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S. HRG. 115–366

FEDERAL RESERVE'S SECOND MONETARY POLICY REPORT FOR 2018

HEARING

BEFORE THE

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

ONE HUNDRED FIFTEENTH CONGRESS

SECOND SESSION

ON

OVERSIGHT ON THE MONETARY POLICY REPORT TO CONGRESS PURSUANT TO THE FULL EMPLOYMENT AND BALANCED GROWTH ACT OF 1978

JULY 17, 2018

Printed for the use of the Committee on Banking, Housing, and Urban Affairs

Available at: http://www.fdsys.gov/

U.S. GOVERNMENT PUBLISHING OFFICE
32–517 PDF WASHINGTON : 2018

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FEDERAL RESERVE'S SECOND MONETARY POLICY REPORT FOR 2018

TUESDAY, JULY 17, 2018

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

The Committee met at 10:01 a.m., in room SH–216, Hart Senate Office Building, Hon. Mike Crapo, Chairman of the Committee, presiding.

OPENING STATEMENT OF CHAIRMAN MIKE CRAPO

Chairman CRAPO. This hearing will now come to order.

Today we welcome Chairman Powell back to the Committee for the Federal Reserve's Semiannual Monetary Policy Report to Congress.

This hearing provides the Committee an opportunity to explore the current state of the U.S. economy and the Fed's implementation of monetary policy and supervision and regulatory activities.

Since our last Humphrey–Hawkins hearing in March, Congress passed, with significant bipartisan support, and the President signed into law S. 2155, the Economic Growth, Regulatory Relief, and Consumer Protection Act.

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

A key provision of the bill provides immediate relief from enhanced prudential standards to banks with $100 billion in total assets or less.

The bill also authorizes the Fed to provide immediate relief from unnecessary enhanced prudential standards to banks with between $100 billion and $250 billion in assets. It is my hope that the Fed promptly provides relief to those within these thresholds.

By rightsizing regulation, the bill will improve access to capital for consumers and small businesses that help drive our economy. And the banking regulators are already considering this bill in some of their statements and rulemakings.

Earlier this month, the Fed, FDIC, and OCC issued a joint statement outlining rules and reporting requirements immediately impacted by the bill, including a separate letter issued by the Fed that was particularly focused on those impacting smaller, less complex banks. But there is still much work to do on the bill's implementation.

As the Fed and other agencies revisit past rules and develop new rules in conjunction with the bill, it is my expectation that such rules will be developed consistent with the purpose of the bill and the intent of the Members of Congress who voted for the bill.

With respect to monetary policy, the Fed continues to monitor and respond to market developments and economic conditions.

In recent comments at a European Central Bank Forum on Central Banking, Chairman Powell described the state of the U.S. economy, saying, "Today most Americans who want jobs can find them. High demand for workers should support wage growth and labor force participation . . . Looking ahead, the job market is likely to strengthen further. Real gross domestic product in the United States is now reported to have risen 2.75 percent over the past four quarters, well above most estimates of its long-run trend . . . Many forecasters expect the unemployment rate to fall into the mid-3s and to remain there for an extended period."

According to the FOMC's June meeting minutes, the FOMC meeting participants agreed that the labor market has continued to strengthen and economic activity has been rising at a solid rate. Additionally, job gains have been strong and inflation has moved closer to the 2-percent target.

The Fed also noted that the recently passed tax reform legislation has contributed to these favorable economic factors. I am encouraged by these recent economic developments and look forward to seeing our bill's meaningful contribution to the prosperity of consumers and households.

As economic conditions improve, the Fed faces critical decisions with respect to the level and trajectory of short-term interest rates and the size of its balance sheet.

I look forward to hearing more from Chairman Powell about the Fed's monetary policy outlook and the ongoing effort to review, improve, and tailor regulations consistent with the Economic Growth, Regulatory Relief, and Consumer Protection Act.

Senator Brown.

OPENING STATEMENT OF SENATOR SHERROD BROWN

Senator BROWN. Thank you, Mr. Chairman. Welcome, Mr. Chair. It is nice to see you again.

This week the President of the United States went overseas and sided with President of Russia while denigrating critical American institutions, including the press, the intelligence community, and the rule of law.

Our colleague Senator McCain expressed clearly what every patriotic American thought: "No prior President has ever abased himself more abjectly before a tyrant. Not only did President Trump fail to speak the truth about an adversary; but speaking for America to the world, our President failed to defend all that makes us who we are—a republic of free people dedicated to the cause of liberty at home and abroad. American Presidents must be the champions of that cause if it is to succeed." The words of the 2008 Republican Presidential nominee.

With our democratic institutions under threat, we cannot ignore what happened in Helsinki yesterday. But we must not lose sight of the other special interest policies of this Administration, includ-

ing the rollback of the rules put in place to prevent the next economic crisis.

Just last week, a Federal Reserve official said, "There are definitely downside risks, but the strength of the economy is really pretty important at the moment. The fundamentals for the U.S. economy are very strong."

That may be true for Wall Street, but for most of America workers have not seen a real raise in years, young Americans are drowning in student loan debt, families are trying to buy their first home. For most of America, the strength of the economy is an open question.

Last month former Fed Chair Ben Bernanke was very clear about the long-term impact of the tax cut and the recent bump in Federal spending when he said, "in 2020 Wile E. Coyote is going to go off the cliff."

Last week the San Francisco Fed released a study finding that the rosy forecasts of the tax bill are likely "overly optimistic." It found that the bill's boost to growth is likely to be well below projections—or even as small as zero. It suggested that these policies could make it difficult to respond to future economic downturns and manage growing Federal debt.

And it is not just the tax bill. The economic recovery has not been evenly felt across the country. Not even close. Mr. Chairman, I would like to enter into the record an article from the *New York Times* this weekend which talks about those families still struggling from the lack of meaningful raises and other job opportunities.

Chairman CRAPO. Without objection.

Senator BROWN. Thank you, Mr. Chairman.

While hours have increased a bit over the past year for workers as a whole, real hourly earnings have not. For production and nonsupervisory workers, hours are flat; pay has actually dropped slightly, according to the Bureau of Labor Statistics.

The number of jobs created in 2017 was smaller than in each of the previous 4 years. Not what we hear in the mainstream media, perhaps. Some of the very companies that announced billions in buybacks and dividends are now announcing layoffs, shutting down factories, and offshoring more jobs.

Some of the biggest buybacks, as we know in this Committee, are in the banking industry, assisted in part by the Federal Reserve's increasingly lax approach to financial oversight.

Earlier this month, as part of the annual stress tests, the Fed allowed the seven largest banks to redirect $96 billion to dividends and buybacks. This money might have been used, as the President and members of the majority party liked to promise during the tax bill, this money might have been used to pay workers, to reduce fees for consumers, to protect taxpayers from bailouts, or be deployed to help American businesses.

Three banks—Goldman, Morgan Stanley, and State Street—all had capital below the amount required to pass the stress tests, but the Fed gave them passing grades anyway.

The Fed wants to make the tests easier next year. Vice Chair Quarles has suggested he wants to give bankers more leeway to

comment on the tests before they are administered. I guess it is OK in Washington to let students help write the exam.

The Fed is considering dropping the qualitative portion of the stress tests altogether—even though banks like Deutsche Bank and Santander and Citigroup and HSBC and RBS have failed on qualitative grounds before.

That does not even include the changes the Fed is working on after Congress passed S. 2155 to weaken Dodd–Frank, making company-run stress tests for the largest banks "periodic" instead of annual and exempting more banks from stress tests altogether.

And, oh, yeah, Vice Chair Quarles has also made it clear that massive foreign banks can expect goodies, too.

And on and on and on it goes. The regulators loosen rules around big bank capital, dismantle the CFPB, ignore the role of the FSOC, undermine the Volcker Rule, and weaken the Community Reinvestment Act.

When banks make record profits, we should be preparing the financial system for the next crisis. We should buildup capital, we should invest in workers, we should combat asset bubbles.

And we should be turning our attention to bigger issues that do not get enough attention, like how the value that we place on work has declined in this country, how our economy increasingly measures success only in quarterly earning reports.

Much of that is up to Congress to address. Over the last 6 months, tragically, I have seen the Fed moving in the direction of making it easier for financial institutions to cut corners, and I have only become more worried about our preparedness for the next crisis.

I look forward to the testimony, Mr. Chairman. And welcome, Mr. Chairman.

Chairman CRAPO. Thank you, Senator Brown. And, again, Chairman Powell, welcome. We appreciate you testifying today, and we look forward to your opening statement. You may proceed.

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

Mr. POWELL. Thank you and good morning. Good morning Chairman Crapo, Ranking Member Brown, and other Members of the Committee. I am happy to present the Federal Reserve's semiannual *Monetary Policy Report* to the Congress today.

Let me start by saying that my colleagues and I strongly support the goals that Congress has set for monetary policy: maximum employment and price stability. We also support clear and open communication about the policies we undertake to achieve these goals. We owe you, and the public in general, clear explanations of what we are doing and why we are doing it. Monetary policy affects everyone and should be a mystery to no one.

For the past 3 years, we have been gradually returning interest rates and the Fed's securities holdings to more normal levels as the economy has strengthened. We believe that this is the best way we can help set conditions in which Americans who want a job can find one and in which inflation remains low and stable.

I will review the current economic situation and outlook, and then I will turn to monetary policy.

Since I last testified here in February, the job market has continued to strengthen and inflation has moved up. In the most recent data, inflation was a little above 2 percent, the level that the Federal Open Market Committee thinks will best achieve our price stability and employment objectives over the longer term. The latest figure was boosted by a significant increase in gasoline and other energy prices.

An average of 215,000 net new jobs per month were created each month in the first half of this year. That number is somewhat higher than the monthly average of 2017. It is also a good deal higher than the average number of people who enter the workforce each month on net. The unemployment rate edged down 0.1 percent over the first half of the year to 4.0 percent in June, near the lowest level of the past two decades. In addition, the share of the population that either has a job or has looked for one in the past month—what we call the "labor force participation rate"—has not changed much since late 2013, and this development is another sign of labor market strength. Part of what has kept the participation rate stable is that more working-age people have started looking for a job, which has helped make up for the large number of baby boomers who are retiring and leaving the labor force.

Another piece of good news is that the robust conditions in the labor market are being felt by many different groups. For example, the unemployment rates for African Americans and Hispanics have fallen sharply over the past few years and are now near their lowest levels since the Bureau of Labor Statistics began reporting these data in 1972. Groups with higher unemployment rates have tended to benefit the most as the job market has strengthened. But jobless rates for these groups are still higher than those for whites. And while three-fourths of whites responded in a recent Fed survey that they were doing at least OK financially, only two-thirds of African Americans and Hispanics responded that way.

