and Freddie continue to be what they have become, perhaps accidentally, and that is Federal Government agencies. We need a Federal backstop in terms of credit risk, but never again should we have a semi-public, semi-private agency where taxpayers take the risk and shareholders try to reap the profit.

Mr. Chairman, I appreciate your patience on not raising rates. You have a twin mandate, but I am going to ask you to also consider an additional factor, not as important as your twin mandate, and that is the profit that you create is a byproduct of your efforts, at times turning over to the Treasury as much as $100 billion or nearly $100 billion in a single year.

And I want you, in your decisions, to reflect on the fact that that is not just a dry accounting entry. It is life and death. We have limited amounts of money that we can spend here in Congress on cancer research, on body armor for our troops and research to make it better, on opioid programs.

So people will live or die based upon whether you are able, as you have in the past, to turn over nearly $100 billion of unintended

profit. And I realize that it is not your mandate, but it is life and death.

We talked at another meeting about wire transfer fraud, and I will get you some background material on that. But I do want to just focus the committee on the fact that people are being tricked through the internet to wire their funds into a particular numbered account thinking they are sending the money to, say, the person they are buying a house from, and instead, it is going somewhere else. So, if we have a confirmation of payee system like the British, we can avoid much of that.

As to your balance sheet shrinkage, that diminishes your profit that you can turn over. It also, as you sell off or allow to run off your mortgage-backed securities, you are raising mortgage costs for people.

Your testimony said that we have a good job market. It is not good until there is a labor shortage that drives wages up to make up for the 20 years of stagnant wages that we have had over the last 2 decades. So I hope you would aspire for more than just a 4-percent unemployment rate.

I do have a question for you here, and that is, in your statement you comment on the Federal debt. You say the Federal Government debt is on an unsustainable path. Of course, fiscal policy is outside your purview but it affects what you do.

We also have a trade deficit, about a half a trillion dollars a year, kind of similar in size to the budget deficit. And so every year we borrow another half trillion dollars to finance that as a country borrowing from abroad. I wonder if you could say that the U.S. trade deficit of over half a trillion dollars a year is on an unsustainable path?

Mr. POWELL. Yes, I mean, I don't think I would say that. The current account deficit is really set by the difference between savings and investment. And the reason the Federal budget is on an unsustainable path is that the debt as a percentage of GDP is at a high level, but much more important than that, it is growing faster than GDP. So debt cannot grow faster than GDP forever, whereas I don't know that I would say that about the current account balance.

Mr. SHERMAN. The accumulated trade deficit where every year we borrow over half a trillion dollars just adds to our foreign debt.

But I want to go on. Some of my colleagues find these hearings kind of dry and so they have urged me to spice things up by asking an accounting principles question. We have CECL, the proposal for the current expected credit loss system, being proposed by FASB. The effect of this may be to increase reserves, but you and the other bank regulators are supposed to determine the size of reserves. We shouldn't increase or decrease reserves because of an esoteric accounting theory discussion which has gone awry.

And so I wonder whether you believe that we should make this major accounting change for banks that will deter, lending particularly in economic downturns, without a quantitative impact study. Have you had a chance to look at this issue and how it will affect the banks that you regulate?

Mr. POWELL. Yes. So we don't think that it will have that effect, but we will be watching carefully. And, we will be looking at this,

and it has really been under discussion for a decade now. It is a decision that FASB made and that we are just implementing. And if we find that it does have effects like that, then we will take appropriate action.

Mr. SHERMAN. Thank you.

Chairwoman WATERS. Thank you very much. The gentleman's time has expired.

The gentleman from Florida, Mr. Posey, is now recognized for 5 minutes.

Mr. POSEY. Thank you very much, Madam Chairwoman, and Mr. Ranking Member, for holding this hearing.

And, Chairman Powell, thank you for being here to present your semiannual report. I would like to think that everyone in this room at one level or another is enjoying the success that we are seeing continue in this country right now. And I want to thank you for the contributions that you have made to that.

It is also great to have a Chairman here who answers questions so directly, and we appreciate that.

I saw recently some trends in banking indicating that, since 2008, we have seen a decline in the number of FDIC-insured banks of about 38 percent, from 7,870 banks to 4,909 banks on the spreadsheet that I saw.

Over the same period of time, assets grew by 80 percent, from $10 trillion to $18 trillion. Mergers have been going on at a very brisk pace, as you are no doubt aware. And I would like you to share what your research shows about the economic implications of increasing concentration in the banking industry and how that might restrict or perhaps enhance the availability of credit to those who take the risk on investments to grow our economy.

Mr. POWELL. Thank you. The number of banks has been decreasing pretty steadily now for more than 30 years. I remember 14,000 was the number, I think, when I was in the government 25—30 years ago. And it is a range of factors. It is people leaving rural areas. It is also allowing interstate banking and things like that. But for whatever reason, you have seen a long-run process.

Now, we know that when a small bank goes out of business in a rural county or a small town, that is not a good thing. And that is bad for the country. It is bad for that town, bad for the social fabric. So we try not to add to the problems of community banks through excessive regulatory burden. We try to be mindful of their important role in society.

Actually, the number of mergers last year, 2018, was the lowest in quite a long time. I asked the staff to go back and look. It is the lowest in at least 15 years. So mergers and consolidation are actually at a pretty low level.

The last thing I will say is I think we need banks of all different sizes. We need small banks. We need banks across the spectrum at different business models serving different communities. We want a diverse ecosystem of banks out there to have a healthy economy.

Mr. POSEY. Okay, related to that same question, could you share the criteria that the Fed uses in evaluating bank merger applications?

Mr. POWELL. I would be glad to. It is quite detailed. There is a Federal Reserve Act section that lays out a lot of detail, and there is also plenty of guidance on that issue. Actually, I have a picture of it here. So we look at competitive factors, banking community factors, managerial resources.

We look at compliance with consumer and fair lending laws and CRA record and that kind of thing. We look at the combined financials, of course, of the two companies. We also invite public comment. We have a pretty thorough, carefully worked out process. We go through this process carefully for mergers and look at all those factors and then make a decision.

Mr. POSEY. Okay. Thank you very much.

I wasn't going to dwell in this realm until we had a series of slides up here overhead and somebody else mentioned Fannie and Freddie. And so I am curious if you could give us an update on the amount of tax dollars that have been spent to date on defending the crooks who mismanaged Fannie and Freddie and nearly bankrupted the whole operation.

The last time we got a report, I am thinking it was about 8 years ago, that we had already spent over $600 million of taxpayer dollars defending these guys from stockholder suits. Can you give us an update on that?

Mr. POWELL. I don't actually have an update on that for you. I can check into that, though.

Mr. POSEY. I know. Okay. If you would communicate that to us, I would appreciate it very much. And I yield back the balance of my time. Thank you.

Chairwoman WATERS. Thank you very much. The gentleman from New York, Mr. Meeks, is recognized for 5 minutes.

Mr. MEEKS. Thank you, Madam Chairwoman.

Good morning, Mr. Chairman.

Mr. POWELL. Good morning.

Mr. MEEKS. Let me ask you a question. There was a study that was done by the New York Fed that found that Americans are borrowing more for cars while borrowing less for houses. And the reason why the statistic caught my eye is because of my strong belief in home ownership and that it is the best value for low- and moderate-income households to build wealth over a long period of time.

And I often have said I would want individuals to rent the car and own the home as opposed to owning the car and renting the home. And in a separate report, the Federal Reserve described a link between rising student debt and an acute decline in home ownership, particularly among young Americans.

So my question is, what does declining home ownership rates, especially among young people saddled with student debt, say about the overall health of the United States economy?

Mr. POWELL. I think the overall household picture of debt, if I can start with that, is basically a healthy one. There are a couple of areas of concern. And you touched on the main one, which I think is student debt. And there is a growing body of research that shows that students who borrow for their education and wind up not getting the kind of value they thought they would get so that their incomes are lower than they expected, can't pay the debt back. That debt can hang over their economic and personal lives

for many years, meaning lower levels of home ownership and other sort of measures of economic success. So we are seeing more and more evidence of that as student debt grows.

Mr. MEEKS. And on I guess a different column the same way, you have identified that debt is also high among low-rated or unrated nonfinancial firms, and that underwriting has deteriorated in lending to highly indebted businesses. I am switching from the individual to the business, this leveraged lending. And obviously, we want to encourage prudent lending to American businesses, even those with existing debt, but I don't want to go back to 2008.

So does the Fed believe that increased credit risk in the leveraged loan market poses systemic vulnerabilities, particularly in the event of an economic downturn?

Mr. POWELL. This is an important supervisory focus. And the headline answer to your question is we don't believe it poses systemic kinds of risks, but we do think it poses a macroeconomic risk, particularly in the event of an economic downturn. These are companies that have borrowed in good times and borrowed high amounts of debt. And if there is a downturn, they will be less able to carry out their roles in the economy and that may have an amplification effect on a downturn.

Our supervision of banks indicates that the banks do not have excessively high exposures to these highly leveraged nonfinancial corporations and also don't have excessively large pipelines of commitments that they have made. Those are two things that they did have before the financial crisis that they don't have now.

So the actual—the banks—and that is our window into this is largely through bank supervision. The banks have really changed the way they manage their involvement in this business in a way that puts the risk out in the holder's hands rather than the bank's hands.

Mr. MEEKS. So we tried to—and we came up with Dodd-Frank to deal with the mortgage crisis back in 2008. And we try to make sure that we are now watching with reference to living wills and other things to prevent—do you think we are prepared and we have enough regulators are watching closely enough so that we can avoid leveraged lending ending up being the next bubble that bursts and that causes us to have the same kind of financial crisis that we had in 2008?

Mr. POWELL. Yes. I think our financial system is so much better capitalized and has so much more liquidity. It has a better sense of its risks and a better ability to manage those risks. Stress tests require banks to take a forward-looking—particularly the largest banks—assessment of their capital adequacy. They have also done resolution planning.

So our banking system is so much more resilient and so much stronger than it was before the financial crisis, so that it should be able to withstand the kinds of shocks that we are talking about.

If there were, for example, unexpectedly high credit losses among nonfinancial corporates, then yes, the banks should have plenty of capital and liquidity to absorb those losses. It doesn't mean there wouldn't be disruptions and losses, because there would be in the economy, but it would not be, we don't think, the kind of thing that we saw in 2008.

Mr. MEEKS. So, by and large, Dodd-Frank did a lot to help us, and there may be other avenues that I think that we may need to include therein to continue to protect ourselves. Is that correct?

Mr. POWELL. I think Dodd-Frank and the whole broader regulatory program, which went way beyond Dodd-Frank, did serve its purpose in strengthening our financial system, yes.

Chairwoman WATERS. The gentleman from Missouri, Mr. Luetkemeyer, is recognized for 5 minutes.

Mr. LUETKEMEYER. Thank you, Madam Chairwoman.

Chairman Powell, welcome. It's good to see you again. Before I get to my questions, I would like to bring up one issue related to guidance. I have consistently fought to ensure that the difference between guidance and rule is clear. You and I have had a number of conversations on this, in fact, in this committee before.

However, just last week I saw a letter from Senators Tillis and Crapo to the Comptroller General regarding the Large Institution Supervision Coordinating Committee (LISCC). From reading this letter, it appears that the Fed, throughout the Obama Administration, created a regulatory and advisory regime that forced banks to meet numerous requirements related to liquidity and capital without going through the rule-making process. If this is true, the Fed has to take a second look at the guidance issued in relation to LISCC and ensure that the proper rule-making process is followed.

I just want to give you a heads-up. I am going to be watching this issue very carefully and I appreciate your attention to this matter.

With regards to my good colleague from Oklahoma, Mr. Lucas, I just want to add my thoughts to his with regard to inter-affiliate margin. This is also an issue I want to watch very carefully, and I want to watch your actions. I think it is important that we take action on this issue. So I am looking forward to working with you on that as well.

The issue that is of most concern to me this morning is CECL. We talked about this a number of times earlier this morning with a number of my colleagues. There seems to be a growing concern from more and more, not only bankers but consumers, whether it is the realtors, the mortgage bankers, the Chamber, the home builders, as they begin to understand the costs that are associated with this.

I know you indicated a minute ago that you didn't think it is going to have much effect, but, my colleague across the aisle a minute ago said that she is not concerned about how it is going to affect banks. So I am desperately and very, very concerned about how it is going to affect banks, because how it affects banks is going to affect consumers.

If banks have to raise their cost of being able to make a loan, that is going to cause people to no longer have the ability to have home loans. We had in this committee back in December home builders testify that for every thousand dollars worth of increased cost, it deprives 100,000 people people across this country of the opportunity to have a home loan. And, of course, those are going to be the low- to moderate-income folks. This is very concerning to me.

And when you look at the banks having to either pass that cost along or eat it and, therefore, ensure that they spread the cost out against other costs, other incomes they have, or they just curtail their lending activities altogether, which in some cases has happened. In my district, I have banks that no longer make home loans because of increased cost.

So I guess my question to you this morning, Mr. Chairman, is, this to me is going to have a devastating effect on the home lending market, especially when you start to talk about the GSEs. And when we start having a dramatic effect on the government-sponsored enterprises (GSEs), which no longer have—if we lose 100,000 homeowners, that is going to affect the economy. You already talked about the building that is not going to go on, about all the sales of materials that are not going to go on. This is going to have a devastating effect on our economy, which is directly in your purview.

So in conversations with Chairman Otting, who now oversees Freddie and Fannie, he gave me some figures, which I am trying to get him to verify in a written letter request that are going to be out of this world of how he is going to have to reserve for this and have to pass those costs along.

So can you tell me, from just this conversation I am having here with you, what your thoughts would be along those lines? Would you have concerns about the GSEs having to pass those costs along and the inability of consumers to have access to credit as a result of that?

Mr. POWELL. Sorry. Were you tying that back to CECL?

Mr. LUETKEMEYER. Yes.

Mr. POWELL. You are, okay. Well, yes, I think we know that regulation does have a cost and that is why we try to make it as efficient as we can and no more burdensome than it needs to be.

Again, I think on CECL, we have tried—we put a lot of resources toward trying to understand how it will affect the behavior of banks, and we are going to be watching that very carefully. Again, for our banks, we have allowed a 3-year phase-in that doesn't even start until next year. So we are going to be seeing it coming in gradually, and we are going to be watching very carefully to see whether these effects happen.

Mr. LUETKEMEYER. Well, I know in talking with banks from Wall Street to Main Street, especially small guys, nobody likes this rule. And it is going to be—and to me, what was told by FASB is the original reason for it was to have better transparency, understanding risk on the balance sheet with regards to home loans. But if you are an investor investing in a limitly held bank or a credit union or a a single individual owning a bank, there is no need for this sort of risk exposure and, therefore, it is unnecessary.

So I am very concerned about this and, as I said, there is a growing groundswell of concern out there and I hope that you take this into consideration.

I yield back.

Chairwoman WATERS. The gentleman from Texas, Mr. Green, is recognized for 5 minutes.

Mr. GREEN. Thank you, Madam Chairwoman. And I thank Chairman Powell for being here with us today. I am honored to be in your company again.

I have great respect for your intellectual prowess. And I say this because you have had to deal with a level of inanity that most Fed Chairs don't have to deal with. I would like for you to hear now the words of the President of the United States. He indicated, "I am doing deals and I am not being accommodated by the Fed." That would be you. "I am not happy with the Fed. They are making mistakes because I have a gut and my gut tells me more sometimes than anybody's brain can ever tell me."

You have access to some of the greatest minds in the world. You do research. I assume that when you are setting the Federal funds rate that you rely on that research and not on the President's gut. I assume that you do this because you understand the impact that it can have on the economy. And I would just like for the record, would you indicate that you do have the level of research necessary to make these decisions without the benefit of the President's gut?

Mr. POWELL. I think we have quite adequate resources at the Fed. We have terrific people, and we have a very strong culture more than anything, which is a culture of commitment to making these decisions for the benefit of all Americans, based on our best thinking, diverse perspectives, and without considering political factors. That is our culture, and it is a strong one.

Mr. GREEN. Thank you. And you do quite a bit of research in various and sundry areas. You have done research in terms of African-American unemployment, unemployment of teenagers. Is that a fair statement?

Mr. POWELL. Oh, yes, quite a bit.

Mr. GREEN. I would like to ask you, if I may, if the stock market is a fair acid test for the health of the economy? Should we rely solely on the stock market? It seems that the President does.

Mr. POWELL. We, of course, look at a wide range of financial conditions, credit market conditions. The stock market is one of many factors.

Mr. GREEN. One of many, but not the sole factor?

Mr. POWELL. No. It is simply one of many.

Mr. GREEN. Not the one that supercedes others?

Mr. POWELL. No. It is one of many.

Mr. GREEN. One of many. Why is it so important for the Fed to be independent?

Mr. POWELL. I think it is important because you have given us an important job, which is to achieve maximum employment and stable prices, and we need to do that in a way that is strictly nonpolitical. You have given us long terms. You have given us protection from sort of shorter-term political considerations, and you have kind of ordered us to do our business that way. And the record is that central banks that are independent, that have a degree of independence from the rest of the government do a better job at serving the general public.

Mr. GREEN. Would it also have a little bit to do with the fact that you want people to rely on what you do and you want people to assume that what you do is not predicated upon the whims of some political personality?

Mr. POWELL. It is very important that the public understand who we are and how we do our business, which is strictly nonpolitical and based on the best thinking we can muster.

Mr. GREEN. Now, let me get to the question that I really wanted to ask, and it is this: Invidious discrimination. You have done many studies. You have acknowledged it. You have acknowledged that you have some of the best minds in the world. I want you, Mr. Powell, to do a study to determine the impact that invidious discrimination—that would be racism; sexism; homophobia; Nativism; anti-Semitism—has on the economy. This is a question that will help us to better assure that you can meet the mandates that have been accorded you.

It is unfortunate that we try our best to change the circumstance, but we have been doing it without the benefit of this intelligence. How soon do you think you can help me with this intelligence, please?

Mr. POWELL. I will speak to some of my research colleagues and get back to you. I will get back to you quickly.

Mr. GREEN. I will look forward to hearing from you. Thank you.

Mr. POWELL. Great. Thank you.

Chairwoman WATERS. Thank you. The gentleman from Michigan, Mr. Huizenga, is recognized for 5 minutes.

Mr. HUIZENGA. Thank you, Madam Chairwoman.

And, Chair Powell, it is good seeing you here today. I have four areas I want to quickly go over: the Volcker Rule; options, specifically exchange listed options; a Fed inflation target increase discussion, if at all possible; and then workforce participation that you had brought up in your opening statement.

First on the Volcker Rule, as ranking member of the Capital Markets Subcommittee, I have been very concerned about the Volcker Rule and how the rule has been detrimental to U.S. capital markets. And last October, myself, Chairman Luetkemeyer and Chairman Hensarling at the time sent you a letter dated October 16th. I don't believe we have actually received a response as of yet.

But in this, it was concerning, we raised concerns that the Volcker Rule unnecessarily restricts a bank's ability to make long-term investments in small businesses as a result of the covered funds provisions. And as you know, such funds provide the same type of financing that a bank is authorized to do on its own balance sheet, but the Volcker Rule prohibits a bank from performing this activity through fund structures.

Previously, you have recognized that a bank's long-term investments in covered funds generally do not threaten safety and soundness, and said regulators would look for ways to encourage this important activity within the language and intent of the statute.

Now, the letter was addressed to Secretary Mnuchin, yourself, Chair Clayton, Comptroller Otting, Chair McWilliams, and Chair Giancarlo at the time—this has been referred to at various times as the "five-headed hydra,"—and I am wondering when you are planning to address this issue?

Mr. POWELL. I think we received quite extensive comments on that proposal, and you mentioned the covered funds part of it. I will just say we are looking carefully at ways to address some of

the concerns that were raised on that and also on the accounting part.

Mr. HUIZENGA. How quickly can we expect clarity?

Mr. POWELL. I don't have a date for you, but I can get you a better sense of that quickly and get back to your office.

Mr. HUIZENGA. That would be helpful.

And last May, the Federal Reserve issued a proposal that would focus compliance and application of the Volcker Rule on the size of a banking firm's market trading business rather than on the size of the bank's assets. The two are not always the same, as we know. And when do you envision finalizing that proposed tailoring rule?

Mr. POWELL. This is S.2155? That one, so, again, we have comments. I think we have a dozen rules out for comment and back.

Mr. HUIZENGA. That was last May that you issued a proposal.

Mr. POWELL. If you are talking about the overall tailoring proposal or are you talking about—this isn't the Volcker Rule. This is the Volcker part of the—

Mr. HUIZENGA. Correct. It is dealing with the size of the firm's trading business rather than the size of its assets.

Mr. POWELL. I will get back to you with a time.

Mr. HUIZENGA. Okay, I would appreciate that.

Options. As you know, for the centrally cleared exchange listed options market, the Current Exposure Method has negatively impacted liquidity and has increased cost to customers. Last Congress, the Options Market Stability Act received unanimous support. And I know America doesn't believe us when we actually say we can agree on something on occasion, but I believe it would have solved some of these issues.

Thankfully, the Federal Reserve, along with the OCC and the FDIC, issued a proposal in October of last year to replace the Current Exposure Method proposed for purposes of exchange-listed options with a more risk-sensitive methodology to be applied, known as the standardized approach for calculating counterparty risk.

Can you indicate when the banking agencies intend to finalize this rulemaking?

Mr. POWELL. I know that is another one for which we have comments out. I think that is coming soon. I will get back to you with a particular date.

Mr. HUIZENGA. All right. I am looking forward to that. It sounds like we are going to have a long meeting after this one.

In my remaining minute here, the Fed inflation target increase—and by the way, the dual mandate has been brought up, and I have never quite understood why it is called the "dual mandate" when it says, "from 1977, Congress mandated that the Fed, promote effectively the goals of maximum employment, stable prices, and moderate long-term interest rates." We somehow forget that third part all the time when we have this discussion.

But last week, news reports indicated that the Fed may be considering a higher inflation target rather than the 2-percent that has been adopted, not mandated but adopted. And I am concerned that the Fed, frankly, is going to be rushing into some new approaches when we are not necessarily understanding what we are living with right now. And I wonder if you can comment on that.

Mr. POWELL. We are not looking at a higher inflation target, full stop.

Mr. HUIZENGA. Okay, excellent.

Mr. POWELL. What we are looking at is a way to more credibly achieve our existing symmetric—

Mr. HUIZENGA. Two percent.

Mr. POWELL. A 2 percent inflation target.

Mr. HUIZENGA. Great. And then, in the remaining seconds, why is the labor participation rate for "prime age workers," as you had said in your opening statement, falling? We are seeing older workers, those labor rate increasing, but seeing prime age.

Mr. POWELL. That is a longer conversation and a really important one. And I think it is a range of things. It is people who—it is largely in younger workers. It has to do with globalization. It has to do with technology. It has to do with the opioid crisis. It has to do with the flattening out of U.S. educational attainment over the years. So this is an incredibly important issue, and I would love to talk more about it, but—

Mr. HUIZENGA. I look forward to our next meeting.

Mr. POWELL. Thanks.

Chairwoman WATERS. The gentleman from Missouri, Mr. Cleaver, is recognized for 5 minutes.

Mr. CLEAVER. Thank you, Madam Chairwoman.

Mr. Chairman, I think at this very moment, the U.S. Trade Representative is testifying before the Ways and Means Committee. And one of the issues they are going to raise is U.S.-China trade issues. And according to the U.S. Trade Representative, in 2016, about 85,000 workers in Missouri were employed because of our trade. That trade is very critical because of the employment. And then, in 2017, the Trade Representative reported that about $14 billion a year in agricultural exports actually promoted the employment situation in Missouri, 85,000 jobs.

I don't want you to get into policy, but how do you weigh the uncertainty in trade with the Fed actually trying to create healthy monetary policy?

Mr. POWELL. So, as you know, we have this thing called the Beige Book, where we accumulate the comments of our vast array of economic and other contacts around the country. And really for the last year or so, a principal feature of those comments has been uncertainty around trade. We have companies say that they are concerned about higher prices, because they are importing materials as part of their product. And some of them saying that they are delaying investments of various kinds and hiring of various kinds. We can't really see through to what the effect of it is. Probably at the aggregate level, it is not big. Individual companies, of course, can be very much affected.

So there is a lot of uncertainty out there, and it would be good to have trade issues resolved. That said, of course we don't have a role in trade.

Mr. CLEAVER. Right.

Mr. POWELL. We don't advise the Administration, and we don't comment on particular policies, as you indicated.

Mr. CLEAVER. That $14 billion that comes into our State to support these jobs, much of that comes from my congressional district.

Saline County, for example, is one of the top spots in the nation for the export of beans to China. And the farmers are—just to—actually what you just said, the farmers, some of them are even saying, "Maybe we should just leave our beans in the ground. Why go through the whole process?"

And even though they have been getting a little compensation from the Federal Government, they are saying, "We want trade, not aid."

And so there is a serious issue.

But the U.S. deficit and fiscal concerns as it relates to the tax bill are something that you have heard us speak about. And, again, I want to try to ask a question so that it doesn't require you to get into policy. But it would be interesting to know what the economic impact of the tax package has been and may continue to impact our economy. Is there any data available that would give us an idea about that impact of the tax package?

Mr. POWELL. I think CBO would be the best source to sort of score what is happening to the economy from a particular law. We look at the aggregate economy and the effects of the tax package are mixed in with everything else that is happening, from our standpoint.

Mr. CLEAVER. Okay. So the Fed wouldn't speak to that?

Mr. POWELL. We had estimates, but with a $20 trillion economy, we don't spend a lot of time trying to look back. That is really not what we do. We made estimates at the beginning, and I think we have adjusted them along the way.

Mr. CLEAVER. Thank you, Mr. Chairman.

Thank you, Madam Chairwoman.

Chairwoman WATERS. Thank you very much.

The gentleman from Wisconsin, Mr. Duffy, is recognized for 5 minutes.

Mr. DUFFY. Thank you, Madam Chairwoman.

Welcome, Mr. Chairman, it's good to see you. Just a quick question on insurance before we go to other topics. I think you have indicated that the U.S. insurance regulatory model has provided for strong solvency, our insurance companies are well-capitalized, but now the IAIS is developing a new international capital regime. I think your colleague, Mr. Quarles, indicated that it would be a challenge for us to implement that new regime in the United States.

And so my question for you is, as you are part of these negotiations, is the U.S. going to agree to a new insurance capital set of regulations, or are we going to provide some pushback and try to get formal recognition of our U.S.-based model?

Mr. POWELL. My understanding is that we are working with that group internationally to make sure that whatever they do adopt in the end works for our system, which we think is a good system. So we are, of course, not going to implement something that doesn't work for us. And we are working with that international group to make sure that what is ultimately adopted does work for us.

Mr. DUFFY. Okay, fair enough. In 2018, you said the U.S. GDP growth was what?

Mr. POWELL. It looks like it is just a tiny bit under 3 percent. It might turn out being 3 percent. It might be 2.9 percent.

Mr. DUFFY. Pretty good. When is the last time we hit 3 percent growth for a year?

Mr. POWELL. 2006, I believe.

Mr. DUFFY. 2006. So it has been over 10 years.

Mr. POWELL. Twelve years.

Mr. DUFFY. I think some other people had indicated that the U.S. economy could never hit 3 percent again. What happened? Why are we hitting 3 percent? We are pretty long into this recovery, right? This is one of the longest expansions that we have had since the Great Depression. Fair enough?

Mr. POWELL. It is one of the longest in U.S. history.

Mr. DUFFY. So, at the end of the expansion, you should see this petering out, but you didn't. You have actually seen some of the highest growth in the whole expansion in over 12 years. What happened?

Mr. POWELL. Well, it was a good year. There are a lot of things that happened.

Mr. DUFFY. I know it was a good year. What happened?

Mr. POWELL. Well, a lot of things did. And I think that the tax cuts and spending increases, the fiscal package certainly supported demand in a meaningful way.

Mr. DUFFY. So lower taxes actually contributed to growth?

Mr. POWELL. Yes, they supported demand. I think the real hope, though, would be that there would be supply side effects over time. And that is something we hope will be big, but that takes longer. It takes more time to work its way through the system.

Mr. DUFFY. And so tax cuts have contributed to 3 percent growth. Has any kind of regulatory reform from the Administration helped with that growth as well?

Mr. POWELL. It is really hard to isolate that. That is a question that people really struggle with. The way I think about it is we really don't want regulation to be any more costly or burdensome than it needs to be to get the job done.

Mr. DUFFY. And so 3 percent growth. And did you make some commentary about the unemployment rates of whites, Latinos, and African Americans?

Mr. POWELL. I did.

Mr. DUFFY. What are they? Is unemployment higher today, or is it lower for those individuals?

Mr. POWELL. I think for Blacks and Latinos and Latinas, we are at historic lows, since the data haven't been kept for more than the last 40, 50 years. You are near historic lows there.

Mr. DUFFY. So, more people are working. And if we want to look at all of the races, everyone is working more, right?

Mr. POWELL. Yes. The labor market is very healthy.

Mr. DUFFY. Very healthy. And their wages, did you testify was what? Their wages are going down or their wages are going up?

Mr. POWELL. Wages have been moving up nicely in the last year or so.

Mr. DUFFY. They are making more money, right?

Mr. POWELL. Particularly for people at the lower end of the labor force.

Mr. DUFFY. So more people are working. More people are making more money. And more people I think you indicated with the lower

education or lower skill sets are making more money. Is that correct?

Mr. POWELL. Yes, that is right.

Mr. DUFFY. So I find it fascinating that some of my colleagues across the aisle bash the tax cuts. They bash the President and the economic policies that have come from this Administration and a Republican Congress. But the net end result has been that more people work, more people make more money. The economy grows at 3 percent.

And when all those great things are happening for all of these Americans, no matter whether you are a Republican or a Democrat, whether you are African American, you are white, you are Hispanic, you are Latino, everybody is doing better under these policies, but all the same, my friends across the aisle try to tap me down as they also bash the President on policies that have helped every single American. I think that is shameful.

I yield back.

Chairwoman WATERS. Thank you.

The gentleman from Illinois, Mr. Foster, is recognized for 5 minutes.

Mr. FOSTER. Thank you, Madam Chairwoman.

And along the same vein, I think if you look at figure 1 in the report that you gave us, you look at the rate of job creation. And I think it is remarkable how constant it has been, with no visible change as a result of any of the policies of the last 2 years, and I think that is the relevant observation there.

Now, this Saturday, March 2nd, the currently suspended debt limit, ceiling on the debt limit is going to come back into effect unless we pass legislation or do something about it. Now, we have some runway on various extraordinary measures that can be done by the Treasury and others.

Do you have a feeling, first off, on how much runway we have before Congress has to deal with the debt limit, and can you say a little bit about what the implications of defaulting on that would be?

Mr. POWELL. I think that there is real uncertainty about when the actual date that the government will run out of cash and not be able to pay all bills when they are due will come, but it will be later this year. It could be late in the summer. It could be in the fall. I think it remains to be seen at this point.

And, I think the main thing is we have never failed to pay all of our bills when and as due, and I think that can never happen. That is just not something we can allow to happen. I think our credit rating and our credit as a country is such an important asset that we need to stop short of letting that happen. I think it could have very hard to predict but possibly quite bad consequences if we were to default on our payments.

Mr. FOSTER. In the past, when we have come close to defaulting and sort of walked up to the cliff on that, what have been the effects to markets, credit ratings, what were the implications for the general economy? Any way to quantify that?

Mr. POWELL. It's very, very hard to quantify it. I know, in 2011, we were downgraded as a consequence of this. And I know that fi-

nancing costs went up for a period right at the height of the crisis, and there was significant cost imposed on the taxpayer for that.

Mr. FOSTER. Now, a few days ago, the President proudly announced that he had reached a currency manipulation deal with China, which I understand you indicated you consult with the Administration on this. Have you been told what that deal is? Has the Federal Reserve been informed?

Mr. POWELL. I think our staff is—basically, our point is—we don't handle currency. That is really the Treasury's job. The thing that is our concern is that we be allowed to conduct monetary policy with a free hand.

Mr. FOSTER. But have you been informed of what that deal is?

Mr. POWELL. At the staff level, I think people are in contact and made sure that that limited interest has been addressed.

Mr. FOSTER. Was that a yes or no or—

Mr. POWELL. Yes.

Mr. FOSTER. So you have been informed. So people in the Fed know what that deal is, although I understand you might not—

Mr. POWELL. As it relates to our interest, I believe so, yes.

Mr. FOSTER. Okay. Are there other tail risks that you think we should be worrying about, things like hard Brexit? What are your top few sources of tail risk that you think we should be thinking about in Congress?

Mr. POWELL. I think the outlook for the U.S. economy is a positive one. And I think that I would start with slowing global growth. We have seen global growth, particularly in China and Europe, through the course of 2018 and right into 2019. Growth in 2017 was a real tailwind for the United States economy. It was synchronized global growth around the world.

As the global economy slows outside the United States, it becomes a headwind. So we are feeling that. Brexit is just an event, and it may pass without much implication for the United States, but it is unprecedented and so it is hard to say exactly what the implications—of course, we are monitoring it very carefully.

Mr. FOSTER. Now, late last year, the comment period closed on considerations you had for developing a real-time interbank settlement system. And can you say a little bit about—just give us an update on what your current thoughts are on that, the schedule we might be looking at?

Mr. POWELL. Yes. We put this proposal out for comment. We have gotten a lot of comments. We are reviewing them. And the idea is that central banks can really provide immediate final settlement, real-time payments, and really—

Mr. FOSTER. And some do internationally.

Mr. POWELL. Many do internationally. And the question is, should we take this on? And I think it is a question we have to evaluate under our existing statute, and we will take our time in doing that. We have to conclude that it is economically viable, that we can charge for it in other words, and also that it is something that the private sector can't adequately handle.

So we are going to look at that. We think, clearly, it could support real-time payments, which we think would be a positive thing. On the other hand, it has to work under our statute.

Mr. FOSTER. Thank you.

Mr. POWELL. Thank you.

Mr. FOSTER. I yield back.

Chairwoman WATERS. The gentleman from Ohio, Mr. Stivers, is recognized for 5 minutes.

Mr. STIVERS. Thank you, Madam Chairwoman.

Chairman Powell, thank you for being here. I want to follow up on some questions that the gentleman from Wisconsin, Mr. Duffy, was talking to you about. Obviously, 3 percent economic growth, 4 percent unemployment, real wage growth is growing. It was a pretty good year for the American people and the American worker, correct?

Mr. POWELL. Yes, it was a good year.

Mr. STIVERS. One of the things that you talked about with Mr. Duffy as a result of the tax cuts, one of the things that we would all like to see is some supply-side growth over time. Can you help us understand what that would mean? It would mean capital investment, which would grow productivity and then make the economy grow even faster, correct?

Mr. POWELL. Yes. I think a couple of things. The first would be the one you mentioned, which is if you give more favorable treatment to capital expenditures in the Tax Code, over time you ought to see more capital expenditures. Capital expenditures drive productivity, and productivity is what drives the rising of living standards.

But I think with supply-side initiatives, it takes time. It has to work its way into the thinking of businesses and into the capital stock, and I just think—we hope those effects are large, but we will have to be patient to see them come in. There is also a smaller possible effect in lower tax rates on individuals, which could call forth more labor supply. So these are highly uncertain supply-side effects and they will take longer to emerge, but we hope—

Mr. STIVERS. And can I ask you about the beginning parts of what we are seeing on that? We have seen new people enter the labor market in the last 6 months, who had given up on working or staying in the market and were starting to leave. Isn't that correct?

Mr. POWELL. Yes. The test of—so what we don't know is how much of that is cyclical, in other words, because the labor market is so tight right now.

Mr. STIVERS. And the second question, we have seen capital expenditures go up in the last 6 months, but we have not seen those pay off yet?

Mr. POWELL. Well, we saw—so capital expenditures were very strong in the early part of 2018. They petered out a little bit, and it may be because of—

Mr. STIVERS. But in the total year, they were up, correct?

Mr. POWELL. Yes. And we expect them to continue to be at a healthy level.

Mr. STIVERS. Great. And so hopefully what we have done on tax cuts will continue to pay dividends into the future, but I wanted people to understand how that works.

Second, quickly on monetary policy, it seems that there has been a change in the way that monetary policy has worked. The Federal funds markets for non-GSEs is at a 40-year low of volume. And so

it seems that the interest on excess reserves is getting to be a more important part of what you do. Can you talk about that shift since 2008?

Mr. POWELL. Yes. So pre-crisis, there was a small amount of reserves, and we could manage the Federal funds rate by making relatively small adjustments in the quantity of reserves. In the current era, where the demand for reserves is so high and, frankly, a little bit volatile too, trying to do that, trying to manage scarcity in that kind of a very large pool, we would have to have a very large presence in the markets on an ongoing basis.

We don't think that is a good—that is not something we—so we think—we have decided to continue to use our existing framework, which is to use our administered rate, administered. So the interest on excess reserves is very fundamental for the way we manage our policy now, and it seems to work very well.

Mr. STIVERS. Thank you. Great. And two more quick questions. One is, hopefully you can answer quickly, but there is a new sort of focus on modern monetary theory that says taxes can better fight inflation than monetary policy. Do you have a basic philosophical view of that?

Mr. POWELL. So that aspect of it would be a complete change. I would say the reason why the Fed does that is that we can move quickly with our tools. And to give the legislature that responsibility, in principle, you could do that, but we have a system that has lots of checks and balances.

Mr. STIVERS. So let's assume for a second those two tools work equally. Who can move faster, the Federal Reserve or Congress?

Mr. POWELL. We can move immediately.

Mr. STIVERS. Much faster. Thank you. And that is assuming they are equally effective, which I would argue that monetary policy is far superior as well.

Quickly, one last thing on real-time payments, something you said that I hope you will stay focused on is whether the free market and the private sector can actually provide a real-time payment system, because if they can, there is no need for the Federal Reserve to do it.

Mr. POWELL. That is part of the thing we have to look at under the Monetary Control Act.

Mr. STIVERS. Thank you.

Mr. POWELL. Thank you.

Mr. STIVERS. I yield back the balance of my time, Madam Chairwoman.

Chairwoman WATERS. Thank you.

The gentleman from Washington, Mr. Heck, is recognized for 5 minutes.

Mr. HECK. Thank you, Madam Chairwoman.

Mr. Chairman, I always ask the same question of the Chair of the Federal Reserve Board, which is, when does America get a raise? I may have to revise that slightly, because, obviously, we are beginning to see some evidence of that, which I think is an indication of the full employment objective mandate that you have. So, good job. In fact, I commend you for your hitting the patience button of late.

But I am looking at these payroll gains of, I think you indicated an average of north of 200,000 jobs added every month, and I don't think that yet looks like full employment, month in and month out. And, as Minnesota Fed President Kashkari has noted, the share of income going to labor isn't really reversing its long-term slide.

So, when the FOMC is being patient and watching the data, what are you looking for in the labor market? How much slack do we have left?

Mr. POWELL. We look at a very broad range of indicators. With inflation, we can look at one indicator, and, actually, we think central banks control that. The labor market is different. So we look at the unemployment rate. We also look at labor force participation. We look at wages. We look at job openings. I could go on. There are 20 or 30 things.

Mr. HECK. And how much slack do we have left?

Mr. POWELL. You never know precisely, and you are learning in real time. So I think we have learned from the performance of labor force participation over the last few years and particularly the last year that there are more people out there who will come back into the labor force. And that creates more slack.

Mr. HECK. More slack to come?

Mr. POWELL. We hope so. We don't really know. There is a long-run aging trend in our country by which, you know, my generation is now retiring. And so you are going to have lower labor force participation compared to what you would have had. But the very strong labor market seems to be pulling people in and holding people in from leaving. So it is a very, very positive development. We hope it continues.

Mr. HECK. So, once we get to full employment, the definition of which you will acknowledge has been a moving target on the part of the Fed, are you willing to let wage growth climb to 4 percent, either to begin to recover some of the decline that we have experienced over labor's share of income or, alternatively, an idea that I don't think is discussed often enough, to see if tight labor markets themselves can improve or boost productivity? Are you willing to let wage growth hit 4 percent?

Mr. POWELL. We are really targeting price inflation, not wage inflation. So, wages should equal to it in the aggregate.

Mr. HECK. Okay.

Mr. POWELL. Inflation plus productivity.

Mr. HECK. As a follow-up, I have a couple of charts. Do we have them? These are your two mandates, obviously, full employment and price stability. You referenced the price stability. My second slide focuses just on it. So can we go to the second slide or not? The second slide. I am burning daylight. Evidently, we can't go to the second slide.

This shows the record over the last 25 years with respect to the Fed's price stability target of 2 percent. I think what is important to note is that we have underperformed 85 months versus overheating 2 months—213 months within a half a percent of target, and good on you for that as well. But, clearly, the long-term record of the Fed has been to underperform.

So there is a relationship between wage growth and price stability. And on the issue of price stability, the Fed has been under-

performing way more, a multiple of I don't know how many, than overheating. And this speaks, obviously, to the issue of, when are we going to get wage growth that begins to compensate for years and years of decline?

I know you are engaged in a healthy exercise to review the tools and communications. Frankly, sir, what I would hope is that it would be taken into account, frankly, some more transparent advancing of the historic record as a means of informing policy going forward because I think this data speaks very clearly that we have a need to place a greater emphasis on wage growth and the factors that it affected.

Thank you, Madam Chairwoman.

Mr. POWELL. If I can just say, you are absolutely right about the inflation data, and I think a number of us have commented on that recently. So I like your charts.

Chairwoman WATERS. Thank you.

The gentleman from Kentucky, Mr. Barr, is recognized for 5 minutes.

Mr. BARR. Chairman Powell, welcome back to the committee. And I will note that when you were first confirmed, you did make a commitment to improve Fed communications. And I want to compliment you and thank you for our conversations. And I think you have fulfilled, by and large, that commitment to improve Fed communications, but I suppose it is my job to hold the Fed accountable and so I am going to press you on a few issues here today, the first of which is the Fed's negative net worth.

The former CEO of the Chicago Federal Home Loan Bank, Alex Pollock, recently observed that the Federal Reserve is insolvent on a mark-to-market basis. You may have read his commentary on this. Pollock's analysis is that, as of the end of September, the Federal Reserve had $66 billion in unrealized losses on its portfolio of long-term mortgage securities and bonds. This equates to 170 percent of the Fed's capital and means that on a mark-to-market basis, the Fed had a net worth of negative $27 billion. If interest rates continue to rise, the unrealized loss will keep getting bigger and the mark-to-market net worth will keep getting more negative.

Chairman Powell, does it matter that the Federal Reserve is insolvent?

Mr. POWELL. No, it doesn't matter at all for any purpose. The unrealized losses have no effect whatsoever on our ability to conduct monetary policy. You will recall that we have been giving close to $100 billion every year in our profits back to the Treasury at the end of the year or during the course of the year.