Incoming data show that, alongside the strong job market, the U.S. economy has grown at a solid pace so far this year. The value of goods and services produced in the economy—or GDP—rose at a moderate annual rate of 2 percent in the first quarter after adjusting for inflation. However, the latest data suggest that economic growth in the second quarter has been considerably stronger than in the first. The solid pace of growth so far this year is based on several factors. Robust job gains, rising after-tax income, and optimism among households have lifted consumer spending in recent months. Investment by businesses has continued to grow at a healthy rate. Good economic performance in other countries has supported U.S. exports and manufacturing. And while housing construction has not increased this year, it is up noticeably from where it stood a few years ago.

Turning to inflation, after several years in which inflation ran below our 2-percent objective, the recent data are more encouraging. The price index for personal consumption expenditures, or PCE inflation—an overall measure of prices paid by consumers—increased 2.3 percent over the 12 months ending in May. That number is up from 1.5 percent a year ago. Overall or headline inflation increased partly because of higher oil prices, which caused a sharp rise in gasoline and other energy prices paid by consumers.

Because energy prices move up and down a great deal, we also look at core inflation. Core inflation excludes energy and food prices and generally is a better indicator of future overall inflation. Core inflation was 2.0 percent for the 12 months ending in May, compared to 1.5 percent a year ago. We will continue to keep a close eye on inflation with the goal of keeping it near 2 percent.

Looking ahead, my colleagues on the FOMC and I expect that, with appropriate monetary policy, the job market will remain strong and inflation will stay near 2 percent over the next several years. This judgment reflects several factors. First, interest rates, and financial conditions more broadly, remain favorable to growth. Second, our financial system is much stronger than before the crisis and is in a good position to meet the credit needs of households and businesses. Third, Federal tax and spending policies likely will continue to support the expansion. And, fourth, the outlook for economic growth abroad remains solid despite greater uncertainties in several parts of the world. What I have just described is what we see as the most likely path for the economy. Of course, economic outcomes that we experience often turn out to be a good deal stronger or weaker than our best forecast. For example, it is difficult to predict the ultimate outcome of current discussions over trade policy as well as the size and timing of the economic effects of the recent changes in fiscal policy. Overall, we see the risk of the economy unexpectedly weakening as roughly balanced with the possibility of the economy growing faster than we currently anticipate.

Over the first half of 2018, the FOMC has continued to gradually reduce monetary policy accommodation. In other words, we have continued to dial back the extra boost that was needed to help the economy recover from the financial crisis and the Great Recession. Specifically, we raised the target range for the Federal funds rate by a quarter percentage point at both our March and June meetings, bringing the target to its current range of 1¾ to 2 percent. In addition, last October we started gradually reducing the Fed's holdings of Treasury and mortgage-backed securities, and that process has been running smoothly. Our policies reflect the strong performance of the economy and are intended to help make sure that this trend continues. The payment of interest on balances held by banks in their accounts at the Federal Reserve has played a key role in carrying out these policies, as the current *Monetary Policy Report* explains. Payment of interest on these balances is our principal tool for keeping the Federal funds rate in the FOMC's target range. This tool has made it possible for us to gradually return interest rates to a more normal level without disrupting financial markets and the economy.

As I mentioned, after many years of running below our longer-run objective of 2 percent, inflation has recently moved close to that level. Our challenge will be to keep it there. Many factors affect inflation—some temporary and others longer lasting. So inflation will at times be above 2 percent and at times below. We say that the 2-percent objective is "symmetric" because the FOMC would be concerned if inflation were running persistently above or below our 2-percent objective.

The unemployment rate is low and expected to fall further. Americans who want jobs have a good chance of finding them. Moreover, wages are growing a little faster than they did a few years ago. That said, they still are not rising as fast as in the years before the crisis. One explanation could be that productivity growth has been low in recent years. On a brighter note, moderate wage growth also tells us that the job market is not causing high inflation.

With a strong job market, inflation close to our objective, and the risks to the outlook roughly balanced, the FOMC believes that—for now—the best way forward is to keep gradually raising the Federal funds rate. We are aware that, on the one hand, raising interest rates too slowly may lead to high inflation or financial market excesses. On the other hand, if we raise rates too rapidly, the economy could weaken and inflation could run persistently below our objective. The Committee will continue to weigh a wide range of relevant information when deciding what monetary policy will be appropriate. As always, our actions will depend on the economic outlook, which may and will change as we receive new data.

For guideposts on appropriate policy, the FOMC routinely looks at a range of monetary policy rules that recommend a level for the Federal funds rate based on the current rates of inflation and unemployment. The July *Monetary Policy Report* gives an update on monetary policy rules and their role in our policy discussions. I continue to find these rules helpful, although using them requires careful judgment.

Thank you, and I will now be happy to take your questions.

Chairman CRAPO. Thank you for your statement, Chairman Powell.

The first question I have will relate to CCAR. As you know, the Fed recently released the results of the 2018 Comprehensive Capital Analysis and Review, the CCAR, stress test. This year the Fed issued conditional nonobjections to certain banks, which, as you are aware, some have criticized. What details can you share about the Fed's decision to issue the conditional nonobjections while allowing those firms to maintain capital distributions at recent levels?

Mr. POWELL. Thank you, Mr. Chairman. So the CCAR supervisory test is and will remain an important part of our supervisory framework, particularly for the largest and most systemically important firms. And I guess I would start by saying that this year's test was by a good margin the most stringent test yet. Hypothetical losses for 2018 were $85 billion higher than during the 2017 stress test, and the hypothetical decline in the capital ratio was 110 basis points higher this year than last year; so a very significantly severe test, and it will result in a material increase in the effect of aggregate capital requirement of the firms subject to the test.

So, you know, we carefully evaluated the results. We voted on them on June 20th, and the next day the firms received a call from our staff, which informed them of the results and their options. This is the standard operating procedure that we follow every year. There is no negotiation, there is no haggling. The decision has been made the day before by the Board, and they are just informed of their options, and they deal with them as they are.

Almost all the firms finished above the required poststress minimums, which is a sign of how well capitalized the industry is. Two firms that did not were required to restrict their distributions to past years' levels. That has always been the penalty for failing to meet the poststress minimums, and that will require the firms to build capital this year, these two firms. The third firm was required to take certain steps regarding the management and analysis of its counterparty exposures under stress. So the same exact penalty was paid. We labeled these as conditional nonobjects rather than objecting straight out to the plan, and we have done that over a period of years many times, and we thought that it was appropriate here.

When we fail a firm, when we actually fail them and send—what we do is we send the plan back and say that your capital planning process is deficient, please take this plan back, please fix it and bring it back to us, and we will look at it again. So that sends a signal that we believe that the capital planning processes of the firms are deficient in some serious way.

As I mentioned, in a number of cases we have gone with sort of an intermediate sanction, and we felt that that was appropriate here. One reason for that is the timing of the tax bill, as we mentioned, and firms plan, of course, well in advance so that they will have enough capital to pass the test. This particular bill passed, was signed into law on December 22nd. We used fourth quarter capital levels for the test, so the TCJA resulted in a significant decrease in the level of capital these firms have. But, of course, they do not benefit from what in the longer term will be a lower tax effect on their earnings. So I think whereas any analyst would look at that law and say that it is positive for banks and for their ability to earn money, it was strictly a negative in this test. So we looked at that, and among other factors we decided to use the conditional nonobject.

I will stop there, Mr. Chairman.

Chairman CRAPO. All right. I appreciate that explanation, and essentially what I am hearing you say is that the same—in fact, even a stricter test was applied, and the same standards of review were used in your analysis and in the consequences that were applied.

Mr. POWELL. That is right, and I just would reiterate our commitment to this particular supervisory stress test. It is a very important thing for us, and we will make sure to keep it stringent.

Chairman CRAPO. All right. Thank you.

Chairman Powell, moving to regulation, the recently enacted Economic Growth, Regulatory Relief, and Consumer Protection Act received significant bipartisan support, as you know. In addition to several provisions providing regulatory relief to community and midsize banks, a key provision of the bill raises the threshold for the application of the enhanced prudential standards from $50 billion to $250 billion.

What is the Fed's process for quickly implementing S. 2155, including its process for ensuring that the financial companies with total assets between $100 billion and $250 billion promptly receive similar relief to the relief provided for the financial institutions with less than $100 billion in total assets?

Mr. POWELL. So our intention and our practice is going to be to implement the bill as quickly as we possibly can. As you probably know, I am sure you know, we released a statement the Friday of July 4th week laying out our plans to move ahead with some things. And, again, we will do them as quickly as possible, and we indicated that we will try to move that along very quickly.

Chairman CRAPO. All right. Thank you.

Senator Brown.

Senator BROWN. Thank you, Mr. Chairman.

Mr. Chairman, I have a number of questions. I hope your answers can be brief. Thank you for our phone call the other day. I know you know this: In real terms wages have not budged recently. Last week BLS reported that hours for production and nonsupervisory workers are flat and pay has actually dropped over the past year. Of course, we should focus on real wages rather than nominal wages. By that measure, is the typical worker really better off this year than he or she was a year ago?

Mr. POWELL. Yes. Yes, I would say that the labor market has strengthened. The labor report will show that wages went up 2.7 percent. That is significantly higher than trend inflation. There is a bit of a bump from gas prices going up and consumers do pay that, but I would say that overall workers are better off because——

Senator BROWN. I would partially contradict that and say that nonsupervisory workers, four out of five workers have seen nominal wages go up but real wages have not by those same BLS statistics.

Let me move to another. You have called stress testing "the most successful regulatory innovation of the postcrisis era"—you said that some time ago—but the actions the Fed has taken during your tenure undercut that effect when the Fed gave Goldman, Morgan, and State Street passing grades this year even though they failed to meet capital requirements in CCAR, the first time that has ever happened in CCAR history. The Fed proposes to weaken the leverage constraint, and CCAR reportedly may drop the qualitative portion of the test, wants to give bankers more leeway to influence the Fed's models, and may soon adjust Dodd–Frank stress tests to make them less stressful and less frequent, hence the "periodic."

Stress test tests were adopted in 2009 to provide confidence to the public that the banks could weather economic shocks. How is the public supposed to trust the stress test when the Fed proposes all of those ways to weaken them?

Mr. POWELL. So we are strongly committed to using stress tests. We really developed the supervisory stress test at the Fed, and as you know, we think it is a very important tool. It was one of the main ways that we used to raise capital, particularly among the largest firms, and we are committed to continuing stress testing as one of the three or four most important innovations, along with higher capital, higher liquidity, and resolution. It is one of the big four pillars for us.

The program has to continue to evolve. We want to strengthen it. We want to make it more transparent. We want to improve it over time. And all of our actions are designed to do that, and I think if you look at the state of the banking system and the fact that this test will require higher capital, then I think you will see

that is consistent with—that our words are consistent with our actions.

Senator BROWN. Well, I think the message coming out emanating from the business press—and those are not, you know, Democratic, liberal newspapers; they are the *Wall Street Journal*, the *Financial Times*, the *New York Times* business section—speaks to the fact that these stress tests are getting weaker.

Let me ask another question. Vice Chair Quarles has given two speeches outlining how the Fed wants to recalibrate the rules for large foreign banks. You gave an answer, a carefully worded answer, I thought, to obscure the fact that large foreign banks may receive less oversight as a result of S. 2155. The public is getting mixed messages from the Fed.

For the record, can foreign banks with more than $50 billion in U.S. assets—Deutsche, Santander, Credit Suisse, the others—can foreign banks with more than $50 billion in U.S. assets expect to get regulatory relief during your tenure?

Mr. POWELL. You know, I think I can say that S. 2155, it is not clear to me how it provides regulatory relief to those firms. I mean, all of the banks that have $50 billion in U.S. assets have more than $250 billion in global assets. So I do not think there really will be much effect. I will not say that we will never do anything to provide regulatory relief to a group during my tenure, but——

Senator BROWN. So your position seems to be that if they are between—if they are over 50 in the U.S., under 250 as those are, but much, much, much bigger with all the——

Mr. POWELL. Globally.

Senator BROWN. Globally, that you do not expect any regulatory relief for them?

Mr. POWELL. Well, the main thing is the $50 billion threshold for internal holding companies will remain the same. We are not looking at that. And I think they will not see much difference.

Senator BROWN. Physical commodities. The Fed proposed a physical commodities rule for 2016. You are moving presumably to finalize it. The Fed responded to questions for the record saying that the Board continues to consider this proposal. When can we expect action on it, Mr. Chairman?

Mr. POWELL. I do not have a date for you on that. I know that we received extensive comments on it, and we are considering them.

Senator BROWN. Do you feel some urgency on it?

Mr. POWELL. I will have to go back and look and see where that is in the line.

Senator BROWN. If you would please respond in writing to that.

And a last question, Mr. Chairman. The Administration and some in Congress pushed through tax cuts and bank deregulation under the guise that it would trickle down to American families in the form of more loans. Loan growth has slowed in the last quarter. It was less than half the growth rate than during the last year of the Obama administration. The four largest banks, as you know, redirected record levels of profits into dividends and stock buybacks. The four big banks' CEOs got an average raise of 26 percent.

My question is simple: When, if ever, do you expect to be able to come before this Committee and demonstrate to us in this Committee, as Chair of the Fed, demonstrate to us how tax cuts and deregulation have actually benefited the real economy in the forms of more lending?

Mr. POWELL. I guess I see my role as reporting about the overall economy rather than the effect of any particular law, although I will be happy to take questions on that.

Senator BROWN. OK. Thank you, Mr. Chairman.

Chairman CRAPO. Senator Scott.

Senator SCOTT. Thank you, Mr. Chairman. And good morning, Chairman Powell. Thank you for being with us today.

Mr. POWELL. Good morning, Senator.

Senator SCOTT. It certainly is difficult to find negative news as it relates to our economic reality. The truth of the matter is that we are in the third largest economic expansion since 1854—not 1954—1854. An 18-year low in our unemployment rates. African American unemployment for the first time in recorded history below 6 percent at 5.9 percent. Hispanic unemployment at 4.6 percent, lowest recorded as well. Wage growth 2.7 percent, the highest level since 2009. And the Atlanta Federal Reserve suggests that we could have a 5-percent GDP growth in the second quarter. And the good news just keeps on coming.

Small businesses said they have not been this optimistic in 45 years. That has got to be a record. Beyond a doubt, tax reform combined with responsible regulations have resulted in more Americans have more money in their pockets. And another great example of the economic reality that we face today is that the core prime-age labor force participation rate has stabilized since 2013 and is starting to climb in the right direction.

My question for you, Chair Powell, is: What has been the overall impact of the economic growth for the long-term unemployed? And can we read into the prime-age labor force participation rate's increase really positive news for those long-term unemployed?

Mr. POWELL. Yes, so prime-age labor force participation, Senator, as you pointed out, has been climbing here in the last couple of years. That is a very healthy sign because prime-age labor force participation is really—you know, it has been weak, and it has been weak in the United States compared to other countries. So it is very troubling, and the fact that that is coming back up is a very positive thing. We really hope it is sustained, and we hope that these gains in participation can be sustained. We have a long box in our *Monetary Policy Report* that talks about that.

The other thing, you mentioned the long-term unemployed.

Senator SCOTT. Yes.

Mr. POWELL. So the number of long-term unemployed has come down dramatically since, I do not know, maybe 2010. I want to say the numbers were between 6 and 7 million, and unless I get this wrong, I think the current number of longer-term unemployed is around 1.5 million. So the people who are on the very edges of the labor force like those people, those are the ones who have benefited the most.

Senator SCOTT. Thank you. With all that economic heat coming our way in a positive way, the prices seem to be going up, so the

CPI rose 2.9 percent, the fastest pace since 2012. Those rising prices could negate some of the wage growth that I just talked about if left unchecked.

In the past we have discussed, you and I, the Fed role according to the congressional mandate seeking stable prices being one of those specific mandates. We have also talked about the downsides of low interest rates for extended periods of time. What do you see in the prices for energy, housing, health care, and transportation? And how is that going to impact your thinking moving forward?

Mr. POWELL. Inflation has been below our 2-percent objective since I joined the Board of Governors in May of 2012 just until last month. For the first time, we have 12 months of core inflation being at 2 percent. So that is a very positive thing. We want to see overall inflation continue to come up so that it is sort of symmetrically around 2 percent. I would say we are just shy of achieving that. But we want inflation to remain right around 2 percent and be as likely to be a little above as a little below. I would say we are on the—and I think our monetary policy is really designed to help us continue to achieve that. So we are gradually moving up rates, and that we think is the policy that will help us get inflation to 2 percent sustainably.

Senator SCOTT. Thank you. Just two more areas for you. South Carolina, my home State's economy is built on trade. You name it, we make it. We grow it and we ship it. Cars, cotton, tires, jets, peaches, soybeans, turbines, solar panels, and the list goes on and on.

What has generally happened in the past to economic growth when we have raised tariffs?

Mr. POWELL. I have to start by saying that, you know, I am really firmly committed to staying in our lane and, you know, our lane is the economy. Trade is really the business of Congress, and Congress has delegated some of that to the executive branch. But, nonetheless, it has significant effects on the economy, and I think when there are long-run effects, we should talk about it and talk in principle. And I would say in general countries that have remained open to trade, that have not erected barriers, including tariffs, have grown faster. They have had higher incomes, high productivity. And countries that have, you know, gone in a more protectionist direction have done worse. I think that is the empirical result.

Senator SCOTT. I only have about 5 seconds left, so let me use my time wisely. As you know, I have a background in the insurance industry, and I am seriously a fan of a State-based system of insurance regulations. I think it is the best in the world. As the Fed participates in developing the ICS with the IAIS, I strongly urge you to shape a final product that protects the U.S. system of insurance regulation, and I would appreciate you and I having a conversation in the near future.

Mr. POWELL. Thank you, Senator.

Senator SCOTT. Thank you.

Thank you, Mr. Chairman.

Chairman CRAPO. Senator Reed.

Senator REED. Thank you very much, Mr. Chairman. Welcome, Chairman Powell.

The issue of wages has been discussed by several of my colleagues and yourself. In 2000, the last time we were at this situation where we were touching 4 percent unemployment, the share of national income by corporations was about 8.3 percent, and the share of wages was 66 percent. Today we are once again reaching that point of about 4 percent unemployment, yet corporate profits account for about 13.2 percent of national income. They have gone up significantly. Wages as a share of national income have gone down from 66 percent to 62 percent. If those trends continue, we are in a situation where working men and women are not going to get their fair share of growth. What are you trying to do at the Fed to ensure that they get their fair share of growth?

Mr. POWELL. The decline in labor share of profits—labor share of profits was generally, you know, oscillating fairly constant for a number of decades and right around the turn of the century began to drop precipitously and continued to do so for more than a decade. It is very troubling. We want an economy that works for everyone. And that happened, by the way, in essentially all advanced economies, and probably a range of factors are responsible for that.

In the last 5 years or so, labor share of profits has been sideways. This is very much akin to the flattening out of median incomes over the last few decades. So it has got to do with a number of global factors.

The thing that we can do is to take seriously your congressional order that we seek maximum employment, so in tight labor markets, workers are more likely going to be paid well and paid their share. I would say most of the factors that have driven down labor share of profits are really not under the control of the Fed. And so those are issues that we do not have control over.

Senator REED. But would you say that the tax bill did not affect those downward trends in wages positively, that, in fact, it has done nothing to reverse what you have seen as a decade or more of decreases?

Mr. POWELL. I think wages are set in the marketplace between workers and companies, and they are affected by a range of factors. I think it would be early to be looking for a bill that was signed into law less than a year ago to be able to visibly be affecting much of anything at this point, really. These things, big changes in fiscal policy, take quite a while to affect wages.

Senator REED. So none of this good news we are talking about today is a result of this tax bill, it is too early?

Mr. POWELL. It is very hard to isolate the—I mean, I would say wages have moved up meaningful over the last 5 years. It has been quite gradual. And, you know, we certainly think it would be fine for them to move up more.

Senator REED. Do you think the European Union is a foe of the United States?

Mr. POWELL. No, I do not.

Senator REED. Thank you.

As we look ahead to some of the potential obstacles—and having, both of us, lived through 2008 and 2009, it looked good and then it looked real bad. In retrospect, we saw some signs of the danger. What are the signs of danger that you are sort of focusing on? There are huge deficits, both Government deficits, private deficits

worldwide. You have got a trade battle brewing. And you have got things like Brexit that could complicate our life dramatically. So what are the two or three things that you think could throw us off this track?

Mr. POWELL. There is a difference between the longer term and the short term. So in the near term, things look good. You know, we look very carefully at a range of financial conditions and financial stability vulnerabilities, we feel that those are at sort of normal, moderate levels right now, although there are some areas that are elevated, some assets prices are high, and there is an elevated level of debt in the nonfinancial corporate sector. More broadly, banks are well capitalized. Households are in much better shape. So financial stability I do not worry about too much at this point, although we keep our eye on that very carefully after our recent experience.