So, really, in no sense are we functionally insolvent.

Mr. BARR. Does the mark-to-market negative net worth make it more difficult to raise the Federal funds rate?

Mr. POWELL. Absolutely not.

Mr. BARR. Okay. Next question is another discussion on the balance sheet and the balance sheet reduction program. In your testimony, you stated that the Fed had made "substantial progress on reducing reserves" and that the Fed is "prepared to adjust the balance sheet normalization program." This does seem to be a shift from your comments in December when you said you believed that

the runup of the balance sheet has been smooth and has served its purpose, and I don't see us changing that.

I think I heard you explain that banks' demand for reserves have increased, and I recognize that currency has doubled from about $850 billion to $1.7 trillion, but please explain what caused the shift in the Fed's balance sheet reduction plan and give us a better understanding, if you can, of the final destination between the $4 trillion size right now and the $1.7 trillion currency level.

Mr. POWELL. In our November meeting—I should go back another meeting. We began a series of meetings to engage on just this set of issues and what is balance sheet normalization going to look like? And, I didn't want to get ahead of the committee in December. And also, I think the markets became much more sensitive to these issues. They had been pretty insensitive to them for some years.

So the truth is we have now had three consecutive meetings on the balance sheet, and we have worked out, I think, the framework of a plan that we hope to be able to announce soon that will light the way all the way to the end of balance sheet normalization and that will result in the end of asset runoff sometime later this year.

Mr. BARR. Well, thank you, and thanks for that explanation. I would just urge you and your colleagues to remain mindful of the fact that there are critics out there who continue to express concern about the size and the composition of the balance sheet as remaining fairly unconventional and the risk that that could pose.

My final question is related to a regulatory matter, the G-SIB surcharge. In July, I sent a letter with 28 of my colleagues to Vice Chair Quarles regarding the G-SIB surcharge. We expressed our concern in that letter that that surcharge puts U.S. banks at a disadvantage when it comes to international competitiveness. The surcharge is more stringent than the one adopted by the international Basel Committee and was adopted before many of the measures to increase resiliency and resolvability were fully implemented.

Yesterday, before the Senate Banking Committee, you stated that the financial system has much higher capital, much higher liquidity, better risk management, and the stress tests have really helped banks understand managing their risks, and you said that our banking system is strong and resilient.

Given these enhancements to resiliency and resolvability, would it be appropriate to reexamine the calculation of the G-SIB surcharge since it was originally formulated in 2015, prior to the aforementioned improvements?

Mr. POWELL. I think that the overall level of our capital, particularly at the largest firms, is about right. I am open to evidence that there are problems with that. I don't see U.S. banks having difficulty competing, particularly internationally. They seem to be competing very well. They seem to be profitable. Their stock prices seem to be fine.

But in terms of the surcharge in particular, it is one of a bunch of pieces, but I would say the overall level I think is just about right.

Mr. BARR. I appreciate your testimony. Thank you.

Chairwoman WATERS. The gentleman from Illinois, Mr. Casten, is recognized for 5 minutes.

Mr. CASTEN. Thank you, Madam Chairwoman.

And thank you, Chairman Powell. You mentioned in your introductory remarks that a significant amount of the recent growth we have seen is due to consumer spending and business investment, and I would like to focus on the second of those and specifically on the impact of energy prices. I want to read a couple of quotes from you in a recent article.

The chief economist at UBS Securities has said that the increase in oil prices was responsible for much of the rebound in fixed investment in 2017, noting specifically how oil and gas shale plays now make us very dependent on the price of oil to drive U.S. fixed investment. Alexander Arnon of the Penn Wharton Budget Model has gone further, to say that firmer oil prices "accounted for almost all of the growth in investment in 2018." The article goes on to mention how several of the Fed offices have been concerned with the softening of oil prices and what it reflects.

The first question is, do you agree that the rise in oil prices over the prior year and a half have been a meaningful contributor to capital investment in the United States?

Mr. POWELL. Yes. As oil prices go up, that makes it more economic for more drilling and you see more capital expenditure (CapEx.) I don't know that it accounts for—certainly, that was very much the case in 2017. I would want to go back and look at 2018. I thought that CapEx went up more broadly in 2018.

Mr. CASTEN. Okay. Well, the oil prices certainly started to fall late last year, I think from $70 and now they are down in the 40s or so, I believe.

You had mentioned in your forward growth forecast that you expect inflation to be lower than planned, in part, because energy costs are down and so you are sort of adjusting for energy there. Does that not apply in reverse, that if we were looking at prior growth being higher, are we treating energy cost fluctuation the same when we look at explanations of prior growth as we are when we are discounting inflation growth going forward because of energy price volatility going the other direction?

Mr. POWELL. I'm sorry; I didn't get your question. Say that again?

Mr. CASTEN. So, if I understood your commentary correctly, you were saying that going forward, inflation is going to be below target, but that is largely driven by energy. And if I am following what is written here, the prior growth was driven in part by energy prices being more positive.

So are we treating the impact of energy prices on the economy the same in a positive direction as we are in a negative direction?

Mr. POWELL. Yes. Yes, we are. Sorry. So, if oil prices are flat, then they are not adding anything to inflation, and if they grow at 2 percent—so that is why we have core. We obviously exclude energy and food because they are volatile. We look through to the core for that reason.

Mr. CASTEN. Are we also factoring the impact of those prices on business investment?

Mr. POWELL. More broadly, yes, absolutely.

Mr. CASTEN. Madam Chairwoman, I would ask unanimous consent to enter this article into the record.

Chairwoman WATERS. Without objection, it is so ordered.

Mr. CASTEN. My final question is: I just came here from—I am bouncing between two hearings today in the Science Committee about ocean sea level rise and, again, ties to the energy markets. I listened to scientists explain how over the course of the next century and much sooner than that based on current CO2 levels and based on current temperatures, we have very realistic expectations of 3 to 8 feet of sea level rise, with fairly significant impacts on the elimination of coastal communities, the collapse of housing, and significant migration inland.

As we think about financial markets going forward and, in particular, 30-year mortgages, are we factoring that into the value? When I put that question to them, they said that there is going to be a significant diminution of that value long before the houses are flooded because it is going to be pretty obvious what is coming.

My question is, as you think about forward rates and how we think about housing policy in general, how should we be thinking about what at this point is largely inexorable?

Mr. POWELL. It is a good question. So, in our supervision of financial institutions, we do take into account, for example, if you are a bank that is lending, that is in the Gulf area, let's say, and you are subject to climate events—or not climate events, but weather events and natural disasters, then we are going to supervise you to make sure that you have the ability to understand and manage those risks as part of your business. That is how it enters into—that is how this subject enters into our work.

I think in terms of broader macroeconomic consequences, it is hard to do, it because it is such a long run. You are talking about climate change, right?

Mr. CASTEN. My question is the interest rate on a 30-year mortgage in an area that is on the coast and in any reasonable scenario may well be underwater before that mortgage is fully recovered.

Mr. POWELL. Again, we supervise our banks to have them take into account that risk of having—but do we have it exactly right? I am sure we don't.

Mr. CASTEN. Thank you, Chairman Powell.

Chairwoman WATERS. The gentleman from Colorado, Mr. Tipton, is recognized for 5 minutes.

Mr. TIPTON. Thank you.

Chairman Powell, it's good to see you again.

The U.S. Chamber of Commerce released a report last fall that found that bank lending to small businesses has not kept up with the needs of the economy, suggesting small business loans remain down 13 percent from 2008.

The report goes on to point out that several regulatory actions have contributed to the slow growth in small business loans and particularly pinpoints that U.S. regulators have imposed substantially more stringent standards on our largest institutions than what is required under the Basel III international standards.

As a former small business owner out of Colorado, I can testify that the ability of a small business to be able to access capital is vital not only in my district but nationwide. As you have acknowledged, the banking system today is well-capitalized and highly liquid, and there have been significant improvements to the risk management and resolvability.

Given that, wouldn't it be appropriate to recalibrate some of the international standards that have been gold-plated in the U.S. so that the excess capital tied up by those regulations can be deployed back into the economy to support small businesses and/or consumers?

Mr. POWELL. As I mentioned, I think that the capital levels we have in our banks are about right, and I am open to evidence that that is not the case. But I do see our banks competing successfully and being profitable and also being resilient to the eventual downturns that will inevitably come. So I think I would like to see more evidence before we start lowering capital standards. I think we ought to hold them where they are for now.

Mr. TIPTON. Okay. I appreciate your comments on that. It is my understanding that we had not only met but exceeded under Federal regulations the Basel standards. Our European counterparts have not done the same. And the goal is is to be able to make sure that we are keeping the robust economy and job growth going and opportunity and hope that is something that you will continue to keep in mind.

Mr. Chairman, we have talked a lot today about some of the CECL requirements that are going to be coming into place with the accounting method, and I do want to express that I have heard concerns that implementation will be expensive and that inevitable mistakes are going to be made after the implementation that will also be expensive. I have also heard concerns about how CECL standards will interact with the ongoing stress testing.

Mr. Chairman, with the implementation of CECL on the horizon, is the Fed preparing to incorporate CECL into its supervisory stress tests before it applies it to all banks in 2022?

Mr. POWELL. I think the answer is, we are not incorporating CECL at least for the next couple of cycles in the stress tests. The stress tests are already forward-looking, of course. They have forward-looking losses that are assumed to happen, so eventually we will incorporate it but not for the time being.

Mr. TIPTON. Do you feel that the regulators are well positioned giving some of the implementations, inevitably some of the challenges that are going to come out of that implementation, to be able to respond in a timely manner?

Mr. POWELL. To respond to?

Mr. TIPTON. Some of the challenges that are going to be paced by the cost and the implementation of CECL. Are they going to be able to respond?

Mr. POWELL. Ah, CECL. Sorry. Yes, I do. I think we are alert to what we are hearing. And we—again, we have put—we have given our institutions a 3-year phase-in period so they can—and they have also had some years to study and understand it. And, we have worked with smaller institutions so they know they don't have to have a department of CECL implementation, try to get that done in an efficient way.

Mr. TIPTON. Well, I appreciate that. And I know that you are going to be keeping an eye on it, and I would like to encourage you just for the impacts potentially on the industry and on our economy just to monitor the subject.

Mr. Chairman, in your testimony, you did also note something that is important for my part of the world. There is a noticeably lower employment rate in terms of the communities in rural areas compared to the urban areas, and that gap has widened over the past decade.

Has the post-crisis regulatory environment for community financial institutions impacted job creations in rural communities?

Mr. POWELL. I don't think that is really the story. It seems to be more loss of manufacturing jobs. If you read the box, there really isn't—I wish there were a clear answer at the end of the box, you get there and it says, okay, here is why, and here is what we can do about it. It is not that simple.

So essentially, the unemployment rates in rural communities and metropolitan areas haven't diverged that much. What has diverged is the labor force participation, and it seems to be—it possibly could be tied to lower education levels in rural areas, but that doesn't seem to explain much of the difference. It may be that it is more about loss of manufacturing, which is more likely to take place away from metropolitan areas.

We are still looking at why, but it is a significant disparity that emerged really after the crisis. And if you go back a ways, rural areas had higher participation and lower unemployment. So it is a curious development and one that we are calling to your attention and trying to understand.

Mr. TIPTON. I yield back.

Chairwoman WATERS. The gentlewoman from California is recognized for 5 minutes.

Ms. PORTER. Thank you, Madam Chairwoman.

Mr. Powell, thank you for being here today with us and for your patience during what I know is a long hearing.

I wanted to ask you about the hedge fund working group that the Financial Stability Oversight Council (FSOC) formed a few years ago. Can you describe whether this working group is actually, in fact, doing any work, and the nature of that work, and when we can expect to see any work product? It has been a little over 2 years since we have had any information from that working group, and I would like to see its results and what it is doing.

Mr. POWELL. I will have to look into that for you. I am sure that we have a number of staff who work full time with the FSOC, or part time at least with the FSOC, and I can get back to you on that. I don't personally know what that working group is doing.

Ms. PORTER. Okay. So in your role as a member of FSOC, I would appreciate your following up with that working group—

Mr. POWELL. I would be glad to.

Ms. PORTER. —and getting a briefing for yourself and sharing it when you can on what they are doing.

As you know, no banks failed last year. The period in American history when the nation went the longest without a single bank failure was across 32 months, from 2004 to 2007, just before the financial crisis. Then we had three banks collapse in 2007; 25 failed in 2008; 140 failed in 2009; and 157 banks failed in 2010. Since the FDIC was created in 1933, until that run-up in the financial crisis in 2004, not a single calendar year had passed without a bank failing.

Do you agree that a long stretch without any bank failures can lull the public and even financial market experts and regulators such as yourself into a false sense of security?

Mr. POWELL. I think really we are talking about human nature here, so, yes, I do think so. I would say though, if I may add, that the banking system is now so much better capitalized and more resilient than it was. And we have made sure to kind of allow for that aspect of human nature, I think, by making a system that is much more resilient to shocks.

Ms. PORTER. So I appreciate your point about the importance of making sure the system is correctly capitalized, but is the Fed not reducing loss absorbing capital requirements for big banks?

Mr. POWELL. No, we are not.

Ms. PORTER. And have you changed the capital holding requirements and the leverage ratios and the measures that are used in the stress tests, especially for banks that are under the $250 billion threshold?

Mr. POWELL. Well, I think overall we have raised capital standards. We have effectively doubled the amount of capital in the largest institutions.

Ms. PORTER. Since when?

Mr. POWELL. Since before the crisis.

Ms. PORTER. Oh, okay. So I am speaking about in the most recent couple years. What has the direction been generally in terms of capital holding?

Mr. POWELL. It has been to hold capital right where it is. I think we—the Fed's view has always been that we don't want the leverage ratio to be the binding. We want it to be a high and hard backstop. We don't want it to be binding. And it had become binding at its current level so we lowered it a bit. The actual amount of capital that will leave the system, including the holding companies, is very, very small.

Ms. PORTER. So, in fact, in the most recent couple of years we have, in your view, moderately reduced the capital holding requirements?

Mr. POWELL. It is actually de-minimus, I would say.

Ms. PORTER. Okay. But we are going slowly somewhat down?

Mr. POWELL. No. I like to see that—I think we are holding the level where it is. The leverage requirement, it is far less than 1 percent of capital. It is a relatively tiny amount of capital that leaves the system. Some of it can leave the bank to go to other parts of the holding company, but it doesn't get out of the holding company. And from—other than that, we are absolutely holding the line on capital. It is not in our thinking that capital levels are too high.

Ms. PORTER. And with regard to stress testing, which is one of the ways that we assess risk, my understanding is that the Fed has recently advanced proposals to reduce the stress testing standards.

Mr. POWELL. No, I wouldn't say that is right, no.

Ms. PORTER. Can you describe then for me and the committee what have been the changes and then maybe we can characterize them differently. But I would love to hear from you about that.

Mr. POWELL. We have tried to improve transparency without—the whole idea of a stress test is it should be stressful and in some sense surprising, and the scenarios change every year and that kind of thing. At the same time, we have tried to be more transparent about the way we look at losses and that kind of thing.

I think the banks make the point that, you know, this is our binding capital requirement for the biggest banks and we ought to have some transparency in terms of what it is going to be so that our own capital isn't volatile year to year. So we have tried to address those concerns but without undermining safety and soundness and without at all limiting the bindingness of the stress test.

Ms. PORTER. Okay. Thank you very much.

I yield back.

Chairwoman WATERS. The gentleman from Texas, Mr. Williams, is recognized for 5 minutes.

Mr. WILLIAMS. Thank you, Madam Chairwoman.

And, Chairman Powell, thank you for coming to the committee today. We always appreciate having you here.

And I would like—I have started asking the witnesses who come before us if they are socialists or capitalists. And I can adjust my questions accordingly when I hear that, but with you, I know what you are. You are a strong capitalist, and I appreciate you for that.

Briefly, I am going to touch on—as you probably remember, I am a car dealer. I have been in the car business for 50 years, and tariffs have us really concerned right now. But besides tariffs, which you have no control over, we are concerned about interest rates. I come back from a 20 percent—I was in business at 20 percent, so I know what interest rates can do, and in my lifetime 6 percent has always been a good rate.

The problem is today balances of the cost of goods sold are very high, much higher than they were in 1981 at 20 percent. We are concerned about the interest rates. Sometimes you can tweak the interest rate a little bit and it could change a person's payment on a car or whatever, 50 bucks, it could put them out of the market.

We are a consumption-driven nation and people want to buy. So I merely take advantage of you being here today to just ask you to be generous or be careful when you start raising the interest rates because it can affect the economy. And in my business, if people can't buy, we cut orders and we cut orders. The plant has to lay people off and so forth. So it does trickle down. So interest rates are a real concern that we have, that—all of us at finance inventories, and I appreciate you being gentle to us when you consider raising those rates.

Also, we need to reward people for going back to work. We need to get more people contributing to the economy, and we cannot have our citizens making rational economic decisions to stay on the sidelines of this booming economy because our government is paying them to do so.

The Monetary Policy Report says that the labor force participation, which we have talked about today, grew by only one-fourth of a percentage point since June even though there are 7.3 million job openings.

So my question to you is, are we creating an economy that encourages people to sit in the dugout rather than get out and play the game?

Mr. POWELL. Well, clearly, we have a problem with labor force participation, and I think there are a range of opinions and views and research about why that is. I do think there are some disincentives to work. For example, if you—it is not that our benefits are that generous, but it is in some cases you lose all of your benefits when you go back to work. And so it becomes a pay cut in effect even though the benefits themselves have lost value in real terms over time. So that is an important thing.

I also think it is just—it is people with relatively low education and skills. It is a lot of young males. It is certainly opioids. Low labor force participation is a function of many things, but many things that I think would be able to be addressed by the kinds of things that Congress can do as opposed to what we can do. We can run a strong labor economy, and I think we have that now, but to sustain that over time it needs more active measures.

Mr. WILLIAMS. Well, I can tell you as an employer, we are looking for people to work. There is no question about it.

Mr. POWELL. Yes.

Mr. WILLIAMS. Next question, it seems like some of my colleagues on the committee believe that banks bringing in more profits is a bad thing. Well, just because we can't turn a profit up here in this business, it doesn't mean that the private industry has to suffer along with us.

When a bank is more profitable, there is more money to lend to small businesses like me and hire more people like we do and ultimately grow our nation's GDP. We have a slide that keeps popping up there that says record profits for banks, so I personally think that is a good slide. We should show that more.

So, Chairman Powell, do you believe that a sector's profitability should be used as justification for more regulation?

Mr. POWELL. I think it is important for businesses to be profitable. It is a good thing. And for banks it is how you accumulate capital. It is the reward for servicing your companies, your customers well.

Mr. WILLIAMS. "Profit" is not a dirty word. It never has been.

Next question, we need our economy to let the private sector continue to build wealth for individuals. And the government—the people in government don't understand the government can help create a job, but it is the private sector that creates net worth. And the Tax Cuts and Jobs Act took a big step in allowing businesses to keep more of their hard-earned money and invest it how they see fit.

The other major step that was taken last Congress was the passage of Senate bill 2155, which will continue to roll back the overly burdensome regulations that have been hurting small businesses and Main Street for years. They are finally seeing a little respite and they are able to do business.

So do you believe the Federal Reserve has been coordinating effectively with the other Federal regulators to implement this much-needed regulatory relief bill?

Mr. POWELL. I do. We are implementing it. We have a lot of resources, and there is a lot to do under S.2155, as you know, and as I mentioned yesterday, it is our highest priority. It is the biggest thing we are working on right now.

Mr. WILLIAMS. Thank you for being here, and I yield back.

Chairwoman WATERS. Thank you very much. And I am pleased you like our slide.

The next person that we have up is the gentleman from Illinois, Mr. Garcia, for 5 minutes.

Mr. GARCIA OF ILLINOIS. Thank you, Madam Chairwoman, and ladies and gentlemen of the committee.

Chairman Powell, when you served as Governor overseeing the Reserve Banks, you sent the Reserve Banks an annual letter suggesting candidates from a range of labor and community groups. Why do you think it is that your suggestions have largely been ignored, and why is the Fed still sluggish in choosing and electing class B and C directors from backgrounds outside of business and the Wall Street community?

Mr. POWELL. Actually, Congressman, I think we have made pretty good progress there. We now have, I guess, it is 24, I think, community interest—community group people, and I think six of the Reserve Banks have a person from labor on the board. So we have made real progress there.

And I think also, I think our record on diversity for the B and C directors is actually an excellent one and a record that I am proud of. In the last 5 or 6 years, we have really made quite big strides there.

Mr. GARCIA OF ILLINOIS. Well, Chicago for one, I think, has been a leader in that regard. The Chicago Fed has one of the most diverse boards—as I understand it, it is the only Reserve Bank to have one director from a labor background, one director from an academic background, and one director from a community organization on its board.

As a matter of fact, two women who happen to be African American and one Latino comprise that diversity in Chicago. Have you spoken with anyone in Chicago at the Chicago Fed about how they have been able to surpass other Reserve Banks in racial and occupational diversity, and if so, what are the best practices that they have shared?

Mr. POWELL. We have an office that deals with the Reserve Banks around this particular issue, and I think—I actually would say that the progress across the Reserve Banks has been quite broad. I know that the—the statistic you are referring to is including an academic as well, and there are not as many academics.

Also with many labor people, you have to give up all political activity to go on our board. I think that is hard for a lot of senior labor people, so it is a challenge for us to find—still we do though and we focus very hard on doing that. So, yes, we talk to Chicago, but, I wouldn't want to say the other Banks haven't made good progress too. I believe they have.

Mr. GARCIA OF ILLINOIS. Thank you.

On the subject of mergers and market concentration, switching gears briefly, last year the Office of the Comptroller of the Currency issued an advance notice of proposed rulemaking around the

Community Reinvestment Act. Fourteen state attorneys general, including the former Illinois attorney general, issued a public comment on the OCC's proposal expressing concern that the proposal might soften the conditions under which a bank's violations of consumer protection laws would cause it to be downgraded.

According to the attorneys general, "Such a minor downgrade will not impact regulators' review of their mergers and acquisitions, the only real stick for the CRA compliance." Do you share the concern that these attorneys general express that the rare circumstances where the Fed presently steps in to interfere in a merger might be undermined by the OCC's proposal?

Mr. POWELL. I wouldn't want to comment on the OCC's—on that proposal, but I will just say, we haven't changed our policy on CRA and mergers. And it still is that we—it is one of the things we look at. And we want companies to have satisfactory or outstanding CRA ratios who are presenting merger applications.

Mr. GARCIA OF ILLINOIS. On the merger review, is it correct that about 97 percent of all mergers are approved and that over the past decade approximately 450 such mergers have been approved? Do you expect that to rise even more so?

Chairwoman WATERS. The gentleman's time has expired.

Mr. POWELL. May I respond, Madam Chairwoman?

Chairwoman WATERS. Yes, you may.

Mr. POWELL. Sorry. I have to look at the numbers. Many merger proposals are withdrawn when we raise questions about them. Most often, you don't wind up actually turning down a proposal. People just withdraw it because they can see it is not going to be approved. And there is a fair amount of that. It is way more than 3 percent, I believe.

Mr. GARCIA OF ILLINOIS. Do they withdraw because of CRA?

Mr. POWELL. They withdraw because they know—yes, I mean, among other—

Mr. GARCIA OF ILLINOIS. Compliance.

Mr. POWELL. Well, they withdraw because they can see that this is either going to take a really long time or it is probably not going to be a successful effort. So—or for other reasons, but in any case, we haven't changed our policy on CRA.

Mr. GARCIA OF ILLINOIS. Thank you, Madam Chairwoman, for your indulgence. I yield back.

Chairwoman WATERS. Thank you.

The gentleman from Arkansas, Mr. Hill, is recognized for 5 minutes.

Mr. HILL. Chairman Powell, welcome back to the committee. We are delighted to have you here. Thank you for your steady hand on the tiller of monetary policy at the Fed, and we are grateful for all the time you spend on both sides of the Hill answering our questions.

I want to follow up on my friend from Kentucky, Mr. Barr's, line of questioning on the balance sheet, and, again, just looking for some detail as you look at the normalization process.

I noted that the balance sheet was down about $368 billion January to January or about a 9 percent reduction. And if you think about the size of the economy and your comments that you have made about the future balance sheet size, it occurred to me that

if, just for discussion purposes, the Fed balance sheet was down at 10 percent of GDP, so $2 trillion in theory as opposed to the 6 or 7 percent it was before the financial crisis, that at this rate it would take about 5 years to normalize in that range.

And as you began to think about the balance sheet, have you all—that would be about 16 years after the financial crisis that the balance sheet would be normalized. If you look at the rolling off of the portfolio, what range of years do you think it would reach? I know it is—I am looking for some range of the denominator.

Mr. POWELL. So the level of demand for our liabilities, principally reserves and currency, but also the Treasury general account, which is a place where Treasury keeps cash, more cash than they used to, and also the designated financial market utilities keep their rainy day cash there. The demand for those liabilities is so much higher that we are actually not very far from the level of that demand. And our estimates of the demand, particularly for reserves, among the large banking institutions have gone up quite a lot just over the course of the last couple of years.

So in terms of years, I actually think we are going to be in a position, we are working on a plan, in fact, to stop runoff later this year. We may still be a bit above equilibrium demand for reserves, but we are not looking to limit the growth of the other liabilities because we think they meet important demands from the public.

Mr. HILL. So you are suggesting that sometime this year, on the asset side, you would stop letting the securities roll off?

Mr. POWELL. That is right. And so that will be about 16, 17 percent of GDP, whereas it was 6 percent before.

Mr. HILL. Yes.

Mr. POWELL. And the difference really is currency is a bigger part of—currency as a percentage of GDP and the same thing with reserves.

Mr. HILL. When you look at the composition, I know you have testified, and Vice Chairman Quarles has too, that you prefer a Treasury-only balance sheet, and you have heard discussions in this committee previously where we recognize in periods of crisis that the Fed might take other assets but that many of us believe they should have swapped those back out over at the Treasury so that the central bank only maintains a Treasury portfolio.

Do you still hold that view? And what is your view of Mr. Quarles' comments last week that he would look at limited sales of the CMBS portfolio?

Mr. POWELL. We have said that we want primarily a Treasury balance sheet. We have also said that we hold the possibility out there that at some point—and this isn't something we have decided. It is not something in the near term—we would do limited sales of MBS to hasten that process along.

I think where we are with the balance sheet is we have a bunch of decisions to make, and the one on MBS sales is probably closer to the back of the line. Really we have to decide about the maturity composition and things like that. We will be working through that in a very careful way. Markets are sensitive to this so—

Mr. HILL. Yes. I know the markets would certainly connect with those sale, and I think I would encourage that.

I want to switch gears and talk about another U.K. issue that is not Brexit, and that is the subject of open banking, the U.K.'s payment services directive, which is also termed informally as open banking. And I would like to get, if not your thoughts today, get your thoughts in writing about the promise of open banking as benefits for more competition.

And this is where consumers have access to all their data, brokerage banking that they get to control. It is a way to have better data security and more consumer security. It has been required now of the major banks in the U.K. Are you familiar at all with that and—

Mr. POWELL. I am not familiar with the U.K. aspect of it. I am familiar with the fact that it is a very interesting and important issue here.

Mr. HILL. I think as we look at FinTech in our markets and as we look at ways to level the competitive playing field between the G-SIFIs and everybody else, this will be an emerging issue, and I would invite your comments in the future about that. Thank you.

Mr. POWELL. Great. Thank you.

Mr. HILL. I yield back.

Chairwoman WATERS. Thank you.

The gentleman from New York, Mr. Zeldin, is recognized for 5 minutes.

Mr. ZELDIN. Thank you, Madam Chairwoman.

And thank you to Chairman Powell. You have been a great resource for—and very open and transparent for my inquiries recently, in my office, just a couple weeks back. And I just want to thank you for how available you are for concerns of this committee and Members of Congress. You have been great.

I wanted to follow up on the 2016 heist of $81 million from Bangladesh's central bank, which exploited vulnerabilities in the New York Fed's fraud detection process. According to a 2016 investigation, Reuters concluded that, "inertia and clumsiness at the New York Fed was a key factor in the theft of these funds."

I understand that the New York Fed established a hotline for global banks following the heist, but could you provide us with an update on additional measures the Fed has taken to rectify the problems identified in the Bangladesh case? And are you confident that the Fed would prevent any payments if a similar hack was attempted in the future?

Mr. POWELL. I think the Fed—the New York Fed and central banks all over the world frankly were very struck by that event and have—and there have been actions at the international level to look at principles and things we can do.

And so I think we have tried to harden our systems to that kind of a fraud, where someone actually gets control of another central bank and starts to—and is able to in effect pretend to be that central bank and try to withdraw dollars or—so I think we have worked hard on that problem. We have also tried to imagine other ways that the system can be invaded in that way. So it is something we have put a lot of resources in.

Mr. ZELDIN. Over the course of today's hearing you have received a lot of questions, a lot of comments. Is there anything—I have

some available time left. Is there anything that you are looking to clear up with any available time or no?

Mr. POWELL. I don't think clear up, no—

Mr. ZELDIN. Great. Well, thank you for—

Mr. POWELL. I have an open microphone, you know, but—

Chairwoman WATERS. Will the gentleman yield?

Mr. ZELDIN. Madam Chairwoman?

Chairwoman WATERS. Yes. If the gentleman will yield—

Mr. ZELDIN. Yes, ma'am.

Chairwoman WATERS. —I will help you to post more questions to the chairman. Would you ask him—well, I will ask him if you are yielding to me, if you will expound more on the stress test. It has come up and I alluded to it when I opened.

And I am worried that what you are recommending will basically create the kind of transparency where you are giving banks the answers ahead of time. And that is not what was intended in Dodd-Frank. Would you help us with that?

Mr. POWELL. Sure. We think stress testing is probably the most successful post-crisis regulatory innovation, and we absolutely intend to preserve stress testing as a key pillar of post-crisis regulation, especially for the very large financial institutions.

I think we—the idea that we would give them our actual models is not a good idea for a couple of reasons: One, that really would be showing, in effect, giving away the test; but, in addition, I think it would create real incentives for banks to kind of stop thinking about the way—about risk on their own and kind of relying on our thinking about risk and our loss rate estimates.

We want them to model their own risks and not use our models. And, of course, we want to check it with our models. So we have stopped way short of that. But we have provided more transparency and I think appropriately so. I think in—you know, in our system of government we owe a level of transparency to the public, and I think we have tried to strike the right balance.

Mr. ZELDIN. Madam Chairwoman, kindly, if I could reclaim my time, I would like to yield to the ranking member, Mr. McHenry.

Chairwoman WATERS. Thank you.

Mr. MCHENRY. Thank you.

Along the same lines, the living will process and the stress test process, I agree have had a beneficial impact. The complaint I have heard from those who have to submit to the stress test is they don't get any feedback. It is pass or fail, everything is on the line, and they hear when the public hears, and they pass or don't and that is all they hear.

So what is the feedback you are giving them on this measure, to the chairwoman's similar question? And in her view, you are lessening the burden; in my view, you are better communicating with those people you are seeking to get information from. So how do you see that?

Mr. POWELL. So, I guess, my sense was and I will go back to the office and look into this, but my sense was there is actually quite a lot of feedback, for example, at the staff level and also above the staff level.

For example, if you have one particular business that is important to you, then we are going to look at the risk models and we

are going to be evaluating them and see that they are capturing evolving risks and that kind of thing. And a lot of that kind of thing comes out in the stress test and in our feedback.

Mr. ZELDIN. I yield back.

Chairwoman WATERS. Thank you. The gentleman's time has expired.

The gentleman from Guam, Mr. San Nicolas, is recognized for 5 minutes.

Mr. SAN NICOLAS. Thank you, Madam Chairwoman.

And thank you, Chairman Powell, for being with us today.

In a prior setting, I posited a question with respect to interest rate policy and how it can be applied to various size companies. And I want to, I guess, reinitiate the inquiry, but first begin by kind of laying the foundation for why I am posing the question.

The Fed has a dual mandate to stabilize prices and provide for maximum employment. But when we pursue interest rate policy that applies across the board to all institutions equally, sometimes we may be carving into one at the expense of the other. For example, community banks and smaller financial institutions don't have the same employment figures necessarily as those areas that are more commonly served by the "big banks."

In the more rural areas that are serviced by community banks, you will find that the unemployment figures are higher than they are when factored against the national average. On the other hand, when it comes to price stability and using interest rates to try and reduce the amount of capital in the economy, the big banks are the ones that are more pervasive in terms of the consumer credit that they issue on a net basis.

And so if we were to, for example, raise rates to try and stabilize prices, that rate increase would apply to both community banks and big banks, thereby reducing the lendability of the community banks the same way that they would impact the bigger banks. But what that would do is it would exacerbate the employment circumstances in the rural areas while also containing the prices on the big bank areas.

And so my question that I posited in a prior setting that I would like to put on the record here today is whether or not the Fed would consider bifurcating interest rate policy to consider a different interest rate policy with respect to community banks or smaller institutions and the areas they serve versus the larger institutions and the more broad stroke that they have on the overall financial system?

And just to kind of tie up my question, again, in our previous setting I mentioned that the contagion risks, the systemic risks that community banks pose are more diluted versus the systemic risk that our big banks present. And so that also just kind of puts into my mind the fact that an interest rate policy that looks at both service areas a little differently might actually help to not only improve employment numbers but to do so in rural areas that are dragging down the overall average and to do so in a way that may not necessarily impact pricing pressures because it is not an across-the-board rate policy.

So could you please share your thoughts on the idea of perhaps bifurcating interest rate policy between larger institutions and smaller institutions?

Mr. POWELL. That is an interesting question. I think it would not, of course, be in keeping with the tradition of interest rates, which is our policy rate is, you know, it applies to the whole economy, and we don't get into distinguishing between different borrowers and that kind of thing. I wouldn't want to see us going down that road. That is more for you to distinguish between different entities under the law.

But I think, again, I wouldn't want to see us going down the road of raising rates, different amounts on different people and different sectors. I think the interest rate is a blunt tool. Remember that we are not elected. We are, you know, we have—we are not supposed to be—we are supposed to be with interest rates just operating at the national level and I think that is probably a healthy thing.

Mr. SAN NICOLAS. I appreciate your feedback. But, when we get back to the question of the mandates of the Fed—and the mandates are very clear: stabilize prices; and maximize employment. But if the variables that are impacting both are different with respect to the institution sizes and the interest rates as they apply to them, we may be unnecessarily impacting employment in pockets of the country by taking a broad stroke approach on interest rates with respect to the pursuit of price stability, for example.

And so while I don't encourage the Fed to necessarily pick and choose, if we were to have the Fed consider growing and evolving its mandate in a way that is using the available data that is out there to be able to target the employment areas that are typically more exacerbated in the community or rural bank places while also pursuing an interest rate policy of price stability that is more so impacted by the bigger banks, I think that that is something that will be worthy of consideration. So I just wanted to put it on the record.

Thank you, Madam Chairwoman. And I yield back.

Chairwoman WATERS. The gentleman from Georgia, Mr. Loudermilk, is recognized for 5 minutes.

Mr. LOUDERMILK. Thank you, Madam Chairwoman.

And thank you, Chairman Powell, for sitting through this again. I have several issues I want to touch on, but first of all, something you and I have spoken about privately and something that Mr. Luetkemeyer brought up, being CECL. I have emphasized my concern. He has expressed his concerns about the potential impact it would have on our economy. First of all, I appreciate the numbers that you brought forward to us, the strength of our economy, the incredible economic expansion and the long-term expansion we have seen. This is good news, good news for everybody in the country in all demographics. We don't want to do anything to suppress that at all.

One of the grave concerns that the manufacturers have in my district, which was surprising to me as I met with them, and I asked their concerns, of course, trade is always a concern with them. But the number one concern was the lack of single-family homes, entry-level homes so that the large number of employees

they are bringing in have a place to buy, to enter into the housing market.

So I would just reemphasize the concern that we have had as we would love to see an offset in capital requirements with CECL to make sure it doesn't suppress this great economic gain that we have made.

But to move onto some issues, as you and I have spoken, I have an IT background and I also represent Georgia, which contains about two-thirds of the payment processors across the nation. And so I know that the Fed is exploring the possibility of getting into the payment business and especially with the realtime payment network.

My question, and I haven't fully developed an opinion on this, but I am very hesitant whenever the Federal Government engages in any practice that competes with the private sector, my first question would be, if you do establish a realtime payments network, is it appropriate for you to continue serving as the regulator for the private sector with which you would be competing?

Mr. POWELL. We do have some instances where we operate, for example, ACH and there is another ACH operator. I think though it is a fair question, and we do hold ourselves to a big standard in that. It is not a—by the way, it is not a payments network really. It is a settlement system. Really only the central bank can provide real, final settlement in immediately available funds. The private sector can provide that too to some, but it is actually on its own books. It is a little bit different approach.

Mr. LOUDERMILK. Okay. And one of the things that you have indicated with the request for comment is that if you do implement the system, it would be fully compatible with the private sector networks.

Mr. POWELL. Yes.

Mr. LOUDERMILK. What have you done to ensure that this would be the case, that it would be fully compatible?

Mr. POWELL. Well, we just will have to do that. That is an undertaking that we have made. And we haven't decided to do this yet, so, but if we do it, it will absolutely be fully compatible.

Mr. LOUDERMILK. Is there any thought, once you establish this, of eventually privatizing?

Mr. POWELL. I hadn't thought of that.

Mr. LOUDERMILK. Okay. I am a big fan of privatization, and as Mr. Williams pointed out, you are a capitalist. I am a strong proponent of the free market and competition, but also I am very hesitant when the government which regulates a certain area competes in it as well.

One of the other areas I would like to ask you a question about, is first of all, I appreciate all the work that you have done in tailoring the proposal for reasonable banks under S.2155. When will the Fed produce a rule on tailoring prudential regulations for U.S. subsidiaries of foreign-owned banks?

Mr. POWELL. We are working on that, and I do think that is something we, I believe, expect to get done pretty shortly here.

Mr. LOUDERMILK. Is there a reason why it has taken so long?

Mr. POWELL. It is just complicated, and we have—I think we have done a dozen rulemakings under S.2155. It is—there are just a lot of things in the law, but we are working on that one.

Mr. LOUDERMILK. Okay. The end result, do you think it will be similar to the proposal for domestic regional banks?

Mr. POWELL. Conceptually, we are trying to treat them similarly, yes.

Mr. LOUDERMILK. Okay. Well, I encourage you to move forward as quickly as possible, but not to the point that we don't have a good end product but also to keep our domestic banks in mind.

The last question, just a little bit off the cuff, regarding cryptocurrency, I know the Securities and Exchange Commission is currently regulating it. Do you have any position or thoughts from a monetary policy standpoint on the impact of cryptocurrency?

Mr. POWELL. From a monetary policy standpoint, the implications are not large, certainly in the near term. People are not using cryptocurrencies in large size for payments, for example. It has really been more of a store of value for some, and you can see that it is highly volatile, so I think it is not attracting a lot of success there. We can talk about it more offline.

Mr. LOUDERMILK. Okay. Thank you.

Chairwoman WATERS. The gentleman's time has expired.

The gentleman from North Carolina, Mr. Budd, is recognized for 5 minutes.

Mr. BUDD. Thank you, Madam Chairwoman.

And, Chairman Powell, I appreciate you being here today, for your steady hand and your continued service, so, again, thank you.

Back in 2017 the Treasury Department issued a series of reports. They had recommendations for streamlining and improving the regulation of the financial systems so that it creates maximum value for American businesses and consumers. While progress has been made on some of those recommendations, there are still some that even 18 months later, haven't been implemented.

An example of that would be a requirement that banks exchange margin on transactions between their own affiliates or the inter-affiliate margin, I think it is called. It is a requirement that is not imposed over at the CFTC or by international regulators.

According to a recent survey, this ties up about $40 billion in capital with no known benefit and it actually prevents banks from most efficiently managing risk in this area.

Last November, Vice Chairman Quarles agreed that the regulators should prioritize this issue and that the agencies had the ability to move into compliance with the rest of the world on this. Can you describe the Fed's plans to implement the Treasury's recommendation with this initial margin requirement, when it would be exempted and when we might expect to get some progress on this?

Mr. POWELL. I know it is something we are working on, and I don't have a date for you or really a result, but I can get back to you on that.

Mr. BUDD. Do you have the sense that it is actually a priority?

Mr. POWELL. Yes. But remember, with S.2155 we have a lot of priorities right now, and that is one which is certainly under active—it is being worked on actively, I know that.

Mr. BUDD. Thank you. I appreciate that.

I want to switch over to CECL or the current expected credit loss rule, and ask a couple of questions on that. As currently structured, a lot of us on both sides of the aisle think that CECL prevents or presents a major capital volatility risk affecting pricing and ability of lending for 30-year mortgages and to borrowers of lower quality credit, especially during downturns. Personally, I feel that it is pro-cyclical.

There have been proposals made that before implementing this major accounting change, there should be a quantitative impact study conducted to look at these concerns. So I worry that this 3-year phase-in that the Federal Reserve recently finalized does not address this underlying pro-cyclicality issue. Do you see any harm in conducting such a study, this QIS?

Mr. POWELL. You know what, I think we have—I can go back and look at that, but I think we don't think it will have that effect but we are going to be watching very carefully—

Mr. BUDD. So to do a study on it, would it be reasonable even to do a QIS? There are varying opinions among very respected people on this. So a QIS would be reasonable?

Mr. POWELL. I would have to go back and talk to the group on this, but this is something we have been working on for 10 years. I think there has been a lot of thought that has gone into it. And I don't have an answer for you on QIS but I can get that.

Mr. BUDD. But as you stand right now, you don't have any known harms that a study would do?

Mr. POWELL. Well, I don't sitting here today, but I don't know how long it would take, and I am not sure what we have done on that front. I can check.

Mr. BUDD. Sure. I would encourage us to do our homework as much as possible, including a QIS. Thank you.

I want to go back briefly to international insurance regulation and your conversation with Congressman Duffy. You told Mr. Duffy that you wanted to negotiate something that "works for the U.S." Thank you for that, by the way.

This is still just a little bit ambiguous for a lot of us, but there are really only two possible outcomes that you could try to achieve, either we are trying to reach an agreement that will require the U.S. to adopt some specific changes to our system or we are trying to have the U.S. system achieve a formal mutual recognition that would require no changes to our system of insurance regulation.

So do you have a preference which way are you headed, either we get mutually recognized as is, or are we going to force changes on the system?

Mr. POWELL. I think, you know, we are not looking to change the fundamental nature of our insurance system. We think it works well. We are also looking to have an international agreement that works with our system.