You mentioned trade. It is hard to say what the outcome will be. Really, there is no precedent for this kind of broad trade discussions. In my adult life, I have not seen where essentially all of our major trading partners—hard to know how that comes out. If it results in lower tariffs for everyone, that would be a good thing for the economy. If it results in, you know, higher tariffs across a broad range of traded goods and services that remain that way for a longer period of time, that will be bad for our economy and for other economies, too.

Senator REED. Thank you very much, Mr. Chairman.

Chairman CRAPO. Thank you.

Senator Rounds.

Senator ROUNDS. Thank you, Mr. Chairman.

Chairman Powell, first of all, I want to thank you for being here today. Before I get into the questions, I would just like to take note of the two rules that were announced this spring: the new stress capital buffer and the proposed changes to tailor the enhanced supplementary leverage ratio. I do appreciate the Federal Reserve's efforts, and I hope we can continue an open dialogue on these changes as you move forward.

I am just curious. You indicated with regard to Senator Reed's question, based on the tax bill, clearly there is an improvement in GDP growth over the last couple of years. Was it anticipation of the tax bill being passed? I would like to flesh that out just a little bit, because most certainly I think a lot of truly believe that that tax bill is a key component in the development of an improvement in our GDP. Your thoughts?

Mr. POWELL. I was really answering about whether you could see it in wages right now. That is hard to do. So growth averaged around 2 percent for 8 years, and then in 2017, I think the current estimate is 2.6 percent. And you saw significant improvements in household and business confidence levels. Overall confidence about the economy, you saw that coming on in 2017. Some of that was probably in anticipation of the passage of what finally passed. So probably that was already in the growth rate. I think it is hard to say, but I suspect that some anticipation of tax cuts and tax reform was already in the growth in 2017.

Going forward—and we have said this—we expect—there are a range of estimates on this, but we would expect that the tax bill

and the spending bill would provide meaningful support to demand for at least the next 2 or 3 years, maybe 3 years, and also might have, you know, effects on the supply side as well. To the extent you are encouraging more investment, you are going to get higher productivity. So it is very—these estimates are subject to tremendous uncertainty both as to amount and as to timing. But I think we look at the range of estimates, and that is certainly where we broadly come out.

Senator ROUNDS. I just want to be clear. That tax bill had a positive impact, even if it is the anticipation of the tax bill. It has a positive impact on our GDP growth, correct?

Mr. POWELL. Yes, I think, so this year, maybe last year, too.

Senator ROUNDS. OK. Let me ask you this: With regard to trade, you make notes specifically in your comments on trade and the fact that there are some things up in the air right now. There is perhaps some instability or some questions on the part of not only our businesses but businesses around the world. Are businesses looking for stability with regard to trade compacts? Or are they looking for opportunity and instability?

Mr. POWELL. Well, they would clearly be looking for stability.

Senator ROUNDS. OK. And then I would look to associate myself—and I support what Senator Scott indicated earlier with regard to the insurance issues and the fact that our State-based regulatory system for insurance I think is critical. I think it is a positive thing for consumers when it is as close to that State regulatory process as possible.

When you came here before the Committee earlier this year, you discussed capital requirements in the options market and mentioned that the Federal Reserve was working on a rule to transition from the risk-insensitive Current Exposure Method, or CEM, to the internationally agreed upon Standardized Approach for Counterparty Credit Risk, SA–CCR. I am supportive of these efforts, but I remain concerned about the timeline for implementation. I noted with concern in a letter to Vice Chair Quarles last year, in response to my request that the Federal Reserve used its reservation of authority to grant interim relief, Vice Chair Quarles asserted that the Fed lacks such authority in this context. I originally raised this issue when Vice Chair Quarles was testifying at his confirmation hearing last July. Unfortunately, it has been a year since that time, and the Fed has yet to take meaningful action.

I remain concerned about this because the longer we wait for American regulators to implement SA–CCR, the more market makers will exit the options market entirely, making our financial system more vulnerable to economic shocks and less competitive compared to our international peers.

I noted in the Basel Committee's last progress report from April of 2018 that 22 of the 27 Basel member countries have either implemented SA–CCR or made substantially more progress at implementation compared to the United States. I am a particularly strong supporter of risk-based capital standards, particularly in this context in options markets. Can you provide an update on when the rulemaking from CEM to SA–CCR will be released?

Mr. POWELL. I know that we are working on it now. I know that we think it is good policy. And I cannot give you an exact date, but I know we are actively directing a rule. By not being able to provide interim relief, all we meant was we actually have to amend the rule. So we will be putting a rule out for proposal and get comments, and then it will go final. It is in train, but these things take time. We are working on it.

Senator ROUNDS. OK. Thank you.

Thank you, Mr. Chairman.

Chairman CRAPO. Senator Menendez.

Senator MENENDEZ. Thank you. Thank you, Chairman Powell, for being here.

Lately we have heard a near constant refrain from the Administration, the President himself, corporate media outlets, and even from you that "the economy is doing very well" and "it has never been better."

Now, if we take a narrow view of the unemployment rate and corporate profits, then, sure, it is a real rosy picture. But take a wider lens to what working families are seeing, and the view is one of great contrast.

Over the last year, despite falling unemployment, working families actually saw their real wages fall. By comparison, after-tax corporate profits increased by 8.7 percent just in the last quarter.

There is something fundamentally wrong in our economy when workers are seeing their pay cut while corporations are benefiting from a $2 trillion tax giveaway. Working families not only cannot get ahead, but they are actually falling behind.

I can tell you, families in New Jersey cannot keep up with the surge in costs, particularly for prescription drugs and health care. I just heard from a constituent in Glendora, New Jersey, who told me that even with his Medicare and secondary insurance, he cannot afford to pay for his insulin and diabetes equipment, and that is pretty unconscionable.

So my question to you, Mr. Chairman, is: When will the benefits of this "booming economy" reach working families?

Mr. POWELL. Thank you, Senator. I think we are aware and I am aware that while the aggregate numbers are good and unemployment is low and surveys overall of households are very positive about the job market, not everybody is experiencing the recovery. Not every demographic group, not every place are experiencing this. So we call that out in every FOMC meeting and in all of our public communications, as I did in my testimony this morning. And, you know, we understand that we have to take maximum employment seriously, and we do. We have been supporting a strong labor market for a long time. Despite many calls for us to raise interest rates much more quickly, I am glad that we stayed in longer than that, and I think gradually raising rates is the way for us to extend this expansion. Nothing hurts working families and people at the margin of the labor markets more than a recession.

Senator MENENDEZ. Well, you are probably going to have a couple more interest rates. What specific steps then are you taking to foster broad-based wage growth so that the average worker, not just managers and executives, are reaping the benefits? I cannot accept that wages are growing when the Bureau of Labor Statistics

points out that production and nonsupervisory workers saw their wages fall two-tenths of a percent, and that is despite increasing their average work week to make up for it. So they are getting squeezed.

Mr. POWELL. So the latest Government report was that wages went up 2.7 percent for production, nonsupervisory workers, and supervisory workers over the last 12 months. And that is higher. That is moving up. It also happens that inflation has moved up and that sort of a bump in energy prices is passing through the headline inflation number. So I think overall, though, you see inflation at about a 2-percent trend. You see wages at 2.7 percent. So I think those trends are healthy, and I think they are reflected in what are pretty positive surveys among workers generally.

Senator MENENDEZ. Let me ask you this: These working families we are talking about are the first to feel the impact when banks, big banks, and corporations take risky bets with no accountability. When we passed Dodd–Frank, we included language to ban incentive-based compensation practices that reward senior executives for irresponsible risk taking. Regulators issued a proposal in 2016, but more than 2 years later, nothing has been finalized. In the meantime, Wall Street bonuses jumped 17 percent last year to an average of more than $184,000—the most since 2006, and that is bonuses alone.

Now, you have made time to weaken Wall Street oversight by revisiting capital rules, revisiting leverage rules, proposing changes to the Volcker Rule, all of which were finalized after years of deliberation, public comments, and input from other regulators, and all of which protect our economy from another financial crisis. How is it, Mr. Chairman, that you have not made time to finish the incentive-based compensation rulemaking for the first time? And can you give me a commitment today as to a timeline for when this will be done?

Mr. POWELL. We tried for many years—it is a multiagency rule, the incentive comp rule. We tried—we were not able to achieve consensus over a period of many years between the various regulatory agencies that need to sign off on that. But that did not stop us from acting, you should know. Particularly for the large institutions, we do expect that they will have in place compensation plans that do not provide incentives for excessive risk taking. And we expect that the Board of Directors will make sure that that is the case. And so it is not something that we have not done. We have, in fact, moved ahead through supervisory practice to make sure that these things are better than they were, and they are substantially better than they were. You see much better compensation practices here focusing mainly on the big firms where the problem really was.

Senator MENENDEZ. Well, that does not have the power of a rule. I hope we can get to a rule-based purpose, because at the end of the day we seem to have revisited everything that was already completed, but yet we cannot get this one going.

Thank you, Mr. Chairman.

Chairman CRAPO. Senator Corker.

Senator CORKER. Thank you, Mr. Chairman. And, Mr. Chairman, thank you for being here. I was remarking to our staff yesterday, as we talked a little bit about this meeting, that because of the way

that you are handling yourself, which I think is in a very positive way, following the Fed is getting really boring these days. But hopefully that will continue. I know that is your goal. We appreciate some of the transparency efforts that you have put forth.

I think I heard you earlier talk about inflation, and obviously we are, you know, at full employment. Hopefully there will be additional people participating in the workforce that have not in the past, and I am glad to see those numbers are rising. But if I understand correctly what you are saying, the predictive stat for people who are watching the Fed today will be core inflation. In other words, that will be the determinative factor as it relates to rate increases in the future.

Mr. POWELL. So we, of course, look at headline inflation, too, and that is our legal mandate. We look at core inflation when we are thinking about the path of future inflation, though, because it is just a better predictor. Many of the things that affect headline inflation do not actually send much of a signal about future inflation.

Senator CORKER. But for people who are trying to see where things are going, now that the labor issue is where it is today, the predictive matter as it relates to future increases and the amount of those is really going to be inflation.

Mr. POWELL. Inflation is going to be really important. You know, I think we are—for quite a while here, we have been in the range of achieving our maximum employment goal, and we are only just getting there with inflation. I would not declare victory on that yet, either.

Senator CORKER. Yeah, it has really been difficult, I think, for many Western countries to get to a place that they are comfortable in inflation, which brings me to the wage issue.

Look, like my colleagues, I am very concerned about wage stagnation, and I am not in any way trying to offload that issue to you. We all have responsibilities to put in place policies that will hopefully cause all Americans' wages to increase. But what we are seeing here and what we are seeing actually, let us face it, in Western countries around the world is people are not—the anticipation that people had relative to where they were going to be in life is not being achieved, which is creating some extremes as it relates to the political environment—actually, in some ways beginning to destabilize, because people are, rightly so, concerned about the fact that they are not really increasing the ability to raise their families as they wish.