So I am not sure that exactly responds to your question, but we are certainly not looking to say, okay, we have negotiated this deal with this group abroad and we are going to come back and it substantially changes our insurance regulation system. That is not going to happen.

Mr. BUDD. So more of a mutual recognition, this is how it works?

Mr. POWELL. Yes, I don't say that—there may be some things that we take on board which sound like good ideas. I don't really know much about the details. But I know that we are in very, very close contact all the time with the State supervisors on this. We have had quite a lot of consult on this and—

Chairwoman WATERS. The gentleman's time has expired.

Mr. BUDD. Chairman Powell, thank you. I yield back, Madam Chairwoman.

Chairwoman WATERS. The gentlewoman from Ohio, Mrs. Beatty, is recognized for 5 minutes.

Mrs. BEATTY. Thank you, Chairwoman Waters, and Ranking Member McHenry.

And thank you, Chairman Powell, for being here today.

You have had a lot of questions thrown at you from monetary and policy and banking and a whole host of things, so I am going to shift and talk about people for a little bit.

I have two questions. The first question is going to be centered around the Federal Reserve's bank board's diversity, and the second is going to be about income equality and the wealth gap.

So let me start by saying I want to draw your attention to a report from the Center for Popular Democracy's Fed Up Campaign, which conducts an annual analysis of gender, racial, and occupational diversity of the Federal Reserve.

And, Madam Chairwoman, I would like to submit this for the record.

Chairwoman WATERS. Without objection, it is so ordered.

Mrs. BEATTY. The Federal Reserve Act, as you know, of 1913 in 12 USC 302 that class B and class C directors are to be selected to represent the public with, quote, due but not exclusively consideration to the interest of agriculture, commerce, industry, service, labor, and consumers, and without discrimination.

However, the analysis done by this report suggests that the Federal Reserve Banks around the country are not representative of the public at all. The report found, quote, that in 2019, among the 108 current Federal board directors, 70 percent—76 percent come from the banking or business sector, 74 percent are white, and 62 percent are male.

Additionally, the report found that an overwhelming number of Federal Reserve Bank presidents are overwhelmingly white at 83 percent. The most troubling aspect of the report was what happened just last year. In 2018, the incoming board of directors was comprised of 50 percent people of color, and 43 percent women. But in 2019 we backslid with incoming directors who were from 82 percent banking or business sectors, 75 percent white and 61 percent male.

You have consistently committed to this committee that you are committed to diversity, of which I am very appreciative. And let me remind you of a quote that you gave: "We make better decisions when we have diverse voices around the tables, and that is something we are very committed to at the Federal Reserve." You probably remember saying that.

So do you have any thoughts on this report? Because I am concerned that we are losing momentum on this issue that was started by Janet Yellen, your predecessor. And I am thinking that I may

need to expand my legislation to include the "Beatty Rule" with the Federal Reserve, patterned after the Rooney Rule, which I am sure you are also familiar with, because we have had dialogues about it. Do you have any thoughts on that?

And because my time is probably going to run out, I want you to also address, when asked about the challenges—you did a town-hall with regular people. I think it was teachers. And you cited widely shared prosperity and mobility, the opportunity to move from being born into a low quintal of wealth spectrum to the highest.

And so as Chair of the Subcommittee on Diversity and Inclusion, I am certainly interested in this and would like to know if you can elaborate on what you believe to be one of the top challenges this economy faces over the next decade as related to diversity and inclusion?

Mr. POWELL. Okay. Thank you.

I think that my experience over my private sector career and public sector career has been that successful organizations value diversity, value inclusion, value freedom to speak, and those sorts of things. And that is certainly true at the Fed. I really do believe that we get better results to the extent we have diverse perspectives around the table.

I feel strongly about that. I have also been involved in the selection of Reserve Bank directors now really since I joined the Board in 2012, and I think that we have made very substantial progress there. And I am proud of the progress that we have made. I think if you look at the numbers over the last 5, 6, 7 years, the number of the diversity among B and C directors is actually higher than the numbers that you read from that report.

Mrs. BEATTY. Let me interrupt you for one second. That is very true of Chicago, but then when you look at Dallas, it is the direct opposite.

Mr. POWELL. I know the numbers at the aggregate level, I think, of the B and C directors that we currently have, 70 percent are diverse in one dimension or another and 25 percent are African American. And these numbers have come way up from where they were 7 or 8 years ago.

If I could just say a second on the Rooney Rule, we are way past the Rooney Rule. I have been involved in eight selection processes for Reserve Bank presidents and in every case we have had multiple diverse candidates, racially diverse, gender diverse, all kinds of diversity. We—and Reserve Banks, you know, hire a national search firm and they go into that. Anyway, sorry.

Mrs. BEATTY. We can talk later. My time is up.

Chairwoman WATERS. The gentlelady's time has expired.

Chairman Powell has a hard stop at 1:00. We are going to get our last Member in, Mr. Davidson from Ohio. You are recognized for 5 minutes.

Mr. DAVIDSON. Thank you, Madam Chairwoman.

Chairman Powell, thank you for your testimony. And I know it has been a long stretch there at the microphone, so it is an honor to be able to get this question in and several hopefully.

Really with great foresight, Congress has acted at times and sometimes not so much. One of the things Congress got right was

the Telecommunications Act of 1996. And the reality is, our economy is so vibrant because it is fostered in an amazing amount of innovation.

Incredibly with the internet, Congress had the foresight to say it is the policy of the United States to preserve the vibrant and competitive free market that presently exists for the internet and other interactive computer services unfettered by Federal or State regulation. Now, it wasn't zero regulation. There was a framework for it, but it was fairly light touch.

As we look at the token economy, tokenized assets and the crypto market, inherently people think of Bitcoin. They think of Bitcoin as the first website that you came across. You might like it, you might hate it, but it certainly didn't represent the internet because it was a website.

And Bitcoin doesn't represent blockchain anymore than a website represents the internet. It is one use. But as our country has kind of been reluctant to provide any regulatory certainty, capital has fled the United States where this innovation initially was off to a good start for other pastures. Do you believe that regulatory certainty could foster increased innovation in this market in the token economy?

Mr. POWELL. I would want to understand that better, but, yes, that makes sense on its face to me.

Mr. DAVIDSON. And when you look at consumer protection, for example, the SEC is focused on protecting the securities market. And the concern is, if everything looks like a security, there is a lack of certainty for investors. And so the Token Taxonomy Act, a bipartisan legislation, that would provide that certainty to say if it meets these criteria then it is not a security is one that we are currently working on and hope to move through this committee in short order.

Beyond that, obviously the scope of the Federal Reserve has a charter. And earlier in your testimony, you talked about 2 percent inflation as a target. Here in Congress, and around the country in certain sectors, people hear 2 percent plus or minus zero deviation, certainly no long-term deviation. Can you state that or confirm that it is a policy to target precisely 2 percent or to what extent is there some level of variance for higher or lower inflation?

Mr. POWELL. Yes. We say that inflation—that our objective is 2 percent but it is a symmetric objective. Because, of course, in the nature of an economy, it is never—it will rarely be exactly 2.000 percent. It is going to be a little bit higher. It is going to be a little bit lower as economic activity fluctuates, as oil prices fluctuate and that sort of thing.

Mr. DAVIDSON. Right. No, but what sort of time horizon do you look at that?

Mr. POWELL. Well, one, it is symmetric in a sense that we are always going to be trying to get back to that. And these things don't move super quickly, so we will be conducting monetary policy in a way that achieves both of our objectives. We also have our maximum employment objective, so—

Mr. DAVIDSON. Right. And so in balance and maybe over a longer period than a quarter, for example?

Mr. POWELL. Yes. Definitely over a longer period.

Mr. DAVIDSON. Okay. And the last time we spoke, we finished talking about trade. And I think it is fitting we finish talking about trade today. Obviously, the United States has become really the world's land of opportunity. We are a great destination for good services, capital, intellectual property, labor, and including people.

But trade has definitely been a high point for this current Administration. We have strengthened our trade deals. We are working to strengthen our trade deal with China as we speak, but there has been a lot of consternation about tariffs.

Historically, Congress has overall authority for trade and they have delegated that to the presidency. My concern is, as we look at 232 tariffs on steel and aluminum, for example, while U.S. steel companies have benefited from higher tariffs with greater profits, their share prices have been destroyed. And part of that is there is no certainty as to how long this tariff is going to last.

If we passed a law, whether it was a 25 percent tariff or a 200 percent tariff or a zero tariff, would the certainty provide better outcomes for the market?

Mr. POWELL. I think certainty in these matters would be helpful.

Mr. DAVIDSON. So toward that end, we are working on the Global Trade Accountability Act. My hope is that it can be bipartisan and Congress can eventually lock in our rates and the trade deals that do make trade great again.

Thank you, and my time has expired. I yield back. I appreciate your testimony.

Chairwoman WATERS. Thank you very much, Chairman Powell. I would like to thank you for your testimony today.

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

I will ask our witness to please respond as promptly as you are able.

And with that, this hearing is adjourned.

[Whereupon, at 1:05 p.m., the hearing was adjourned.]

A P P E N D I X

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Statement by

Jerome H. Powell

Chairman

Board of Governors of the Federal Reserve System

before the

Committee on Financial Services

U.S. House of Representatives

February 27, 2019

Good morning. Chairwoman Waters, Ranking Member McHenry, and other members of the Committee, I am happy to present the Federal Reserve's semiannual *Monetary Policy Report* to the Congress.

Let me start by saying that my colleagues and I strongly support the goals Congress has set for monetary policy--maximum employment and price stability. We are committed to providing transparency about the Federal Reserve's policies and programs. Congress has entrusted us with an important degree of independence so that we can pursue our mandate without concern for short-term political considerations. We appreciate that our independence brings with it the need to provide transparency so that Americans and their representatives in Congress understand our policy actions and can hold us accountable. We are always grateful for opportunities, such as today's hearing, to demonstrate the Fed's deep commitment to transparency and accountability.

Today I will review the current economic situation and outlook before turning to monetary policy. I will also describe several recent improvements to our communications practices to enhance our transparency.

Current Economic Situation and Outlook

The economy grew at a strong pace, on balance, last year, and employment and inflation remain close to the Federal Reserve's statutory goals of maximum employment and stable prices--our dual mandate.

Based on the available data, we estimate that gross domestic product (GDP) rose a little less than 3 percent last year following a 2.5 percent increase in 2017. Last year's growth was led by strong gains in consumer spending and increases in business investment. Growth was supported by increases in employment and wages, optimism among households and businesses,

and fiscal policy actions. In the last couple of months, some data have softened but still point to spending gains this quarter. While the partial government shutdown created significant hardship for government workers and many others, the negative effects on the economy are expected to be fairly modest and to largely unwind over the next several months.

The job market remains strong. Monthly job gains averaged 223,000 in 2018, and payrolls increased an additional 304,000 in January. The unemployment rate stood at 4 percent in January, a very low level by historical standards, and job openings remain abundant. Moreover, the ample availability of job opportunities appears to have encouraged some people to join the workforce and some who otherwise might have left to remain in it. As a result, the labor force participation rate for people in their prime working years--the share of people ages 25 to 54 who are either working or looking for work--has continued to increase over the past year. In another welcome development, we are seeing signs of stronger wage growth.

The job market gains in recent years have benefited a wide range of families and individuals. Indeed, recent wage gains have been strongest for lower-skilled workers. That said, disparities persist across various groups of workers and different parts of the country. For example, unemployment rates for African Americans and Hispanics are still well above the jobless rates for whites and Asians. Likewise, the percentage of the population with a job is noticeably lower in rural communities than in urban areas, and that gap has widened over the past decade. The February *Monetary Policy Report* provides additional information on employment disparities between rural and urban areas.

Overall consumer price inflation, as measured by the 12-month change in the price index for personal consumption expenditures (PCE), is estimated to have been 1.7 percent in December, held down by recent declines in energy prices. Core PCE inflation, which excludes

food and energy prices and tends to be a better indicator of future inflation, is estimated at 1.9 percent. At our January meeting, my colleagues and I generally expected economic activity to expand at a solid pace, albeit somewhat slower than in 2018, and the job market to remain strong. Recent declines in energy prices will likely push headline inflation further below the Federal Open Market Committee's (FOMC) longer-run goal of 2 percent for a time, but aside from those transitory effects, we expect that inflation will run close to 2 percent.

While we view current economic conditions as healthy and the economic outlook as favorable, over the past few months we have seen some crosscurrents and conflicting signals. Financial markets became more volatile toward year-end, and financial conditions are now less supportive of growth than they were earlier last year. Growth has slowed in some major foreign economies, particularly China and Europe. And uncertainty is elevated around several unresolved government policy issues, including Brexit and ongoing trade negotiations. We will carefully monitor these issues as they evolve.

In addition, our nation faces important longer-run challenges. For example, productivity growth, which is what drives rising real wages and living standards over the longer term, has been too low. Likewise, in contrast to 25 years ago, labor force participation among prime-age men and women is now lower in the United States than in most other advanced economies. Other longer-run trends, such as relatively stagnant incomes for many families and a lack of upward economic mobility among people with lower incomes, also remain important challenges. And it is widely agreed that federal government debt is on an unsustainable path. As a nation, addressing these pressing issues could contribute greatly to the longer-run health and vitality of the U.S. economy.

Monetary Policy

Over the second half of 2018, as the labor market kept strengthening and economic activity continued to expand strongly, the FOMC gradually moved interest rates toward levels that are more normal for a healthy economy. Specifically, at our September and December meetings we decided to raise the target range for the federal funds rate by 1/4 percentage point at each, putting the current range at 2-1/4 to 2-1/2 percent.

At our December meeting, we stressed that the extent and timing of any further rate increases would depend on incoming data and the evolving outlook. We also noted that we would be paying close attention to global economic and financial developments and assessing their implications for the outlook. In January, with inflation pressures muted, the FOMC determined that the cumulative effects of these developments, along with ongoing government policy uncertainty, warranted taking a patient approach with regard to future policy changes. Going forward, our policy decisions will continue to be data dependent and will take into account new information as economic conditions and the outlook evolve.

For guideposts on appropriate policy, the FOMC routinely looks at monetary policy rules that recommend a level for the federal funds rate based on measures of inflation and the cyclical position of the U.S. economy. The February *Monetary Policy Report* gives an update on monetary policy rules. I continue to find these rules to be helpful benchmarks, but, of course, no simple rule can adequately capture the full range of factors the Committee must assess in conducting policy. We do, however, conduct monetary policy in a systematic manner to promote our long-run goals of maximum employment and stable prices. As part of this approach, we strive to communicate clearly about our monetary policy decisions.

We have also continued to gradually shrink the size of our balance sheet by reducing our holdings of Treasury and agency securities. The Federal Reserve's total assets declined about $310 billion since the middle of last year and currently stand at close to $4.0 trillion. Relative to their peak level in 2014, banks' reserve balances with the Federal Reserve have declined by around $1.2 trillion, a drop of more than 40 percent.

In light of the substantial progress we have made in reducing reserves, and after extensive deliberations, the Committee decided at our January meeting to continue over the longer run to implement policy with our current operating procedure. That is, we will continue to use our administered rates to control the policy rate, with an ample supply of reserves so that active management of reserves is not required. Having made this decision, the Committee can now evaluate the appropriate timing and approach for the end of balance sheet runoff. I would note that we are prepared to adjust any of the details for completing balance sheet normalization in light of economic and financial developments. In the longer run, the size of the balance sheet will be determined by the demand for Federal Reserve liabilities such as currency and bank reserves. The February *Monetary Policy Report* describes these liabilities and reviews the factors that influence their size over the longer run.

I will conclude by mentioning some further progress we have made in improving transparency. Late last year we launched two new publications: The first, *Financial Stability Report,* shares our assessment of the resilience of the U.S. financial system, and the second, *Supervision and Regulation Report,* provides information about our activities as a bank supervisor and regulator. Last month we began conducting press conferences after every FOMC meeting instead of every other one. The change will allow me to more fully and more frequently explain the Committee's thinking. Last November we announced a plan to conduct a

comprehensive review of the strategies, tools, and communications practices we use to pursue our congressionally assigned goals for monetary policy. This review will include outreach to a broad range of stakeholders across the country. The February *Monetary Policy Report* provides further discussion of these initiatives.

Thank you. I am happy to respond to questions.

FEBRUARY 2019

DATA BRIEF

THE URGENT NEED FOR A MORE PUBLICLY REPRESENTATIVE FED: 2019 Diversity Analysis of Federal Reserve Bank Directors





ACKNOWLEDGMENTS

This report was written and researched by Maggie Corser. It was edited by Emily Gordon, and Jordan Haedtler, Ruben Lucio, and Shawn Sebastian.

ABOUT THE CONTRIBUTORS



Fed Up is a coalition of community organizations and labor unions across the country, calling on the Federal Reserve to reform its governance and adopt policies that build a strong economy for the American public. The Fed can keep interest rates low, give the economy a fair chance to recover, and prioritize genuine full employment and rising wages.

www.ThePeoplesFed.org



The Center for Popular Democracy (CPD) works to create equity, opportunity and a dynamic democracy in partnership with high-impact base-building organizations, organizing alliances, and progressive unions. CPD strengthens our collective capacity to envision and win an innovative pro-worker, pro-immigrant, racial and economic justice agenda.

www.populardemocracy.org

The Urgent Need for a More Publicly Representative Fed: 2019 Diversity Analysis of Federal Reserve Bank Directors

2019 Data Brief

The Center for Popular Democracy's Fed Up Campaign conducts an annual analysis of the gender, racial, and occupational diversity of the Federal Reserve system's leadership. This is designed to gauge progress on the Federal Reserve's public commitments to diversity and highlight areas for continued growth in the coming year.

The 2019 analysis reveals a shocking lack of progress in diversity among the nation's most powerful monetary policymakers. While some Federal Reserve Banks have made modest progress in gender and racial diversity, board members from the business and banking sectors continue to dominate leadership positions. In 2019, among the 108 current Fed Board Directors: 76% come from the banking or business sectors, 74% are white, and 62% are male. These diversity issues also extend to Federal Reserve Bank Presidents who are overwhelmingly (83%) white and are most commonly recruited from with the Federal Reserve's existing leadership or the finance sector.

Without diverse perspectives, the Federal Reserve's failure to represent the interests of the American people will persist. In 2019, policymakers and advocates continue to call on the Federal Reserve to actively pursue greater diversity at all levels of its leadership.

Introduction

Despite the Federal Reserve Act's requirement that the Federal Reserve system leadership "represent the public," and draw from the interests of "agriculture, commerce, industry, services, labor, and consumers," the Federal Reserve (the Fed) has consistently failed to ensure that Reserve Bank directors reflect the rich diversity of our economy.[1] In 2016 the Fed Up campaign published "To Represent the Public: The Federal Reserve's Continued Failure to Represent the American People." The report's diversity findings sparked a public outcry and led to a coordinated campaign among community groups, and allied think tanks, calling on the Federal Reserve to diversify its leadership.[2]

In the face of sustained public pressure, and repeated calls from Congress and advocates to appoint a leadership reflecting the American people, the Fed leadership signaled it would take steps to improve. At the time, Fed Chair Janet Yellen publicly stated: "I am committed to improving diversity throughout our organization. Improving diversity requires effort and constant focus. We will continue

working hard to achieve this goal."[3] In 2017 the incoming Fed Chair Jerome Powell pledged to carry on Yellen's commitment: "We make better decisions when we have diverse voices around the table, and that's something we're very committed to at the Federal Reserve."[4]

The Fed's public commitment to develop a more diverse leadership was tested in 2018 when the New York Federal Reserve Bank appointed a new president. The New York Fed plays an especially critical role given its close proximity to Wall Street and central role in formulating the Fed's response to the financial crisis. When asked by Representative Maxine Waters what Jerome Powell would do to ensure the New York Fed considered diverse candidates in its President search process, he said "We will always have diverse candidates. They will always have a fair shot. I cannot in any individual case guarantee that we will have a diverse outcome."[5] Ultimately, John C. Williams, a white man who spent his career at the Fed was appointed President of the New York Federal Reserve Bank.[6] Immediately before his appointment to the New York Fed, Williams was the San Francisco Reserve Bank President. This left a presidential vacancy at the San Francisco Fed which was ultimately filled by Mary Daly, a white woman who spent her career at the Fed.[7]

When the search committees in New York and San Francisco invited Fed Up to discuss presidential vacancies in 2018, Fed Up presented them with a diverse and qualified list of candidates. These candidates: reflected gender, racial, and occupational diversity; had demonstrated independence from the financial sector; and had a proven commitment to the Fed's full employment mandate.[8] In addition, each candidate put forward by Fed Up was qualified by the standards laid out by the search committee. In New York, none of Fed Up's proposed candidates were ever contacted. In San Francisco, these candidates were not seriously considered, and the search committee ultimately chose longtime Fed insiders for both positions.

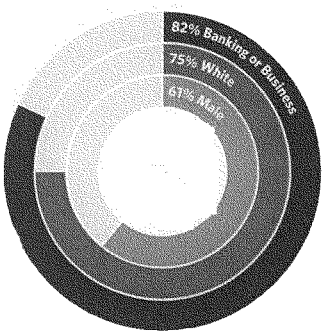
Key Findings

Data shows the Federal Reserve is backsliding on the incremental progress it made on diversity in 2018.

The Federal Reserve Banks appointed 28 new directors to the boards of the twelve Reserve Banks in 2019. Indisputably, the Federal Reserve Banks failed to appoint a diverse group of incoming directors. **This year's incoming Fed directors are:**

- 82% Banking/Business
- 75% White
- 61% Male

In contrast, the 2018 incoming directors were 50% people of color and 43% women.[9] There is deeply inadequate gender or racial diversity among these 2019 incoming directors which indicates the Fed is backsliding on its diversity commitments. As in previous years, directors from the banking and business sectors continue to dominate.



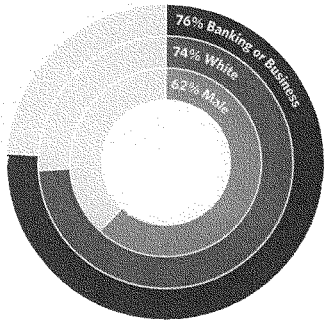
28 Incoming Fed Directors in 2019

The Federal Reserve System still has a striking lack of diversity.

Overall, the composition of the 2019 board of directors of the twelve Federal Reserve Banks remains disproportionately white, male, and from banking and business backgrounds. **The 108 current board directors are:**

- 76% Banking or Business
- 74% White
- 62% Male

These numbers stand in stark contrast to the American public. Far from the 76% of Fed directors in banking of business, only 18% of our economy is comprised of people with business and financial services jobs.[10] Despite men making up 49% of the US population, they are overrepresented in Fed leadership as 62% of all directors.[11]



Total 108 Fed Directors

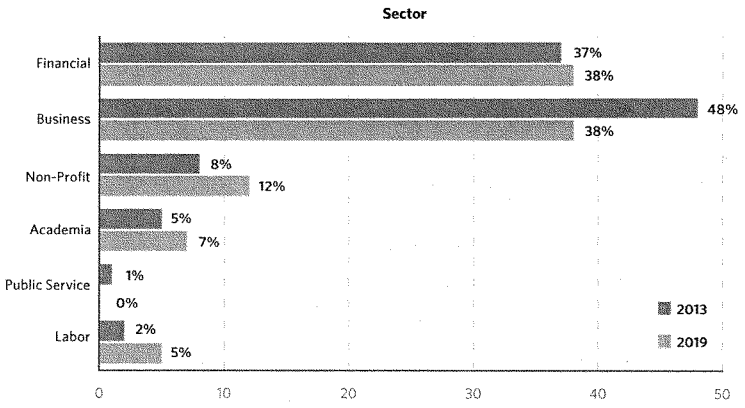
Overall, from 2018 to 2019 there was a 3% increase in Fed directors from labor, non-profit and academia.

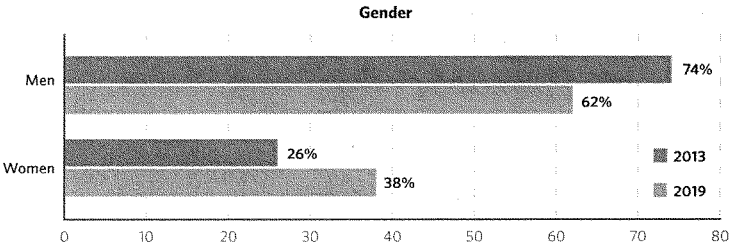
While this change is wholly inadequate, it is worth noting that public demands for a more diverse leadership have yielded some incremental progress since 2013. In 2016, Fed Up recommended that each Reserve Bank board include at least one director from a labor background, one from an academic background, and one from a non-profit/civic organization background. Although the twelve Reserve Banks are still a long way from implementing that recommendation, the number of Reserve Banks with a director from the labor sector has increased from just two in 2016 to five (or nearly half of the Reserve Banks) in 2019. The most diverse Reserve Bank board in the country, the Chicago Fed, has fulfilled Fed Up's recommendation. The Chicago Fed currently has a director from labor (Jorge Ramirez), an academic (Susan Collins), and a director from a community organization (Helene Gayle) all serving on the board.[12]

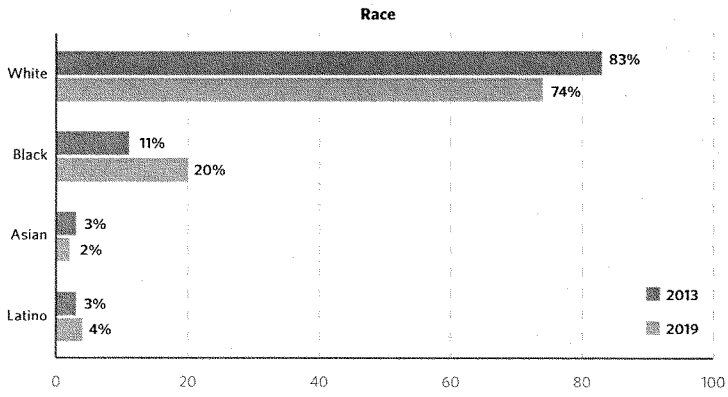
Comparing Fed Diversity in 2013 vs. 2019 Shows Progress is Slow

When comparing diversity data from 2013 (the first year Fed Up began tracking these numbers), it's clear that the Fed's pace of change is entirely too slow. In 2013, 85% of Fed directors came from banking and business sectors. The last six years saw a 10% increase in directors from non-profit, academia, and labor sectors, but even with this change, financial and business sectors continue to dominate leadership positions at 76%. In 2013, only 12 of the 105 directors were African American.[13] Today that number has increased to 22 African American directors out of 108.

> "Shockingly, the Fed only added one Latino director in the last six years, bringing the total to 4 out of 108, and has decreased the number of Asian directors from 3 to 2."




Gender
Men
Women
74%
62%
26%
38%
2013
2019
0
10
20
30
40
50
60
70
80


Race
White
Black
Asian
Latino
83%
74%
11%
20%
3%
2%
3%
4%
2013
2019
0
20
40
60
80
100

Progress in diversity across the twelve Federal Reserve Banks is uneven

The diversity data for each Reserve Bank's board of directors highlights that some Reserve Banks have farther to go than others. Progress is uneven with many Reserve Banks improving in one area of diversity but not improving in others.

- **Chicago currently has the most diverse Federal Reserve Bank board of directors:**
  - 45% of directors come from labor, academic, or non-profit sectors.
  - 44% of directors are African American or Latino.



Even as the most diverse Reserve Bank, Chicago still must improve its gender diversity. Women make up only 33% of directors in 2019, despite women making up more than 50% of the population in the Chicago Fed's region.[14]

- **Dallas is the least diverse Bank in the Federal Reserve system.**

The Dallas Fed's board of directors are:

- 89% Banking/Business
- 78% White
- 78% Male



In 2019 the Dallas Fed added another director from the business sector which further decreased its diversity.[15]

- **Philadelphia and Saint Louis are tied for least progress in 2019.**



Both the Philadelphia and St. Louis Federal Reserve Banks made no improvements in gender, racial, or occupational diversity this year.



Boston



2018

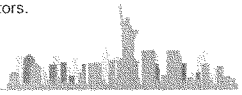
- 55% Banking/Business
- 67% White
- 78% Male

2019

- 66% Banking/Business
- 67% White
- 67% Male

Boston added one female director but made no improvements in racial diversity. The Reserve Bank increased its number of directors from the banking and business sectors.

New York



2018

- 66% Banking/Business
- 67% White
- 78% Male

2019

- 66% Banking/Business
- 56% White
- 67% Male

New York added one director of color but made no improvements to gender or occupational diversity.

Philadelphia



2018

- 66% Banking/Business
- 78% White
- 56% Male

2019

- 66% Banking/Business
- 78% White
- 56% Male

Philadelphia made no improvements in gender, racial, or occupational diversity.

Cleveland



2018

- 89% Banking/Business
- 67% White
- 78% Male

2019

- 89% Banking/Business
- 67% White
- 67% Male

Cleveland added one female director but made no improvements in racial or occupational diversity.

Richmond



2018

- 77% Banking/Business
- 89% White
- 56% Male

2019

- 66% Banking/Business
- 89% White
- 56% Male

Richmond added one director from the non-profit sector but made no improvements in racial or gender diversity.



Atlanta

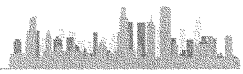
2018

- 100% Banking/Business
- 89% White
- 78% Male

2019

- 89% Banking/Business
- 78% White
- 56% Male

Atlanta made modest improvements in racial diversity and solid progress on gender diversity.



Chicago

2018

- 66% Banking/Business
- 56% White
- 78% Male

2019

- 55% Banking/Business
- 56% White
- 67% Male

Chicago made progress on gender and occupational diversity.



St. Louis

2018

- 88% Banking/Business
- 78% White
- 44% Male

2019

- 88% Banking/Business
- 89% White
- 44% Male

St. Louis made no improvements in racial, gender, or occupational diversity.



Minneapolis

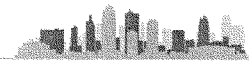
2018

- 76% Banking/Business
- 88% White
- 50% Male

2019

- 77% Banking/Business
- 89% White
- 44% Male

Minneapolis added two female directors but made no progress on racial or occupational diversity.[16]



Kansas City

2018

- 77% Banking/Business
- 78% White
- 67% Male

2019

- 66% Banking/Business
- 67% White
- 67% Male

Kansas City made improvements in racial and occupational diversity but no improvements in gender diversity.

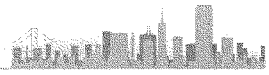
Dallas



2018	2019
77% Banking/Business	89% Banking/Business
78% White	78% White
78% Male	78% Male

Dallas added another director from the business sector and made no improvements in racial and gender diversity.

San Francisco



2018	2019
100% Banking/Business	89% Banking/Business
78% White	78% White
78% Male	78% Male

San Francisco added one director from the labor sector but made no improvements in racial or gender diversity.

The data demonstrates that progress has been slow and uneven. As with previous years, the Federal Reserve Banks also missed a key opportunity to improve diversity by renewing directors' terms. Every year, each of the twelve Regional Reserve Banks have directors whose terms are set to expire.[17] In 2019, the 19 directors whose terms were renewed are 68% white, 53% male, and 52% come from the banking or business sectors. Given the current diversity challenges at the Federal Reserve, when Banks choose to renew directors' terms it often maintains the status quo at each Bank. Moving forward, the Federal Reserve must take advantage of terms ending in order to appoint new directors and ensure a more diverse leadership.

The Presidents of the twelve Federal Reserve Banks are overwhelmingly white and male.

In 2019 the twelve Fed Bank Presidents are:

- 83% White
- 75% Male

In 2017 the Federal Reserve made history when it appointed Dr. Raphael W. Bostic, a prominent African American economist and academic, to lead the Atlanta Federal Reserve. In the history of the Federal Reserve System there had been 134 Federal Reserve Bank Presidents. Previously, not one of those Presidents was African American or Latino.[18]

Unfortunately, in 2018 the Federal Reserve missed a critical opportunity to continue this progress

Three newly appointed Federal Reserve Presidents started their terms in 2018: John C. Williams, New York Fed President; Tom Barkin, Richmond Fed President; and Mary Daly, San Francisco Fed President. All three of these Presidents are white and two are male. Barkin comes from the business sector while Daly and Williams both had 20+ year tenures at the Fed prior to their appointments.

The Federal Reserve's continued practice of hiring from within the Fed will limit its ability to meaningfully diversify its leadership

- 54% of current Presidents are Fed insiders who spent their careers at the Federal Reserve.

  In fact, these seven individuals spent a combined 158 years at the Fed before their appointments as Fed Presidents.

- 23% of Presidents come from the financial or business sectors

  In fact, 3 of the 12 current Fed Presidents have strong ties to Goldman Sachs.

- 23% of Presidents come from academia

Recommendations

In light of the fact that the Federal Reserve has made minimal progress towards their diversity goals, Fed Up's recommendations from 2018 continue to apply. The Federal Reserve Chair, Board of Governors, and leadership at the twelve Reserve Banks must take proactive steps to:

- Appoint new directors who improve the gender and racial diversity of the board of directors at the twelve Federal Reserve Banks.
- End the outsized representation and influence of the banking and business sectors among the twelve Reserve Bank boards of directors.
- Improve the occupational diversity of the boards by promoting directors with non-profit, academic, and labor backgrounds.
- Ensure a transparent and publicly inclusive Federal Reserve Bank presidential selection process. This includes releasing: a public timeline, list of criteria, list of candidates, and opportunities for public input via town halls or forums.

Conclusion

When people of color, women, labor representatives, consumer advocates, non-profit professionals, community activists, and academics are underrepresented within the Fed's leadership, policymaking at the Federal Reserve skews towards the interests of bankers and businesspeople. Moving forward, the Fed must be led by a diverse leadership that includes people of color, women, and people from a range of sectors and backgrounds. This will help ensure that the Fed's policies are maximally inclusive and truly take into consideration economic conditions of all regions and communities.

Methodology: This report draws on publicly available information to determine sector and demographic backgrounds of each incoming Federal Reserve board of director and President. The Federal Reserve Board of Governors and the twelve Federal Reserve Banks are welcome to provide the Fed Up Campaign with full diversity disclosures, in the event these data require any updates or additions.

Notes

1 "The Federal Reserve Act of 1913," https://www.federalreserve.gov/aboutthefed/fract.htm.

2 Center for Popular Democracy "'To Represent the Public' The Federal Reserve's Continued Failure to Represent the American People" February 2016, https://populardemocracy.org/sites/default/files/Fed%20Up.pdf.

3 Remarks by Janet L. Yellen, Chair Board of Governors of the Federal Reserve System, at "Banking and the Economy: A Forum for Minority Bankers" Federal Reserve Bank of Kansas City, September 29, 2016, https://www.federalreserve.gov/newsevents/speech/yellen20160929a.pdf.

4 "Jerome Powell: I'm a big supporter of diversity," CNBC, November 28, 2017, https://www.cnbc.com/video/2017/11/28/jerome-powell-im-a-big-supporter-of-diversity.html.

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8 "Fed Up Coalition Advocates for Candidates from Diverse Backgrounds for San Francisco President," Center for Popular Democracy, July 18, 2018, https://populardemocracy.org/news-and-publications/fed-coalition-advocates-candidates-diverse-backgrounds-san-francisco-president; "New York Electeds, Fed Advisers Join Backlash Against New York Fed Presidential Selection Process," Center for Popular Democracy, March 28, 2018, https://populardemocracy.org/news-and-publications/new-york-electeds-fed-advisers-join-backlash-against-new-york-fed-presidential.

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10 U.S. Bureau of Labor Statistics, "Employment by major industry sector: Table 2.1 Employment by major industry sector, 2006, 2016, and projected 2026," October 24, 2017, https://www.bls.gov/emp/tables/employment-by-major-industry-sector.htm.

11 U.S. Census Bureau, "QuickFacts: United States," July 1, 2017, https://www.census.gov/quickfacts/fact/table/US/PST045217.

12 Center for Popular Democracy, "The Federal Reserve: Real and Perceived Conflicts of Interest and a Path Forward," June 20, 2016, https://populardemocracy.org/news/publications/federal-reserve-real-and-perceived-conflicts-interest-and-path-forward.

13 In 2013 there were three vacant Fed director positions bringing the total number to 105.

14 U.S. Census Bureau, "QuickFacts: Illinois," July 1, 2018, https://www.census.gov/quickfacts/il. Note: the Chicago Fed's 7th District covers Iowa and most of Illinois, Indiana, Michigan and Wisconsin. For the purpose of this report, Illinois (which is the location of the Chicago Fed's headquarters) was used to determine the overall percent of women in the region.

15 While San Francisco, like Dallas, is 89% banking/business, 78% white, and 78% male, in 2019 the San Francisco Fed added one Director with a labor background which slightly improved its diversity numbers. Dallas, on the other hand, became less diverse after its 2019 appointments.

16 Note: Minneapolis had one vacant director position in 2018 which accounts for the 1 percentage point difference between 2018 and 2019.

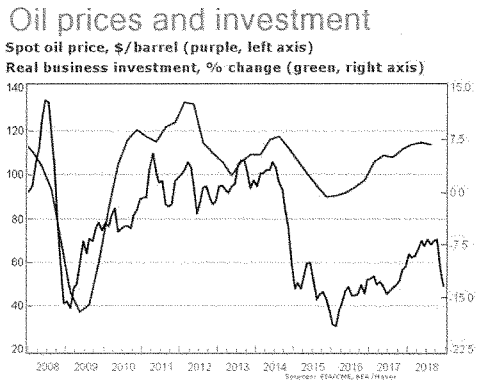
17 Federal Reserve Bank directors serve three-year terms, renewable once for a maximum of six years of service.

18 Aaron Klein "The Fed's striking lack of diversity and why it matters" Brookings Institute, August 1, 2016, https://www.brookings.edu/opinions/the-feds-striking-lack-of-diversity-and-why-it-matters/.

Opinion: So much for the Republican tax cut as a game changer — the investment boom is fading fast

By Rex Nutting
Published: Jan 19, 2019 9:45 a.m. ET

The price of oil has a bigger impact on capital expenditures than the corporate tax rate



EIA/BEA/Haver Analytics

With oil prices softening, will business investment weaken as well?

The investment boom that began in 2016 is fading fast, quashing the never-realistic hopes of Republicans that the corporate tax cut had permanently transformed the economy for the better.

There's good reason to believe that the tax cut had almost no impact on business investment. Rather, it was strong demand, especially for oil, that encouraged businesses to expand capacity. Now investment is softening along with aggregate demand.

A year ago, Republicans were predicting that their big tax cut for businesses would create a virtuous cycle of higher fixed investment, leading to higher growth rates lasting for years.

A month ago, White House economist Kevin Hassett was insisting that everything was still going as planned. He declared that companies were investing more in equipment, software and facilities, enough to propel U.S. potential growth from an anemic 2% to a stellar 3% or more.

As he often is, Hassett was too cheery.

Now, hopes that the investment boom would continue into 2019 are in tatters, victim to four factors that are dragging on the economy: reduced fiscal stimulus (including the shutdown), a weakening global economy, the uncertainty of Donald Trump's trade policy and soft oil prices.

Capex plans scaled back

Those four interrelated trends are weighing on aggregate demand in the U.S. and global economies, forcing companies to scale back their investment plans. It's already visible in the data and in surveys of business expectations.

It's important to define terms from the start. When economists talk about "investment," they aren't talking about putting money into the stock market. They are talking about building and maintaining productive assets that will continue to create value for years.

There are three broad classes of fixed investment: structures, such as factories, oil wells and housing; equipment, such as machinery, airplanes and computers; and intellectual property, such as software, new drugs, and blockbuster Hollywood movies.

Also read: The 15 U.S. companies that are investing the most in tomorrow's big ideas

Businesses invest when they believe demand for their products will rise. Right now, fewer companies are confident of that future revenue. Most of the leading indicators of demand are slumping as the new year begins.

Surveys of manufacturing executives show that the giddy optimism of early 2018 has turned to caution. The new orders component of the ISM manufacturing index, for instance, plunged 11 points in December. Company guidance, U.S. regional surveys and global purchasing managers surveys are telling the same story: Companies are scaling back their plans for capital spending.

Economists at Morgan Stanley say their capex plans index (which is based on the regional Fed surveys of capital-spending expectations) has fallen in eight of the past nine months to the lowest level in a year.

"The continued softening in the index indicates restrained capital spending activity in 2019 as the shine of tax stimulus fades, and slower global growth, uncertainty around trade policy, and tighter financial conditions weigh on investment plans," said Morgan Stanley economist Molly Wharton in a note to clients.

Hard data also show that capital spending is softening. Real business investment surged at a 10% annual pace in the first half of the year, but slowed to 2.5% in the third quarter. Core capital equipment orders and shipments slowed through November, and private nonresidential construction spending has also weakened.

Unfortunately, the government shutdown means this key data isn't being reported or collected. It's never a good time to fly blind, doubly so now.

Impact of oil prices

There's something else going on besides weak aggregate demand: The impact of oil prices on U.S. investment is underappreciated.

It used to be that changes in oil prices mainly affected consumption — lower prices boosted the economy by making energy consumers richer, while higher prices frequently led to recessions. But since the fracking revolution earlier in this decade, changes in oil prices have become highly correlated with changes in investment.

Traditional oil production is based on long-lasting projects requiring huge investments of hundreds of millions of dollars. The analysis of the profitability of, say, an offshore drilling project doesn't depend on spot crude oil prices US:CLG9 but on prices expected for the duration of the project's life. Temporary fluctuations in oil prices won't affect this kind of investment.

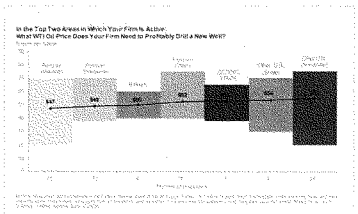
But producing oil from shale is different in an important way: The investments are much smaller (less than $10 million per well), production can ramp up quickly, and the productive life of any well is much shorter. This means the profitability of investing in a shale-fracking project depends on expected oil prices over the next few years.

That creates a lot of volatility in oil-field investment. High prices attract a lot of investment, but when prices fall, as they did in 2014 and 2015, investment collapses. The dip in U.S. growth rates in 2015 and 2016 was largely due to the impact of lower oil prices on business investment.

Oil accounted for all growth

After a study of county-level economic data, Seth Carpenter, chief U.S. economist at UBS Securities, concluded that the increase in oil prices was responsible for much of the rebound in fixed investment in 2017, including investments in drilling equipment, storage tanks, pipes, machinery, vehicles, worker housing, and the equipment needed to supply the required sand and water.

Alexander Arnon of the Penn Wharton Budget Model estimated in a blog post titled "The Price of Oil is Now a Key Driver of Business Investment" that firmer oil prices accounted for almost all of the growth in investment in 2018.



Most oil investments aren't profitable if the price falls much below $50 a barrel.

Unfortunately, oil prices have fallen again. Oil prices, which were near $70 in October, fell to $43 in mid-December and are now around $52. That's right at the midpoint of profitability for most fracking projects, according to the Dallas Fed's Energy Survey.

"The current level of oil prices puts energy investment on a cusp," wrote Carpenter of UBS. "Further declines in the price of West Texas Intermediate are likely to have a substantively negative effect on energy's contribution to U.S. GDP.

Manufacturers in the Dallas and Kansas City Federal Reserve districts have noticed, Morgan Stanley's Wharton points out. "Declining oil prices are a concern going into the first quarter of 2019," one fabricated metal product manufacturer told the Dallas Fed in December. About half of energy firms in the district have lowered their capital spending plans for 2019.

Likewise, oil and gas drilling activity in the Minneapolis Fed district "slowed notably recently in response to a rapid decline in the price of crude oil," according to the latest Beige Book. "An industry contact reported that expectations for capital expenditures in the Bakken oil patch have shifted downward dramatically."

The incentives in the 2017 tax cut had almost nothing to do with the investment boom we saw in 2017 and 2018, which helps

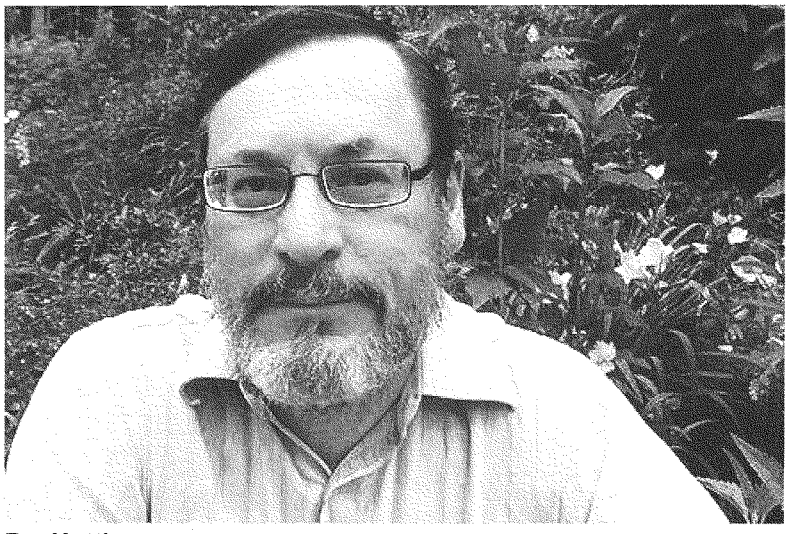
explain why many corporate executives and macro-economists don't think the tax cut transformed the economy at all.

For instance, IHS Markit is predicting that U.S. gross domestic product will fade from 2.9% in 2018 to 1.4% in 2023. The Federal Reserve, the Congressional Budget Office, the IMF and other forecasters agree that the tax cut was a temporary jolt, not a game-changer.

The U.S. economy needs a higher rate of productivity if we want living standards to improve. The tax cut didn't change the weak trend in business investment. Maybe it's time to invest more public money into transportation, alternative energy, education and health care to increase the nation's capital stock and boost our growth rate.

Related commentary:

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- The tax cut's fatal flaw: Companies already have all the cheap capital they want



RexNutting

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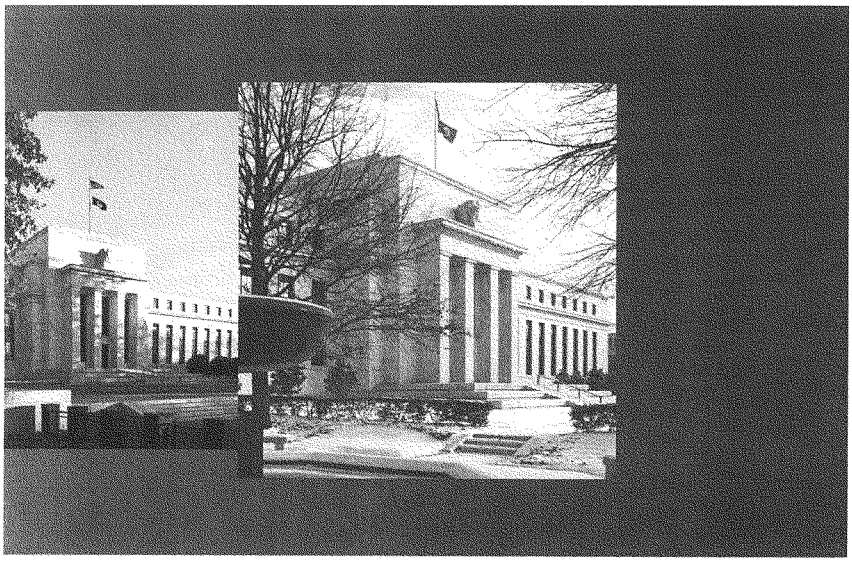
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February 22, 2019

Monetary Policy Report

February 22, 2019



Board of Governors of the Federal Reserve System

LETTER OF TRANSMITTAL

BOARD OF GOVERNORS OF THE
FEDERAL RESERVE SYSTEM

Washington, D.C., February 22, 2019

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

Jerome H. Powell, Chairman

Statement on Longer-Run Goals and Monetary Policy Strategy

Adopted effective January 24, 2012; as amended effective January 29, 2019

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 4.4 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.

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Note: **This report reflects information that was publicly available as of noon EST on February 21, 2019.** Unless otherwise stated, the time series in the figures extend through, for daily data, February 20, 2019; for monthly data, January 2019; and, for quarterly data, 2018: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.

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Summary

Economic activity in the United States appears to have increased at a solid pace, on balance, over the second half of 2018, and the labor market strengthened further. Inflation has been near the Federal Open Market Committee's (FOMC) longer-run objective of 2 percent, aside from the transitory effects of recent energy price movements. In this environment, the FOMC judged that, on balance, current and prospective economic conditions called for a further gradual removal of policy accommodation. In particular, the FOMC raised the target range for the federal funds rate twice in the second half of 2018, putting its level at 2¼ to 2½ percent following the December meeting. In light of softer global economic and financial conditions late in the year and muted inflation pressures, the FOMC indicated at its January meeting that it will be patient as it determines what future adjustments to the federal funds rate may be appropriate to support the Committee's congressionally mandated objectives of maximum employment and price stability.

Economic and Financial Developments

The labor market. The labor market has continued to strengthen since the middle of last year. Payroll employment growth has remained strong, averaging 224,000 per month since June 2018. The unemployment rate has been about unchanged over this period, averaging a little under 4 percent—a low level by historical standards—while the labor force participation rate has moved up despite the ongoing downward influence from an aging population. Wage growth has also picked up recently.

Inflation. Consumer price inflation, as measured by the 12-month change in the price index for personal consumption expenditures, moved down from a little above the FOMC's objective of 2 percent in the middle of last year to an estimated 1.7 percent in December, restrained by recent declines in consumer energy prices. 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 measure that includes those items, is estimated to have been 1.9 percent in December—up ¼ percentage point from a year ago. Survey-based measures of longer-run inflation expectations have generally been stable, though market-based measures of inflation compensation have moved down some since the first half of 2018.

Economic growth. Available indicators suggest that real gross domestic product (GDP) increased at a solid rate, on balance, in the second half of last year and rose a little under 3 percent for the year as a whole—a noticeable pickup from the pace in recent years. Consumer spending expanded at a strong rate for most of the second half, supported by robust job gains, past increases in household wealth, and higher disposable income due in part to the Tax Cuts and Jobs Act, though spending appears to have weakened toward year-end. Business investment grew as well, though growth seems to have slowed somewhat from a sizable gain in the first half. However, housing market activity declined last year amid rising mortgage interest rates and higher material and labor costs. Indicators of both consumer and business sentiment remain at favorable levels, but some measures have softened since the fall, likely a reflection of financial market volatility and increased concerns about the global outlook.

Financial conditions. Domestic financial conditions for businesses and households have become less supportive of economic growth since July. Financial market participants' appetite for risk deteriorated markedly in the latter part of last year amid investor concerns

about downside risks to the growth outlook and rising trade tensions between the United States and China. As a result, Treasury yields and risky asset prices declined substantially between early October and late December in the midst of heightened volatility, although those moves partially retraced early this year. On balance since July, the expected path of the federal funds rate over the next several years shifted down, long-term Treasury yields and mortgage rates moved lower, broad measures of U.S. equity prices increased somewhat, and spreads of yields on corporate bonds over those on comparable-maturity Treasury securities widened modestly. Credit to large nonfinancial firms remained solid in the second half of 2018; corporate bond issuance slowed considerably toward the end of the year but has rebounded since then. Despite increases in interest rates for consumer loans, consumer credit expanded at a solid pace, and financing conditions for consumers largely remain supportive of growth in household spending. The foreign exchange value of the U.S. dollar strengthened slightly against the currencies of the U.S. economy's trading partners.

Financial stability. The U.S. financial system remains substantially more resilient than in the decade preceding the financial crisis. Pressures associated with asset valuations eased compared with July 2018, particularly in the equity, corporate bond, and leveraged loan markets. Regulatory capital and liquidity ratios of key financial institutions, including large banks, are at historically high levels. Funding risks in the financial system are low relative to the period leading up to the crisis. Borrowing by households has risen roughly in line with household incomes and is concentrated among prime borrowers. While debt owed by businesses is high and credit standards—especially within segments of the loan market focused on lower-rated or unrated firms—deteriorated in the second half of 2018, issuance of these loans has slowed more recently.

International Developments. Foreign economic growth stepped down significantly last year from the brisk pace in 2017. Aggregate growth in the advanced foreign economies slowed markedly, especially in the euro area, and several Latin American economies continued to underperform. The pace of economic activity in China slowed noticeably in the second half of 2018. Inflation pressures in major advanced foreign economies remain subdued, prompting central banks to maintain accommodative monetary policies.

Financial conditions abroad tightened in the second half of 2018, in part reflecting political uncertainty in Europe and Latin America, trade policy developments in the United States and its trading partners, as well as concerns about moderating global growth. Although financial conditions abroad improved in recent weeks, alongside those in the United States, on balance since July 2018, global equity prices were lower, sovereign yields in many economies declined, and sovereign credit spreads in the European periphery and the most vulnerable emerging market economies increased somewhat. Market-implied paths of policy rates in advanced foreign economies generally edged down.

Monetary Policy

Interest rate policy. As the labor market continued to strengthen and economic activity expanded at a strong rate, the FOMC increased the target range for the federal funds rate gradually over the second half of 2018. Specifically, the FOMC decided to raise the federal funds rate in September and in December, bringing it to the current range of 2¼ to 2½ percent.

In December, against the backdrop of increased concerns about global growth, trade tensions, and volatility in financial markets, the Committee indicated it would monitor global economic and financial developments and assess their implications for

the economic outlook. In January, the FOMC stated that it continued to view sustained expansion of economic activity, strong labor market conditions, and inflation near the Committee's 2 percent objective as the most likely outcomes. Nonetheless, in light of global economic and financial developments and muted inflation pressures, the Committee noted that it will be patient as it determines what future adjustments to the target range for the federal funds rate may be appropriate to support these outcomes. FOMC communications continued to emphasize that the Committee's approach to setting the stance of policy should be importantly guided by the implications of incoming data for the economic outlook. In particular, the timing and size of future adjustments to the target range for the federal funds rate will depend on the Committee's assessment of realized and expected economic conditions relative to its maximum-employment objective and its symmetric 2 percent inflation objective.

Balance sheet policy. The FOMC continued to implement the balance sheet normalization program that has been under way since October 2017. Specifically, the FOMC reduced its holdings of Treasury and agency securities in a gradual and predictable manner by reinvesting only principal payments it received from these securities that exceeded gradually rising caps. Consequently, the Federal Reserve's total assets declined by about $260 billion since the middle of last year, ending the period close to $4 trillion.

Together with the January postmeeting statement, the Committee released an updated Statement Regarding Monetary Policy Implementation and Balance Sheet Normalization to provide additional information about its plans to implement monetary policy over the longer run. In particular, the FOMC stated that it intends to continue to implement monetary policy in a regime with an ample supply of reserves so that active management of reserves is not required. In addition, the Committee noted that it is prepared to adjust any of the details for completing balance sheet normalization in light of economic and financial developments.

Special Topics

Labor markets in urban versus rural areas. The recovery in the U.S. labor market since the end of the recession has been uneven across the country, with rural areas showing markedly less improvement than cities and their surrounding metropolitan areas. In particular, the employment-to-population ratio and labor force participation rate in rural areas remain well below their pre-recession levels, while the recovery in urban areas has been more complete. Differences in the mix of industries in rural and urban areas—a larger share of manufacturing in rural areas and a greater concentration of fast-growing services industries in urban areas—have contributed to the stronger rebound in urban areas. (See the box "Employment Disparities between Rural and Urban Areas" in Part 1.)

Monetary policy rules. In evaluating the stance of monetary policy, policymakers consider a wide range of information on the current economic conditions and the outlook. Policymakers also consult prescriptions for the policy interest rate derived from a variety of policy rules for guidance, without mechanically following the prescriptions of any specific rule. The FOMC's approach for conducting systematic monetary policy provides sufficient flexibility to address the intrinsic complexities and uncertainties in the economy while keeping monetary policy predictable and transparent. (See the box "Monetary Policy Rules and Systematic Monetary Policy" in Part 2.)

Balance sheet normalization and monetary policy implementation. Since the financial crisis, the size of the Federal Reserve's balance sheet has been determined in large part by its decisions about asset purchases for

economic stimulus, with growth in total assets primarily matched by higher reserve balances of depository institutions. However, liabilities other than reserves have grown significantly over the past decade. In the longer run, the size of the balance sheet will be importantly determined by the various factors affecting the demand for Federal Reserve liabilities. (See the box "The Role of Liabilities in Determining the Size of the Federal Reserve's Balance Sheet" in Part 2.)

Federal Reserve transparency and accountability. For central banks, transparency provides an essential basis for accountability. Transparency also enhances the effectiveness of monetary policy and a central bank's efforts to promote financial stability. For these reasons, the Federal Reserve uses a wide variety of communications to explain its policymaking approach and decisions as clearly as possible. Through several new initiatives, including a review of its monetary policy framework that will include outreach to a broad range of stakeholders, the Federal Reserve seeks to enhance transparency and accountability regarding how it pursues its statutory responsibilities. (See the box "Federal Reserve Transparency: Rationale and New Initiatives" in Part 2.)

PART 1
RECENT ECONOMIC AND FINANCIAL DEVELOPMENTS

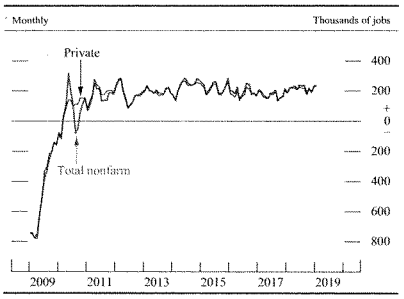
Domestic Developments

The labor market strengthened further during the second half of 2018 and early this year . . .

Payroll employment gains have remained strong, averaging 224,000 per month since June 2018 (figure 1). This pace is similar to the pace in the first half of last year, and it is faster than the average pace of job gains in 2016 and 2017.

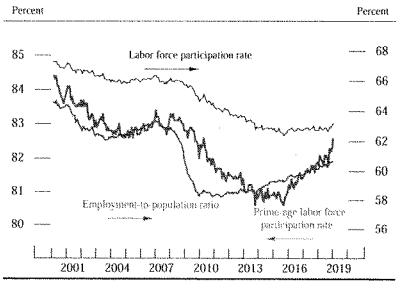
The strong pace of job gains over this period has primarily been manifest in a rising labor force participation rate (LFPR)—the share of the population that is either working or actively looking for work—rather than a declining unemployment rate.[1] Since June 2018, the LFPR has moved up about ¼ percentage point and was 63.2 percent in January—a bit higher than the narrow range it has maintained in recent years (figure 2). The improvement is especially notable because the aging of the population—and, in particular, the movement of members of the baby-boom cohort into their retirement years—has otherwise imparted a downward influence on the LFPR. Indeed, the LFPR for individuals between 25 and 54 years old—which is much less sensitive to population aging—has

1. Net change in payroll employment



NOTE: The data are 3-month moving averages.
SOURCE: Bureau of Labor Statistics via Haver Analytics.

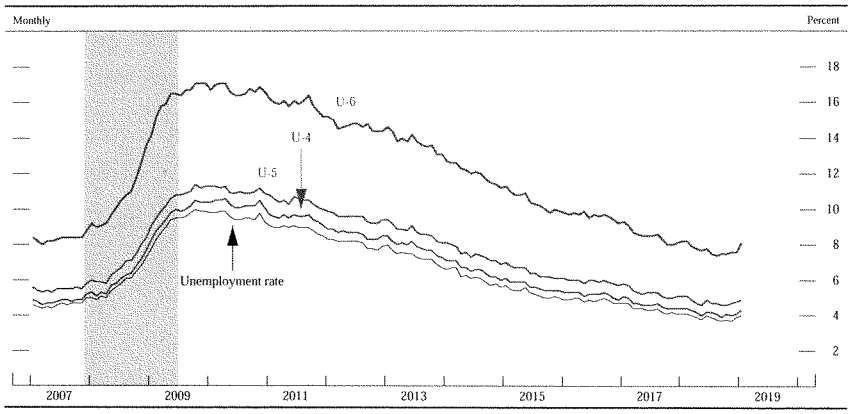
2. Labor force participation rates and employment-to-population ratio



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.

1. The observed pace of payroll job gains would have been sufficient to push the unemployment rate lower had the LFPR not risen. Indeed, monthly payroll gains in the range of 115,000 to 145,000 appear consistent with an unchanged unemployment rate around 4.0 percent and an unchanged LFPR around 62.9 percent (which are the June 2018 values of these rates). If instead the LFPR were declining 0.2 percentage point per year—roughly the influence of population aging—the range of job gains needed to maintain an unchanged unemployment rate would be about 40,000 per month lower. There is considerable uncertainty around these estimates, as the difference between monthly payroll gains and employment changes from the Current Population Survey (the source of the unemployment rate and LFPR) can be quite volatile over short periods.

3. 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 are available 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.

improved considerably more than the overall LFPR, including a ½ percentage point rise since June 2018.[2]

At the same time, the unemployment rate has remained little changed and has generally been running a little under 4 percent.[3] Nevertheless, the unemployment rate remains at a historically low level and is ½ percentage point below the median of the Federal Open Market Committee (FOMC) participants' estimates of its longer-run normal level (figure 3).[4] Combining the movements in both unemployment and labor force participation,

2. Since 2015, the increase in the prime-age LFPR for women was nearly 2 percentage points, while the increase for men was only about 1 percentage point. In January, the LFPR for prime-age women was slightly above where it stood in 2007, whereas for men it was still about 2 percentage points below.

3. The unemployment rate in January was 4.0 percent, boosted somewhat by the partial government shutdown, as some furloughed federal workers and temporarily laid-off federal contractors are treated as unemployed in the household employment survey.

4. See the Summary of Economic Projections in Part 3 of this report.

the employment-to-population ratio for individuals 16 and over—the share of that segment of the population who are working—was 60.7 percent in January and has been gradually increasing since 2011.

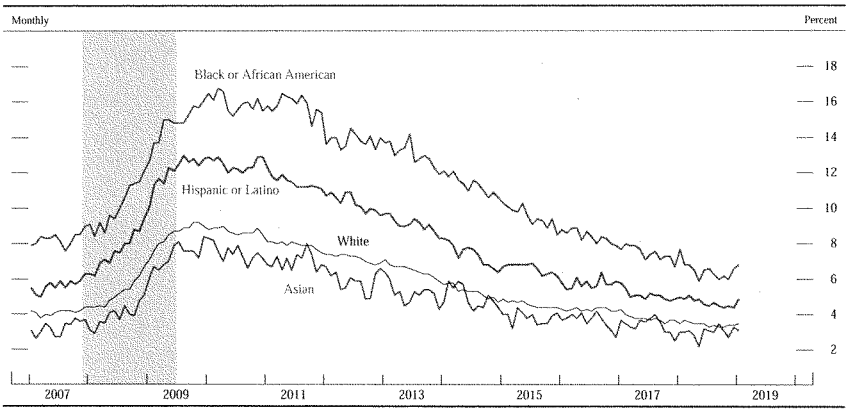
Other indicators are also consistent with a strong labor market. As reported in the Job Openings and Labor Turnover Survey (JOLTS), the job openings rate has moved higher since the first half of 2018, and in December, it was at its highest level since the data began in 2000. The quits rate in the JOLTS is also near the top of its historical range, an indication that workers have become more confident that they can successfully switch jobs when they wish to. In addition, the JOLTS layoff rate has remained low, and the number of people filing initial claims for unemployment insurance benefits has also remained low. Survey evidence indicates that households perceive jobs as plentiful and that businesses see vacancies as hard to fill.

. . . and unemployment rates have fallen for all major demographic groups over the past several years

The flattening in unemployment since mid-2018 has been evident across racial and ethnic groups (figure 4). Even so, over the past several years, the decline in the unemployment rates for blacks or African Americans and for Hispanics has been particularly notable, and the unemployment rates for these groups are near their lowest readings since these series began in the early 1970s. Differences in unemployment rates across ethnic and racial groups have narrowed in recent years, as they typically do during economic expansions, after having widened during the recession; on net, unemployment rates for African Americans and Hispanics remain substantially above those for whites and Asians, with differentials generally a bit below pre-recession levels.

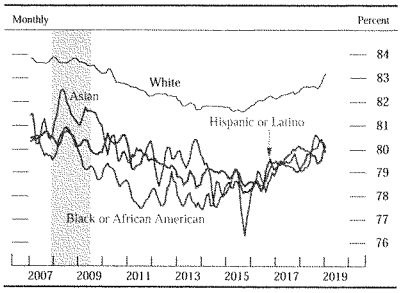
The rise in LFPRs for prime-age individuals over the past few years has also been apparent in each of these racial and ethnic groups. Nonetheless, the LFPR for whites remains

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.

5. Prime-age labor force participation rate by race and ethnicity



NOTE: The prime-age labor force participation rate is a percentage of the population aged 25 to 54. Persons whose ethnicity is identified as Hispanic or Latino may be of any race. The data are seasonally adjusted by Board staff and are 3-month moving averages. The shaded bar indicates a period of business recession as defined by the National Bureau of Economic Research.
SOURCE: Bureau of Labor Statistics.

higher than that for other groups (figure 5). Important differences in economic outcomes persist across other characteristics as well (see, for example, the box "Employment Disparities between Rural and Urban Areas," which highlights that there has been less improvement since 2010 in the LFPR and employment-to-population ratio for prime-age individuals in rural areas compared with urban areas).

Increases in labor compensation have picked up recently but remain moderate by historical standards . . .

Most available indicators suggest that growth of hourly compensation has stepped up further since June 2018 after having firmed somewhat over the past few years; however, growth rates remain moderate compared with those that prevailed in the decade before the recession. Compensation per hour in the business sector—a broad-based measure of wages and benefits, but one that is quite volatile—rose 2¼ percent over the four quarters ending in 2018:Q3, about the same as the average annual increase over the past seven years or so (figure 6). The employment cost index, a less volatile measure of both wages and the cost

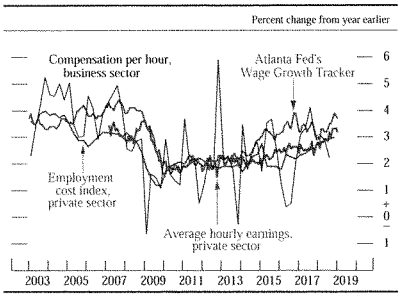
to employers of providing benefits, increased 3 percent over the same period, while average hourly earnings—which do not take account of benefits—increased 3.2 percent over the 12 months ending in January of this year; the annual increases in both of these measures were the strongest in nearly 10 years. 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 3.7 percent in January, near the upper end of its readings in the past three years and well above the average increase in the preceding few years.[5]

. . . and have likely been restrained by slow growth of labor productivity over much of the expansion

These moderate rates of compensation gains likely reflect the offsetting influences of a strong labor market and productivity growth that has been weak through much of the expansion. From 2008 to 2017, labor productivity increased a little more than 1 percent per year, on average, well below the average pace from 1996 to 2007 of nearly 3 percent and also below the average gain in the 1974–95 period (figure 7). Although considerable debate remains about the reasons for the slowdown over this period, the weakness in productivity growth may be partly attributable to the sharp pullback in capital investment during the most recent recession and the relatively slow recovery that followed. More recently, however, labor productivity is estimated to have increased almost 2 percent at an annual rate in the first three quarters of 2018—still moderate relative to earlier periods, but its fastest three-quarter gain since 2010. While it is uncertain whether this faster rate of growth will persist, a sustained pickup in productivity growth, as well as additional labor market strengthening, would likely support stronger gains in labor compensation.

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.

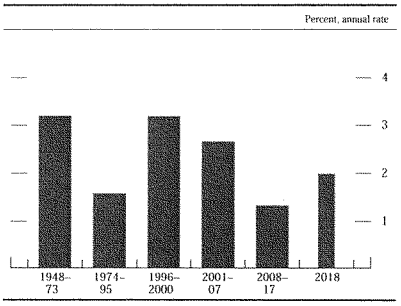
6. Measures of change in hourly compensation



NOTE: Business-sector compensation is on a 4-quarter percentage change basis and extends through 2018:Q3. For the private-sector employment cost index, change is over the 12 months ending in the last month of each quarter; for private-sector average hourly earnings, the data are 12-month percent changes and begin in March 2007; 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.

7. 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 bar for 2018 reports growth from 2017:Q4 through 2018:Q3 at an annual rate.

SOURCE: Bureau of Labor Statistics via Haver Analytics.

Employment Disparities between Rural and Urban Areas

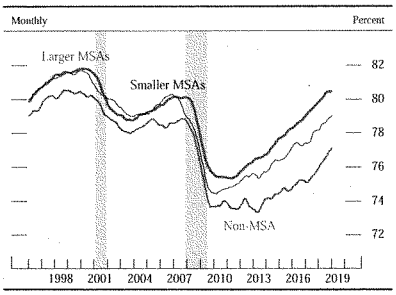
The U.S. labor market has recovered substantially since 2010. For people in their prime working years (ages 25 to 54), the unemployment rate has moved down steadily to levels below the previous business cycle peak in 2007, the labor force participation rate (LFPR) has retraced much of its decline, and the share of the population who are employed—known as the employment-to-population ratio, or EPOP ratio—has returned to about its level before the recession. However, the labor market recovery has been uneven across the country, with "rural" (or nonmetro) areas showing markedly less improvement than cities and their surroundings (metro areas).[1]

The extent of the initial decline and subsequent improvement in the EPOP ratio varied by metropolitan status. The gap between the EPOP ratios in rural and larger urban areas is now noticeably wider than it was before the recession, and the cyclical recovery started later in rural areas. Specifically, as shown in figure A, the prime-age EPOP is now slightly above its pre-recession level in larger urban areas, whereas it is just below its pre-recession average in smaller urban areas and much below its pre-recession level in rural areas.[2]

The EPOP ratio can usefully be viewed as summarizing both the LFPR—that is, the share of the population that either has a job or is actively looking for work—and the unemployment rate, which measures the share of the labor force without a job and actively searching.[3] The divergence in rural and urban EPOP ratios during the economic expansion almost entirely reflects divergences in LFPRs rather than in unemployment rates (figures B and C). In particular, the rural and urban unemployment rates have tracked each

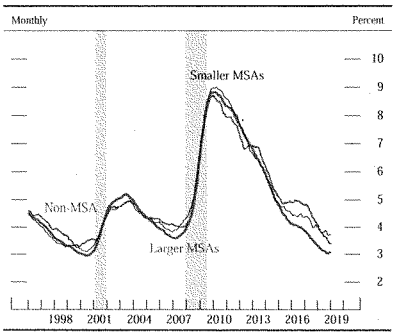
(continued)

A. Employment-to-population ratios



NOTE: Data are for persons aged 25 to 54. 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: References listed in box note 2.

B. Unemployment rates



NOTE: Data are for persons aged 25 to 54. 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: References listed in box note 2.

1. For convenience, we refer to metropolitan counties with strong commuting ties to an urbanized center as "urban" and nonmetropolitan counties that lack such ties as "rural."

2. For all figures in this discussion, the raw data are 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. Calculations of the series shown are as described in 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. The figures show 12-month moving averages of the monthly time-series.

3. Specifically, the EPOP ratio equals (LFPR) x (1 -- unemployment rate), where LFPR is defined as "labor force/population" and the unemployment rate is defined as "persons unemployed/labor force." These numbers are multiplied by 100 for presentation purposes in the figures.

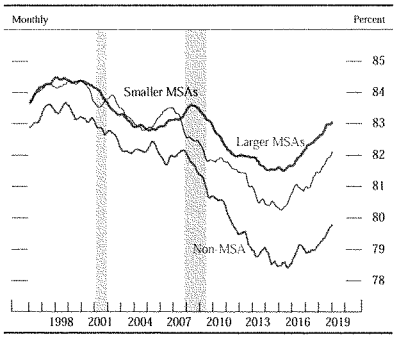
other fairly closely in this expansion, though they have diverged a little in the past few years. In contrast, the difference between rural and urban LFPRs has widened significantly over the past decade.

On average, people in rural areas tend to have fewer years of schooling than people in urban areas, and because the EPOP ratio tends to be lower for individuals with less education, this demographic difference has contributed to the persistent rural–urban divide. However, these educational differences do not appear responsible for the fact that the gap between rural and urban EPOP ratios have widened. Figure D shows that, in recent years, rural and urban EPOP ratios diverged substantially even within educational categories, similar to the divergence in EPOPs more generally. The left panel of figure D shows that the EPOP ratio of non-college-educated adults ages 25 to 54 has been much lower in rural areas than in urban ones beginning in 2012. The right panel of figure D shows that the EPOP ratio of college-educated adults used to be *higher* in rural areas than in urban ones, but that is no longer so. Thus, the recent widening of the rural–urban disparity in EPOP ratios has not been primarily driven by differences in years of education.

Nevertheless, because the recovery in the EPOP ratio for non-college-educated adults in rural areas

(continued on next page)

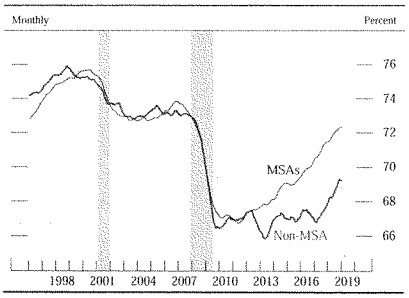
C. Labor force participation rates



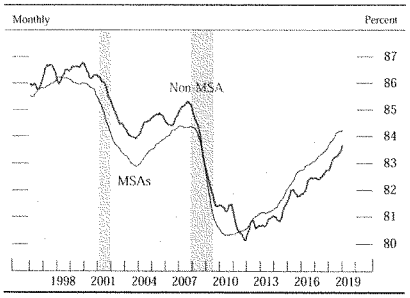
NOTE: Data are for persons aged 25 to 54. Larger metropolitan statistical areas (MSAs) consist of 500,000 people or more, and smaller MSAs consist of 100,000 to 500,000 people. The shaded bars indicate periods of business recession as defined by the National Bureau of Economic Research.
SOURCE: References listed in box note 2.

D. Employment-to-population ratios

Noncollege adults



College adults



NOTE: Data are for persons aged 25 to 54. MSA is metropolitan statistical area. The shaded bars indicate periods of business recession as defined by the National Bureau of Economic Research.
SOURCE: References listed in box note 2.

Employment Disparities *(continued)*

has been particularly weak, it is likely that broader macroeconomic trends—including the ongoing shift in labor demand that has favored individuals with more education—have had more adverse consequences for the populations in rural areas than in urban areas. For example, manufacturing, where employment has stagnated, accounts for a larger share of employment in rural areas than in urban areas, while fast-growing services industries, such as health-care and professional services that tend to employ workers with more education, are more concentrated in urban areas. Indeed, employment in manufacturing has not yet fully recovered from the recession. And, despite the strength in the past two years, the share of total employment in manufacturing has remained near its post-recession low.

The fact that most of the EPOP divergence is seen in labor force participation rather than unemployment rates suggests that many rural workers who experienced a permanent job loss, perhaps due to a factory closing, decided to eventually exit the labor force rather than continue their job search. Some individuals who had been working, despite ongoing health problems, may have responded to job loss and poor reemployment opportunities by applying for Social Security Disability Insurance (SSDI) benefits, and, in fact, take-up increased a little more in rural areas than it did in urban ones over the past decade.[4]

When regions are faced with adverse changes in labor demand, some residents may respond by migrating to more prosperous areas. The more out-migration that occurs from areas with relatively fewer labor market opportunities, the smaller should be the observed decline in local-area EPOPs.[5] However, some research suggests that the average migration response to adverse demand shocks has decreased in recent decades, which could amplify the labor market effects of local shocks and lead to persistent disparities in EPOP ratios across areas.[6]

4. This increase could reflect growing public health problems (which expands the pool of individuals who qualify for SSDI) and sluggish labor demand in rural areas (which increases the propensity of individuals to apply for SSDI benefits).

5. Although a higher rate of rural out-migration would help close the EPOP gap, depopulation might exacerbate economic difficulties for those who remain in rural areas.

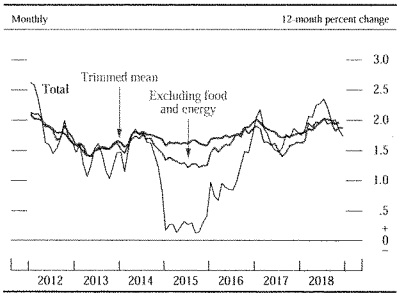
6. See, for example, Mai Dao, Davide Furceri, and Prakash Loungani (2017), "Regional Labor Market Adjustment in the United States: Trend and Cycle," *Review of Economics and Statistics*, vol. 99 (May), pp. 243–57.

Price inflation is close to 2 percent

Consumer price inflation has fluctuated around the FOMC's objective of 2 percent, largely reflecting movements in energy prices. As measured by the 12-month change in the price index for personal consumption expenditures (PCE), inflation is estimated to have been 1.7 percent in December after being above 2 percent for much of 2018 (figure 8).[6] Core PCE inflation—that is, inflation excluding consumer food and energy prices—is estimated to have been 1.9 percent in December. Because food and energy prices are often quite volatile, core inflation typically provides a better indication than the total measure of where overall inflation will be in the future. Total inflation was below core inflation for the year as a whole not only because of softness in energy prices, but also because food price inflation has remained relatively low.

Core inflation has moved up since 2017, when inflation was held down by some unusually large price declines in a few relatively small categories of spending, such as mobile phone services. The trimmed mean PCE price index, produced by the Federal Reserve Bank of Dallas, provides an alternative way to purge inflation of transitory influences, and it may be less sensitive than the core index to idiosyncratic price movements such as those noted earlier. The 12-month change in this measure did not decline as much as core PCE inflation in 2017, and it was 2.0 percent in November.[7] Inflation likely has been increasingly supported by the strong labor market in an environment of stable inflation expectations; inflation last year was

8. Change in the price index for personal consumption expenditures



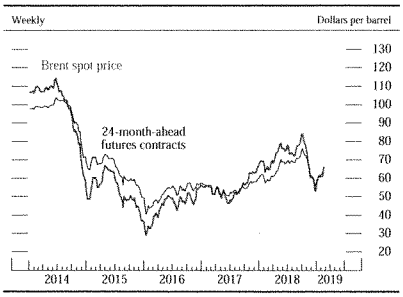
NOTE: The data for total and excluding food and energy extend through December 2018; final values are staff estimates. The trimmed data extend through November 2018.

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

6. The partial government shutdown has delayed publication of the Bureau of Economic Analysis's estimate for PCE price inflation in December, and the numbers reported here are estimates based on the December consumer and producer price indexes.

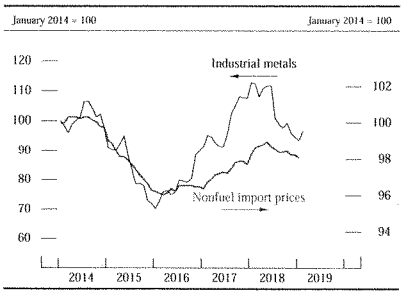
7. The trimmed mean index excludes whichever prices showed the largest increases or decreases in a given month. Note that over the past 20 years, changes in the trimmed mean index have averaged about ¼ percentage point above core PCE inflation and 0.1 percentage point above total PCE inflation.

9. Spot and futures prices for crude oil



NOTE: The data are weekly averages of daily data and extend through February 20, 2019.
SOURCE: ICE Brent Futures via Bloomberg.

10. 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 20, 2019.
SOURCE: For nonfuel import prices, Bureau of Labor Statistics; for industrial metals, S&P GSCI Industrial Metals Spot Index via Haver Analytics.

also boosted slightly by the tariffs that were imposed throughout 2018.

Oil prices have dropped markedly in recent months . . .

As noted, the slower pace of total inflation in late 2018 relative to core inflation largely reflected softening in consumer energy prices toward the end of the year. After peaking at about $86 per barrel in early October, the price of crude oil subsequently fell sharply and has averaged around $60 per barrel this year (figure 9). The recent decline in oil prices has led to moderate reductions in the cost of gasoline and heating oil. Supply factors, including surging oil production in Saudi Arabia, Russia, and the United States, appear to be most responsible for the recent price declines, but concerns about weaker global growth likely also played a role.

. . . while prices of imports other than energy have also declined

After climbing steadily since their early 2016 lows, nonfuel import prices peaked in May 2018 and declined for much of the rest of 2018 in response to dollar appreciation, lower foreign inflation, and declines in commodity prices. In particular, metal prices fell markedly in the second half of 2018, partly reflecting concerns about prospects for the global economy (figure 10). Nonfuel import prices, before accounting for the effects of tariffs on the price of imported goods, had roughly a neutral influence on U.S. price inflation in 2018.

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

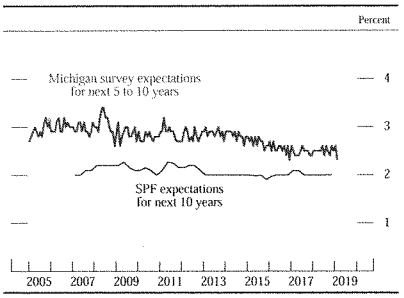
Expectations of inflation likely influence actual inflation by affecting wage- and price-setting decisions. Survey-based measures of inflation expectations at medium- and longer-term horizons have remained generally stable over the second half of 2018. In the Survey of Professional Forecasters, conducted 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 very close to 2 percent for the past several years (figure 11). In the University of Michigan Surveys of Consumers, the median value for inflation expectations over the next 5 to 10 years has been around 2½ percent since the end of 2016, though this level is about ¼ percentage point lower than had prevailed through 2014. In contrast, in the Survey of Consumer Expectations, conducted by the Federal Reserve Bank of New York, the median of respondents' expected inflation rate three years hence—while relatively stable around 3 percent since early 2018—is nonetheless at the top of the range it has occupied over the past couple of years.

. . . while market-based measures of inflation compensation have come down since the first half of 2018

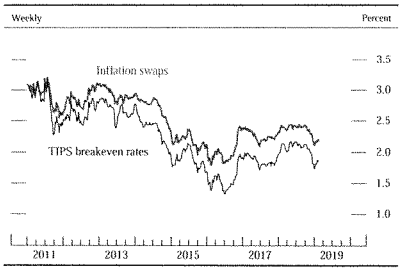
Inflation expectations can also be gauged by market-based measures of inflation compensation. However, the inference is not straightforward, because market-based measures can be importantly affected by changes in premiums that provide compensation for bearing inflation and liquidity risks. Measures of longer-term inflation compensation—derived either from differences between yields on nominal Treasury securities and those on comparable-maturity Treasury Inflation-Protected Securities (TIPS) or from inflation swaps—moved down in the fall and are below levels that prevailed earlier in 2018 (figure 12).[8] The TIPS-based measure of 5-to-10-year-forward inflation compensation and the analogous measure from inflation swaps are now about 1¾ percent

11. Median inflation expectations



NOTE: The Michigan survey data are monthly and extend through February 2019; the February data are preliminary. The SPF data for inflation expectations for personal consumption expenditures are quarterly and begin in 2007:Q1.
SOURCE: University of Michigan Surveys of Consumers; Federal Reserve Bank of Philadelphia, Survey of Professional Forecasters (SPF).

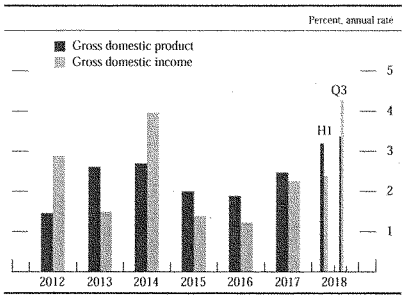
12. 5-to-10-year-forward inflation compensation



NOTE: The data are weekly averages of daily data and extend through February 15, 2019. TIPS is Treasury Inflation-Protected Securities.
SOURCE: Federal Reserve Bank of New York; Barclays; Federal Reserve Board staff estimates.

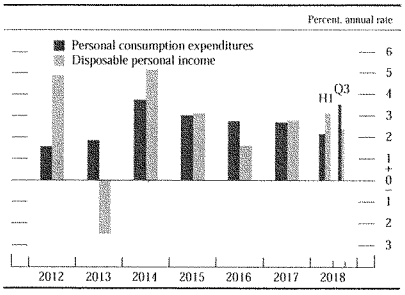
8. Inflation compensation implied by the TIPS breakeven inflation rate is based on the difference, at comparable maturities, between yields on nominal Treasury securities and yields on TIPS, which are indexed to the total consumer price index (CPI). Inflation swaps are contracts in which one party makes payments of certain fixed nominal amounts in exchange for cash flows that are indexed to cumulative CPI inflation over some horizon. Inflation compensation derived from inflation swaps typically exceeds TIPS-based compensation, but week-to-week movements in the two measures are highly correlated.

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



SOURCE: Bureau of Economic Analysis via Haver Analytics.

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



SOURCE: Bureau of Economic Analysis via Haver Analytics.

and 2¼ percent, respectively, with both measures below their respective ranges that persisted for most of the 10 years before the start of the notable declines in mid-2014.[9]

Real gross domestic product growth was solid, on balance, in the second half of 2018

Real gross domestic product (GDP) rose at an annual rate of 3½ percent in the third quarter, and available indicators point to a moderate gain in the fourth quarter.[10] For the year, GDP growth appears to have been a little less than 3 percent, up from the 2½ percent pace in 2017 and the 2 percent pace in the preceding two years (figure 13). Last year's growth reflects, in part, solid growth in household and business spending, on balance, as well as an increase in government purchases of goods and services; by contrast, housing-sector activity turned down last year. Private domestic final purchases—that is, final purchases by households and businesses, which tend to provide a better indication of future GDP growth than most other components of overall spending—likely posted a strong gain for the year.