Let us talk a little bit about that. What is it from your perspective that is causing us to be in this place where the economy is growing, but for the last 30 years, Americans really have not seen the wage gains that they would like to see? Could you just lay out—not in any way to take responsibility at the Fed solely yourself, but what is driving that?

Mr. POWELL. You know, the stagnation of middle-class incomes, the relatively low mobility that we have, the disappointing level of wages over a long period of time, it is all of a piece, and it all does go to that. And I think the causes of these things are really deep. It is not something we can address really successfully over time with monetary policy, as you say. So, I mean, I think it is——

Senator CORKER. What are those deep causes?

Mr. POWELL. So I think, you know, part of it is, in our case, in the case of the United States, stagnation of educational achievement, the leveling out of educational attainment. When U.S. educational attainment was rising, technology was coming in; it was asking for more skills on the part of people. They had those skills, and so you had productivity rising, you had incomes rising, you had inequality declining over a long period of time.

U.S. educational attainment flattened out in the 1970s, and everywhere else in the world it has been going up. We really had a lead. We were the first country to have gender-blind, you know, secondary education universally. So that is a big thing. Really the only way for incomes to go up over a long period of time is through higher productivity. Real incomes go up over a long period of time because of higher productivity. Higher productivity is a function of, in part, the educational and skills and aptitude of the workforce. It is also, you know, partly the evolution of technology and investment.

I think right now in particular we had a number of years of very weak investment after the crisis because there was no need to invest. That weak investment period is casting a shadow over productivity right now, which is one of the main factors that is holding down wages. These are deep, hard problems, but education is really at the bottom of the pile.

Senator CORKER. And I am glad you alluded to that, and my time is up, I know. But we have had—we actually have had productivity growth without wage growth.

Mr. POWELL. Over long periods of time, the only way wages can go up sustainably is with productivity growth. They do not necessarily match all the time. I mean, since the crisis ended, productivity growth has been—output per hour has been very, very weak. Increases have been very, very weak.

Senator CORKER. Thank you, Mr. Chairman.

Chairman CRAPO. Senator Tester.

Senator TESTER. Thank you, Chairman Crapo and Ranking Member Brown. And thank you for being here, Chairman Powell. I want to run over some stuff that has been run over already just real quick.

You had answered in a previous question that the stress tests continue. Is that correct? Stress tests continue on the banks?

Mr. POWELL. Absolutely. Every year.

Senator TESTER. And you said you were going to try to improve them, make them more transparent, which, by the way, I applaud that. Would you also add to that list that you are trying to weaken the stress tests?

Mr. POWELL. No, absolutely not.

Senator TESTER. You are still making them do what they need to do to prove that their soundness is there?

Mr. POWELL. The 2018 stress test was by a margin the most stringent stress test we have done yet.

Senator TESTER. OK. Folks also continue to be concerned that S. 2155 allowed foreign megabanks like Deutsche Bank, UBS, Barclays to see their enhanced prudential standards weakened. You have agreed—and you have said it again today—that S. 2155

does not do that. Do you have any plans to weaken standards on the largest FBOs that I mentioned?

Mr. POWELL. No. No, sir.

Senator TESTER. OK. In your testimony you said, "Good economic performance in other countries has supported U.S. exports and manufacturing." What other countries are you talking about? Would that include the EU? Would that include Canada and Mexico, the other countries, I am talking about, that have good economic performance? Would that include China? Those other countries——

Mr. POWELL. It would include all those countries, yes.

Senator TESTER. All those countries? And I know you said that the tariff situation and the trade situation is something that Congress deals with that you do not deal with, but it would appear to me—and I just want to get your opinion on this because I value it. It would appear to me that all this stuff about getting out of NAFTA and putting tariffs on folks and not being at the table when TPP was finally signed is a net negative on our economy. Would you agree with that long term—short term and long term?

Mr. POWELL. I am going to try to walk that line that I mentioned earlier and not comment on any particular policy, but in principle, open trading is good. We do not want countries to have barriers to trade or, you know, tariffs being a barrier to trade.

Senator TESTER. Both directions.

Mr. POWELL. In both directions. We want to have an international, you know, rules-based system in which countries can get together and any country that violates that can face the other countries, and that system has served us very well. Tariffs have come down steadily over the years. Until recently, they were at their all-time low level. But the thing is we do not know how this goes. This process we are in right now, the Administration says it is going for broadly lower tariffs. If that happens, that is good for the economy. That would be very good for the economy—our economy and others' too, by the way. On the other hand, if we wind up with higher tariffs, then not so good.

Senator TESTER. That is correct. And in the meantime, just as a sidebar, if it cuts off foreign markets for grains, for example, there is going to be a lot of people in family farm agriculture that are put out of business. And that is my concern. You do not need to comment on that.

I realize that you do not play a central role in our housing finance system, but you do play a central role in our economy, and the Fed does have a sizable balance sheet with billions of dollars' worth of mortgage-backed securities on the books.

In March it was announced that Fannie Mae and Freddie—no, not Freddie, but Fannie Mae would need $4 billion from its line of credit at the Treasury Department. How concerning is this to you and the Fed given the size of mortgage-backed securities that are on your books?

Mr. POWELL. The mortgage-backed securities that we have are guaranteed by the Federal Government. There is no credit risk there. I would say more generally, if this is responsive, I think that the housing finance system, the GSEs, remains one of the big unfinished pieces of business postfinancial crisis, and I think it would

be healthy for the economy and for the housing finance system to see that move forward.

Senator TESTER. You answered my second question. So you think that Congress' inability to address Fannie Mae and Freddie Mac in the end could harm our economy?

Mr. POWELL. I think it is really important for the longer run that we get the housing finance system off the Federal Government's balance sheet and using market forces and some of the things that are already in place and carry forward some kind of a reform. I think it is very important for the economy longer term.

Senator TESTER. OK. Thank you, Chairman Powell, and I appreciate your being here. I have got a couple other questions for the record that I would love to have you answer.

Thank you very much.

Mr. POWELL. Thanks.

Chairman CRAPO. Senator Toomey.

Senator TOOMEY. Thanks, Mr. Chairman. Thank you, Chairman Powell, for joining us.

I just had a quick follow-up on this wage discussion. I think the most recent numbers we had were the month of June. Comparison to the previous June, 2.7 percent I think was the nominal growth in the wage number, so obviously a positive number. I think we would all like to see a bigger real growth. I think there is no question we would like to see that. But I would suggest that there is something peculiar about just the arithmetic of this sometimes, and maybe you could just briefly comment on this.

As our economic growth has coincided with a significant growth in entry-level jobs and people coming into the workforce at entry-level wages, since those wages are at the low end of the wage spectrum, isn't it the case that the nature of arithmetic is that the average wage will reflect to some degree the fact that new entrants naturally come in at the low end of the spectrum and it would mask the growth in wages of people who have been continuously employed?

Mr. POWELL. Yes, that is right. There can be compositional effects, is what we call them, so younger people coming in, lower wages; older people, higher wages, retirement can be an effect. I am not sure it is right now, but I can check on that.

Senator TOOMEY. I think that is likely to be the case as we have increasing workforce participation. I think that is a likely consequence.

You made a very important point, I think, earlier that sustained wage growth absolutely requires sustained productivity growth. It is not possible to have the former without the latter. We all know that productivity growth is driven by several things, but one of the principal contributing factors is capital expenditure. It is new tools and equipment and technology in the hands of workers that make them more productive.

The June FOMC minutes included a disturbing observation, and I will quote very briefly. It says, "Some districts indicated that plans for capital spending had been scaled back or postponed as a result of uncertainty over trade policy." So the FOMC is saying that there is already adverse consequence in the form of scaled back investment as a result of uncertainty in trade policy. If there

is more uncertainty—and we have threats of additional tariffs hanging over the markets right now—doesn't it follow that this is a threat to wage growth because the continuum includes a reduction in capital expenditure, lower productivity growth than we would otherwise have in a corresponding relative weakness in wage growth?

So, in other words, isn't all this trade uncertainty a threat to wage growth?

Mr. POWELL. It may well be. We do not see it in the numbers yet, but we have heard a rising chorus of concern which now begins to speak of actual cap ex plans being put on ice for the time being.

Senator TOOMEY. Yeah, which is really disturbing. The Senator from Tennessee's question about what causes stagnant wages, well, it corresponded to an extended period of very low productivity growth, which itself corresponded to very low capital expenditure growth. We broke that with the incentives in the tax reform that caused a big surge in cap ex. And it would be a tremendous pity to jeopardize that because of the trade policy.

Let me move on to a somewhat technical matter regarding the Fed's balance sheet. As you know, historically the Fed has manipulated just overnight rates, the discount rate and Fed funds rate, and let the markets decided all other interest rates. That all changed with quantitative easing when the Fed became the biggest market participant in the purchase of Treasurys. And it changed in an explicit way when the Fed decided that it would intentionally manipulate the shape of the yield curve with Operation Twist, which was very consciously and willfully designed to change the shape of the curve.

My understanding is now, to the extent that you make purchases of Treasurys, which you do when payments come back to the Fed in excess of what you want to run off, you do so basically as a set proportion of what the Treasury is issuing without regard to where on the curve they are issuing.

So while this is happening, the yield curve is flattening and in a pretty dramatic way, right? Twos, tens were like a hundred basis points a year ago. Today they are, I do not know, 25 basis points. Some people are concerned that a flattening curve or an inverted curve correlates with economic slowdown and recession.

Here is my question: Does a dramatic change in the shape of the yield curve in any way influence the trajectory that you guys are on with respect to normalizing interest rates and the balance sheet?

Mr. POWELL. Sorry. In other words, are we going to change our balance sheet policies due to the—is that what you are asking—due to the changing shape of the curve?

Senator TOOMEY. Yeah, does the changing shape of the curve weigh into your considerations at all?

Mr. POWELL. You know, I think what really matters is what the neutral rate of interest is, and I think population look at the shape of the curve because they think that there is a message in longer-run rates, which reflects many things, but that longer-run rates also tell us something, along with other things, about what the longer-run neutral rate is. That is really, I think, why the slope of the yield curve matters. So I look directly at that rather than—in

other words, if you raise short-term rates higher than long-term rates, you know, then maybe your policy is tighter than you think, or it is tight, anyway.

So I think the shape of the curve is something we have talked about quite a lot. Different people think about it different ways. Some people think about it more than others. I think about it as really the question being what is that message from the longer-run rate about neutral rates.

Senator TOOMEY. Yeah, I think that makes a lot of sense.