Some measures of consumer and business sentiment have recently softened—likely reflecting concerns about financial market volatility, the global economic outlook, trade policy tensions, and the government shutdown—and consumer spending appears to have weakened at the end of the year. Nevertheless, the economic expansion continues to be supported by steady job gains, past increases in household wealth, expansionary fiscal policy, and still-favorable domestic financial conditions, including

9. As these measures are based on CPI inflation, one should probably subtract about ¼ percentage point—the average differential with PCE inflation over the past two decades—to infer inflation compensation on a PCE basis.

10. The initial estimate of GDP by the Bureau of Economic Analysis for the fourth quarter was delayed because of the partial government shutdown and will now be released on February 28.

moderate borrowing costs and easy access to credit for many households and businesses.

Ongoing improvements in the labor market continue to support household income and consumer spending . . .

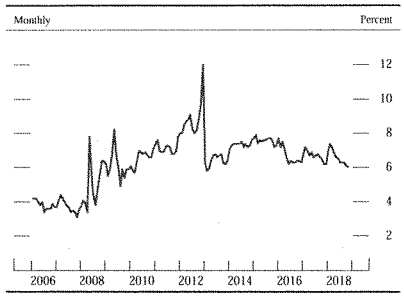
Real consumer spending picked up after some transitory weakness in the first half of 2018, rising at a strong annual rate of 3½ percent in the third quarter and increasing robustly through November (figure 14). However, despite anecdotal reports of favorable holiday sales, retail sales were reported to have declined sharply in December. Real disposable personal income—that is, income after taxes and adjusted for price changes—looks to have increased around 3 percent over the year, boosted by ongoing improvements in the labor market and the reduction in income taxes due to the implementation of the Tax Cuts and Jobs Act (TCJA). With consumer spending rising at about the same rate as gains in disposable income in 2018 through the third quarter (the latest data available), the personal saving rate was roughly unchanged, on net, over this period (figure 15).

. . . although wealth gains have moderated and consumer confidence has recently softened

While increases in household wealth have likely continued to support consumer spending, gains in net worth slowed last year. House prices continued to move up in 2018, boosting the wealth of homeowners, but the pace of growth moderated (figure 16). U.S. equity prices are, on net, similar to their levels at the end of 2017. Still, the level of equity and housing wealth relative to income remains very high by historical standards (figure 17).[11]

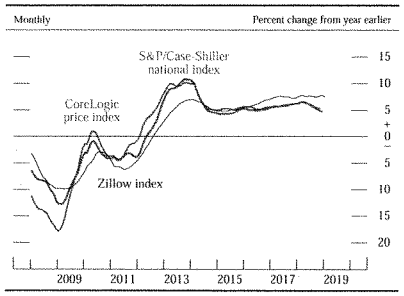
11. Indeed, in the third quarter of 2018—the most recent period for which data are available—household net worth was seven times the value of disposable income, the highest-ever reading for that ratio, which dates back to 1947. However, following the decline in stock prices since the summer, this ratio has likely fallen somewhat.

15. Personal saving rate



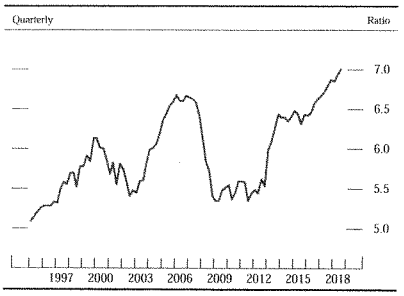
NOTE: Data extend through November 2018.
SOURCE: Bureau of Economic Analysis via Haver Analytics.

16. Prices of existing single-family houses



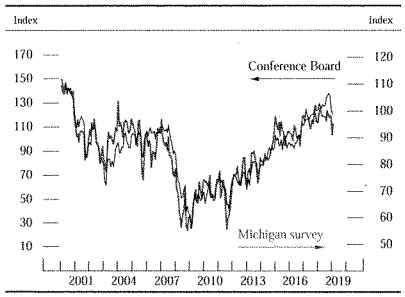
NOTE: The data for the S&P/Case-Shiller index extend through November 2018. The data for the CoreLogic index extend through December 2018.
SOURCE: CoreLogic Home Price Index; Zillow; S&P/Case-Shiller U.S. National Home Price Index. The S&P/Case-Shiller Index is a product of S&P Dow Jones Indices LLC and/or its affiliates. (For Dow Jones Indices licensing information, see the note on the Contents page.)

17. Wealth-to-income ratio



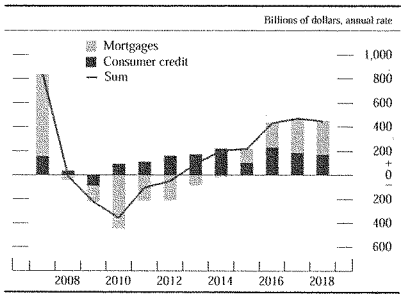
NOTE: Data extend through 2018:Q3. The series is the ratio of household net worth to disposable personal income.
SOURCE: For net worth, Federal Reserve Board, Statistical Release Z.1, "Financial Accounts of the United States"; for income, Bureau of Economic Analysis via Haver Analytics.

18. Indexes of consumer sentiment



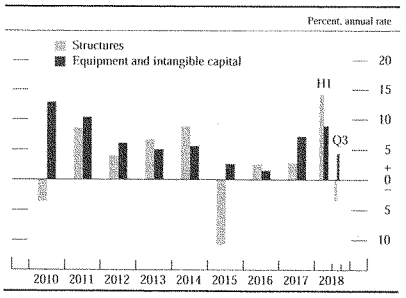
NOTE: The data are monthly. Michigan data extend through February 2019; the February data are preliminary. The Conference Board data are indexed to 100 in 1985. The Michigan survey data are indexed to 100 in 1966.
SOURCE: University of Michigan Surveys of Consumers; Conference Board.

19. Changes in household debt



NOTE: Changes are calculated from year-end to year-end except 2018 changes, which are calculated from 2017:Q3 to 2018:Q3.
SOURCE: Federal Reserve Board, Statistical Release Z.1, "Financial Accounts of the United States."

20. Change in real private nonresidential fixed investment



SOURCE: Bureau of Economic Analysis via Haver Analytics.

Consumer sentiment as measured by the Michigan survey flattened out at a high level through much of 2018, and the sentiment measure from the Conference Board survey climbed through most of the year, with both measures posting their highest annual averages since 2000 (figure 18). However, consumer sentiment has turned down since around year-end, on net, with the declines primarily reflecting consumers' expectations for future conditions rather than their assessment of current conditions. Consumer attitudes about car buying have also weakened. Nevertheless, these indicators of consumers' outlook remain at generally favorable levels, likely reflecting rising income, job gains, and low inflation.

Borrowing conditions for consumers remain generally favorable despite interest rates being near the high end of their post-recession range

Despite increases in interest rates for consumer loans and some reported further tightening in credit card lending standards, financing conditions for consumers largely remain supportive of growth in household spending, and consumer credit growth in 2018 expanded further at a solid pace (figure 19). Mortgage credit has continued to be readily available for households with solid credit profiles. For borrowers with low credit scores, mortgage underwriting standards have eased somewhat since the first half of 2018 but remain noticeably tighter than before the recession. Financing conditions in the student loan market remain stable, with over 90 percent of such credit being extended by the federal government. Delinquencies on such loans, though staying elevated, continued to improve gradually on net.

Business investment growth has moderated after strong gains early in 2018 . . .

Investment spending by businesses rose rapidly in the first half of last year, and the available data are consistent with growth having slowed in the second half (figure 20).

The apparent slowdown reflects, in part, more moderate growth in investment in equipment and intangibles as well as a likely decline in investment in nonresidential structures after strong gains earlier in the year. Forward-looking indicators of business spending—such as business sentiment, capital spending plans, and profit expectations from industry analysts—have softened recently but remain positive overall. And while new orders of capital goods flattened out toward the end of last year, the backlog of unfilled orders for this equipment has continued to rise.

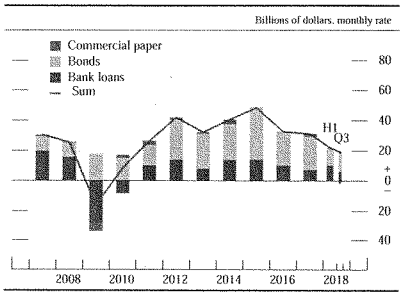
. . . as corporate financing conditions tightened somewhat but remained accommodative overall

Spreads of yields on nonfinancial corporate bonds over those on comparable-maturity Treasury securities widened modestly, on balance, since the middle of 2018 as investors' risk appetite appeared to recede some. Nonetheless, a net decrease in Treasury yields over the past several months has left interest rates on corporate bonds still low by historical standards, and financing conditions appear to have remained accommodative overall. Aggregate net flows of credit to large nonfinancial firms remained solid in the third quarter (figure 21). The gross issuance of corporate bonds and new issuance of leveraged loans both fell considerably toward the end of the year but have since rebounded, mirroring movements in financial market volatility.

Respondents to the January Senior Loan Officer Opinion Survey on Bank Lending Practices, or SLOOS, reported that lending standards for commercial and industrial (C&I) loans remained basically unchanged in the fourth quarter after having reported easing standards over the past several quarters. However, banks reported tightening lending standards on all categories of commercial real estate (CRE) loans in the fourth quarter on net.

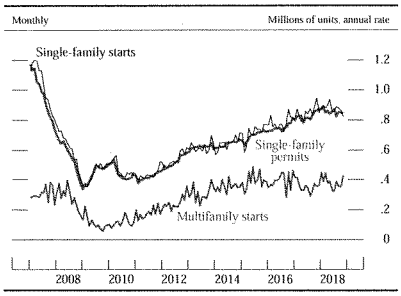
Meanwhile, financing conditions for small businesses have remained generally

21. Selected components of net debt financing for nonfinancial businesses



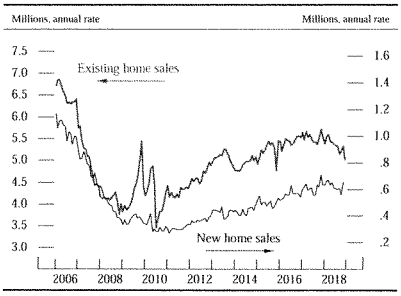
SOURCE: Federal Reserve Board, Statistical Release Z.1, "Financial Accounts of the United States."

22. Private housing starts and permits



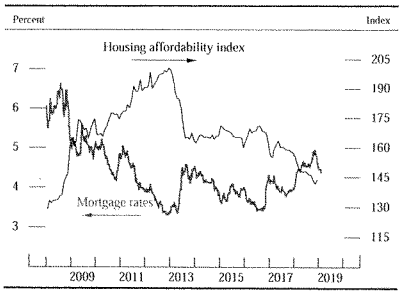
NOTE: The data extend through November 2018.
SOURCE: U.S. Census Bureau via Haver Analytics.

23. New and existing home sales



NOTE: Data are monthly. New home sales extends through November 2018 and includes only single-family sales. Existing home sales extends through December 2018 and 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.

24. Mortgage rates and housing affordability



NOTE: The housing affordability index data are monthly through December 2018, and the mortgage rate data are weekly through February 14, 2019. At an index value of 100, a median-income family has exactly enough income to qualify for a median-priced home mortgage. Housing affordability is seasonally adjusted by Board staff.
SOURCE: For housing affordability index, National Association of Realtors; for mortgage rates, Freddie Mac Primary Mortgage Market Survey.

accommodative. Lending volumes to small businesses rebounded a bit in recent months, and indicators of recent loan performance stayed strong.

Activity in the housing sector has been declining

Residential investment declined in 2018, as housing starts held about flat and sales of existing homes moved lower (figures 22 and 23). The drop in residential investment reflects rising mortgage rates—which remain higher than in 2017 despite coming down some recently—as well as higher material and labor building costs, which have likely restrained new home construction. Consumers' perceptions of homebuying conditions deteriorated sharply over 2018, consistent with the decline in the affordability of housing associated with both higher mortgage rates and still-rising house prices (figure 24).

Net exports likely subtracted from GDP growth in 2018

After a strong performance in the first half of last year supported by robust exports of agricultural products, real exports declined in the third quarter, and available indicators suggest only a partial rebound in the fourth quarter (figure 25). At the same time, growth in real imports seems to have picked up in the second half of 2018. As a result, real net exports—which lifted U.S. real GDP growth during the first half of 2018—appear to have subtracted from growth in the second half. For the year as a whole, net exports likely subtracted a little from real GDP growth, similar to 2016 and 2017. The nominal trade deficit and the current account deficit in 2018 were little changed as a percent of GDP from 2017 (figure 26).

Federal fiscal policy actions boosted economic growth in 2018 . . .

Fiscal policy at the federal level boosted GDP growth in 2018, both because of lower income and business taxes from the TCJA and

because federal purchases appear to have risen significantly faster than in 2017 as a result of the Bipartisan Budget Act of 2018 (figure 27).[12] The partial government shutdown, which was in effect from December 22 through January 25, likely held down GDP growth in the first quarter of this year somewhat, largely because of the lost work of furloughed federal government workers and temporarily affected federal contractors.

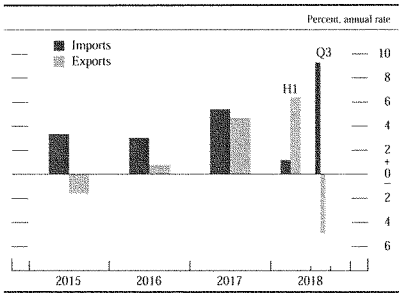
The federal unified deficit widened in fiscal year 2018 to 3¾ percent of nominal GDP because receipts moved lower, to roughly 16½ percent of GDP (figure 28). Expenditures edged down, to 20¼ percent of GDP, but remain above the levels that prevailed in the decade before the start of the 2007–09 recession. The ratio of federal debt held by the public to nominal GDP equaled 78 percent at the end of fiscal 2018 and remains quite elevated relative to historical norms (figure 29). The Congressional Budget Office projects that this ratio will rise over the next several years.

. . . 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. After several years of slow growth, revenue gains of state governments strengthened notably as sales and income tax collections have picked up over the past few quarters. At the local level, property tax collections continue to rise at a solid clip, pushed higher by past house price gains. After declining a bit in 2017, real state and local government purchases grew moderately last year, driven largely by a boost in construction but also reflecting modest growth in employment at these governments.

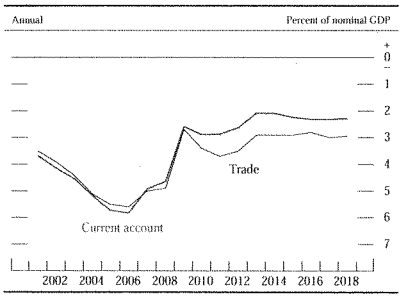
12. The Joint Committee on Taxation estimated that the TCJA would reduce average annual tax revenue by a little more than 1 percent of GDP starting in 2018 and for several years thereafter. This revenue estimate does not account for the potential macroeconomic effects of the legislation.

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



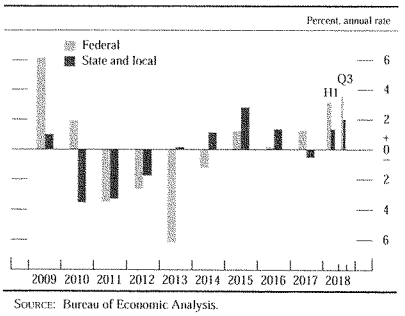
SOURCE: Bureau of Economic Analysis via Haver Analytics.

26. U.S. trade and current account balances



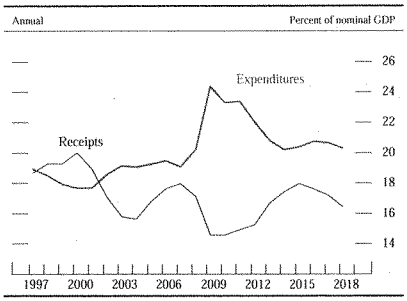
NOTE: Data for 2018 are the average of the first three quarters of the year, at an annualized rate. GDP is gross domestic product.
SOURCE: Bureau of Economic Analysis via Haver Analytics.

27. Change in real government expenditures on consumption and investment



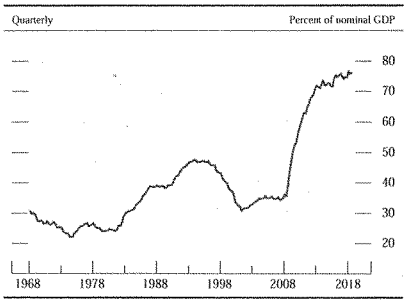
SOURCE: Bureau of Economic Analysis.

28. 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 Q3.
SOURCE: Office of Management and Budget via Haver Analytics.

29. Federal government debt held by the public



NOTE: The data extend through 2018: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."

Financial Developments

The expected path of the federal funds rate over the next several years has moved down

Despite the further strengthening in the labor market and continued expansion in the U.S. economy, market-based measures of the expected path for the federal funds rate over the next several years have declined, on net, since the middle of last year (figure 30). Various factors contributed to this shift, including increased investor concerns about downside risks to the global economic outlook and rising trade tensions, as well as FOMC communications that were viewed as signaling patience and greater flexibility in the conduct of monetary policy in response to adverse macroeconomic or financial market developments.

Survey-based measures of the expected path of the policy rate through 2020 also shifted down, on net, relative to the levels observed in the first half of 2018. According to the results of the most recent Survey of Primary Dealers and Survey of Market Participants, both conducted by the Federal Reserve Bank of New York just before the January FOMC meeting, the median of respondents' modal projections for the path of the federal funds rate implies two additional 25 basis point rate increases in 2019. Relative to the December survey, these increases are expected to occur later in 2019. Looking further ahead, respondents to the January survey forecast no rate increases in 2020 and in 2021.[13] Meanwhile, market-based measures of uncertainty about the policy rate approximately one to two years ahead were little changed, on balance, from their levels at the end of last June.

13. The results of the Survey of Primary Dealers and the Survey of Market Participants are available on the Federal Reserve Bank of New York's website at https://www.newyorkfed.org/markets/primarydealer_survey_questions.html and https://www.newyorkfed.org/markets/survey_market_participants, respectively.

The nominal Treasury yield curve continued to flatten

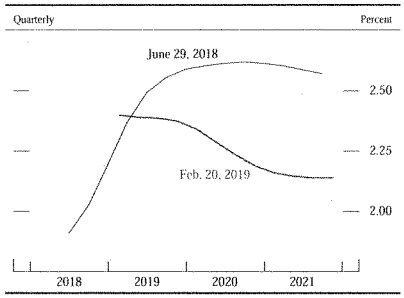
The nominal Treasury yield curve flattened somewhat further since the first half of 2018, with the 2-year nominal Treasury yield little changed and the 5- and 10-year nominal Treasury yields declining about 25 basis points on net (figure 31). At the same time, yields on inflation-protected Treasury securities edged up, leaving market-based measures of inflation compensation moderately lower. In explaining movements in Treasury yields since mid-2018, market participants have pointed to developments related to the global economic outlook and trade tensions, FOMC communications, and fluctuations in oil prices. Option-implied volatility on swap rates—an indicator of uncertainty about Treasury yields—declined slightly on net.

Consistent with changes in yields on nominal Treasury securities, yields on 30-year agency mortgage-backed securities (MBS)—an important determinant of mortgage interest rates—decreased about 20 basis points, on balance, since the middle of last year and remain low by historical standards (figure 32). Meanwhile, yields on both investment-grade and high-yield corporate debt declined a bit (figure 33). As a result, the spreads on corporate bond yields over comparable-maturity Treasury yields are modestly wider than at the end of June. The cumulative increases over the past year have left spreads for high-yield and investment-grade corporate bonds close to their historical medians, with both spreads notably above the very low levels that prevailed a year ago.

Broad equity price indexes increased somewhat

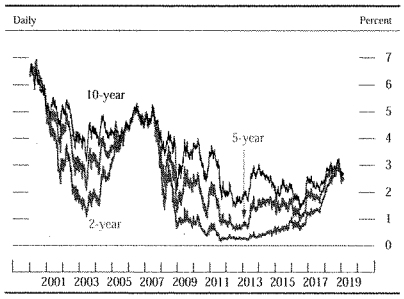
Broad U.S. stock market indexes increased somewhat since the middle of last year, on net, amid substantial volatility (figure 34). Concerns over the sustainability of corporate earnings growth, the global growth outlook, international trade tensions, and some Federal

30. Market-implied federal funds rate path



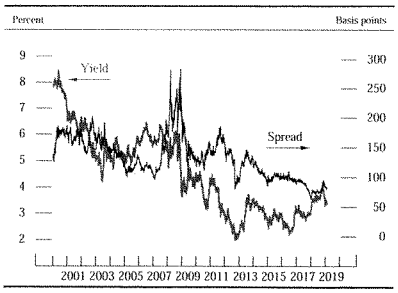
NOTE: The federal funds rate path is implied by quotes on overnight index swaps—a derivative contract tied to the effective federal funds rate. The implied path as of February 20, 2019, is compared with that as of June 29, 2018. The path is estimated with a spline approach, assuming a term premium of 0 basis points. The current path extends through November 2021 and the previous one through September 2021.
SOURCE: Bloomberg; Federal Reserve Board staff estimates.

31. Yields on nominal Treasury securities



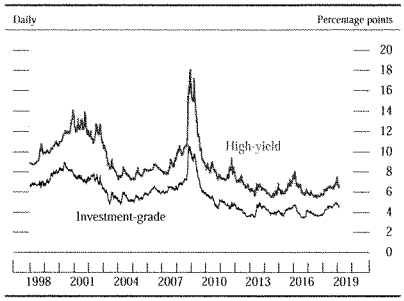
SOURCE: Department of the Treasury via Haver Analytics.

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.
SOURCE: Department of the Treasury; Barclays Live.

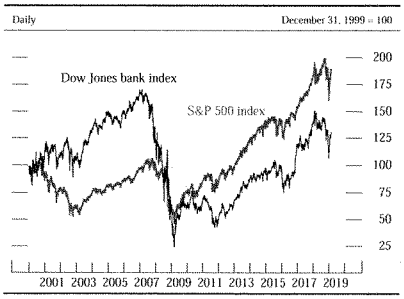
33. Corporate bond yields, by securities rating



NOTE: Investment-grade is the 10-year triple-B, which reflects the effective yield of the ICE BofAML 7-to-10-year triple-B U.S. Corporate Index (C4A4). High-yield is the 10-year high-yield and reflects the effective yield of the ICE BofAML 7-to-10-year U.S. Cash Pay High Yield Index (J4A0).

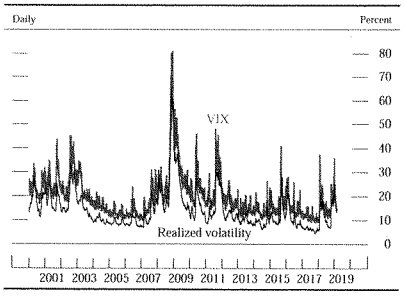
SOURCE: ICE Bank of America Merrill Lynch Indices, used with permission.

34. Equity prices



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

35. S&P 500 volatility



NOTE: The VIX is a measure of implied volatility that represents the expected annualized change in the S&P 500 index over the following 30 days. For realized volatility, five-minute returns are used in an exponentially weighted moving average with 75 percent of weight distributed over the past 20 days.

SOURCE: Cboe Volatility Index® (VIX®) accessed via Bloomberg.

Reserve communications that were perceived as less accommodative than expected weighed on investor sentiment for a time. There were considerable differences in stock returns across sectors, reflecting their varying degrees of sensitivities to energy price declines, trade tensions, and rising interest rates. In particular, stock prices of companies in the utilities sector—which tend to benefit from falling interest rates—and in the health-care sector outperformed broader indexes. Conversely, stock prices in the energy sector substantially underperformed the broad indexes, as oil prices dropped sharply. Basic materials—a sector that was particularly sensitive to concerns about the global growth outlook and trade tensions—also underperformed. Bank stock prices declined slightly, on net, as the yield curve flattened and funding costs rose. Measures of implied and realized stock price volatility for the S&P 500 index—the VIX and the 20-day realized volatility—increased sharply in the fourth quarter of last year to near the high levels observed in early February 2018 amid sharp equity price declines. These volatility measures partially retraced following the turn of the year, with the VIX returning to near the 30th percentile of its historical distribution and with realized volatility ending the period close to the 70th percentile of its historical range (figure 35). (For a discussion of financial stability issues, see the box "Developments Related to Financial Stability.")

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

Available indicators of Treasury market functioning have generally remained stable since the first half of 2018, with a variety of liquidity metrics—including bid-ask spreads, bid sizes, and estimates of transaction costs—displaying few signs of liquidity pressures. Liquidity conditions in the agency MBS market were also generally stable. Overall, the functioning of Treasury and agency MBS markets has not been materially affected by

the implementation of the Federal Reserve's balance sheet normalization program over the past year and a half. Credit conditions in municipal bond markets have remained stable since the middle of last year, though yield spreads on 20-year general obligation municipal bonds over comparable-maturity Treasury securities were modestly higher on net.

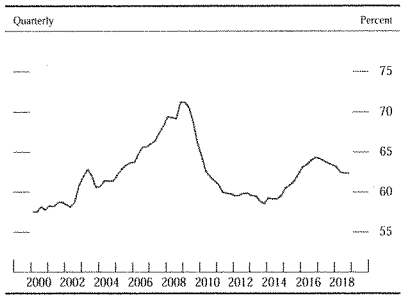
Money market rates have moved up in line with increases in the FOMC's target range

Conditions in domestic short-term funding markets have also remained generally stable since the beginning of the summer. Increases in the FOMC's target range were transmitted effectively through money markets, with yields on a broad set of money market instruments moving higher in response to the FOMC's policy actions in September and December. The effective federal funds rate moved to parity with the interest rate paid on reserves and was closely tracked by the overnight Eurodollar rate. Other short-term interest rates, including those on commercial paper and negotiable certificates of deposits, also moved up in light of increases in the policy rate.

Bank credit continued to expand, and bank profitability improved

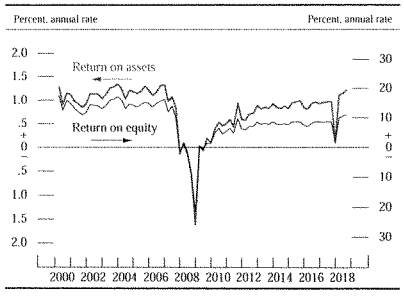
Aggregate credit provided by commercial banks expanded through the second half of 2018 at a stronger pace than the one observed in the first half of last year, as the strength in C&I loan growth more than offset the moderation in the growth in CRE loans and loans to households. In the fourth quarter of last year, the pace of bank credit expansion was about in line with that of nominal GDP, leaving the ratio of total commercial bank credit to current-dollar GDP little changed relative to last June (figure 36). Overall, measures of bank profitability improved further in the third quarter despite a flattening yield curve, but they remain below their pre-crisis levels (figure 37).

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



NOTE: Data for 2018:Q4 are estimated.
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.

37. Profitability of bank holding companies



NOTE: The data are quarterly and are seasonally adjusted. The data extend through 2018:Q3.
SOURCE: Federal Reserve Board, Form FR Y-9C, Consolidated Financial Statements for Bank Holding Companies.

Developments Related to Financial Stability

The Federal Reserve Board's financial stability monitoring framework

The framework used by the Federal Reserve Board to monitor financial stability distinguishes between shocks to and vulnerabilities of the financial system. Shocks, such as sudden changes to financial or economic conditions, are typically surprises and are inherently difficult to predict, whereas vulnerabilities tend to build up over time and are the aspects of the financial system that are most expected to cause widespread problems in times of stress. Some vulnerabilities are cyclical in nature, rising and falling over time, while others are structural, stemming from longer-term forces shaping the nature of credit intermediation. As a result, the framework focuses primarily on monitoring vulnerabilities and emphasizes four broad categories based on academic research.[1]

1. Elevated valuation pressures are signaled by asset prices that are high relative to economic fundamentals or historical norms and are often driven by an increased willingness of investors to take on risk. As such, elevated valuation pressures imply a greater possibility of outsized drops in asset prices.

2. Excessive borrowing by businesses and households leaves them vulnerable to distress if their incomes decline or the assets they own fall in value.

3. Excessive leverage within the financial sector increases the risk that financial institutions will not have the ability to absorb losses when hit by adverse shocks.

4. Funding risks expose the financial system to the possibility that investors will "run" by withdrawing their funds from a particular institution or sector. Facing a run, financial institutions may need to sell assets quickly at "fire sale" prices, thereby incurring substantial losses and potentially even becoming insolvent. Historians and economists often refer to widespread investor runs as "financial panics."

While this framework provides a systematic way to assess financial stability, some potential risks do not fit neatly into it because they are novel or difficult to quantify, such as cybersecurity or developments in crypto-assets. In addition, some vulnerabilities are difficult to measure with currently available data, and the set of vulnerabilities may evolve over time. Given these limitations, we continually rely on ongoing research by the Federal Reserve staff, academics, and other experts.

Since the publication of the Federal Reserve Board's first *Financial Stability Report* on November 28, 2018, some areas where valuation pressures were a concern have cooled, particularly those related to below-investment-grade corporate debt.[2] Regulatory capital and liquidity ratios of key financial institutions, especially large banks, are at historically high levels. Funding risks in the financial system are low relative to the period leading up to the crisis. Borrowing by households has risen roughly in line with household incomes and has been concentrated among prime borrowers. Nonetheless, debt owed by businesses is high, and credit standards, especially within segments of the loan market focused on lower-rated or unrated firms, deteriorated in the second half of 2018.

Asset valuations increased to the high end of their historical ranges in many markets over 2017 and the first half of 2018, supported by the solid economic expansion and an apparent increase in investors' appetite for risk. However, compared with July 2018, around the time of the previous *Monetary Policy Report*, valuation pressures have eased somewhat in the equity, corporate bond, and leveraged loan markets. Over the same period, amid substantial market volatility, the forward equity price-to-earnings ratio of S&P 500 firms, a metric of valuations in equity markets, declined a touch, on net, and it currently stands just below the top quartile of its historical distribution (figure A). Spreads on both investment- and speculative-grade corporate bonds over comparable-maturity Treasury securities widened modestly to levels close to the medians of their historical ranges since 1997 (figure B). Spreads on newly issued leveraged loans widened markedly in the fourth quarter of 2018. In real estate markets, commercial real estate prices have been growing faster than rents for several years, leaving valuations stretched.

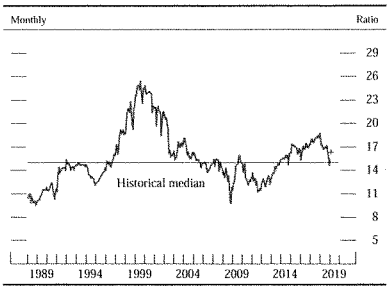
Since the 2007–09 recession, household debt and business debt have diverged (figure C). Over the past several years, borrowing by households has stayed in line with income growth and has been concentrated among borrowers with strong credit histories.

(continued)

1. For a review of the research literature in this area and further discussion, see Tobias Adrian, Daniel Covitz, and Nellie Liang (2015), "Financial Stability Monitoring," *Annual Review of Financial Economics*, vol. 7 (December), pp. 357–95.

2. See Board of Governors of the Federal Reserve System (2018), *Financial Stability Report* (Washington: Board of Governors, November), https://www.federalreserve.gov/publications/2018-november-financial-stability-report-purpose.htm.

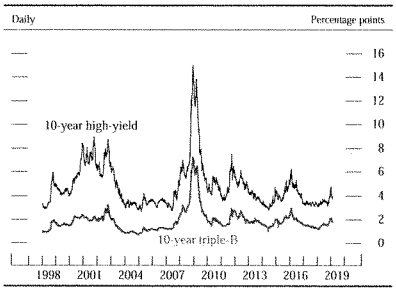
A. Forward price-to-earnings ratio of S&P 500 firms



NOTE: Aggregate forward price-to-earnings ratio of S&P 500 firms. Data are based on expected earnings for 12 months ahead. The plus sign shows daily data corresponding to February 20, 2019.

SOURCE: Federal Reserve Board staff calculations using Refinitiv (formerly Thomson Reuters), IBES Estimates.

B. Corporate bond spreads to similar-maturity Treasury securities

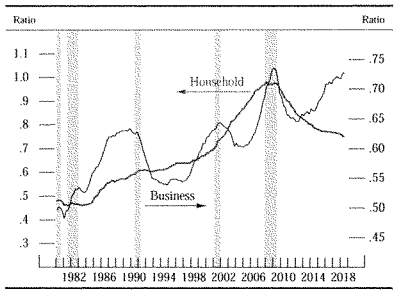


NOTE: The 10-year triple-B reflects the effective yield of the ICE BofAML 7-to-10-year triple-B U.S. Corporate Index (C4A4), and the 10-year high-yield reflects the effective yield of the ICE BofAML 7-to-10-year U.S. Cash Pay High Yield Index (J4A0). Treasury yields from smoothed yield curve estimated from off-the-run securities.

SOURCE: ICE Data Indices, LLC, used with permission; Department of the Treasury.

By contrast, borrowing by businesses, including riskier firms, has expanded significantly. For speculative-grade and unrated firms, the ratio of debt to assets has increased steadily since 2010 and remains near its historical peak. Further, growth in debt to businesses with lower credit ratings and with already elevated levels of borrowing, such as high-yield bonds and leveraged loans, has been substantial over the past

C. Business- and household-sector credit-to-GDP ratio



NOTE: Data are quarterly and extend through 2018:Q3. The shaded bars indicate periods of business recession as defined by the National Bureau of Economic Research. 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.

two years (figure D). Issuance of these instruments slowed significantly in November and December 2018 because of the sharply higher spreads demanded by investors to hold them, but issuance has rebounded somewhat in early 2019.

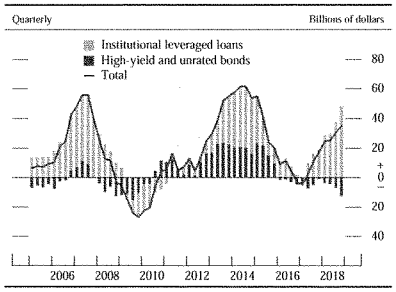
Credit standards for new leveraged loans deteriorated over the second half of 2018. The share of newly issued large loans to corporations with high leverage—defined as those with ratios of debt to EBITDA (earnings before interest, taxes, depreciation, and amortization) above 6—increased through 2018 to levels exceeding previous peaks observed in 2007 and 2014, when underwriting quality was notably poor. In addition, issuance of covenant-lite loans—loans with few or no traditional maintenance covenants—remained high during the second half of 2018, although this elevated level may reflect, in part, a greater prevalence of investors who do not traditionally monitor and exercise loan covenants.[3] Nonetheless, the strong economy has helped sustain solid credit performance of leveraged loans in 2018, with the default rate on such loans near the low end of its historical range.

(continued on next page)

3. Collateralized loan obligations, which are predominantly backed by leveraged loans, have grown rapidly over the past year and, as of year-end 2018, purchase about 60 percent of leveraged loans at origination. Similarly, mutual funds hold about 20 percent of leveraged loans.

Financial Stability *(continued)*

D. Net issuance of risky business debt



NOTE: Total net issuance of risky debt is the sum of the net issuance of speculative-grade and unrated bonds and leveraged loans. The data are four-quarter moving averages.

SOURCE: Mergent, Fixed Investment Securities Database (FISD); S&P Global, Leveraged Commentary & Data.

The credit quality of nonfinancial high-yield corporate bonds was roughly stable over the past several years, with the share of high-yield bonds outstanding that are rated B3/B- or below staying flat and below the financial crisis peak. In contrast, the distribution of ratings among investment-grade corporate bonds deteriorated. The share of bonds rated at the lowest investment-grade level (for example, an S&P rating of triple-B) reached near-record levels. As of December 2018, around 42 percent of corporate bonds outstanding were at the lowest end of the investment-grade segment, amounting to about $3 trillion.

Vulnerabilities from financial-sector leverage continue to be low relative to historical standards, in part because of regulatory reforms enacted since the financial crisis. Core financial intermediaries, including large banks, insurance companies, and broker-dealers, appear well positioned to weather economic stress. As of the third quarter of 2018, regulatory capital ratios for the U.S. global systemically important banks remained well above regulatory requirements and were close to historical highs. Those banks will be subject to the 2019 Dodd-Frank Act stress tests and Comprehensive Capital Assessment and Review. Consistent with the Federal Reserve Board's public framework, this year's scenarios feature a larger increase in unemployment and a deeper recession than in 2018 as well as typically large declines in financial asset prices. Capital levels at insurance companies and broker-dealers also remained relatively robust by historical standards. A range of indicators suggest that hedge fund leverage was roughly unchanged over 2018; however, comprehensive data, available with a significant time lag, from early 2018 showed that leverage remained at the upper end of its range over the past eight years.

Vulnerabilities associated with funding risk—that is, the financing of illiquid assets or long-maturity assets with short-maturity debt—continue to be low, in part because of the post-crisis implementation of liquidity regulations for banks and the 2016 money market reforms.[4] Banks are holding higher levels of liquid assets, while their use of short-term wholesale funding as a share of liabilities is near historical lows. Assets under management at prime funds, institutions that proved vulnerable to runs in the past, have risen somewhat in recent months but remained far below pre-reform levels.

Potential downside risks to international financial stability include a downturn in global growth, political and policy uncertainty, an intensification of trade tensions, and broadening stress in emerging market economies (EMEs). In many advanced foreign economies, financial conditions tightened somewhat in the second half of 2018, partly reflecting a deterioration in the fiscal outlook of Italy and Brexit uncertainty. The United Kingdom and the European Union (EU) have not yet ratified the terms for the United Kingdom's March 2019 withdrawal from the EU (Brexit). Without such a withdrawal agreement, there will be no transition period for important trade and financial interactions between U.K. and EU residents, and, despite preparations for a "no-deal Brexit," a wide range of economic and financial activities could be disrupted. EMEs also experienced heightened financial stress in the second half of 2018. Although that stress has receded somewhat more recently, many EMEs continue to harbor important vulnerabilities, reflecting one or more of substantial corporate leverage, fiscal concerns, or excessive reliance on foreign funding.

4. See U.S. Securities and Exchange Commission (2014), "SEC Adopts Money Market Fund Reform Rules," press release, July 23, https://www.sec.gov/news/press-release/2014-143.

International Developments

Economic activity in most foreign economies weakened in the second half of 2018

After expanding briskly in 2017, foreign GDP growth moderated in 2018. While part of this slowdown is likely due to temporary factors, it also appears to reflect weaker underlying momentum against the backdrop of somewhat tighter financial conditions, increased policy uncertainty, and ongoing debt deleveraging.

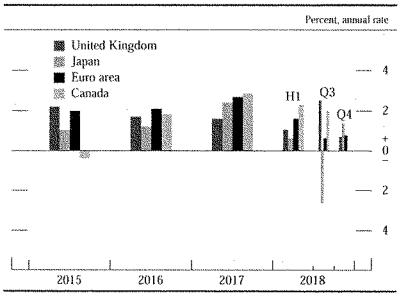
The growth slowdown was particularly pronounced in advanced foreign economies

Real GDP growth in several advanced foreign economies (AFEs) slowed markedly in the second half of the year (figure 38). This slowdown was concentrated in the manufacturing sector against the backdrop of softening global trade flows. In Japan, real GDP contracted in the second half of 2018, as economic activity, which was disrupted by a series of natural disasters in the third quarter, rebounded only partly in the fourth quarter. Growth in the euro area slowed in the second half of the year: Transportation bottlenecks and complications in meeting tighter emissions standards for new motor vehicles weighed on German economic activity, while output contracted in Italy. Although some of these headwinds appear to be fading, recent indicators—especially for the manufacturing sector—point to only a limited recovery of activity in the euro area at the start of 2019.

Inflation pressures remain contained in advanced foreign economies . . .

In recent months, headline inflation has fallen below central bank targets in many major AFEs, reflecting large declines in energy prices (figure 39). In the euro area and Japan, low headline inflation rates also reflect subdued core inflation. In Canada and the United Kingdom, instead, core inflation rates have been close to 2 percent.

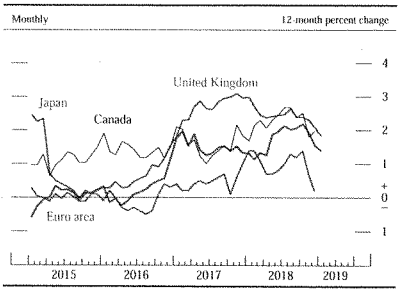
38. Real gross domestic product growth in selected advanced foreign economies



NOTE: The data for the euro area, Japan, and the U.K. incorporate preliminary estimates for 2018:Q4. The data for Canada extend through 2018: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.

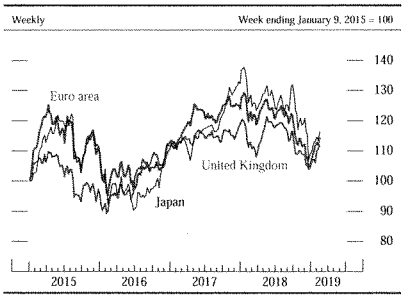
39. Consumer price inflation in selected advanced foreign economies



NOTE: The data for the euro area incorporate the flash estimate for January 2019. The data for the United Kingdom extend through January 2019. The data for Canada and Japan extend through December 2018.

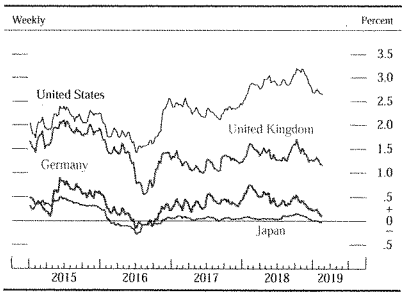
SOURCE: For the United Kingdom, Office for National Statistics; for Japan, Ministry of International Affairs and Communications; for the euro area, Statistical Office of the European Communities; for Canada, Statistics Canada; all via Haver Analytics.

40. Equity indexes for selected foreign economies



NOTE: The data are weekly averages of daily data and extend through February 20, 2019.
SOURCE: For euro area, DJ Euro Stoxx Index; for Japan, TOPIX Stock Index; for United Kingdom, FTSE 100 Stock Index; all 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 20, 2019.
SOURCE: Bloomberg.