I see my time has expired. Thank you, Mr. Chairman.

Chairman CRAPO. Let me check.

Senator WARNER. I got in under——

Chairman CRAPO. Senator Warner.

Senator WARNER. Thank you, Mr. Chairman. Chairman Powell, it is great to see you again. Part of the challenge coming this late in the hearing is a lot of my questions have been answered. I want to follow up a comment at least on what Senator Toomey was addressing. I was going to cite the minutes of the Fed June meeting as well in terms of you say you have not seen these effects in the economy yet, but there has been a slowing of cap ex because of concerns about what I think is the President's kind of ill-thought-through trade war. I strongly believe we ought to take into consideration and have a fair and balanced trading system. I think China is the worst offender, particularly in the theft of intellectual property and other items. I was actually applauding the President when he moved strongly at first for a day or two on ZTE and before he folded at the first pushback from President Xi. And I would argue that we would be in a stronger position vis-a-vis citizenship if we had been about to actually rally other nations around the world, nations that are our allies. Instead, he is engaged in trade practices with them. No need to comment on that.

Senator Tester raised an issue I wanted to raise as well, indicating foreign banks that have relatively small U.S. subsidiaries but large overall international assets are still going to be subject to stress tests. As a matter of fact, wasn't it correct that at least, since there are a variety of stress tests, the CCAR stress tests still applies to institutions that have assets at any level or relatively any level, and that there was recently a foreign bank with $900 billion of total assets but only $86 billion in U.S. assets that the CCAR stress test still applied to? Is that not correct?

Mr. POWELL. I believe that is correct.

Senator WARNER. OK. I think you have addressed that, and there are some tensions here between—the Chairman is a good friend of mine and all. I think there may be appropriate regulatory relief for some regional banks, but I want to make sure—and I think you have addressed this with Senator Tester—that for those banks in that 100 to 250 range, you can have a thorough process and rulemaking process that stress tests are going to continue on a regular basis, and that these banks that fall into this category are going to be strictly reviewed before they might receive some of this regulatory relief to make sure that they—you know, size alone may not be the only indicator of significance to the overall market, and there may be some institutions that fall in that category but still need the enhanced SIFI diagnosis.

Mr. POWELL. Right, so the bill gives us all the authority we need, frankly, to reach below 250 down to 100 and apply any prudential standard we want, either on the grounds of financial stability or just the safety and soundness of banking companies. We will published—we are thinking about it carefully now. We are going to publish for public comment the range of factors that we can consider. And, again, the bill is very generous in letting us consider all the factors that we think are relevant.

Senator WARNER. But one of the reasons that I was supportive of the legislation was testimony that you had given prior to the passage that this was not going to be some blanket dismissal of these institutions, that you were going to go through a thorough rulemaking process and make an evaluation before those regulations were relaxed. Is that still your position?

Mr. POWELL. We will, absolutely. In fact, there is one institution now that is designated as a SIFI that is less than 250. So we are not shy about finding financial stability risk when we find it.

Senator WARNER. We think, again, the lines are always arbitrary here, but it is up to you and the Fed to make sure that institutions, particularly based upon their business practices that may be overall economically significant, that they still will have that determination, as you indicated, even if they fall below 250.

Mr. POWELL. Yes, a wide range of factors it will be.

Senator WARNER. Let me move to a different topic. I recently sent you a letter with a number of my Democratic colleagues on the Community Reinvestment Act, and I think the renewal of that act is very important. And I am concerned that the OCC has proposed a policy that will "only consider lowering component performance test ratings of a bank if evidence of discrimination or illegal credit practices directly relates to the institution's CRA lending activities."

The way I read that would mean that under the OCC's proposal, which I think is inappropriate, you could end up with a bank still getting a good CRA rating, even though they had discriminatory practices, but simply those discriminatory practices fell outside of its CRA lending processes. So my hope would be for those banks that fall under the Fed's review that we will not see a relaxing of those CRA standards.

Mr. POWELL. You have correctly stated what our policy is, and I have every reason to think that it will continue to be that. We am not looking to change it.

Senator WARNER. I would hope so, and I want to make sure we will follow up with additional letters and requests on that subject.

Thank you, Mr. Chairman.

Chairman CRAPO. Thank you.

Senator Van Hollen.

Senator VAN HOLLEN. Thank you, Mr. Chairman. Mr. Chairman, welcome. Good to have you here.

A couple questions that relate to the tax bill, because much has been said about that. Senator Toomey mentioned that it has resulted in increased investment. What I have seen is a huge whopping increase in stock buybacks. In fact, as of today, the number is $600 billion in stock buybacks. Those are corporations that have decided not to invest the money back into their workers or their

plant or their equipment, but give it to stockholders, which included, I should say, one-third of the stock holdings in this country are foreign stockholders. So it is a great windfall for the accounts of foreign stockholders.

Much has also been claimed about the economic impact. I am looking at the most recent projection that the Fed had for median long-term growth. As of your June 13th report, I see it is 1.8 percent, is that correct, for the current long-term growth median projection?

Mr. POWELL. Yes, it is.

Senator VAN HOLLEN. Are you aware of what the projection was a year ago before the tax bill was passed?

Mr. POWELL. I am going to say 1.8 percent.

Senator VAN HOLLEN. It was 1.8 percent. I mean, the reality is, despite all the hype around here, it is not really going to have an impact on our long-term growth. Surprisingly, a lot of us did think there was going to be a sugar high. When you dump $2 trillion into the economy, you would think there would be some sugar high, and maybe there will be some sugar high. But I was interested in an analysis that came out of the San Francisco Fed. I do not know if you saw it. Two economists there actually said that the 2017 tax law is likely to give maybe not even a sugar high. Have you had a chance to review that analysis?

Mr. POWELL. I have, and I would just say that, you know, there is a wide range of estimates of the effects of the recent fiscal changes, and, you know, they are talking about the possibility—I think their point was late in the cycle when you are near full employment, the effects might be less. You know, they might or they might not be. I think there is a lot of uncertainty.

One of the great things about the Fed is we get a range of views, which is a healthy thing.

Senator VAN HOLLEN. But it does stand to reason, right, that you would have a smaller impact late in a cycle? I mean, that is why most fiscal policy in this country over the years has said that we want to provide stimulus during the really tough times when a lot of people are out of work, but you do not necessarily want to provide stimulus sugar high when the economy is clicking on all cylinders. And I think that is the point these economists made, is we are actually in the ninth year of growth.

So when you are talking about some increase in real wages, not nearly what we want—I mean, that is over the 9-year period. Is that right?

Mr. POWELL. I am sorry. Your question?

Senator VAN HOLLEN. When you talk about some small uptick in real wages, that is over the period of recovery, right?

Mr. POWELL. I was really talking about nominal wages, and what I was talking about was if you look at 2012, 2013, 2014, all of our main wage things sort of were around 2 percent, measures around 2 percent. Now they are close to 3 percent. So it was not an overnight thing, overnight sensation. It was a gradual increase. But you have seen a meaningful increase.

Senator VAN HOLLEN. Right. And isn't a fact that real wage increases were higher during the last term of the Obama administration than during the Trump administration?

Mr. POWELL. I would really have to go back and look at that.

Senator VAN HOLLEN. I have the advantage, Mr. Chairman, of having your detailed Fed analysis and the Bureau of Labor Statistics. And what it shows is that, in fact, real wage increases were higher during the last term of the Obama administration. The point here really is not play make-believe, as we sometimes hear around here, that this tax bill somehow miraculously helped a lot of people out. The reality is, as we heard, real wages are pretty flat. I understood your testimony about oil price increases. We do not know how long they will be with us. But we also know that real wage increases were higher during the 4 years of the Obama administration than so far in the Trump administration with the tax cut and everything else.

So I hope that my colleagues will bring more of a discussion based—a reality-based discussion to this. The one thing we do know that tax bill did, the one thing we did know is it is going to add about $2 trillion to our national debt, a debt that will have to be paid off by everybody in this room and their kids and grandkids. And at the same time, the Fed projection shows no change in the long-term growth projections. So we just blew $2 trillion. A lot of it is already going to stock buybacks, and I just hope we will sort of end the happy talk about what this tax cut did.

Thank you.

Chairman CRAPO. Senator Heitkamp.

Senator HEITKAMP. Thank you, Mr. Chairman. And thank you, Chairman Powell, for once again coming before the Committee and being willing to answer our questions.

I want to just make a point about wages, and you do not need to comment on this. Almost 20 percent of the people in our country who are wage earners earn less than $12.50 an hour. I do not know how many of you think you can live on $12.50 an hour, but I think—given that you are working a 40-hour week. Thirty-two percent earn between $12.50 and $20 an hour. Twenty dollars an hour is just barely $40,000 a year. And the next 30 percent is $22 to $30, much of it heavily weighted on the light end. In fact, I have seen one survey that has told us that two-thirds of all wage earners in this country earn less than $20 an hour, hourly wage earners.

If you do not think that that presents economic challenges if that does not change, we are wrong. I think that there is optimism. Optimism is leading to taking on more consumer debt. I think we are seeing that. The response, and I think appropriate, that you have on interest rates is going to drive increased costs. We have targeted or linked the student loan rate to what you do, thereby exacerbating those people who are attempting to take that next leap forward. So I just want to make the point that where your job is to look at macro, we visit with people every day in our States who are struggling, struggling to make ends meet.

And I want to transition to the next place for me on North Dakota struggles, and that is trade. You know, I have been asking questions about trade for 2 years now. So if you look at the minutes of the Fed meeting, which I think Senator Toomey talked about, businesses across the country from steel and aluminum to farming have been telling Fed officials about plans to pull back

their investments in their business or offshore their business. We have now pork producers talking about moving their pork production offshore to basically avoid what has been happening in the pork industry.

These industries I think have good reason to be concerned. Economists across the spectrum, including economists in the private sector, Morgan Stanley and Goldman Sachs, European Central Bank, the IMF, they are all raising alarms with trade tensions looming.

So if the President's trade policies continue to result in escalating tariffs by our trading partners, I think this is going to have serious damage to the economy and, in particular, to producers and consumers in my State.

Now, just to give you a number, North Dakota is the ninth most dependent on imported steel. That surprises people, but you think about our base industry. What is one of the primary inputs in drilling and in moving oil? It is steel. What is one of the primary inputs in large equipment manufacturing? It is steel. And I have heard from my equipment manufacturers that what amount they got in tax savings has been gobbled up in the first 2 or 3 months of this fiscal year.

Then we are not even talking about farmers with the double whammy of getting hit with steel tariffs—they are large steel users—and seeing their commodity prices being challenged.

You offered a view last week that the President's trade war results in other countries actually lowering their trade barriers. Then that would be a positive outcome. I do not disagree. However, the historic and economic evidence suggests the opposite is likely to occur. In fact, if you look at efforts such as Smoot–Hawley—we can go all the way back there—we know and I believe history will tell you that it contributed significantly to the depth of the Great Depression. I do not say it causes it, but it certainly did not assist in early recovery.

So would you agree with former Chairman Ben Bernanke when he said in a 2007 speech on trade that restricting trade by imposing tariffs, quotas, or other barriers is exactly the wrong thing to do for the economy?

Mr. POWELL. I would, assuming you are talking about them remaining in place over a sustained period of time. Absolutely.

Senator HEITKAMP. Well, you know, I get a little frustrated by this short-term pain for long-term gain. I think that we are going to have long-term consequences in agriculture because I think we are going to have emerging markets in the competitive space that we have not before. We already see the Chinese are subsidizing their farmers to grow soybeans. We see that Brazil and Argentina are amping up their soybeans and, arguably, could be, in fact, buying American soybeans, marking them up and enjoying our market with the markup as we struggle.

So in that same speech, then-Chair Bernanke cites studies which show that the effects of protectionist policies almost invariably lead to lower productivity in U.S. firms and lower living standards for U.S. consumers. Is there any reason to believe that these studies are no longer valid?

Mr. POWELL. None that I know of.

Senator HEITKAMP. OK. Chair Powell, I make the point on Bernanke's comments and historic record because we cannot afford to put our head in the sand and ignore the facts about the impact of the Administration's trade policies on our economy. I think it is clear—I have been probably one of the most outspoken critics of the President's trade policy here, certainly on this side of the aisle. And if we want to improve trade, the right way to do it is to expand trade agreements, in my opinion, not impose reciprocal tariffs.

And so I am deeply concerned—and I know that at this point you are taking a watchful eye. But I am deeply concerned about the long-term ramifications of this so-called short-term policy. And certainly if we see the next tranche, the $200 billion, and then beyond that we see tariffs on automobiles, we will, in fact, be in a full-on, escalated, damaging trade war. And I do not know where that ends. And if this is a game of who blinks first, the best thing to do would be to get to the negotiating table.

Now—oh, I am over my time.

Chairman CRAPO. Yes.

Senator HEITKAMP. I am sorry. But I want to make the point that I am going to stay on this. I am going to stay on the macro effects of this trade policy, because this is not good for our economy, and we are going to look back at this time perhaps in a year and say that is the point at which we turned the corner and the economy started taking a downturn.

Chairman CRAPO. Senator Warren.

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

Before the financial crisis, banks loaded up on risky loans while regulators just looked the other way. And when those loans went bad, taxpayers were left holding the bag because big banks did not have enough capital to stay afloat.

Dodd–Frank included two major reforms to make sure that this never happens again: first, rules that make big banks meet higher capital standards so they are better equipped to handle losses; and, second, rules that make the banks take annual stress tests to ensure that they are not taking on too much risk.

But since you have taken over, Chairman Powell, the Fed has rolled back on both of these reforms, and I just want to explore what that means for our economy.

In April the Fed proposed an amendment that lowers the enhanced supplementary leverage ratio. That is the special capital requirement for the too-big-to-fail banks. The FDIC claims that this reform will allow the banks to maintain $121 billion less in capital, but the Fed disagrees with the FDIC's assessment. Why is that?

Mr. POWELL. We actually think that the effect of that proposed change which is under consideration—we are looking at the comments—would be pretty close to zero as it relates to the firm itself. And, also, we think—in other words, if you look at the entire entity, it would be less than $1 billion. I will not say zero, but I think our estimate was $400 million.

Senator WARREN. So you just think the FDIC's $121 billion estimate is made up?

Mr. POWELL. They are talking about the bank; whereas, we are talking about the whole firm. Within the whole firm, at the firm level——

Senator WARREN. But the banks we have to worry about are the banks that get bailed out here.

Mr. POWELL. Yeah, and the enhanced supplemental leverage ratio, the problem with this is that we do not want a leverage ratio to be the binding capital requirement because it actually calls upon—if you are bound by that, you are actually called upon to take more risk. So we would rather not have the bank bound by that.

Senator WARREN. So let us take a look at this in terms of trying to strengthen the banks so that we do not have to be in a position to bail them out. The second thing you have done is you have put a lot of stock in stress tests, and last week you called the stress tests "the most successful postcrisis innovation for bank regulation." But under your leadership, the Fed has weakened the stress test regime.

Here is one example. Results of this year's exercise recently became public and reportedly three banks—Goldman Sachs, State Street, and Morgan Stanley—had capital levels that were too low to pass the test. I wrote to you about these banks a few weeks ago, and I appreciate your response on this. But just to be clear, after they flunked, did you give those too-big-to-fail banks a failing grade?

Mr. POWELL. We gave them what we call a "conditional nonobject," which is something we have done——

Senator WARREN. OK, but that is not a failing grade, right? They did not flunk.

Mr. POWELL. They suffered the same penalty, which was to have to limit their distributions to the prior years.

Senator WARREN. Well, that is what I want to ask. If you did not flunk them, did you at least follow the Fed guidelines and make those banks submit new capital plans that would pass the test?

Mr. POWELL. No. In fact, when we do the conditional nonobject, we do not require them to resubmit——

Senator WARREN. So you do not require them to actually meet the criteria.

Mr. POWELL. In the many times we have used that tool over the years, we have not required that.

Senator WARREN. In other words, the Fed looked the other way. You let these banks off with what you call a conditional nonobjection, letting them distribute capital to their shareholders instead of keeping it on their books. In fact, because of your action, Morgan Stanley and Goldman Sachs investors took home about $5 billion more than they otherwise would have. That is nice gift to the bank, Mr. Chairman.

On top of that, the Fed also proposed a rule in April that would make the stress tests less severe, effectively reducing capital requirements at the eight largest banks by a total of about $54 billion, according to a Goldman Sachs analysis.

So, Chairman Powell, by your own account, the economy is doing well. We all know that bank profits are gigantic. The banks just got huge tax breaks. Three Fed Presidents—President Rosengren,

President Mester, and President Evans—have suggested it is an ideal time to raise capital requirements to strengthen the banks instead of siphoning off cash to shareholders. So why is the Fed under your leadership persistently seeking to reduce capital requirements and weaken stress tests?

Mr. POWELL. With respect, Senator, we are not doing either of those things. In fact, the stress test in 2018 was materially more stressful—the amount of the loss and the amount of required capital to pass the test was the highest by far of any test.

Senator WARREN. Look, I do not know what to say. The FDIC does not see it that way. Goldman Sachs does not see it that way. The data do not seem to back you up on this. The Fed's capital requirements and the stress test are like a belt and suspenders. You can loosen the belt and rely on the suspenders, or you can take off the suspenders and rely on the belt. But if you do both, your pants will fall down. And, Chairman Powell, we learned in 2008 that when the big banks' pants fall down, it is the American economy, American taxpayers, American workers who get stuck pulling them back up. So it looks like to me the Fed is headed in the wrong direction here.

Thank you, Mr. Chairman.

Chairman CRAPO. Senator Schatz.

Senator SCHATZ. Thank you, Mr. Chairman. Chairman Powell, thank you for your service, and thank you for being willing to engage. I understand the need for you to stay in your lane, so I am going to ask a question, and I want to have as constructive of an exchange as possible, knowing that some of this ground has been covered, and I do not want to turn this into a partisan conversation.

Banks are doing well. They had record-breaking profits in the years 2016 and 2017, and it looks like 2018 is going to be another gangbuster year. Across the board, banks increased their dividends by 17 percent in 2017, 12 percent in 2018. Community banks' earnings are also up. Household credit is up.

In April, after your speech to the Economic Club of Chicago, you said, and I quote, "As you look around the world, U.S. banks are competing very, very successfully. They are very profitable. They are earning good returns on capital. Their stock prices are doing well. So I am looking for the case for some kind of evidence that regulation is holding them back, and I am not really seeing that case as made at this point."

The data backs up your statement. Banks are the most profitable that they have ever been. So what is the motivation for weakening Dodd–Frank rules like the Volcker Rule?

Mr. POWELL. I think we want regulation to be as efficient as well as effective as it can possibly be. Regulation is not free. Regulation, good regulation, has very positive benefits—avoiding financial crises, avoiding consumer harm, and things like that. But nobody benefits when regulation is inefficient. And so we have taken the job, particularly for the smaller institutions going back and looking at everything we have done over the last decade, to make sure that we are doing it in the most efficient way possible. That is what we are doing. We want the strongest, toughest regulation to apply to the biggest banks, particularly the eight SIFIs. And then we want

to make sure that we have tailored appropriately as we move down into regionals and subregionals and then large community banks and then smaller ones.

Senator SCHATZ. OK. A fair answer. What would you say to someone back home who says, "Why would the Fed focus on this? Why would the Banking Committee focus on this? Why would the Federal legislative branch focus on making life easier for the banks given income inequality, given that these are literally the most profitable institutions in American history?" I get that it is always better to make things more efficient. It just seems like you have limited resources and we have limited political capital to spend on priorities for the Fed. What do I say to someone back home who says, "Why are you taking care of these guys who seem to be feeding at the trough pretty nicely?"

Mr. POWELL. I think you have to distinguish between different kinds of institutions. You know, I do not think that the smaller community banks are maybe feeling quite as healthy as you are saying. I think they are healthy. But I think, you know, we want them to be devoting their efforts to making loans and investing in their communities, supporting economic activities in communities, not——

Senator SCHATZ. But lending is up, right? And profitability is at least somewhat of a proxy for the efficiency of the regulations. I will not belabor this. I take your answer in good faith.

In a recent interview with Marketplace, you were asked what keeps you up at night. This is one of the things I enjoy about you, is you are frank in your responses while trying to stay in your lane. And you said, "We face some real longer-term challenges, again, associate with how fast the economy can grow and also how much the benefits of that growth can be spread through the population. I look at things like mobility. If you judge the United States against other similar well-off countries, we have relatively low mobility. So if you are born in the lower end of the income spectrum, your chances of making it to the top or even to the middle are actually lower than they are in other countries."

Understanding that the Fed cannot address these issue squarely, can you talk a little bit about income inequality and what ought to be done? And then my final question around income inequality is whether, to the extent that you have expressed this view, a tax cut that provides about $33,000 for individuals in the top 1 percent of earners and about 40 bucks to the poorest of the poor, whether or not that helps or hurts in terms of income inequality.

Mr. POWELL. There are a range of—the question I was answering in that interview and that you are really asking is really these are issues that the Fed does not have the tools or the mandate to fix, but they, nonetheless, involve significant longer-term economic challenges. So I just would—you know, I pointed out low mobility, which is the research of Raj Chetty, who is a professor back at Harvard now, and also just the stagnation of median incomes for a long time. And if you look at things like labor force participation among prime-age males, you have seen a decline over 60 years.