. . . prompting central banks to withdraw accommodation only gradually

With underlying inflation still subdued, the Bank of Japan and the European Central Bank (ECB) kept their short-term policy rates at negative levels. Although the ECB concluded its asset purchase program in December, it signaled an only very gradual removal of policy accommodation going forward. The Bank of England (BOE) and the Bank of Canada, which both began raising interest rates in 2017, increased their policy rates further in the second half of 2018 but to levels that are still low by historical standards. The BOE noted that elevated uncertainty around the United Kingdom's exit from the European Union (EU) weighed on the country's economic outlook.

Political uncertainty and slower economic growth weighed on AFE asset prices

Moderation in global growth, protracted budget negotiations between the Italian government and the EU, and developments related to the United Kingdom's withdrawal from the EU weighed on AFE asset prices in the second half of 2018 (figure 40). Broad stock price indexes in the AFEs fell, interest rates on sovereign bonds in several countries in the European periphery remained elevated, and European bank shares underperformed, although these moves have partially retraced in recent weeks. Market-implied paths of policy in major AFEs and long-term sovereign bond yields declined somewhat, as economic data disappointed (figure 41).

Growth slowed in many emerging market economies

Chinese GDP growth slowed in the second half of 2018 as an earlier tightening of credit policy, aimed at restraining the buildup of debt, caused infrastructure investment to fall sharply and squeezed household spending (figure 42). However, increased concerns about a sharper-than-expected slowdown in

growth, as well as prospective effects of trade policies, prompted Chinese authorities to ease monetary and fiscal policy somewhat. Elsewhere in emerging Asia, growth remained well below its 2017 pace amid headwinds from moderating global growth. Tighter financial conditions also weighed on growth in other EMEs—notably, Argentina and Turkey.

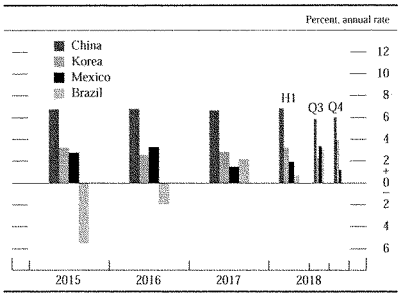
Economic activity strengthened somewhat in Mexico and Brazil, but uncertainty about policy developments remains elevated

In Mexico, economic activity increased at a more rapid rate in the third quarter after modest advances earlier in the year. However, growth weakened again in the fourth quarter, as perceptions that the newly elected government would pursue less market-friendly policies led to a sharp tightening in financial conditions. Amid a sharp peso depreciation and above-target inflation, the Bank of Mexico raised its policy rate to 8.25 percent in December. Brazilian real GDP growth rebounded in the third quarter after being held down by a nationwide trucker's strike in May, and financial markets have rallied on expectations that Brazil's new government will pursue economic policies that support growth. However, investors continued to focus on whether the new administration would pass significant fiscal reforms.

Financial conditions in many emerging market economies were volatile but are, on net, little changed since July

Financial conditions in the EMEs generally tightened in the second half of 2018, as investor concerns about vulnerabilities in several EMEs intensified against the backdrop of higher policy uncertainty, slowing global growth, and rising U.S. interest rates. Trade policy tensions between the United States and China weighed on asset prices, especially in China and other Asian economies. Broad measures of EME sovereign bond spreads over U.S. Treasury yields rose, and benchmark EME equity indexes declined. However,

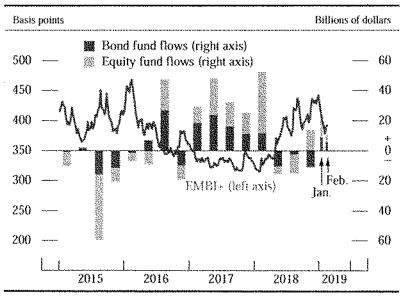
42. Real gross domestic product growth in selected emerging market economies



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 Korea and Mexico incorporate preliminary estimates for 2018:Q4. The data for Brazil extend through 2018: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.

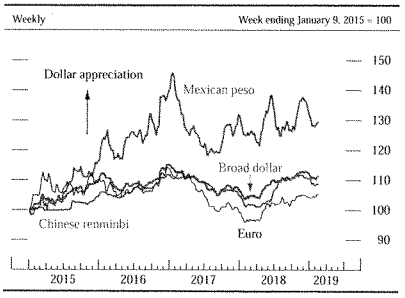
43. Emerging market mutual fund flows and spreads



NOTE: The bond and equity fund flows data are quarterly sums of weekly data from January 1, 2015, to December 31, 2018, and monthly sums of weekly data from January 1, 2019, to February 20, 2019. 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 19, 2019.

SOURCE: For bond and equity fund flows, EPFR Global; for EMBI+, J.P. Morgan Emerging Markets Bond Index Plus via Bloomberg.

44. 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 20, 2019. 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."

financial conditions improved significantly in recent months, supported in part by more positive policy developments—including the U.S.-Mexico-Canada Agreement and progress on U.S.–China trade negotiations—and FOMC communications indicating a more gradual normalization of U.S. interest rates. EME mutual fund inflows resumed in recent months after experiencing outflows in the middle of 2018 (figure 43). While movements in asset prices and capital flows have been sizable for a number of economies, broad indicators of financial stress in EMEs are below those seen during other periods of stress in recent years.

The dollar appreciated slightly

The foreign exchange value of the U.S. dollar is bit a higher than in July (figure 44). Concerns about the global outlook, uncertainty about trade policy, and monetary policy normalization in the United States contributed to the appreciation of the dollar. The Chinese renminbi depreciated against the dollar slightly, on net, amid ongoing trade negotiations and increased concerns about growth prospects in China. The Mexican peso has been volatile amid ongoing political developments and trade negotiations but has, on net, declined only modestly against the dollar. Sharp declines in oil prices also weighed on the currencies of some energy-exporting economies.

PART 2
MONETARY POLICY

The Federal Open Market Committee continued to gradually increase the federal funds rate in the second half of last year

From late 2015 through the first half of last year, the Federal Open Market Committee (FOMC) gradually increased its target range for the federal funds rate as the economy continued to make progress toward the Committee's congressionally mandated objectives of maximum employment and price stability. In the second half of 2018, the FOMC continued this gradual process of monetary policy normalization, raising the federal funds rate at its September and December meetings, bringing the target range to 2¼ to 2½ percent (figure 45).[14] The FOMC's decisions to increase the federal funds rate reflected the solid performance of the U.S. economy, the continued strengthening of the labor market, and the fact that inflation had moved near the Committee's 2 percent longer-run objective.

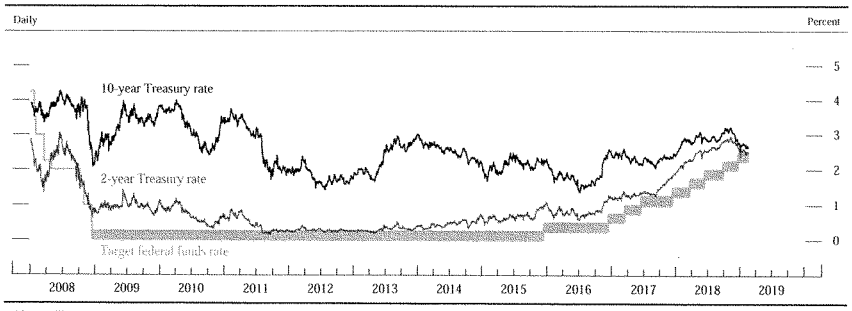
Looking ahead, the FOMC will be patient as it determines what future adjustments to the target range for the federal funds rate may be appropriate

With the gradual reductions in the amount of policy accommodation to date, the federal funds rate is now at the lower end of the range of estimates of its longer-run neutral level—that is, the level of the federal funds rate that is neither expansionary nor contractionary.

Developments at the time of the December FOMC meeting, including volatility in financial markets and increased concerns about global growth, made the appropriate extent and timing of future rate increases more uncertain than earlier. Against that backdrop, the Committee indicated it would monitor global economic and financial developments and assess their implications for the economic outlook. In the Summary

14. See Board of Governors of the Federal Reserve System (2018), "Federal Reserve Issues FOMC Statement," press release, September 26, https://www.federalreserve.gov/newsevents/pressreleases/monetary20180926a.htm; and Board of Governors of the Federal Reserve System (2018), "Federal Reserve Issues FOMC Statement," press release, December 19, https://www.federalreserve.gov/newsevents/pressreleases/monetary20181219a.htm.

45. 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.

of Economic Projections (SEP) from the December meeting—the most recent SEP available—participants generally revised down their individual assessments of the appropriate path for monetary policy relative to their assessments at the time of the September meeting.[15]

In January, the Committee stated that it continued to view sustained expansion of economic activity, strong labor market conditions, and inflation near the Committee's symmetric 2 percent objective as the most likely outcomes. Nonetheless, in light of global economic and financial developments and muted inflation pressures, the Committee will be patient as it determines what future adjustments to the federal funds rate may be appropriate to support these outcomes.

Future changes in the federal funds rate will depend on the economic outlook as informed by incoming data

The FOMC has continued to emphasize that the actual path of monetary policy will depend on the evolution of the economic outlook as informed by incoming data. Specifically, in deciding on the timing and size of future adjustments to the federal funds rate, the Committee 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.

In addition to evaluating a wide range of economic and financial data and information gathered from business contacts and other informed parties around the country, policymakers routinely consult prescriptions for the policy interest rate from a variety of rules, which can serve as useful guidance to the FOMC. However, many practical considerations make it undesirable for the FOMC to mechanically follow the prescriptions of any specific rule. Consequently, the FOMC's framework for conducting systematic monetary policy respects key principles of good monetary policy and, at the same time, provides flexibility to address many of the limitations of these policy rules (see the box "Monetary Policy Rules and Systematic Monetary Policy").

The FOMC has continued to implement its program to gradually reduce the Federal Reserve's balance sheet

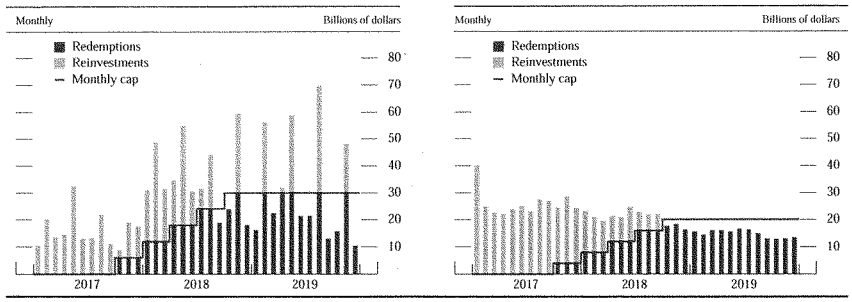
The Committee has continued to implement the balance sheet normalization program that has been under way since October 2017.[16] Under this program, the FOMC has been reducing its holdings of Treasury and agency securities in a gradual and predictable manner by decreasing its reinvestment of the principal payments it received from these securities. Specifically, such payments have been reinvested only to the extent that they exceeded gradually rising caps (figure 46).

In the third quarter of 2018, the Federal Reserve reinvested principal payments from its holdings of Treasury securities maturing during each calendar month in excess of $24 billion. It also reinvested in agency mortgage-backed securities (MBS) the amount of principal payments from its holdings of agency debt and agency MBS received during each calendar month in excess of $16 billion. In the fourth quarter, the FOMC increased the caps for Treasury securities and for agency securities to their respective maximums of $30 billion and $20 billion. Of note,

15. See the December Summary of Economic Projections, which appeared as an addendum to the minutes of the December 18–19, 2018, meeting of the FOMC and is presented in Part 3 of this report.

16. For more information, see the Addendum to the Policy Normalization Principles and Plans, which is available on the Board's website at https://www.federalreserve.gov/monetarypolicy/files/FOMC_PolicyNormalization.20170613.pdf.

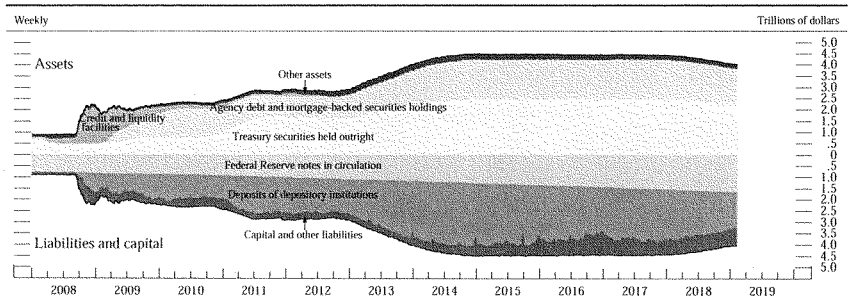
46. Principal payments on SOMA securities



NOTE: Reinvestment and redemption amounts of Treasury securities are projections starting in February 2019. Reinvestment and redemption amounts of agency debt and mortgage-backed securities are projections starting in February 2019. Cap amounts are projections beyond March 2019. The data extend through December 2019.

SOURCE: Federal Reserve Bank of New York; Federal Reserve Board staff calculations.

47. 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 13, 2019.

SOURCE: Federal Reserve Board, Statistical Release H.4.1, "Factors Affecting Reserve Balances."

reinvestments of agency debt and agency MBS ceased in October as principal payments fell below the maximum redemption caps.

The Federal Reserve's total assets have continued to decline from about $4.3 trillion last July to about $4.0 trillion at present, with holdings of Treasury securities at approximately $2.2 trillion and holdings of agency debt and agency MBS at approximately $1.6 trillion (figure 47).

As the Federal Reserve has continued to gradually reduce its securities holdings, the level of reserve balances in the banking system has declined. In particular, the level of reserve balances has decreased by about $350 billion since the middle of last year, and

Monetary Policy Rules and Systematic Monetary Policy

Monetary policy rules are mathematical formulas that relate a policy interest rate, such as the federal funds rate, to a small number of other economic variables—typically including the deviation of inflation from its target value and a measure of resource slack in the economy. The prescriptions for the policy interest rate from these rules can provide helpful guidance for the Federal Open Market Committee (FOMC). This discussion provides information on how policy rules inform the FOMC's systematic conduct of monetary policy, as well as practical considerations that make it undesirable for the FOMC to mechanically follow the prescriptions of any specific rule. The FOMC's approach for conducting monetary policy provides sufficient flexibility to address the intrinsic complexities and uncertainties in the economy while keeping monetary policy predictable and transparent.

Policy Rules and Historical Prescriptions

The effectiveness of monetary policy is enhanced when it is well understood by the public.[1] In simple models of the economy, good economic performance can be achieved by following a specific monetary policy rule that fosters public understanding and that incorporates key principles of good monetary policy.[2] One such principle is that monetary policy should respond in a predictable way to changes in economic conditions and the economic outlook. A second principle is that monetary policy should be accommodative when inflation is below policymakers' longer-run inflation objective and employment is below its maximum sustainable level; conversely, monetary policy should be restrictive when the opposite holds. A third 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. Other rules include the "balanced approach" rule, the "adjusted Taylor (1993)" rule, the "price level" rule, and the "first difference" rule (figure A).[3] These policy rules embody the three key principles of good monetary policy and take into account estimates of how far the economy is from the Federal Reserve's dual-mandate goals of maximum employment and price stability. Four of the five rules include the difference between the rate of unemployment that is sustainable in the longer run and the current unemployment rate (the unemployment rate gap); the first-difference rule includes the change in the unemployment gap rather than its level.[4] In addition, four of the five rules include the difference

(continued)

1. For a discussion of how the public's understanding of monetary policy matters for the effectiveness of monetary policy, see Janet L. Yellen (2012), "Revolution and Evolution in Central Bank Communications," speech delivered at the Haas School of Business, University of California at Berkeley, Berkeley, Calif., November 13, https://www.federalreserve.gov/newsevents/speech/yellen20121113a.htm.

2. For a discussion regarding principles for the conduct of monetary policy, see Board of Governors of the Federal Reserve System (2018), "Monetary Policy Principles and Practice," Board of Governors, https://www.federalreserve.gov/monetarypolicy/monetary-policy-principles-and-practice.htm.

3. The Taylor (1993) rule was 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 is based on a rule suggested 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.

4. 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 the level that GDP would be if the economy were 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. However, movements in these alternative measures of resource utilization are highly correlated. For more information, see the note below figure A.

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	$R_t^{T93adj} = maximum\ \{R_t^{T93} - Z_t, 0\}$
Price-level rule	$R_t^{PL} = maximum\ \{r_t^{LR} + \pi_t + (u_t^{LR} - u_t) + 0.5(PLgap_t), 0\}$
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 the FOMC's 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. Box note 3 provides references for the policy rules.

between recent inflation and the FOMC's longer-run objective (2 percent as measured by the annual change in the price index for personal consumption expenditures, or PCE), 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 ($PLgap_t$).[5] The price-level rule thereby takes account of the deviation of inflation from the long-run objective in earlier periods as well as the current 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 standard Taylor (1993) rule after a recession during which the federal funds rate has fallen to its lower bound may therefore 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 standard Taylor (1993) rule after the economy begins to recover. The version of the price-level rule specified in figure A also recognizes that the federal funds rate cannot be reduced materially below zero. If inflation runs below the 2 percent objective during periods when the price-level rule prescribes setting the federal funds rate well below zero, the rule will, over time, call for more accommodation to make up for the past inflation shortfall.

As shown in figure B, the different monetary policy rules often differ in their prescriptions for the federal funds rate.[6] Although almost all of the simple policy

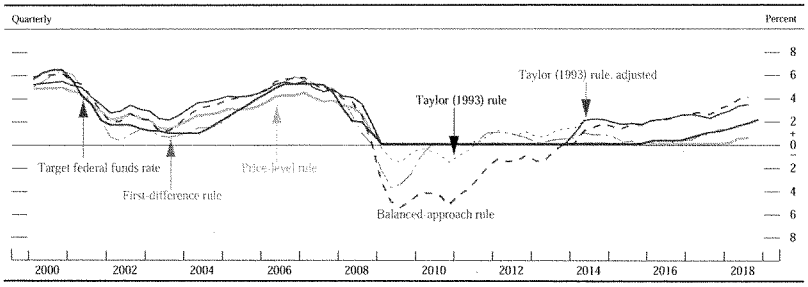
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5. Calculating the prescriptions of the price-level rule requires selecting a starting year for the price level from which to cumulate the 2 percent annual rate of inflation. Figure B uses 1998 as the starting year. Around that time, the underlying trend of inflation and longer-term inflation expectations stabilized at a level consistent with PCE price inflation being close to 2 percent.

6. These prescriptions are calculated using (1) published data for inflation and the unemployment rate and (2) survey-based estimates of the longer-run value of the neutral real interest rate and the longer-run value of the unemployment rate.

Monetary Policy Rules *(continued)*

B. Historical federal funds rate prescriptions from simple policy rules



NOTE: The rules use historical values of inflation, the federal funds rate, and the unemployment rate. Inflation is measured as the 4-quarter percent change in the price index for personal consumption expenditures (PCE) 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 PCE excluding food and energy in 1998 extrapolated at 2 percent per year. The data extend through 2018:Q3, with the exception of the target federal funds rate data, which go through 2018:Q4.

SOURCE: Federal Reserve Bank of Philadelphia; Wolters Kluwer, Blue Chip Economic Indicators; Federal Reserve Board staff estimates.

rules would have called for values for the federal funds rate that were increasing over time in recent years, the prescribed values vary widely across rules. In general, there is no unique criterion for favoring one rule over another.

Systematic Monetary Policy in Practice

Although monetary policy rules seem appealing for obtaining and communicating current and future policy rate prescriptions, the usefulness of these rules for policymakers is limited by a range of practical considerations. According to simple monetary policy rules, the policy interest rate must respond mechanically to a small number of variables. However, these variables may not reflect important information available to policymakers at the time they make decisions. For example, none of the inputs into the Taylor (1993) rule include financial and credit market conditions or indicators of consumer and business sentiment; these factors are often very informative for the future course of the economy. Similarly, monetary policy rules tend to include only the current values of the selected variables in the rule. But the relationship between the current values of these variables and the outlook for the economy changes over time for a number of reasons. For example, the structure of the economy is evolving over time and is not known with certainty at any given point in time.[7] To complicate matters further, monetary policy affects the Federal Reserve's goal variables of inflation and employment with long and variable lags. For these reasons, good monetary policy must take into account the information contained in the real-time forecast of the economy. Finally, simple policy rules do not take into account that the risks to the economic outlook may be asymmetric, such as during the period when the federal funds rate was still close to zero. At that time, the FOMC took into consideration that it would have limited scope to respond to an unexpected weakening in the economy by cutting the federal funds rate, but that it would have ample scope to increase the policy rate in response to an unexpected strengthening in the economy. This asymmetric risk provided a rationale for increasing the federal funds rate more gradually than prescribed by some policy rules shown in figure B.[8]

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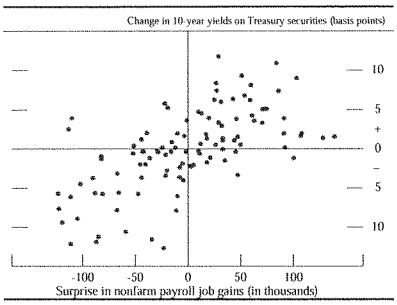
7. The box "Complexities of Monetary Policy Rules" in the July 2018 *Monetary Policy Report* discusses how shifts in the structure of the economy cause the longer-run value of the neutral real interest rate to vary over time and thus complicate its estimation. See Board of Governors of the Federal Reserve System (2018), *Monetary Policy Report* (Washington: Board of Governors, July), pp. 37–41, https://www.federalreserve.gov/monetarypolicy/files/20180713_mprfullreport.pdf.

8. For further discussion regarding the challenges of using monetary policy rules in practice, see Board of Governors of the Federal Reserve System (2018), "Challenges Associated with Using Rules to Make Monetary Policy," Board of Governors, https://www.federalreserve.gov/monetarypolicy/challenges-associated-with-using-rules-to-make-monetary-policy.htm.

The FOMC conducts systematic monetary policy in a framework that respects the key principles of good monetary policy while providing sufficient flexibility to address many of the practical concerns described earlier. At the core of this framework lies the FOMC's firm commitment to the Federal Reserve's statutory mandate of promoting maximum employment and price stability, a commitment that the Committee reaffirms on a regular basis.[9] To explain its monetary policy decisions to the public as clearly as possible, the FOMC communicates about the economic data that are relevant to its policy decisions. As part of this communication strategy, the Federal Reserve regularly describes the economic and financial data used to inform its policy decisions in the *Monetary Policy Report* and the FOMC meeting minutes. These data include, but are not limited to, measures of labor market conditions, inflation, household spending and business investment, asset prices, and the global economic environment. The FOMC postmeeting statements and the meeting minutes detail how the data inform the Committee's overall economic outlook, the risks to this outlook, and, in turn, the Committee's assessment about the appropriate stance of monetary policy. This appropriate stance depends on the FOMC's longer-run goals, the economic outlook and the risks to the outlook, and the channels through which monetary policy actions influence economic activity and prices. The FOMC combines all of these elements in determining the timing and size of adjustments of the policy interest rates. The quarterly Summary of Economic Projections provides additional information about each FOMC participant's forecasts for the economy and the longer-run assessments of the economy, under her or his individual views concerning appropriate policy.

These policy communications help the public understand the FOMC's approach to monetary policymaking and the principles that underlie it. Consequently, in response to incoming information, market participants tend to adjust their expectations regarding monetary policy in the direction consistent with achieving the maximum-employment and price-stability goals of the FOMC.[10] Evidence that market participants adjust their expectations for policy in this manner is shown in figure C. The figure plots the change in the 10-year yield on Treasury securities in a one-hour window around the release of employment reports on the vertical axis against the difference in the actual value of nonfarm payroll job gains and the expectations of private-sector analysts immediately before the release of the data on the horizontal axis—that is, a proxy for "surprises" in nonfarm payroll job gains. When actual nonfarm payroll job gains turn out to be higher than market participants expect, the yield on 10-year Treasury securities tends to increase. The rise in the 10-year yield reflects market participants' expectation that, as a result of stronger-than-expected labor market data, the path of short-term interest rates will be higher in the future. Conversely, the 10-year yield tends to decline after negative surprises in nonfarm payroll data, reflecting the path of short-term interest rates will be somewhat lower in the future. These adjustments in the 10-year yield help stabilize the economy even before the FOMC changes the level of the federal funds rate in the direction consistent with achieving its goals, as higher long-term interest rates tend to slow the labor market while lower rates tend to strengthen it.

C. Change in 10-year yield in response to Employment Situation report



NOTE: The data are monthly, and the sample period starts in February 2010. The change in 10-year yields on Treasury securities is measured within a 1-hour window after the data release. The surprise in nonfarm payroll job gains is measured as the difference in the actual nonfarm payroll job gains in thousands and the median expected nonfarm payroll job gains in the Bloomberg Survey of Economists before the data release.

SOURCE: Bureau of Labor Statistics; Bloomberg.

9. See the Statement on Longer-Run Goals and Monetary Policy Strategy, which is available on the Board's website at https://www.federalreserve.gov/monetarypolicy/files/FOMC_LongerRunGoals.pdf.

10. New economic information can be composed of data surprises or of factors that may pose risks to future economic outcomes but are not yet reflected in the data.

by about $1.2 trillion since its peak in 2014.[17] At the January meeting, the Committee released an updated Statement Regarding Monetary Policy Implementation and Balance Sheet Normalization to provide additional information regarding its plans to implement monetary policy over the longer run.[18] In this statement, the Committee indicated that it intends to continue to implement monetary policy in a regime in which an ample supply of reserves ensures that control over the level of the federal funds rate and other short-term interest rates is exercised primarily through the setting of the Federal Reserve's administered rates, and in which active management of the supply of reserves is not required. This operating procedure is often called a "floor system." The FOMC judges that this approach provides good control of short-term money market rates in a variety of market conditions and effective transmission of those rates to broader financial conditions. In addition, the FOMC stated that it is prepared to adjust any of the details for completing balance sheet normalization in light of economic and financial developments.

Although reserve balances play a central role in the ongoing balance sheet normalization process, in the longer run, the size of the balance sheet will also be importantly determined by trend growth in nonreserve liabilities. The box "The Role of Liabilities in Determining the Size of the Federal Reserve's Balance Sheet" discusses various factors that influence the size of reserve and nonreserve liabilities.

Meanwhile, interest income on the Federal Reserve's securities holdings has continued to support substantial remittances to the U.S. Treasury. Preliminary financial statement results indicate that the Federal Reserve remitted about $65 billion in 2018.

The Federal Reserve's implementation of monetary policy has continued smoothly

As with the previous federal funds rate increases since late 2015, the Federal Reserve successfully raised the effective federal funds rate in September and December by increasing the interest rate paid on reserve balances and the interest rate offered on overnight reverse repurchase agreements (ON RRPs). Specifically, the Federal Reserve raised the interest rate paid on required and excess reserve balances to 2.20 percent in September and to 2.40 percent in December. In addition, the Federal Reserve increased the ON RRP offering rate to 2.00 percent in September and to 2.25 percent in December. The Federal Reserve also approved a ¼ percentage point increase in the discount rate (the primary credit rate) in both September and December. Yields on a broad set of money market instruments moved higher, roughly in line with the federal funds rate, in response to the FOMC's policy decisions in September and December. Usage of the ON RRP facility has remained low, excluding quarter-ends.

The effective federal funds rate moved to parity with the interest rate paid on reserve balances in the months before the December meeting. At its December meeting, the Committee made a second small technical adjustment by setting the interest on excess reserves rate 10 basis points below the top of the target range for the federal funds rate; this adjustment was intended to foster trading in the federal funds market at rates well within the FOMC's target range.

The Federal Reserve will conduct a review of its strategic framework for monetary policy in 2019

With labor market conditions close to maximum employment and inflation near the Committee's 2 percent objective, the FOMC

17. Since the start of the normalization program, reserve balances have dropped by approximately $600 billion.

18. See the Statement Regarding Monetary Policy Implementation and Balance Sheet Normalization, which is available on the Board's website at https://www.federalreserve.gov/newsevents/pressreleases/monetary20190130c.htm.

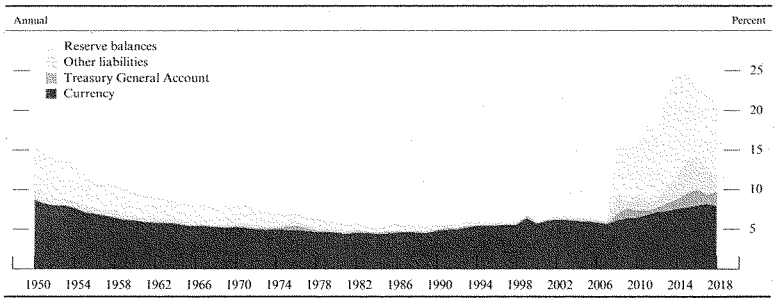
The Role of Liabilities in Determining the Size of the Federal Reserve's Balance Sheet

The size of the Federal Reserve's balance sheet increased from $900 billion at the end of 2006 to about $4.5 trillion at the end of 2014—or from 6 percent of gross domestic product (GDP) to about 25 percent of GDP—mainly as a result of the large-scale asset purchase (LSAP) programs conducted in response to persistent economic weakness following the financial crisis. The expansion of total assets that stemmed from the LSAPs was primarily matched by higher reserve balances of depository institutions, which peaked in the fall of 2014 at $2.8 trillion, or almost 16 percent of GDP, rising from about $10 billion at the end of 2006. Liabilities other than reserves have also grown significantly and played a role in the expansion of the balance sheet. The magnitude of these nonreserve liabilities as well as the flows affecting their variability are not closely related to monetary policy decisions. Since October 2017, the Federal Reserve has been gradually reducing its securities holdings resulting from crisis-era purchases. Once these holdings have unwound to the point at which reserve balances have declined to their longer-run level, the size of the balance sheet will be determined by factors affecting the demand for Federal Reserve liabilities. This discussion describes the Federal Reserve's most significant liabilities and reviews the factors that influenced their size since the financial crisis. Many of the Federal Reserve's liabilities arise from statutory responsibilities, such as supplying currency and serving as the Treasury Department's fiscal agent. Each liability provides social benefits to the economy and plays an important role as a safe and liquid asset for the public, the banking system, the U.S. government, or other institutions.

Figure A plots the evolution of the Federal Reserve's main liabilities relative to nominal GDP over the post–World War II period. Federal Reserve notes outstanding have traditionally been the largest Federal Reserve liability and, over the past three decades, have been slowly growing as a share of U.S. nominal GDP. U.S. currency is an important medium of exchange and store of value, both domestically and abroad. Despite the increasing use of electronic means of payment, currency remains widely used in retail transactions in the United States. Demand for currency tends to increase with the size of the economy because households and businesses need more currency to use in exchange for a growing volume of economic transactions. In addition, with heavy usage of U.S. currency overseas, changes in global growth as well as in financial and geopolitical stability can also

(continued on next page)

A. Liabilities as a share of nominal gross domestic product



NOTE: Data for 2018 pertain to Q3 and are from the *Federal Reserve Banks Combined Quarterly Financial Report* (Unaudited); data for 1950 through 2017 are from the *104th Annual Report, 2017*.

SOURCE: Board of Governors of the Federal Reserve System (2018), *104th Annual Report, 2017*, Table 6: Reserves of Depository Institutions, Federal Reserve Bank Credit, and Related Items (Table 6A: Year-End 1984-2017 and Month-End 2017; Table 6B: Year-End 1918-1983) (Washington: Board of Governors), pp. 302-09, https://www.federalreserve.gov/publications/files/2017-annual-report.pdf; Board of Governors of the Federal Reserve System (2018), *Federal Reserve Banks Combined Quarterly Financial Report* (Unaudited), Table: Combined Statements of Condition (Washington: Board of Governors, September 30), p. 3, https://www.federalreserve.gov/aboutthefed/files/quarterly-report-20180930.pdf.

The Role of Liabilities *(continued)*

materially affect the rate of currency growth. Since the start of the Global Financial Crisis, notes in circulation have more than doubled and, as of the end of 2018, stood at about $1.67 trillion, equivalent to about 8 percent of U.S. GDP, implying that accommodating demand for currency alone requires a larger balance sheet than before the crisis.

Reserve balances are currently the second-largest liability in the Federal Reserve's balance sheet, totaling $1.66 trillion at the end of 2018, or nearly 8 percent of nominal GDP. This liability item consists of deposits held at Federal Reserve Banks by depository institutions, including commercial banks, savings banks, credit unions, thrift institutions, and most U.S. branches and agencies of foreign banks. These balances include reserves held to fulfill reserve requirements as well as reserves held in excess of these requirements. Reserve balances allow banks to facilitate daily payment flows, both in ordinary times and in stress scenarios, without borrowing funds or selling assets. Reserve balances have been declining for several years, in part as a result of the ongoing balance sheet normalization program initiated in October 2017, and now stand about $1.2 trillion below their peak in 2014. At its January 2019 meeting, the Federal Open Market Committee decided that it would continue to implement monetary policy in a regime with an ample supply of reserves, which is often called a "floor system" or an "abundant reserves system."[1] Going forward, the banking system's overall demand for reserve balances and the Committee's judgment about the quantity that is appropriate for the efficient and effective implementation of monetary policy will determine the longer-run level of reserve balances. Although the level of reserve balances that banks will eventually demand is not yet known with certainty, it is likely to be appreciably higher than before the crisis. Banks' higher demand for reserves appears to reflect in part an increased focus on liquidity risk management in the context of regulatory changes.

Liabilities other than currency and reserves include the Treasury General Account (TGA), reverse repurchase agreements conducted with foreign official account holders, and deposits held by designated financial market utilities (DFMUs). By statute, the Federal Reserve serves a special role as fiscal agent or banker for the federal government. Consequently, the U.S. Treasury holds cash balances at the Federal Reserve in the TGA, using this account to receive taxes and proceeds of securities sales and to pay the government's bills, including interest and principal on maturing securities. Before 2008, the Treasury targeted a steady, low balance of $5 billion in the TGA on most days, and it used private accounts at commercial banks to manage the variability in its cash flows. Since 2008, the Treasury has used the TGA as the primary account for managing cash flows. In May 2015, the Treasury announced its intention to hold in the TGA a level of cash generally sufficient to cover one week of outflows, subject to a minimum balance objective of roughly $150 billion. Since this policy change, the TGA balance has generally been well above this minimum; at the end of 2018, it was about $370 billion, or nearly 2 percent of GDP. The current policy helps protect against the risk that extreme weather or other technical or operational events might cause an interruption in access to debt markets and leave the Treasury unable to fund U.S. government operations—a scenario that could have serious consequences for financial stability.

Reverse repurchase agreements with foreign official accounts, also known as the foreign repo pool, also rose during recent years. The Federal Reserve has long offered this service as part of a suite of banking and custody services to foreign central banks, foreign governments, and international official institutions.

1. See footnote 18 in the main text.

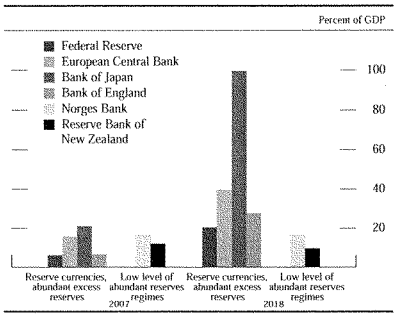
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Accounts at the Federal Reserve provide foreign official institutions with access to immediate dollar liquidity to support operational needs, to clear and settle securities in their accounts, and to address unexpected dollar shortages or exchange rate volatility. The foreign repo pool has grown from an average level of around $30 billion before the crisis to a current average of about $250 billion, equivalent to a little more than 1 percent of GDP. The rise in foreign repo pool balances has reflected in part central banks' preference to maintain robust dollar liquidity buffers.

Finally, "other deposits" with the Federal Reserve Banks have also risen steadily over recent years, from less than $1 billion before the crisis to about $80 billion at the end of 2018. Although "other deposits" include balances held by international and multilateral organizations, government-sponsored enterprises, and other miscellaneous items, the increase has largely been driven by the establishments of accounts for DFMUs. DFMUs provide the infrastructure for transferring, clearing, and settling payments, securities, and other transactions among financial institutions. The Dodd-Frank Wall Street Reform and Consumer Protection Act provides that DFMUs—those financial market utilities designated as systemically important by the Financial Stability Oversight Council—can maintain accounts at the Federal Reserve and earn interest on balances maintained in those accounts.

Putting together all of these elements—that is, projected trend growth for currency in circulation, the Committee's decision to continue operating with ample reserves, and the higher levels for the TGA, the foreign repo pool, and DFMU balances—explains why the longer-run size of the Federal Reserve's balance sheet will be considerably larger than before the crisis. At the end of 2018, the Federal Reserve's balance sheet totaled $4.1 trillion, or about 20 percent of GDP. Figure B considers the size of the balance sheet in an international context. In response to the Global Financial Crisis, central bank balance sheets increased in many jurisdictions. Relative to GDP, the Federal Reserve's balance sheet remains smaller than those of other reserve-currency central banks in major advanced foreign economies that currently operate with abundant reserves—such as the European Central Bank, the Bank of Japan, and the Bank of England—although this difference is partly due to the Federal Reserve being much further along in the policy normalization process after the crisis. In addition, the Federal Reserve's balance sheet relative to GDP is only modestly larger than those of central banks, such as the Norges Bank and the Reserve Bank of New Zealand, that aim to operate at a relatively low level of abundant reserves. Of course, differences in central bank balance sheets also reflect differences in financial systems across countries.

B. Central bank balance sheets relative to gross domestic product



NOTE: Data for 2018 pertain to Q3, except for the Bank of England, whose data pertain to 2017:Q3. Norges Bank data exclude assets of Norway's Government Pension Fund Global.

SOURCE: Haver Analytics.

judges it is an opportune time for the Federal Reserve to conduct a review of its strategic framework for monetary policy—including the policy strategy, tools, and communication practices. The goal of this assessment is to identify possible ways to improve the Committee's current policy framework in order to ensure that the Federal Reserve is best positioned going forward to achieve its statutory mandate of maximum employment and price stability.

Specific to the communications practices, the Federal Reserve judges that transparency is essential to accountability and the effectiveness of policy, and therefore the Federal Reserve seeks to explain its policymaking approach and decisions to the Congress and the public as clearly as possible. The box "Federal Reserve Transparency: Rationale and New Initiatives" discusses the steps and new initiatives the Federal Reserve has taken to improve transparency.

Federal Reserve Transparency: Rationale and New Initiatives

Over the past 25 years, the Federal Reserve and other major central banks have taken steps to improve transparency, which provides three important benefits. First, transparency helps ensure that central banks are held accountable to the public and its elected representatives. Accountability is essential to democratic legitimacy and is particularly important for central banks that have been granted extensive operational independence, as is the case for the Federal Reserve. Second, transparency enhances the effectiveness of monetary policy. If the public understands the central bank's views on the economy and monetary policy, then households and businesses will take those views into account in making their spending and investment plans. Third, transparency supports a central bank's efforts to promote the safety and soundness of financial institutions and the overall financial system, including by helping financial institutions know what is expected of them. Thus, for each of these reasons, the Federal Reserve seeks to explain its policymaking approach and decisions to the Congress and the public as clearly as possible.

To foster transparency and accountability, the Federal Reserve uses a wide variety of communications, including semiannual testimony by the Chairman in conjunction with this report, the *Monetary Policy Report*. In addition, the Federal Open Market Committee (FOMC) has released a statement after every regularly scheduled meeting for almost 20 years, and detailed minutes of FOMC meetings have been released since 1993.[1] In 2007, the Federal Reserve expanded the economic projections that have accompanied the *Monetary Policy Report* since 1979 into the Summary of Economic Projections, which FOMC participants submit every quarter. And in 2012, the FOMC first released its Statement on Longer-Run Goals and Monetary Policy Strategy, which it reaffirms annually.[2]

The Federal Reserve continues to make improvements to its communications. In January, the Chairman began holding a press conference after each FOMC meeting, doubling the frequency of the press conferences that were introduced in 2011. These press conferences are held 30 minutes after the release of the postmeeting statement and provide additional information about the economic outlook, the Committee's policy decision, and policy tools. Press conferences also allow the Chairman to answer questions on monetary policy and other issues in a timely fashion.

In November 2018, the Federal Reserve announced that it would conduct a broad review of its monetary policy framework—specifically, of the policy strategy, tools, and communication practices that the FOMC uses in the pursuit of its dual-mandate goals of maximum employment and price stability. The Federal Reserve's existing policy framework is the result of decades of learning and refinements and has allowed the FOMC to pursue effectively its dual-mandate goals. Central banks in a number of other advanced economies have also found it useful, at times, to conduct reviews of their monetary policy frameworks. Such a review seems particularly appropriate when the economy appears to have changed in ways that matter for the conduct of monetary policy. For example, the neutral level of the policy interest rate appears to have fallen in the United States and abroad, increasing the risk that a central bank's policy rate will be constrained by its effective lower bound in future economic downturns. The review will consider ways to ensure that the Federal Reserve's monetary policy strategy, tools, and communications going forward provide the best means to achieve and maintain the dual-mandate objectives.

The review will include outreach to and consultation with a broad range of stakeholders in the U.S. economy through a series of "Fed Listens" events. The Reserve Banks will hold forums around the country, in a town hall format, allowing the Federal Reserve to gather perspectives from the public, including representatives of business and industry, labor leaders, community and economic development officials, academics, nonprofit organizations, community bankers, local government officials, and representatives of congressional offices in Reserve Bank Districts.[3] In addition, the Federal Reserve

(continued on next page)

1. In December 2004, the FOMC decided to begin publishing the minutes three weeks after every meeting, expediting the publication schedule to provide the public with more timely information.

2. The statement is reprinted at the beginning of this report on p. ii. The FOMC also publishes transcripts of its meetings after a five-year lag. For a review of the main communication tools used by the Federal Reserve and other central banks, see the document "Monetary Policy Strategies of Major Central Banks," which is available on the webpage "Monetary Policy Principles and Practice" on the Board's website at https://www.federalreserve.gov/monetarypolicy/monetary-policy-principles-and-practice.htm.

3. "Fed Listens" events will be held at the Federal Reserve Bank of Dallas this February and at the Federal Reserve Bank of Minneapolis this April. Other "Fed Listens" events will be announced in coming weeks.

Federal Reserve Transparency *(continued)*

System will sponsor a research conference this June at the Federal Reserve Bank of Chicago, with academic speakers and non-academic panelists from outside the Federal Reserve System.

Beginning around the middle of 2019, as part of their review of how to best pursue the Fed's statutory mandate, Federal Reserve policymakers will discuss relevant economic research as well as the perspectives offered during the outreach events. At the end of the process, policymakers will assess the information and perspectives gathered and will report their findings and conclusions to the public.

This review complements other recent changes to the Federal Reserve's communication practices. In November 2018, the Board inaugurated two reports, the *Supervision and Regulation Report* and the *Financial Stability Report*.[4] These reports provide information about the Board's responsibility, shared with other government agencies, to foster the safety and soundness of the U.S. banking system and to promote financial stability. Transparency is key to these efforts, as it enhances public confidence, allows for the consideration of outside ideas, and makes it easier for regulated entities to know what is expected of them and how best to comply.

The *Supervision and Regulation Report* provides an overview of banking conditions and the current areas of focus of the Federal Reserve's regulatory policy framework, including pending rules, and key themes, trends, and priorities regarding supervisory programs. The report distinguishes between large financial institutions and regional and community banking organizations because supervisory approaches and priorities for these institutions frequently differ. The report provides information to the public in conjunction with semiannual testimony before the Congress by the Vice Chairman for Supervision.

The *Financial Stability Report* summarizes the Board's monitoring of vulnerabilities in the financial system. The Board monitors four broad categories of vulnerabilities, including elevated valuation pressures (as signaled by asset prices that are high relative to economic fundamentals or historical norms), excessive borrowing by businesses and households, excessive leverage within the financial sector, and funding risks (risks associated with a withdrawal of funds from a particular financial institution or sector, for example as part of a "financial panic"). Assessments of these vulnerabilities inform Federal Reserve actions to promote the resilience of the financial system, including through its supervision and regulation of financial institutions.

Through all of these efforts to improve its communications, the Federal Reserve seeks to enhance transparency and accountability regarding how it pursues its statutory responsibilities.

4. The *Supervision and Regulation Report* and the *Financial Stability Report* are available on the Board's website at, respectively, https://www.federalreserve.gov/publications/2018-november-supervision-and-regulation-report-preface.htm and https://www.federalreserve.gov/publications/2018-november-financial-stability-report-purpose.htm.

PART 3
SUMMARY OF ECONOMIC PROJECTIONS

The following material appeared as an addendum to the minutes of the December 18–19, 2018, meeting of the Federal Open Market Committee.

In conjunction with the Federal Open Market Committee (FOMC) meeting held on December 18–19, 2018, 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 2018 to 2021 and over the longer run.[19] Each participant's projections were 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.[20] "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 2019 would run somewhat above their individual estimate of its longer-run rate. Most participants continued to expect real GDP growth to slow throughout the projection horizon, with a majority of participants projecting growth in 2021 to be a little below their estimate of its longer-run rate. Almost all participants who submitted longer-run projections continued to expect that the unemployment rate would run below their estimate of its longer-run level through 2021. Most participants projected that inflation, as measured by the four-quarter percentage change in the price index for personal consumption expenditures (PCE), would increase slightly over the next two years, and nearly all participants expected that it would be at or slightly above the Committee's 2 percent objective in 2020 and 2021. Compared with the Summary of Economic Projections (SEP) from September, many participants marked down slightly their projections for real GDP growth and inflation in 2019. Table 1 and figure 1 provide summary statistics for the projections.

As shown in figure 2, participants generally continued to expect that the evolution of the economy, relative to their objectives of maximum employment and 2 percent inflation, would likely warrant some further gradual increases in the federal funds rate. Compared with the September submissions, the median projections for the federal funds rate for the end of 2019 through 2021 and over the longer run were a little lower. Most participants expected that the federal funds rate at the end of 2020 and 2021 would be modestly higher than their estimate of its level over the longer run; however, many marked down the extent to which it would exceed their estimate of the longer-run level relative to their September projections.

19. Five members of the Board of Governors, one more than in September 2018, were in office at the time of the December 2018 meeting and submitted economic projections.

20. One participant did not submit longer-run projections for real GDP growth, the unemployment rate, or the federal funds rate.

Table 1. Economic projections of Federal Reserve Board members and Federal Reserve Bank presidents, under their individual assessments of projected appropriate monetary policy, December 2018

Percent

Variable	Median[1]					Central tendency[2]					Range[3]				
	2018	2019	2020	2021	Longer run	2018	2019	2020	2021	Longer run	2018	2019	2020	2021	Longer run
Change in real GDP	3.0	2.3	2.0	1.8	1.9	3.0–3.1	2.3–2.5	1.8–2.0	1.5–2.0	1.8–2.0	3.0–3.1	2.0–2.7	1.5–2.2	1.4–2.1	1.7–2.2
September projection	3.1	2.5	2.0	1.8	1.8	3.0–3.2	2.4–2.7	1.8–2.1	1.6–2.0	1.8–2.0	2.9–3.2	2.1–2.8	1.7–2.4	1.5–2.1	1.7–2.1
Unemployment rate	3.7	3.5	3.6	3.8	4.4	3.7	3.5–3.7	3.5–3.8	3.6–3.9	4.2–4.5	3.7	3.4–4.0	3.4–4.3	3.4–4.2	4.0–4.6
September projection	3.7	3.5	3.5	3.7	4.5	3.7	3.4–3.6	3.4–3.8	3.5–4.0	4.3–4.6	3.7–3.8	3.4–3.8	3.3–4.0	3.4–4.2	4.0–4.6
PCE inflation	1.9	1.9	2.1	2.1	2.0	1.8–1.9	1.8–2.1	2.0–2.1	2.0–2.1	2.0	1.8–1.9	1.8–2.2	2.0–2.2	2.0–2.3	2.0
September projection	2.1	2.0	2.1	2.1	2.0	2.0–2.1	2.0–2.1	2.1–2.2	2.0–2.2	2.0	1.9–2.2	2.0–2.3	2.0–2.2	2.0–2.3	2.0
Core PCE inflation[4]	1.9	2.0	2.0	2.0		1.8–1.9	2.0–2.1	2.0–2.1	2.0–2.1		1.8–1.9	1.9–2.2	2.0–2.2	2.0–2.3	
September projection	2.0	2.1	2.1	2.1		1.9–2.0	2.0–2.1	2.1–2.2	2.0–2.2		1.9–2.0	2.0–2.3	2.0–2.2	2.0–2.3	
Memo: Projected appropriate policy path															
Federal funds rate	2.4	2.9	3.1	3.1	2.8	2.4	2.6–3.1	2.9–3.4	2.6–3.1	2.5–3.0	2.1–2.4	2.4–3.1	2.4–3.6	2.4–3.6	2.5–3.5
September projection	2.4	3.1	3.4	3.4	3.0	2.1–2.4	2.9–3.4	3.1–3.6	2.9–3.6	2.8–3.0	2.1–2.4	2.1–3.6	2.1–3.9	2.1–4.1	2.5–3.5

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 25–26, 2018. 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 25–26, 2018, meeting, and one participant did not submit such projections in conjunction with the December 18–19, 2018, 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.

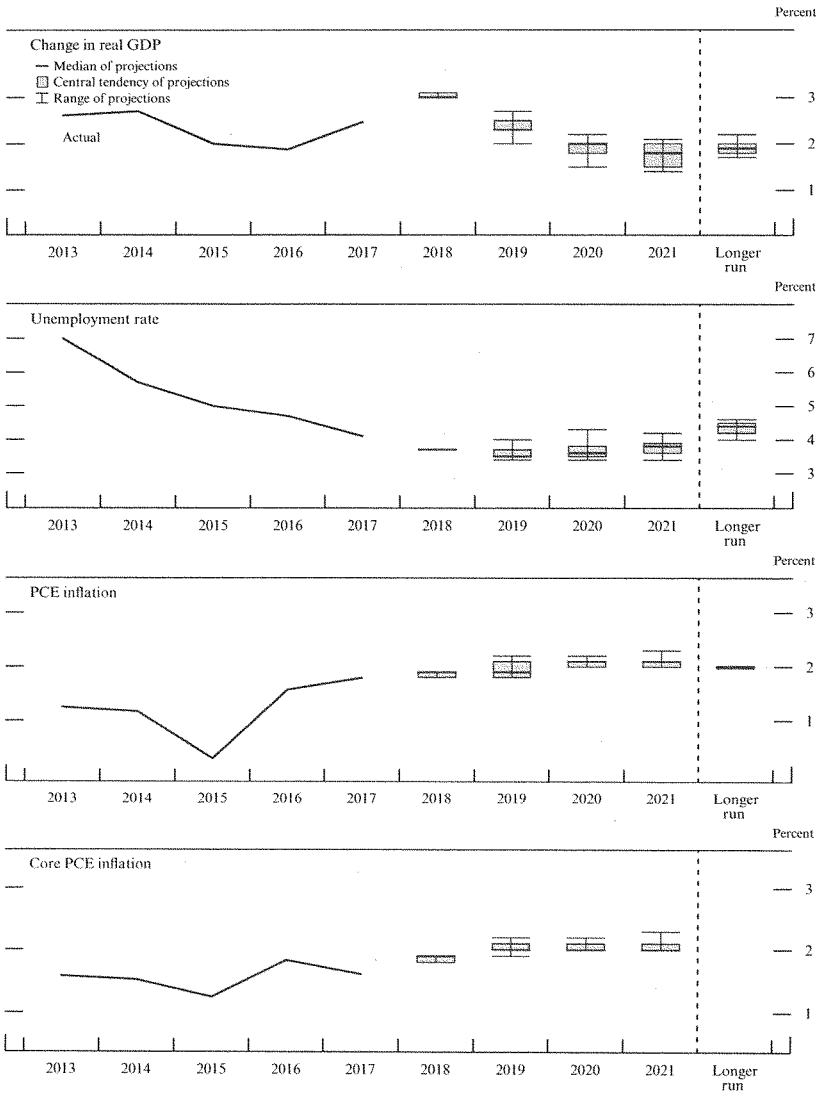
On balance, participants continued to view the uncertainty around their projections as broadly similar to the average of the past 20 years. While most participants viewed the risks to the outlook as balanced, a couple more participants than in September saw risks to real GDP growth as weighted to the downside, and one less participant viewed the risks to inflation as weighted to the upside.

The Outlook for Economic Activity

The median of participants' projections for the growth rate of real GDP for 2019, conditional on their individual assessment of appropriate monetary policy, was 2.3 percent, slower than the 3.0 percent pace expected for 2018. Most participants continued to expect GDP growth to slow throughout the projection horizon, with the median projection at 2.0 percent in 2020 and at 1.8 percent in 2021, a touch lower than the median estimate of its longer-run rate of 1.9 percent. Relative to the September SEP, the medians of the projections for real GDP growth for 2018 and 2019 were slightly lower, while the median for the longer-run rate of growth was a bit higher. Several participants mentioned tighter financial conditions or a softer global economic outlook as factors behind the downward revisions to their near-term growth estimates.

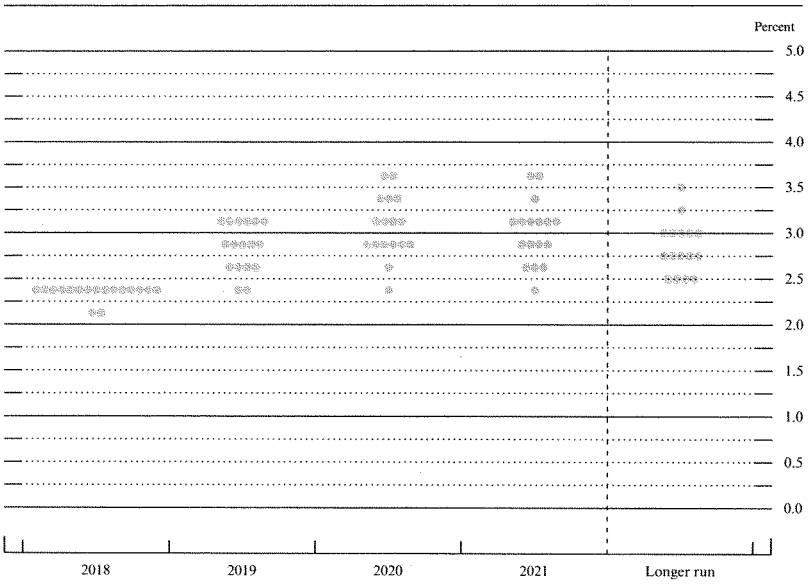
The median of projections for the unemployment rate in the fourth quarter of 2019 was 3.5 percent, unchanged from the September SEP and almost 1 percentage point below the median assessment of its longer-run normal level. With participants generally continuing to expect the unemployment rate to bottom out in 2019 or 2020, the median projections for 2020 and 2021 edged back up to 3.6 percent and 3.8 percent, respectively. Nevertheless, most participants continued to project that the unemployment rate in 2021 would still be well below their estimates of its longer-run level. The median estimate of the longer-run normal rate of unemployment was slightly lower than in September.

Figure 1. Medians, central tendencies, and ranges of economic projections, 2018–21 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.

Figures 3.A and 3.B show the distributions of participants' projections for real GDP growth and the unemployment rate from 2018 to 2021 and in the longer run. The distributions of individual projections for real GDP growth for 2019 and 2020 shifted down relative to those in the September SEP, while the distributions for 2021 and for the longer-run rate of GDP growth were little changed. The distribution of individual projections for the unemployment rate in 2019 was a touch more dispersed relative to the distribution of the September projections; the distribution moved slightly higher for 2020, while the distribution for the longer-run normal rate shifted toward the lower end of its range.

The Outlook for Inflation

The median of projections for total PCE price inflation was 1.9 percent in 2019, a bit lower than in the September SEP, while the medians for 2020 and 2021 were 2.1 percent, the same as in the previous projections. The medians of projections for core PCE price inflation over the 2019–21 period were 2.0 percent, a touch lower than in September. Some participants pointed to softer incoming data or recent declines in oil prices as reasons for shaving their projections for 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 total PCE price inflation and core PCE price inflation beyond this year either shifted slightly to the left or were unchanged relative to the September SEP. Most participants revised down slightly their projections of total PCE price inflation for 2019. All participants expected that total PCE price inflation would be in a range from 2.0 to 2.3 percent in 2020 and 2021. Most participants projected that core PCE inflation would run at 2.0 to 2.1 percent throughout the projection horizon.

Appropriate Monetary Policy

Figure 3.E shows distributions 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 2018 to 2021 and over the longer run. The distributions for 2019 through 2021 were less dispersed and shifted slightly toward lower values. Compared with the projections prepared for the September SEP, the median federal funds rate was 25 basis points lower over the 2019–21 period. For the end of 2019, the median of federal funds rate projections was 2.88 percent, consistent with two 25 basis point rate increases over the course of 2019. Thereafter, the medians of the projections were 3.13 percent at the end of 2020 and 2021. Most participants expected that the federal funds rate at the end of 2020 and 2021 would be modestly higher than their estimate of its level over the longer run; however, many marked down the extent to which it would exceed their estimate of the longer-run level relative to their September projections. The median of the longer-run projections of the federal funds rate was 2.75 percent, 25 basis points lower than in September.

In discussing their projections, many participants continued to express the view that any further increases in the federal funds rate over the next few years would likely be gradual. That anticipated pace reflected a few factors, such as a short-term neutral real interest rate that is currently low and an inflation rate that has been rising only gradually to the Committee's 2 percent objective. Some participants cited a weaker near-term trajectory for economic growth or a muted response of inflation to tight labor market conditions as factors contributing to the downward revisions in their assessments of the appropriate path for the policy rate.

Uncertainty and Risks

In assessing the appropriate path of the federal funds rate, 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 measures 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 PCE price inflation. Those measures are represented graphically in the "fan charts" shown in the top panels of figures 4.A, 4.B, and 4.C. The fan charts display the median SEP projections for the three variables surrounded by symmetric confidence intervals derived from the forecast errors reported in table 2. If the degree of uncertainty attending these projections is similar to the typical magnitude

Table 2. Average historical projection error ranges

Percentage points

Variable	2018	2019	2020	2021
Change in real GDP[1]	±0.8	±1.6	±2.1	±2.1
Unemployment rate[1]	±0.1	±0.8	±1.5	±1.9
Total consumer prices[2]	±0.2	±1.0	±1.0	±1.0
Short-term interest rates[3]	±0.1	±1.4	±2.0	±2.4

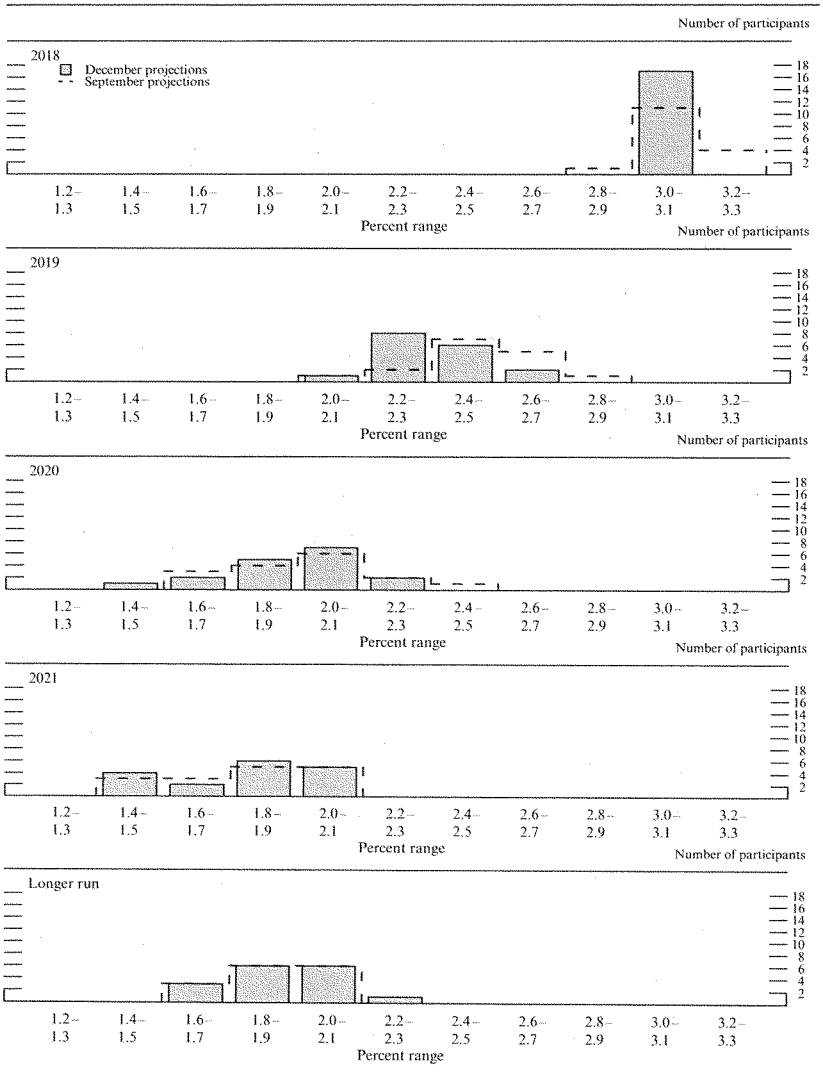
NOTE: Error ranges shown are measured as plus or minus the root mean squared error of projections for 1998 through 2017 that were released in the winter by various private and government forecasters. As described in the box "Forecast Uncertainty," under certain assumptions, there is about a 70 percent 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), https://doi.org/10.17016/FEDS.2017.020.

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.

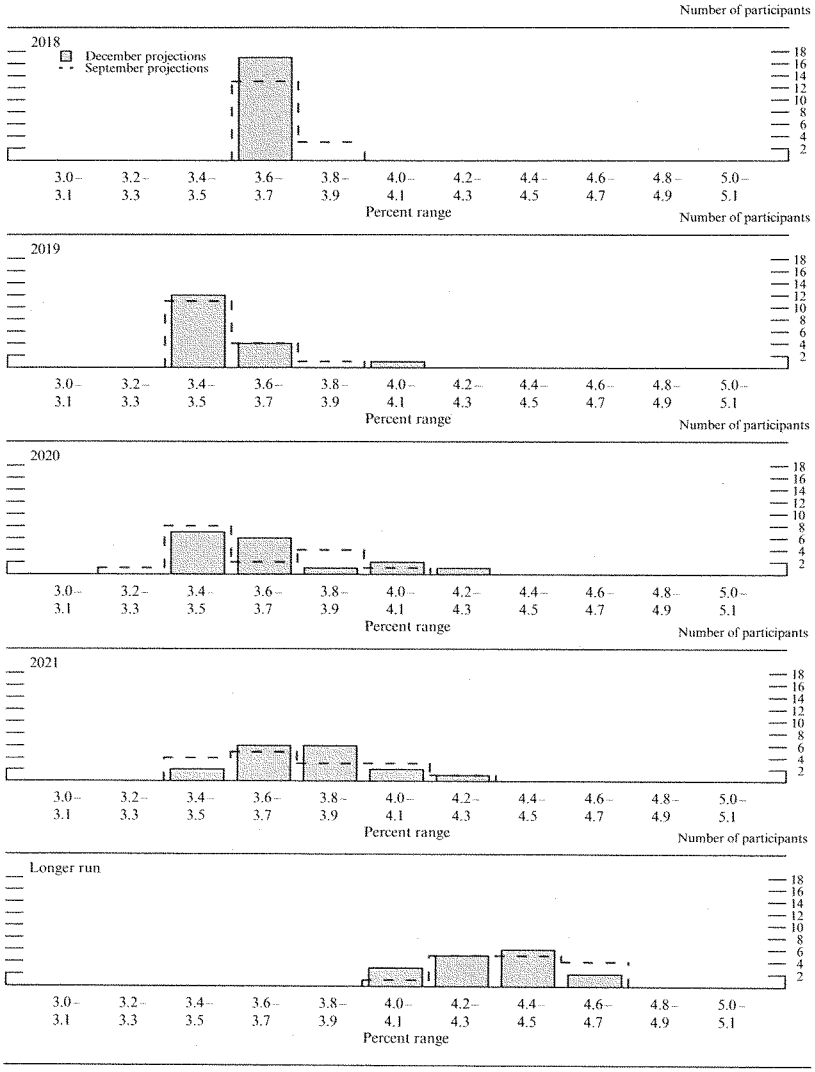
3. For Federal Reserve staff forecasts, measure is the federal funds rate. For other forecasts, measure is the rate on 3-month Treasury bills. Projection errors are calculated using average levels, in percent, in the fourth quarter.

Figure 3.A. Distribution of participants' projections for the change in real GDP, 2018–21 and over the longer run



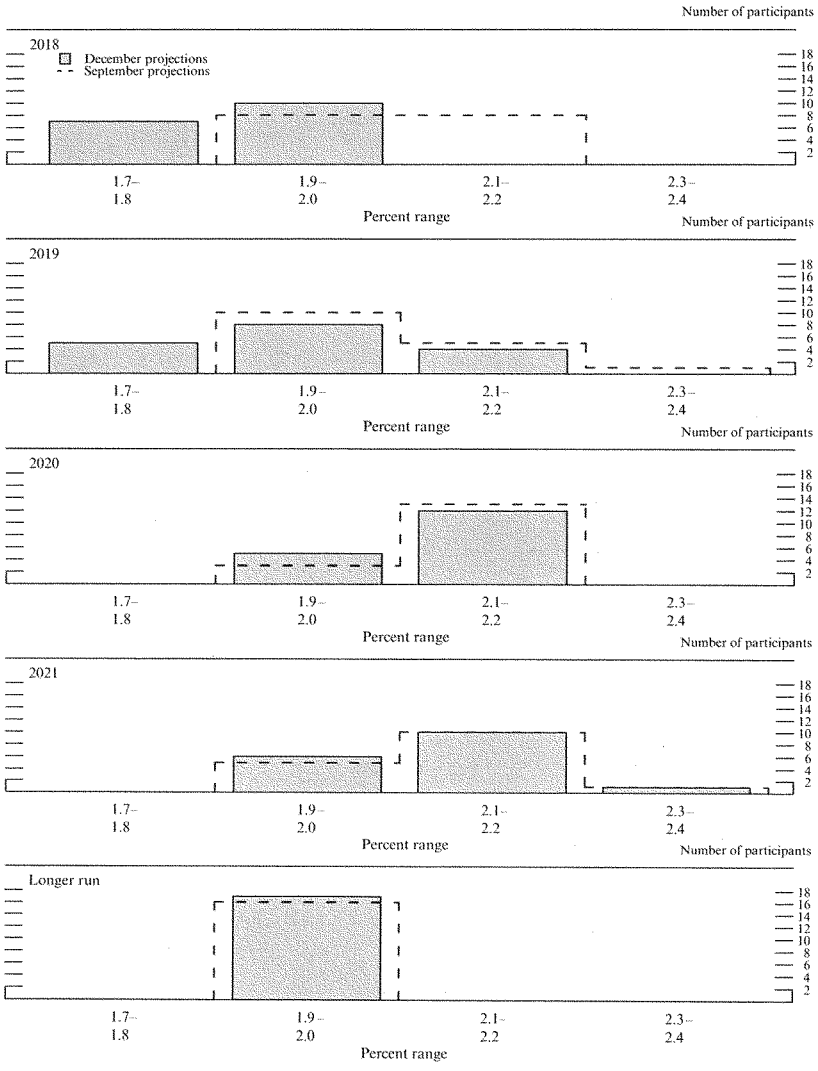
NOTE: Definitions of variables and other explanations are in the notes to table 1.

Figure 3.B. Distribution of participants' projections for the unemployment rate, 2018–21 and over the longer run



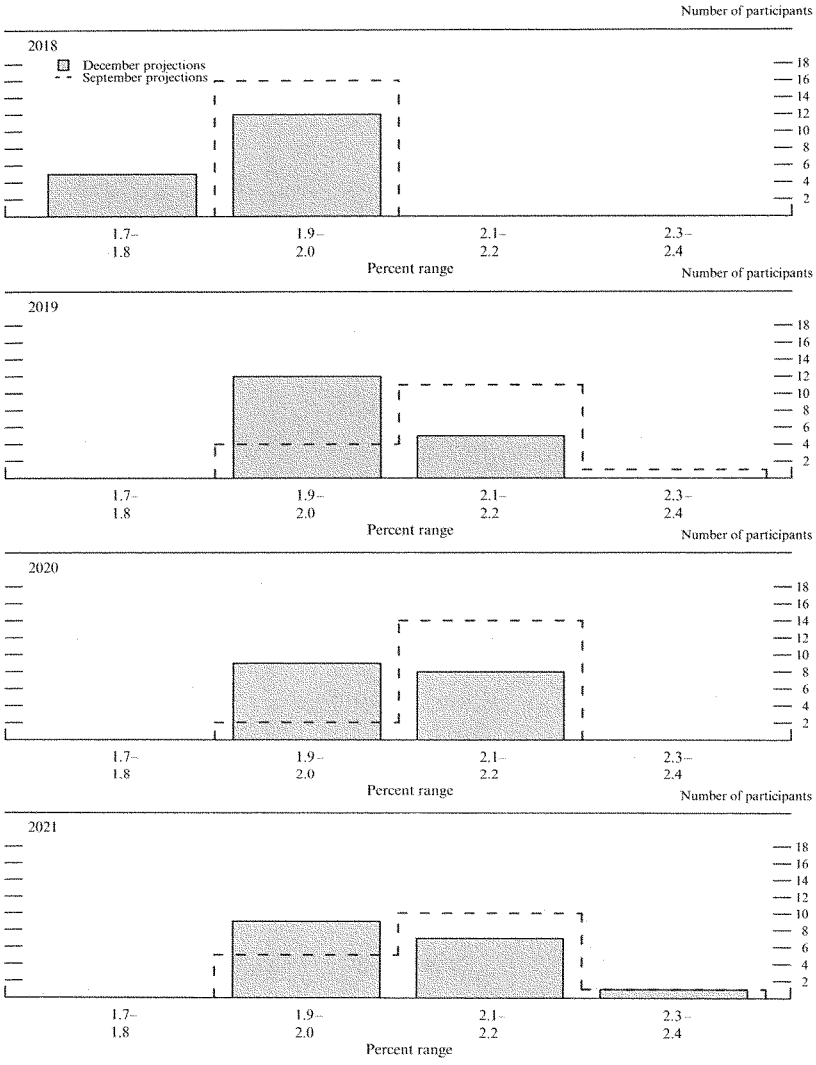
NOTE: Definitions of variables and other explanations are in the notes to table 1.

Figure 3.C. Distribution of participants' projections for PCE inflation, 2018–21 and over the longer run



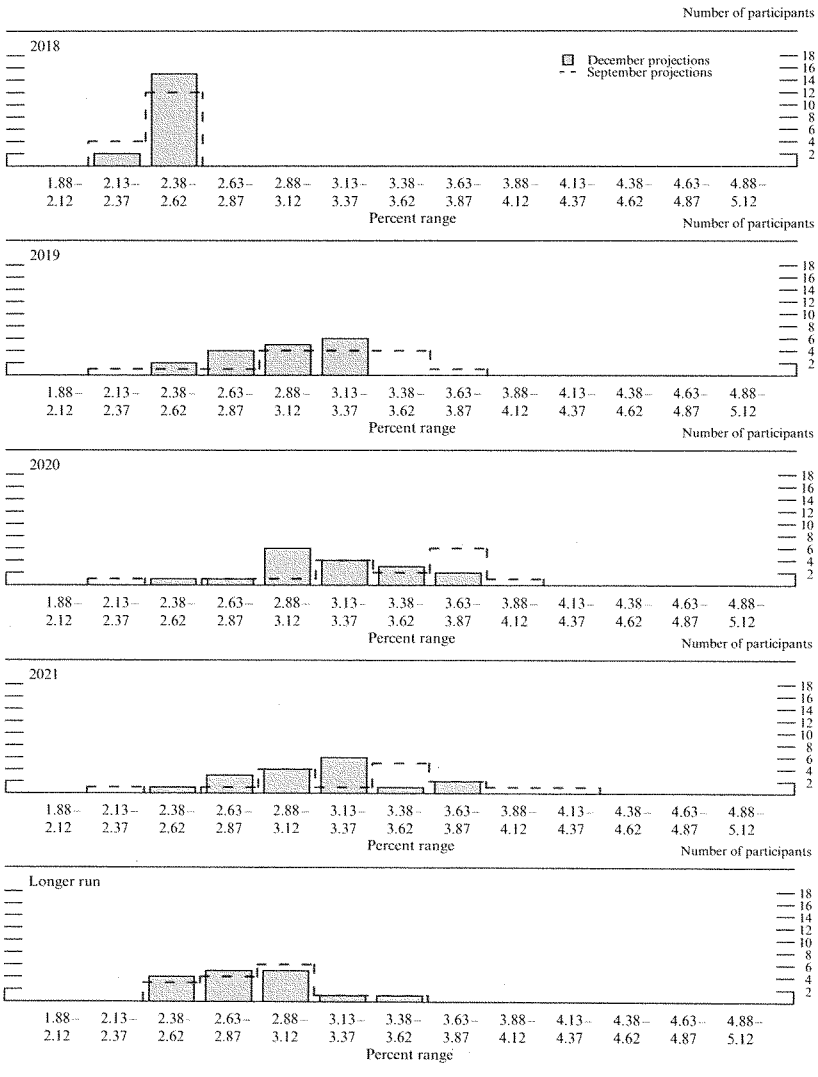
NOTE: Definitions of variables and other explanations are in the notes to table 1.

Figure 3.D. Distribution of participants' projections for core PCE inflation, 2018–21



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, 2018–21 and over the longer run



NOTE: Definitions of variables and other explanations are in the notes to table 1.

of past forecast errors and the risks around the projections are broadly balanced, then future outcomes of these variables would have about a 70 percent probability of being within these confidence intervals. For all three variables, this measure of uncertainty is substantial and generally increases as the forecast horizon lengthens.

Participants' assessments of the level of uncertainty surrounding their individual economic projections are shown in the bottom-left panels of figures 4.A, 4.B, and 4.C. Participants generally continued to view the degree of uncertainty attached to their economic projections for real GDP growth and inflation as broadly similar to the average of the past 20 years.[21] A couple more participants than in September viewed the uncertainty around the unemployment rate as higher than average.

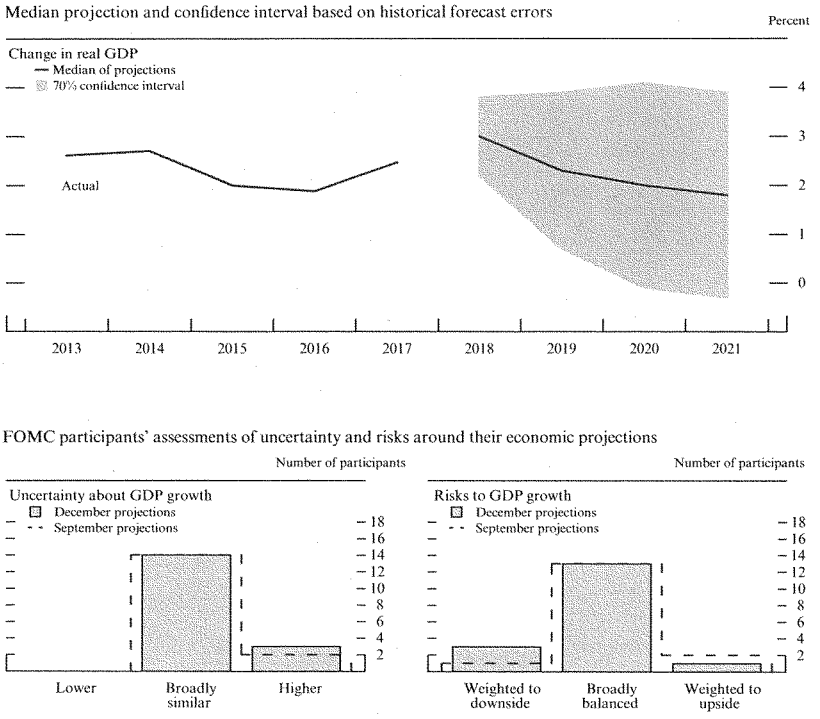
Because the fan charts are constructed to be symmetric around the median projections, they do not reflect any asymmetries in the balance of risks that participants may see in their economic projections. Participants' assessments of the balance of risks to their economic projections are shown in the bottom-right panels of figures 4.A, 4.B, and 4.C. Most participants generally judged the risks to the outlook for real GDP growth, the unemployment rate, headline inflation, and core inflation as broadly balanced—in other words, as broadly consistent with a symmetric fan chart. Two more participants than in September saw the risks to real GDP growth as weighted to the downside, and one less judged the risks as weighted to the upside. The balance of risks to the projection for the unemployment rate was unchanged, with three participants judging the risks to the unemployment rate as weighted to the downside and two participants viewing the risks as weighted to the upside. In addition, the balance of risks to the inflation projections shifted down slightly relative to September, as one less participant judged the risks to both total and core inflation as weighted to the upside and one more participant viewed the risks as weighted to the downside.

In discussing the uncertainty and risks surrounding their economic projections, participants mentioned trade tensions as well as financial and foreign economic developments as sources of uncertainty or downside risk to the growth outlook. For the inflation outlook, the effects of trade restrictions were cited as upside risks and lower energy prices and the stronger dollar as downside risks. Those who commented on U.S. fiscal policy viewed it as an additional source of uncertainty and noted that it might present two-sided risks to the outlook, as its effects could be waning faster than expected or turn out to be more stimulative than anticipated.

Participants' assessments of the appropriate future path of the federal funds rate were 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, the unemployment rate, and inflation, uncertainty surrounding the projected path for the federal funds rate importantly reflects the uncertainties about the paths for those key economic variables along with other factors. 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, the forecast uncertainty surrounding the appropriate path of the federal funds rate is substantial and increases for longer horizons.

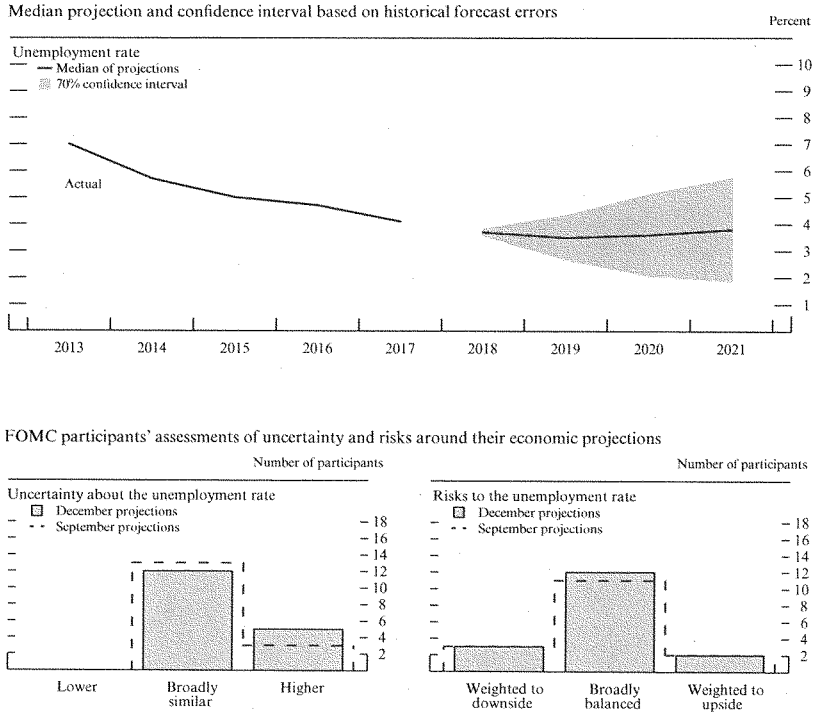
21. At the end of this summary, the box "Forecast Uncertainty" discusses the sources and interpretation of uncertainty surrounding the economic forecasts and explains the approach used to assess the uncertainty and risks attending the participants' projections.

Figure 4.A. Uncertainty and risks in projections of GDP growth



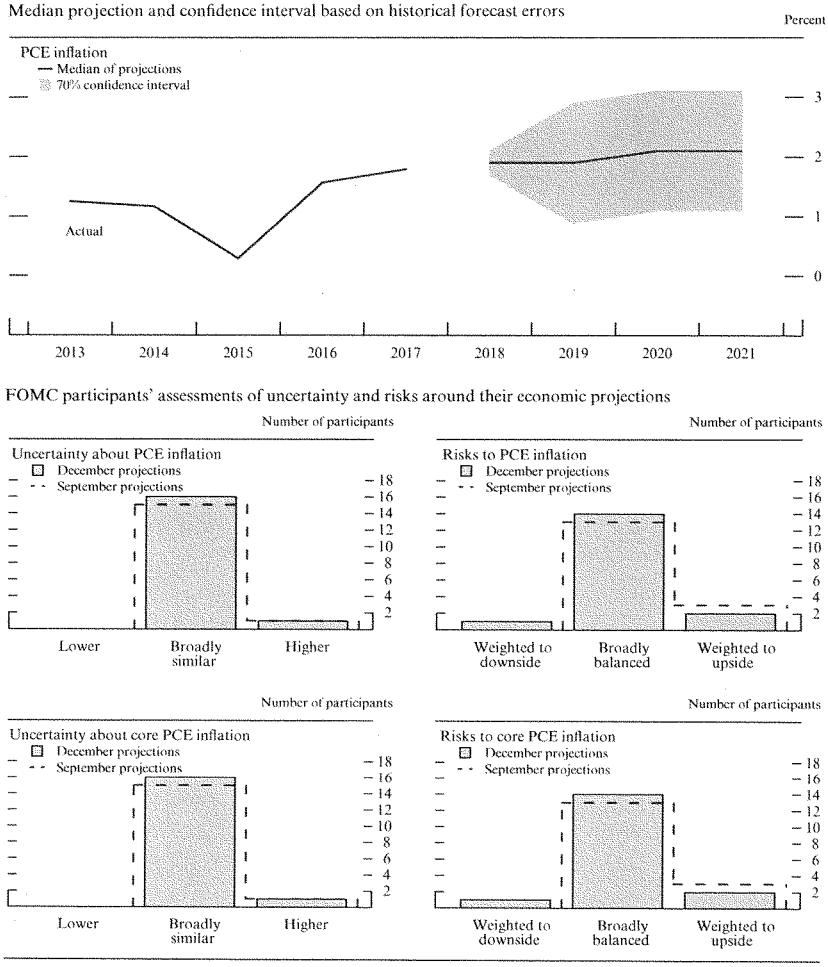
NOTE: The blue and red lines in the top panel show actual values and median projected values, respectively, of the percent change in real gross domestic product (GDP) from the fourth quarter of the previous year to the fourth quarter of the year indicated. The confidence interval around the median projected 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."

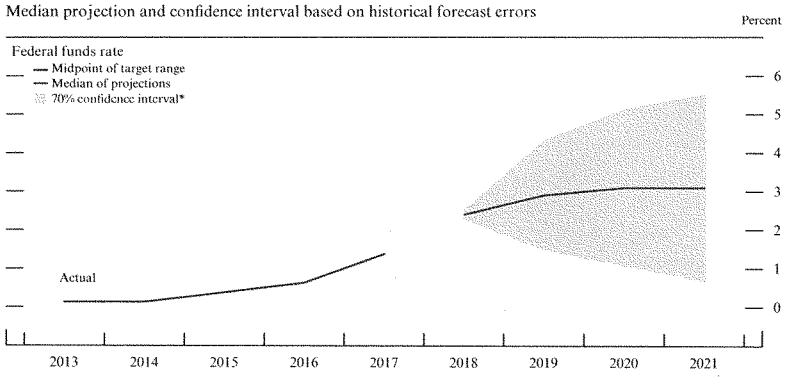
Figure 4.C. Uncertainty and risks in projections of PCE inflation



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

Median projection and confidence interval based on historical forecast errors



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, 1.4 to 4.6 percent in the second year, and 0.9 to 5.1 percent in the third and fourth years. The corresponding 70 percent confidence intervals for overall inflation would be 1.8 to 2.2 percent in the current year and 1.0 to 3.0 percent in the second, third, and fourth years. 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

(continued)

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.

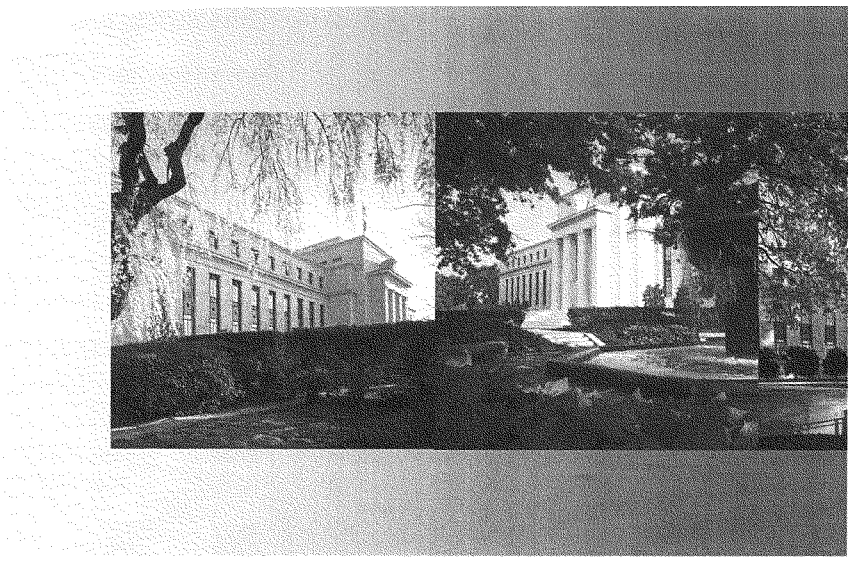
As with real activity and inflation, the outlook for the future path of the federal funds rate is subject to considerable uncertainty. This uncertainty arises primarily because each participant's assessment of the appropriate stance of monetary policy depends importantly on the evolution of real activity 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
CRE	commercial real estate
DFMU	designated financial market utility
EBITDA	earnings before interest, taxes, depreciation, and amortization
ECB	European Central Bank
EME	emerging market economy
EPOP	employment-to-population
EU	European Union
FOMC	Federal Open Market Committee; also, the Committee
GDP	gross domestic product
JOLTS	Job Openings and Labor Turnover Survey
LFPR	labor force participation rate
LSAP	large-scale asset purchase
MBS	mortgage-backed securities
Michigan survey	University of Michigan Surveys of Consumers
ON RRP	overnight reverse repurchase agreement
PCE	personal consumption expenditures
SEP	Summary of Economic Projections
SLOOS	Senior Loan Officer Opinion Survey on Bank Lending Practices
SSDI	Social Security Disability Insurance
TCJA	Tax Cuts and Jobs Act
TGA	Treasury General Account
TIPS	Treasury Inflation-Protected Securities
VIX	implied volatility for the S&P 500 index



Questions for The Honorable Jerome H. Powell, Chair, Board of Governors of the Federal Reserve System from Representative Barr:

As you know, the GSIB surcharge was adopted in July 2015, based on the FRB's assessment of the GSIBs' resiliency and resolvability. The FRB has since acknowledged significant improvements in resiliency and resolvability. In fact, Vice Chairman Quarles said in April 2018 before the House Financial Services Committee that "a process of thinking about" recalibrating the GSIB surcharge is appropriate now in light of those improvements. Further, in adopting the GSIB surcharge, the FRB committed to periodically reevaluating the surcharge methodology to ensure that economic growth does not unduly affect firms' risk scores or hinder their ability to provide credit and other essential financial services. However, in identical letters to Congress last year, both you and Vice Chairman Quarles cited two unrelated factors—the profitability of U.S. GSIBs and their higher stock valuations relative to foreign banks peers—as justification for not recalibrating the GSIB surcharge. You repeated this answer in response to my question about the GSIB surcharge on February 27, 2019 and stated that capital was "about right." While I have full confidence in your leadership, I ask that you please explain your justification further as to why the GSIB surcharge shouldn't be recalibrated right now. In particular, I would like you to explain why you believe bank profitability and stock valuations have any bearing on the appropriate calibration for financial regulation. Additionally, I would like to know if there is a formal internal process for reviewing the GSIB surcharge and how frequently that will be exercised.

As Vice Chair Quarles indicated in April 2018, the Federal Reserve Board (Board) is currently reviewing and revising aspects of its regulatory framework. In the regulatory capital space, there are several interrelated projects underway, certain of which have statutory deadlines and are therefore being prioritized by the Board. For example, the Board approved proposals to tailor the prudential standards that apply to large banks and depository institution holding companies (October 2018)[1] and to foreign banking organizations (April 2019),[2] and the Board intends to complete these rulemakings ahead of the November 2019 statutory deadline.

With respect to the GSIB surcharge, the Board indicated when it issued the rule that it would reassess the regime at regular intervals to review whether the surcharge was calibrated appropriately.[3] Although I continue to believe that the levels of capital in the U.S. banking system are about right, I do support regular reviews of all the Board's rules, including the GSIB surcharge rule. I cannot give you a timeline for the review of the GSIB surcharge rule, but I note that the Board currently has outstanding a proposal that would calibrate the GSIB leverage surcharges and a proposal that would simplify capital requirements for large banking firms by integrating a banking firm's supervisory stress test results into its regulatory capital requirements.

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[1] See 83 FR 61408 (Nov. 29, 2018); 83 FR 66024 (Dec. 21, 2018).
[2] See https://www.federalreserve.gov/newsevents/pressreleases/bcreg20190408a.htm.
[3] See 80 FR 49082, 49085 (Aug. 14, 2015).

Questions for The Honorable Jerome H. Powell, Board of Governors of the Federal Reserve System from Representative Budd:

1. For regulatory consistency domestically, as well as presenting a united front internationally, I believe it is important that the Federal Reserve and state insurance commissioners coordinate their development of insurance capital standards. As the Fed develops its "building blocks approach" (BBA) for an insurance capital standard, how do you intend to ensure that the BBA and the group capital calculation (GCC) from the states are not significantly divergent?

As stated in the Board of Governors of the Federal Reserve System's (Board) insurance capital Advanced Notice of Proposed Rulemaking, our goal is to develop a capital standard for insurance savings and loan holding companies that efficiently uses existing legal-entity-level regulatory capital frameworks, including those of state insurance supervisors. In developing the Building Block Approach, the Board has been mindful of the potential interaction with the development by the National Association of Insurance Commissioners (NAIC) of the group capital calculation. The primary functional supervisor for insurance companies for which the Board is consolidated supervisor is a state insurance regulator. It is just good policy for the authorities that mutually supervise firms to coordinate efforts in order to streamline, seek harmony, and minimize inconsistencies.

To that end, in August of 2017, the Federal Reserve initiated contact with the NAIC and state insurance supervisors to engage in dialogue with the aim of achieving consistency, wherever possible, between the two capital frameworks under development. We meet frequently and engage substantively with representatives of the NAIC and the states. Input from the NAIC and the states has helped identify areas of commonality while remaining respectful of the somewhat different objectives of the relevant supervisory bodies and legal environments. Some differences may arise because of the Board's mandate to protect the safety and soundness of federally insured depository institutions. As to a firm's insurance subsidiaries, the state supervisors' focus is on policyholder protection, while the Board serves as consolidated supervisor of the organization. The Board's capital standard also must comport with federal law, while the NAIC's group capital calculation interfaces with states' laws.

2. Does the Federal Reserve intend to create the "Public Option" for payments via its real-time payment proposal? If so, wouldn't you need congressional authority before creating such a system? If you intend to proceed without congressional approval, is it your goal to compete with the same private entities you regulate? And is that appropriate in your view?

The potential actions outlined in the Board's October 2018 Federal Register Notice request for comment, are intended to promote the safety and efficiency of faster payments in the United States and to support the modernization of the financial services sector's provision of payment services. The Federal Reserve has provided services alongside the private-sector since its inception that have supported both objectives while providing nationwide access to check, Automated Clearing House (ACH), and wire services to banks of all sizes.

The Board has received over 400 comment letters from a broad range of market participants and interest groups, including consumer groups, in response to the Federal Register Notice seeking

public input on potential actions the Federal Reserve might take in regard to supporting faster payments in the United States. The Board is carefully considering all of the comments received before determining whether any action is appropriate or the timing of such potential action. Any resulting action the Board decides to take would be pursued in alignment with the provisions of the Federal Reserve Act, the Monetary Control Act (MCA), and longstanding Federal Reserve policies and processes created to avoid conflicts of interest across the various roles played by the Federal Reserve.

In particular, the Congress, in part motivated to encourage and ensure fair competition between the Federal Reserve and private sector, passed the MCA in 1980, which requires the Federal Reserve to fully recover costs in providing payment services over the long run and adopt pricing principles to avoid unfair competition with the private sector. The Board has also established additional criteria for the provision of new or enhanced payment services that specify the Federal Reserve must expect to (1) achieve full cost recovery over the long run, (2) provide services that yield a public benefit, and (3) provide services that other providers alone cannot be expected to provide with reasonable effectiveness, scope, and equity. In addition to these criteria, for new services or service enhancements, the Board also conducts a competitive impact analysis to determine whether there will be a direct and material adverse effect on the ability of other service providers to compete effectively in providing similar services.[2]

3. During your testimony before the House Financial Services Committee on February 27th, 2019, I asked you about the Federal Reserve's work at the International Association of Insurance Supervisors (IAIS) and the ongoing development of an International Capital Standard (ICS). You stated:

"We're not looking to change the fundamental nature of our insurance system, we think it works well...We're also looking to have an international agreement that works with our system...We're certainly not looking to say, O.K., we've negotiated this deal with this group abroad and we're going to come back and substantially change our insurance regulation system, that's not going to happen...There may be some things that we take on board which sound like good ideas..."

Thank you for your commitment to not seek to fundamentally change the nature of our insurance regulatory system through these international negotiations. I agree with you that our current state-based approach to insurance regulation works well and strongly protects U.S policyholders.

One of the main pillars of the current draft of the ICS is the requirement of a consolidated group capital requirement for insurance companies. The consolidated group capital requirement is similar to what is used under European Insurance solvency regulation. As you know, in the U.S., insurance companies operate under a legal entity capital requirement.

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[2] *See* The Federal Reserve in the Payments System (issued 1984; revised 1990), Federal Reserve Regulatory Service 9-1558.

- **Do you agree with me that changing the structure of US solvency regulation from a legal entity capital requirement to a consolidated group capital requirement would be considered a "change (to) the fundamental nature of our insurance system?"**

We remain firm supporters of the U.S. state-based insurance supervisory system, which has proven its strength and resilience for well over a century and provides an invaluable service in protecting policyholders. The state-based insurance supervisory system utilizes legal entity capital requirements, and the NAIC is currently engaged in the development of a group capital calculation that is based on an aggregation of legal entity capital requirements. The Board's consolidated supervision, deriving from its statutory authorities, complements the existing work of state insurance supervisors with a perspective that considers risk across the entire firm. In order for any form of an insurance capital standard (ICS) to be implementable globally, it needs to be suitable for the U.S. insurance market. We continue to advocate for an aggregation alternative in the ICS. Among other things, this approach would utilize and build on state insurance capital requirements. Together with the other U.S. members of the International Association of Insurance Supervisors (IAIS), we will continue to advocate for international insurance standards that promote a global level playing field and work well for the U.S. insurance market.

4. Given that the current draft of the ICS is expected to be finalized for field testing in November 2019 at the IAIS "...." in Abu Dhabi, what steps have you taken during the past negotiations and what steps will you be taking over the next several critical months of future negotiations to ensure that the final version of the ICS either does not contain a consolidated group capital requirement or to ensure the U.S. system of insurance regulation formally deemed as outcome equivalent (or mutually recognized)?

Together with the Federal Insurance Office, the NAIC, and state insurance regulators, the Federal Reserve continues its advocacy of an aggregation method that can be deemed comparable to the ICS. As noted, in order for any form of an ICS to be implementable globally, it needs to be suitable for the U.S. insurance market. The current core reference method in the ICS would face implementation challenges in the United States. For example, such a framework may fail to adequately account for U.S. accounting frameworks, both Generally Accepted Accounting Principles (GAAP) and the NAIC's Statutory Accounting Principles, introduce excessive volatility, and involve excessive reliance on supervised firms' internal models. Among other things, this motivates our advocacy of an aggregation alternative, and the use of an alternative valuation method that derives from U.S. GAAP, in the ICS.

Furthermore, we support the collection of information about an aggregation-based approach that would reside within the ICS, and actively participate, together with other jurisdictions that espouse aggregation-based approaches, in the development of such an approach for the ICS.

It is also important to recall that the international standard-setting bodies like the IAIS do not have the ability to impose requirements on any national jurisdiction, and any standards developed through these fora are not self-executing or binding on the United States unless adopted by the appropriate U.S. lawmakers or regulators in accordance with applicable domestic laws and rulemaking procedures.

5. When the FRB adopted margin requirements for covered swap entities, it recognized that its cost estimate was imprecise. Today, we know that the regulation ties up capital unnecessarily for inter-affiliate transactions. The inter-affiliate margin requirements, contrary to the rule's intent, has made risk management less efficient without attendant benefits to the financial system. You stated that updating this requirement is a priority and that the FRB is working actively on it. When can we expect action from the FRB to address this important issue?

As I noted in my testimony and consistent with the Treasury Department's recommendations, Board staff is actively reviewing the application of margin requirements to inter-affiliate transactions. These efforts include ongoing discussions with the Office of the Comptroller of the Currency, Federal Deposit Insurance Corporation, Farm Credit Administration, and Federal Housing Finance Agency (the agencies); an assessment of how the current requirements help to protect the safety and soundness of covered swap entities; an assessment of whether any changes to this aspect of the swap margin rule would be consistent with the Dodd-Frank Wall Street Reform and Consumer Protection Act; and a review of the interaction of this aspect of the rule with other regulations. Because the swap margin rule was adopted jointly with the agencies, any change to the rule would also need to be adopted jointly with the agencies.

Questions for The Honorable Jerome H. Powell, Chair, Board of Governors of the Federal Reserve System from Representative Chuy Garcia:

1. I would like to follow up on our conversation regarding merger applications during your testimony.

According to the Federal Reserve's semiannual report on banking applications activity, only one application for a merger has been rejected out of over 6,000 applications since 2014. The report also mentions that 5-8% of applications are withdrawn each year, and cites banks' "Community Reinvestment Act (CRA) or consumer compliance record" as one key reason why an application might be withdrawn.

In recent years, advocates have argued for strengthening the CRA, arguing that the fact that 98% of banks receive outstanding or satisfactory ratings suggests enforcement is not rigorous enough. Since a positive CRA exam performance is one of the few existing obstacles to merger approval, it follows that the high percentage of banks that receive positive CRA assessments is one reason why so many applications are approved.

- **Of the 388 applications that have been withdrawn since 2014, how many application withdrawals have occurred because the applicants were informed that their CRA performance records were not adequate? Can you project how a weakening of CRA exams might affect the annual application approval rate, which is typically 90% or higher?**

The Board of Governors (Board) has made publicly available its approach to applications that may not satisfy statutory requirements for approval or that otherwise raise supervisory or regulatory concerns.[1] Applications can be withdrawn by the applicant for any number of reasons. For example, an applicant may withdraw for technical or procedural reasons; for reasons regarding the statutory factors that must be considered by the Board, including supervisory issues; or because the applicant has decided not to pursue the application for business or strategic reasons. Applicants also may have multiple reasons for withdrawing filings and, in many cases, applicants do not provide specific reasons for withdrawing filings. Therefore, the Board is not able to provide the number of applications withdrawn due primarily to Community Reinvestment Act (CRA) considerations.

The Board's goal in any future rulemaking is to strengthen CRA regulations and the examination process supporting them in order to support the CRA's goal of encouraging access to credit, particularly in low- and moderate-income communities. To this end, we will seek public comment on any potential changes to the Board's CRA regulations. However, at this time, we are not able to project how any potential revisions to the current CRA regulations would affect the application approval rate.

[1] This is reflected SR 14-2/CA 14-1: Enhancing Transparency in the Federal Reserve's Applications Process, https://www.federalreserve.gov/supervisionreg/srletters/sr1402.htm.

2. One of Congress' responses to the 2008 financial crisis was to authorize the Fed to create a so-called countercyclical capital buffer. Out of recognition that the banking sector experiences "boom and bust cycles," Fed regulators were granted the authority to invoke higher capital requirements when they assess the risk of losses among large banks as higher than normal. With your predecessor as Fed chair now warning about high levels of corporate debt, and numerous other risks emerging on Wall Street and in the commercial real estate market, a range of Federal Reserve officials, including Governor Brainard and several Reserve Bank presidents, have called on the Board of Governors to institute the countercyclical capital buffer.

- **What factors are you weighing when deciding whether to follow your colleagues' recommendation to activate the countercyclical capital buffer?**

The Board finalized its policy statement on the countercyclical capital buffer (CCyB) in 2016, in which we laid out a comprehensive framework for setting its level. As indicated in the policy statement, the CCyB is intended to address elevated risks from activity that is not well supported by underlying economic fundamentals. As such, the Board expects the CCyB to be nonzero if overall vulnerabilities were judged to have risen to a level that was "meaningfully above normal." The overall assessment incorporates the Board's judgment of those vulnerabilities that, as you noted, have arisen in the business sector, as well as the level of other key financial vulnerabilities that tend to vary with the economic cycle, such as household leverage, financial sector leverage, asset valuation pressures and investor risk appetite, and maturity and liquidity transformation, and how all of those vulnerabilities interact.

In coming to its assessment of the broad set of vulnerabilities, the Board considers a wide array of economic and financial indicators, as well as a number of statistical models developed by staff. The financial system overall appears to be quite resilient. Our forward-looking stress tests indicate that the institutions at the core of the financial system – the nation's largest banks – are well positioned to support lending and economic activity during severe macroeconomic and market scenarios. Taking all of this together, I continue to view overall vulnerabilities as moderate.

3. In the year you've been Fed Chair, you've talked a lot about the uncertainty facing the Federal Reserve. It is hard to predict where inflation is going and it hard to know how many jobs the economy can produce. I commend you for acknowledging and highlighting the uncertainty in Fed predictions and estimates. That said, it seems like over the past decade the Fed's predictions and estimates have always missed in one direction. The Fed has consistently overestimated the natural rate of unemployment and future inflation.

- **How have these models been updated given the misses? In light of your own acknowledgement that estimates of the natural rate of unemployment are "very uncertain," are you reexamining the Fed's models and framework for full employment? Would you consider putting confidence intervals around the NAIRU in future Fed projection materials?**

The Board relies on a host of different models and types of analysis to estimate the natural rate of unemployment and inflation. Because the structure of the economy is constantly changing, we

regularly update these models and search for new models and frameworks that can better explain developments in the labor market and the U.S. economy more generally.

We also periodically assess the materials we use to communicate our outlook to the public. The Summary of Economic Projections, published quarterly, presents projections conditioned upon individual Federal Open Market Committee participants' individual assessments of projected appropriate monetary policy. There is well-developed literature on the statistical confidence intervals surrounding estimates of the longer-run unemployment rate. As a result, policymakers are well aware of the uncertainty surrounding these estimates when they make their policy decisions.

Questions for The Honorable Jerome H. Powell, Chair, Board of Governors of the Federal Reserve System from Representative Anthony Gonzalez:

Chairman Powell, can you discuss how the Federal Reserve's goals of a achieving its Dual Mandate has impacted real wage growth in recent years and how you take into consideration the impact on lower income workers when setting policy?

Nominal wage growth has picked up over the past few years, with most measures now running at or above 3 percent on an annualized basis. This increase in nominal wage growth has also translated into faster real wage growth relative to a few years ago, which I take as a good sign that the strong economy is helping workers. Moreover, recent wage gains have been fastest for low-wage workers and workers with less educational attainment, which is also a welcome development. With regard to monetary policy, our actions affect the economy as a whole and thus we cannot target particular groups of workers. However, by fulfilling the maximum employment component of our dual mandate, the Federal Reserve can ensure that the conditions are in place to keep labor demand high and stable for as many workers as possible, which in turn allows workers to more easily find jobs that best match their abilities and that provide them with the greatest opportunity to increase their skills, productivity, and earnings.

The US National Debt exceeded 22 trillion dollars in recent weeks and the US is projected to exceed trillion dollar deficits annually over the ten year budget window. I am concerned about the long term impact of these projected deficits. However, some of my colleagues have stated that deficits do not matter since we borrow our own currency.

- **Chairman Powell, can you comment on your view of the mounting debt that our country is taking on?**

I am concerned about high and rising federal government debt. The large and growing federal debt, relative to the size of the economy, projected to occur over the coming decades would have negative effects on the economy. In particular, a rising federal debt burden would reduce national saving, all else equal, and put upward pressure on longer-term interest rates, raising borrowing costs for households and businesses. Those effects would likely restrain private investment, which, in turn, would tend to reduce productivity and overall economic growth. In addition, a large and rising debt burden can potentially restrict the capacity of fiscal policymakers to respond to future economic and financial shocks, as well as to other adverse events. These negative effects remain a concern even though the federal government borrows in our own currency.

Some commentators have noted that the negative effects of high debt levels on the federal budget and the economy may be less pernicious than in earlier decades because real interest rates are currently lower. If real interest rates and inflation remained low then interest payments on the debt would be a smaller share of gross domestic product than they would be otherwise. However, a low interest rate environment does not mean that federal budget deficits and debt do not matter, but instead would imply that the burden of servicing a given amount of federal debt would be a little less onerous.

Questions for The Honorable Jerome H. Powell, Board of Governors of the Federal Reserve System from Representative Lynch:

Dodd-Frank required that most derivatives be centrally cleared, bringing greater transparency and stability to the derivatives market. However, this shifted considerable risk to the Central Counter Parties.

- **Is the Fed concerned about the level of risk systemic risk that now exists in clearinghouses? If so, what regulatory steps could Congress take to examine and alleviate this risk?**

The Board of Governors (Board) noted in its Financial Stability Report that central clearing activities have grown over the past several decades and offer many financial stability benefits but such increased activity warrants and receives our continual attention.[2] Since the financial crisis, global regulatory efforts have contributed to this growth by encouraging and, in some cases, mandating central clearing of over-the-counter derivatives. Central clearing strengthens financial stability by addressing many of the weaknesses exposed during the crisis. In particular, central clearing reduces risk exposures through multilateral netting and daily margin requirements. Central clearing also provides greater transparency through enhanced reporting requirements. Finally, central clearing may reduce the cost of counterparty default by facilitating the orderly liquidation of a defaulting member's positions and allocating any resulting losses among members of the central counterparties (CCPs) through loss-mutualization rules.

Central clearing, however, only offers such benefits to the extent the CCPs themselves are managed safely. The regulatory community has worked collectively in the years since the crisis to set heightened risk management expectations for financial market utilities (FMUs), including CCPs. Federal Reserve staff participated in the development of these international standards for the governance, risk management, and operation of FMUs. These standards, the Principles for Financial Market Infrastructures (PFMI), were published in 2012.[3]

Since the publication of the PFMI, regulators have implemented these standards into national regulation, as appropriate. In the United States, for example, the Commodity Futures Trading Commission (CFTC), the Securities and Exchange Commission (SEC), and the Board have promulgated regulations based on the PFMI that apply to FMUs that have been designated as systemically important by the Financial Stability Oversight Council (FSOC), pursuant to the authority in Title VIII of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (Dodd-Frank Act). The Dodd-Frank Act provided the CFTC, SEC, and the Board with important authorities that enable these agencies to supervise designated FMUs commensurate with the risk they introduce into financial markets, including prescribing risk management

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[2] See, Federal Reserve Board, *Financial Stability Report at:* https://www.federalreserve.gov/publications/files/financial-stability-report-201811.pdf (November 2018).

[3] The Committee on Payments and Market Infrastructures (CPMI) is a global standard setting body comprised of central banks focused on promoting the safety and efficiency of payment, clearing, and settlement arrangements to support broader financial stability. The International Organization of Securities Commissions (IOSCO) is the international body of securities regulators that promulgates global standards for the securities sector. Together, CPMI-IOSCO developed and published the PFMI in 2012.

standards for these entities. The CFTC and the SEC are the supervisory agencies with direct responsibility for the CCPs that have been designated by FSOC. The Federal Reserve has the authority to participate in exams of the designated FMUs and review changes proposed by a designated FMU to its rules, procedures, and operations. Through this activity, the Federal Reserve has gained a broader perspective across multiple systems. Board staff continues to monitor CCPs consistent with the authorities granted to the Board under the Dodd-Frank Act with the perspective that these FMUs act as important components in the financial system more broadly.

Section 402(b) of S. 2155 exempted the cash deposits of custody banks held at central banks from the denominator of the supplemental leverage ratio.

- **Please provide an update on when Section 402(b) will be implemented. Also, how does the Fed see Section 402(b) interacting with proposed changes to the Enhanced Supplemental Leverage Ratio the Fed announced in April 2018?**

The Board, the Office of the Comptroller of the Currency (OCC) and Federal Deposit Insurance Corporation, intend to issue a joint proposal in April 2019, to implement Section 402(b) of the Economic Growth, Regulatory Relief, and Consumer Protection Act. The comment period on the proposal would end 60 days after publication in the Federal Register.

The April 2018 proposal issued by the Board and the OCC to recalibrate the enhanced supplementary leverage ratio standards was calibrated based on the definition of the existing denominator of that ratio. At that time, the denominator included central bank deposits for all firms. The April 2018 proposal noted that significant changes to the supplementary leverage ratio would likely necessitate reconsideration of the proposed recalibration, as Board and the OCC did not intend to materially change the aggregate amount of capital in the banking system.

As you note, section 402(b) directs the agencies to allow custodial banking organizations to exclude qualifying central bank deposits from the supplementary leverage ratio, which would meaningfully modify the supplementary leverage ratio as applied to these firms. Accordingly, as the Board weighs any re-calibration of the enhanced supplementary leverage ratio, the Board will consider the potential changes to capital levels at custodial banking organizations resulting from the implementation of section 402, as well as the expected impact on the aggregate level of capital in the banking system.

Questions for The Honorable Jerome H. Powell, Chair, Board of Governors of the Federal Reserve System from Representative Posey:

1. Chairman Powell, one of the great themes in your testimony in the Senate Banking Committee was the role of the labor force participation rate in our current macro-economic outlook. I'm particularly interested in your emphasis on how a higher labor force participation rate can boost economic growth and more widely distribute the benefits of prosperity – getting at some of the concerns about economic equality. In the Q&A at the Senate Banking Committee hearing, you and others identified some things that might improve the rate both nationally and regionally like education and training, health of the population, child care, etc. One of the fascinating effects that you discussed was how government programs often create an incentive to stay out of the labor force because for a prospective employee, working may mean giving up more in benefits than the income from working.

- **Could you recount those examples and suggest how Congress might adjust programs to improve incentives to participate in the labor force?**

Economic growth over the long term is determined by the growth in our labor force and the increase of the amount of output derived from each hour of work, or labor productivity. Labor force growth, in turn, reflects the rate of participation in the labor market. Household decisions on whether to participate in the labor market and seek work are affected by many factors including wage rates, taxes, and government benefits. In general, safety net programs are typically designed so that benefits fall as incomes rise. As a consequence, for low- and moderate-income households, any improvement to household finances from increased work is partially offset by the loss of benefits that occurs as household income rises. Researchers have found that programs with a rapid phase-out of benefits, and the interaction among various safety net programs, sometimes leads to relatively high effective marginal tax rates. This, in turn, may discourage work, particularly for potential second earners. Researchers have found that programs where the phase-out range is relatively long, reduce potential disincentive effects.

As you know, it is up to Congress to determine how best to ensure safety-net programs provide the lowest work disincentives as possible while still achieving the social goals of the programs. For our part, the Federal Reserve is focused on pursuing our congressionally mandated goals – maximum employment and price stability, and making the best decisions we can in the interest of the public.

2. The economy was in tough shape about this time ten years ago. After the crisis, Congress also prescribed some tough medicine for bank capital and liquidity. We called it "enhanced prudential standards." Last year in the Economic Growth Act, S. 2155, we authorized the Fed to fine-tune some of those standards based on the asset size of banks. This is of great interest to community banks in my district. I certainly support moving away from one-size-fits-all regulation, but I'm concerned that about whether we might be making our regulatory approach more complicated by putting out Earnings Per Share and then putting out Tailored Earnings Per Share.

- **Could you give us a conceptual description of your tailoring of capital and liquidity requirements, tell us when you expect to complete the new rules, and comment on whether these ongoing efforts tell us that the enhanced standards (like Basel III) make sense if we must tailor them? Is there something simple we can do?**

The principle of tailoring regulatory requirements to a firm's specific risks is a long-standing practice of the Board of Governors (Board). Recently, the Board has taken several steps towards substantial additional tailoring of its regulations. For example, the Board issued proposals that would prescribe materially less stringent requirements for firms that pose less risk, while maintaining the most stringent requirements for firms that pose the greatest risks to the financial system.

One set of proposals would revise the regulatory capital and liquidity requirements that apply to U.S. banking organizations based on their risk profiles. To determine the appropriate set of standards for a given firm, the proposals would use thresholds based on size, cross-jurisdictional activity, reliance on short-term wholesale funding, nonbank assets, and off-balance sheet exposure. These proposals build on the Board's existing efforts to tailor its rules and experience implementing those rules, and account for changes to the enhanced prudential standards made by the Economic Growth, Regulatory Relief, and Consumer Protection Act (EGRRCPA). The comment period on proposals closed on January 22, 2019, and the Board is currently considering comments on the proposals.[1]

In addition, the Board, together with the Office of the Comptroller of the Currency and the Federal Deposit Insurance Corporation, recently proposed a rule, pursuant to section 201 of EGRRCPA that would provide a simple, leverage-based capital requirement for community banking organizations with less than $10 billion in assets. The proposed rule would provide an alternative to the current capital rule, as banking organizations that qualify for and opt into the proposed rule's framework would not be subject to other risk-based or leverage capital requirements. The comment period on the proposed rule closed on April 9, 2019.

3. Chairman Powell, your recent statements have outlined how the Federal Reserve plans to reduce its balance sheet from the "dealer of last resort" levels of the crisis. In some of those statements you mention the role of bank reserves at the Fed and said that the expected level of bank reserves deposited with the Federal Reserve would be somewhere around $1 trillion. That's a significantly higher level – about 23 times higher – than the figure for bank reserves of $43 billion in early 2008. We have a lot of bank assets parked in reserves instead of loans to businesses. That apparent huge increase is due to the liquidity requirements of Dodd-Frank.

- **Mr. Chairman, are our post-recession prudential standards possibly just too conservative to provide the kind of innovative financial system we need to sustain the kind of innovation and job growth we need in the overall economy that is changing so rapidly?**

[1] Similar proposals were issued in April 2019 for foreign banking organizations operating in the U.S.

The capital and liquidity requirements adopted after the financial crisis have made the financial system far safer and much better positioned to meet the credit needs of households and businesses throughout the business cycle. As a result of these reforms and of improvements in risk management in the banking sector, banks hold greater quantities of high-quality liquid assets, including reserves. At the same time, bank lending to businesses has been growing at a healthy pace, and the Federal Reserve's Senior Loan Officer Opinion Survey shows that credit terms for commercial and industrial loans have generally eased each year since the crisis. We believe that sound bank balance sheets have been supportive of lending to households and businesses.

4. Chairman Powell, you've been discussing your new cost-benefit analysis unit at the Fed and the role of cost-benefit analysis in improving regulatory efficiency. I know that it came up yesterday at your Senate hearing. I applaud your efforts. Here in the government, we see an ongoing wave of proposals for regulation and for changes and investments in our energy, transportation, and other sectors. I wonder if the lessons you're learning about cost- benefit analysis would apply to these activities outside the Fed because we need some way – some evidence-based help – to sort through this avalanche of ideas and pick the best ones to spend our time and money on.

- **Can you please comment on this notion?**

The Board takes seriously the importance of assessing 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 regulatory or policymaking process within the context of the Board's mission and applicable statutory intent. While the Board has always valued regulatory efficiency, establishing a unit dedicated to analyzing the costs and benefits associated with regulatory or policymaking processes has increased the capacity of the Board to conduct such analyses and enabled the Board to enhance its expertise in cost-benefit analysis.

Cost-benefit analysis that considers both direct and indirect costs and benefits and qualitative considerations supports the effective implementation of the Board's statutory responsibilities. The early work of the unit has highlighted that, while some economic impacts can be quantified, others require qualitative discussion.

With regard to activities outside of the Federal Reserve, many other agencies conduct cost-benefit analysis as part of their rulemaking processes that are more tailored to the nature of their responsibilities. It would be inappropriate for us to recommend an approach for areas in which we do not have expertise.

5. Chairman Powell, will the rate at which you're reducing your holdings of mortgage backed securities acquired during the crisis have any impacts on the mortgage market or the market prices of those assets, or do you expect your market operations to have very little effect on prices?

Experience suggests that Federal Reserve actions that alter the quantity of a financial asset held by the public can affect the price of that asset, as well as broadly similar assets.[2] Indeed, the Federal Reserve's purchases of longer-term securities were an important tool for reducing long-term interest rates and promoting recovery from the crisis. The quantity of agency mortgage-backed securities (MBS) that the Federal Reserve holds or is anticipated to hold at a point in time is factored into market prices. Because the Federal Reserve has been reducing its holdings of agency MBS in a gradual and predictable manner, and because it has maintained a policy of communicating its plans for normalizing the size of its securities holdings well in advance, the reduction in our holdings should have only a modest effect on the prices of these assets.

[2] https://www.federalreserve.gov/newsevents/speech/bernanke20120831a.htm.

Question for The Honorable Jerome H. Powell, Board of Governors of the Federal Reserve System from Representative Steil:

Chair Powell, S.2155 directed the Office of the Comptroller of the Currency (OCC) to write regulations giving federal savings associations flexibility to elect national bank lending authorities without having to change charters. The intent is to give these institutions opportunities to better serve evolving community needs without unnecessary cost and disruption. I understand that the OCC is poised to issue a final rule, and bankers considering the election are waiting for a signal regarding whether the same flexibility will be permitted for savings associations in holding company structures.

- **Can you tell me when clarification is expected? I hope the Federal Reserve can act with timely and parallel purpose.**

Thank you for your question regarding section 206 of the Economic Growth, Regulatory Relief, and Consumer Protection Act. Federal Reserve Board (Board) staff is working diligently to analyze and address treatment of such federal savings associations under various laws within the Board's jurisdiction. Our staff is consulting with the Office of the Comptroller of the Currency and working to provide clarity consistent with the statute and congressional intent in a timely manner.

Questions for The Honorable Jerome H. Powell, Chair, Board of Governors of the Federal Reserve System from Representative Stivers:

1. Despite China's ambitions for its currency, central banks around the world currently prefer to hold Canadian dollars more than the renminbi (RMB). As recently as last year, reserves of the Australian dollar also exceeded RMB holdings.

- **Do you believe central banks should hold significant RMB reserves, or increase existing reserves, as long as China is a state-controlled economy with limited transparency and no rule of law?**

In general, countries choose the currencies they hold as foreign exchange reserves for a number of reasons, including the stability of the currency, the safety and soundness of the country's economic and financial systems, the depth and liquidity of the country's financial markets, and exposures of individual countries to other economies through trade and financial linkages. Some countries have chosen to include renminbi in their reserve holdings, but according to data from the International Monetary Fund, to date these holdings are very small in aggregate, amounting to less than 2 percent of global reserves. The U.S. dollar is still the most widely held reserve currency, in large part because of the safety and soundness of the U.S. economy and the depth and liquidity of U.S. financial markets.

2. You have clearly stated that the Federal Reserve is not considering an inflation target higher than two percent. Understandably, many interpret this statement as being consistent with current Fed policy. Others, however, propose allowing the Fed to significantly overshoot or undershoot two percent inflation, provided that price growth averages two percent over a certain timeframe.

- **Please respond to the following: Can you confirm that the two percent inflation target you endorsed before the Committee is identical to the Fed's current policy? And given the Fed's recent challenges in reaching two percent inflation, do you view proposals in which the Fed must reliably overshoot or undershoot an inflation target as credible alternatives to existing policy? If so, what is the empirical basis that lead you to consider such alternatives as both achievable and easily explainable to the public?**

The Federal Open Market Committee (FOMC) is firmly committed to fulfilling its statutory mandate of promoting maximum employment, stable prices, and moderate long-term interest rates. The FOMC describes its current approach for achieving this mandate in the "Statement on Longer-Run Goals and Monetary Policy Strategy"[1] and specifies in this statement that the FOMC's longer-run goal for inflation is 2 percent, as measured by the annual change in the price index for personal consumption expenditures. The existing approach, as articulated in the statement, has served the public well. Nevertheless, the FOMC is open to considering ways to strengthen its framework, and it has initiated a broad review of its monetary policy strategy, tools, and communication practices.

[1] https://www.federalreserve.gov/monetarypolicy/files/FOMC_LongerRunGoals.pdf.

While the FOMC does not seek fundamental changes to its framework from this review, the FOMC wants to engage broadly with the public to strengthen the existing framework. Evidence in the United States and around the world suggests that episodes at the effective lower bound (ELB) could occur more frequently than in the past and could impose high economic costs.

3. In the minutes to the January 2019 FOMC meeting, the Fed describes the federal funds rate as "the primary tool for adjusting the stance of policy." However, you made note of the significance of interest on excess reserves (IOER) in your testimony, and IOER is purportedly meant as a floor for the federal funds rate.

- **If the federal funds rate is dependent on IOER, is IOER, de facto, the Fed's primary tool for adjusting interest rates, notwithstanding the use of the federal funds rate to communicate monetary policy?**

The FOMC communicates the stance of monetary policy by announcing the target range for the federal funds rate. The effective federal funds rate is the median rate on federal fund trades by private entities, and hence is not directly determined by the Federal Reserve. The Interest on Excess Reserves (IOER) rate, along with the offering rate on the overnight reverse repurchase facility, are set by the Federal Reserve to support the trading of the federal funds rate within the target range specified by the FOMC. The IOER rate has been an effective tool in supporting the FOMC's policy stance.

4. The Fed has communicated that the balance sheet's size will largely be determined by banks' demand for reserves. Prior to the financial crisis, reserves amounted to less than $20 billion, and at the end of 2018, they totaled $1.66 trillion. In other words, reserve balances are now more than 80 times greater than before the crisis, and a post-normalization balance sheet with $1 trillion in reserves would still represent reserve balances more than 50 times higher than pre-crisis levels.

- **Do you believe a 50-fold increase in demand is plausible, and if so, why do you believe banks' demand has increased by that magnitude?**

A key outcome of post-crisis regulation is that, banks hold more high-quality liquid assets on their balance sheets. Part of the reason that bank holdings of high-quality liquid assets are such large multiples of pre-crisis levels is that those initial levels were quite low. Both regulators and internal risk managers at banks now realize that banks must hold sufficient stocks of high-quality liquid assets to meet unexpected outflows.

5. In your January press conference, you indicated that an elevated balance sheet of $4 trillion or above would still allow for the Fed to use balance sheet policy during a downturn. As the February 2019 Monetary Policy Report illustrates, Japan began with a large balance sheet relative to GDP prior to the financial crisis, and its balance sheet went on to experience significant growth.

- **How does the Bank of Japan's experience inform the views you expressed at the January press conference regarding the effectiveness of balance sheet policy in combatting a future recession?**

The size of the Bank of Japan's balance sheet has increased significantly, as assets rose from about 25 percent of gross domestic product (GDP) to around 100 percent over the past decade. That increase reflects the Bank of Japan's large-scale asset purchases aimed at curbing disinflationary pressures and supporting its 2 percent inflation target. Evidence suggests that the Bank of Japan's balance sheet policies helped lower longer-term yields and support asset prices, thereby providing stimulus to economic activity. This stimulus has helped to bring Japanese inflation out of negative territory, though inflation remains well below the Bank of Japan's objective. On balance, evidence from Japan is consistent with balance sheet policy being an important tool in providing accommodation when the policy rate is at the ELB.

Notably, the size of the Federal Reserve's balance sheet is much smaller than the Bank of Japan's, as assets have fallen from about 25 percent of GDP in 2014 to about 20 percent of GDP at the end of 2018. Moreover, assets are expected to shrink somewhat further this year. As the FOMC affirmed in January, in the event that future economic conditions call for a more accommodative policy than can be achieved solely by reducing the federal funds rate, our primary means of adjusting the stance of monetary policy, the FOMC would be prepared to use the full range of our tools including the balance sheet.

Many empirical studies in the United States find that the Federal Reserve's asset purchase and maturity extension programs used to support the economy during the recovery from the financial crisis were effective in lowering longer-term yields and improving overall financial conditions. Accordingly, adjusting both the size and composition of the balance sheet, along with forward guidance for the federal funds rate, remain important tools to use in the event of a future recession in which the federal funds rate reaches the ELB.

Questions for The Honorable Jerome H. Powell, Chair, Board of Governors of the Federal Reserve System from Representative Tipton:

The GSIB surcharge was adopted in July 2015, based on the FRB's assessment of the GSIBs' resiliency and resolvability. The FRB has since acknowledged significant improvements in resiliency and resolvability. In fact, Vice Chairman Quarles said in April 2018 before the House Financial Services Committee that "a process of thinking about" recalibrating the GSIB surcharge is appropriate now in light of those improvements. Further, in adopting the GSIB surcharge, the FRB committed to periodically reevaluating the surcharge methodology to ensure that economic growth does not unduly affect firms' risk scores or hinder their ability to provide credit and other essential financial services. However, in identical letters to Congress last year, both you and Vice Chairman Quarles cited two factors that some have suggested are unrelated to the surcharge—the profitability of U.S. GSIBs and their higher stock valuations relative to foreign banks peers—as justification for the FRB's inaction in fulfilling its commitment to recalibrate the GSIB surcharge. These factors were again cited in your response to questions about the GSIB surcharge on February 27, 2019.

- **Could you please explain the actions the FRB is taking to fulfill its commitment to reevaluate the GSIB surcharge's calibration, including a specific timeline for this review, and whether (and, if so, why) it's your understanding that bank profitability and stock valuations have a bearing on the appropriate calibration for financial regulation.**

As you are aware, the bulk of post-crisis regulation is largely complete, with the important exception of the U.S. implementation of the recently concluded Basel Committee agreement on bank capital standards. It is therefore a natural and appropriate time to step back and assess those efforts. The Board of Governors (Board) is conducting a comprehensive review of the regulations in the core areas of post-crisis reform, including capital, stress testing, liquidity, and resolution. The objective of this review is to consider the effect of those regulatory frameworks on the resiliency of the financial system, including improvements in the resolvability of banking organizations, and on credit availability and economic growth.

The Board's capital rules have been designed to significantly reduce the likelihood and severity of future financial crises by reducing both the probability of failure of a large banking organization and the consequences of such a failure, were it to occur. Capital rules and other prudential requirements for large banking organizations should be set at a level that protects financial stability and maximizes long-term, through-the-cycle, credit availability and economic growth.

Consistent with these principles, the Board originally calibrated the globally systemically important banking (GSIB) organizations surcharge so that—given the circumstances of the financial system – each GSIB would hold enough capital to lower its probability of failure so that the expected impact of its failure on the financial system would be approximately equal to that of a large non-GSIB.

In general, I believe overall capital for our largest banking organizations is at about the right level. Critical elements of our capital structure for these organizations include stress testing, the stress capital buffer, and the enhanced supplementary ratio. Work is underway to finalize the calibration of these fundamental building blocks, all of which form part of the system in which the GSIB surcharge has an effect.

The sustained profitability of U.S. GSIBs since the financial crisis indicates that holding higher levels of capital has not reduced the ability of GSIBs to extend loans to creditworthy households and businesses. Stock valuations indicate the market's expectations for a firm. The GSIBs have generally experienced increases in the value of their respective stock prices as their required regulatory capital levels have increased. This movement indicates that the market also believes that the increased levels of capital of GSIBs are not inconsistent with strong performance.