These are unhealthy trends in the U.S. economy that we do not have the tools to fix. You do. These are things for the legislature to work on. And, you know, it comes down to things that are easy

to say and hard to do, like improve education, deal with the opioid crisis, things like that. And I also think, you know, balanced regulation plays a role in this and in enabling capital to be allocated freely and people to move from job to job. All those things go into it. But these are long-run important issues, particularly—another one is the potential growth rate of the country, which looks like it has slowed down because of aging, really, and demographics and things like that.

So these are big issues. We cannot really affect them with monetary policy.

Senator SCHATZ. Thank you.

Chairman CRAPO. Senator Cortez Masto.

Senator CORTEZ MASTO. Thank you. Chairman Powell, thank you for being here, and thank you for also answering our questions. I appreciated your comments earlier in the introduction, and noting what you admitted that the aggregate numbers do look good.

But I also noted in your presentation that there is a quote that you say, and it is this: "And while three-fourths of whites responded in a recent Federal Reserve survey that they were doing at least OK financially" in 2017—"at least OK, only two-thirds of African Americans and Hispanics responded that way" when it comes to financially whether they were doing OK. And I think that is what this comes down to. It comes down to those individuals who are living out there who are struggling, how much money is in their pocket, how much it can pay for.

I notice you talked about the wages are up 0.27 percent, price index increased 2.3 percent. So in response to Senator Menendez's question about the steps that you were taking for broad-based wage growth, you answered several things. But let me ask you this: Is it your opinion that it is the Fed's responsibility or role to do something about wage growth, broad-based wage growth to play a role there?

Mr. POWELL. I think, you know, what you have assigned us is literally maximum employment and stable prices, and also financial stability, we have an overall responsibility for that. Maximum employment, the sense of that is it is not just one measure. It is a broad range of measures, and I think we have really—you know, we have worked hard to provide support for the labor markets.

Senator CORTEZ MASTO. And that would include wage growth then?

Mr. POWELL. It would. Wage growth comes into really both of those things. It comes into maximum employment. It also comes into inflation.

Senator CORTEZ MASTO. Good. I am glad you said that because here is the other thing that you said that concerned me, and you said one way to address and increase wage growth was incomes need to go up, and they only go up with higher productivity. And that is what you said needs to occur.

But let me ask you this, because I have looked at some of the economists and studied some of the reports in the last 30 years or so, and I know that was true probably from 1950 to the 1970s, that they were both going up together. But we also have studies that show from 1973 to 2016 it was just the opposite. They are divergent, that productivity went up by 73.7 percent, but the hourly pay

went up 12.5 percent, only 12.5 percent. That is 5.9 times more, more productivity than pay.

So knowing that, how can you say that we need to focus on higher productivity because that will also increase wages?

Mr. POWELL. So what I said was that over a long period of time, wages cannot go up sustainably without productivity also increasing. It is a different thing to say that higher productivity guarantees higher wages. I did not say that, and I do not think that is true. I know very well the charts you are talking about.

Senator CORTEZ MASTO. So then what tools—then what are you doing to address wage growth to ensure that we are increasing wages? Because here is what is happening—and you know this. If you are in your community—and I am hoping you are—and you are talking to people across America, you know that wages have been flat since 1973. That means that the people when I go home—and me and my family and Nevadans in general who are struggling, they do not have enough money to pay for housing costs, for health care, for education, for prescription drugs. And what do I tell them that you are doing to look out for their interests to help them and improve their lives with the tools that you have?

Mr. POWELL. The tool that we have is monetary policy, and we can and we have——

Senator CORTEZ MASTO. No, I appreciate that. Let me ask you this: Can you just put it in terms if you are talking to a constituent in my State to explain to them what you are doing—now, remember, Nevada was a place where we had the foreclosure crisis. People lost their homes, and they lost their jobs. We had 15 percent unemployment at one point in time, underwater in their homes. What would you say to those individuals that you are doing to ensure, one, it does not happen again and, two, improve the wage growth for them?

Mr. POWELL. We are doing everything we can with our tools to make sure that if you want a job, you can have one, and we are also——

Senator CORTEZ MASTO. But having a job and having a livable wage are two different things.

Mr. POWELL. Over the long term, we do not have those tools. You have those tools. Congress has the tools to assure stronger wage growth over time. We really do not have that with—we can move interest rates around to support activities, support hiring. We do not have the tools to support higher productivity, for example, which tends to lead to higher wages without guaranteeing them.

Senator CORTEZ MASTO. As an economist, you can work with us and tell us the tools or the things that can be done, like increasing the minimum wage, that might improve livable wages for individuals, correct?

Mr. POWELL. I would say principally over long periods of time investing in education and in skills are the single—that is the single best thing we can do to have a productive workforce and share prosperity widely, which is what we all want.

Senator CORTEZ MASTO. And I know my time is up, and I appreciate that. But I am concerned. Is that based on your own individual opinion, or is that research or data or information that you know that shows that?

Mr. POWELL. It is a lot of research.

Senator Cortez Masto. OK. Thank you.

Chairman CRAPO. Senator Donnelly.

Senator DONNELLY. Thank you, Mr. Chairman. And thank you, Mr. Chairman.

Mr. Powell, I am worried about farmers in my State. I checked about an hour ago. Soybean prices are $8.40 a bushel, well below the cost of production right now. Corn is $3.48 a bushel, well below the cost of production. In the last couple of weeks, I have visited with a number of Hoosier farmers and groups like the Indiana Corn and Soybean Alliance and the Indiana Farm Bureau to hear their growing concerns with falling commodity prices and uncertain trade policies, which are already harming Hoosier farmers in rural communities.

Let me tell you a conversation I had last Friday. It was with a businessman who is also a farmer, and he was telling me about he just bought 140 acres from another farmer. And he said, "Joe, I told the farmer, 'I do not want to buy this from you right now because I know you are struggling. And I know you do not want to sell this. And I do not want to take advantage of you.'"

And the farmer who was selling it said, "If I do not sell this, I could start losing everything else, and so you are actually helping me out." This is where our rural economy is going right now.

I have also heard from local businesses dealing with canceled orders because of the tariffs. The price of soybeans, as I mentioned, it is a 10-year low—a 10-year low—due largely to the Chinese tariffs on U.S. exports. This current policy, what I worry about is that it has already damaged foreign export markets that took decades and decades to build. And so what I am asking you is: What would be the long-term impact of falling commodity prices and reduced agriculture exports on rural communities, which are struggling in so many ways already?

Mr. POWELL. Well, I think we know it would be very bad, and we have seen periods in American history where that has happened, and it can be extremely tough on farmers and rural communities.

Senator DONNELLY. And if they lose the markets that they have developed—I was over in China talking to some of their defense leaders a few years ago about North Korea, and I was walking through the airport, and there was a group just by coincidence—it was a flight back home, the flight to Chicago and then go back home to Indiana. It was a group of Indiana soybean farmers who were traveling the country, developing the market. What happens to rural communities if China just looks up and says, you know, "we found more reliable suppliers"?

Mr. POWELL. As we discussed, it can be very tough.

Senator DONNELLY. So as Fed Chairman, what would you say to all those farmers who are really nervous, really concerned about what their future will be? They look to us for smart policies, for reasonable policies. Is there anything you can say about this trade war that is going on right now?

Mr. POWELL. I should again start by saying that it is really not the Fed's role. We do not do trade policy. That is Congress and the Administration.

But, you know, I think if the current process of negotiation back and forth results in lower tariffs, that would be a good thing for the economy. If it results in higher tariffs, then I think—you know, I hardly need to tell you what higher tariffs would do for agricultural producers. Agriculture is an area where we lead the world in productivity and we are great exporters, and, you know, you would be very hard hit by these tariffs.

Senator DONNELLY. If this goes on for a couple more years, what would be the impact on our rural communities?

Mr. POWELL. I think certainly it would be very tough on the rural communities and, you know, I think we would feel that at the national level, too.

Senator DONNELLY. Let me also ask you about opioids, which you have mentioned, and workforce participation. My State has been deeply impacted by the opioid crisis. Last summer, during one of her final appearances before Congress, I spoke with former Chair Janet Yellen about the opioid epidemic and its connection to not just health outcomes but also economic and employment outcomes, the impact of opioids on the labor participation rate, which has declined from 66 to 63 percent over the last decade. She agreed there was a connection and noted surveys suggest that many prime-age individuals who are not actively participating in the labor market are involved in prescription drug use.

You know, I look at these people we have lost, the next doctors, the next electricians, the next nurses. What do you see is the impact of the opioid epidemic on our workforce participation and, in general, the economy?

Mr. POWELL. You know, it is a terrible human tragedy for many communities, certainly for the individuals and their families involved. I think from an economic standpoint, some high percentage of the prime-age people who are not in the labor force, particularly prime-age males who are not in the labor force, are taking painkillers of some kind. I think the number that Alan Krueger, who is a professor, came up with is 44 percent of them. So it is a big number. It is having a terrible human tool on our communities, and also it matters a lot for labor force participation and economic activity in our country.

Senator DONNELLY. Thank you.

Thank you, Mr. Chairman.

Chairman CRAPO. Thank you, Senator Donnelly.

That concludes the questioning, but Senator Brown wants——

Senator BROWN. Thirty seconds, Mr. Chairman. Thank you. A number of colleagues have talked about productivity and nonsupervisory pay, that pay has gone up 27 percent and—I am sorry, 2.7 percent, but it is important—from June to June, I think, was what one of my colleagues said. But it is important to recognize that CPI has gone up 3 percent in that period. So we should really never talk about nominal pay. We should talk about real dollar pay.

Thank you, Mr. Chairman.

Chairman CRAPO. Understood. All right. Thank you. And thank you, Mr. Chairman, again for being here. We appreciate your work and also your taking the time to come here and respond to our questions.

For Senators wishing to submit questions for the record, those questions are due in 1 week, on Tuesday, July 24th, and, Chairman Powell, we ask that you respond as promptly as you can to the questions that may come in.

Again, we thank you for being here. This is very good timing. We have got a vote underway right now, so we appreciate you helping to steer this hearing to a good conclusion.

With that, the hearing is adjourned.

Mr. POWELL. Thank you.

[Whereupon, at 11:53 a.m., the hearing was adjourned.]

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

PREPARED STATEMENT OF CHAIRMAN MIKE CRAPO

Today, we welcome Chairman Powell back to the Committee for the Federal Reserve's Semiannual Monetary Policy Report to Congress.

This hearing provides the Committee an opportunity to explore the current state of the U.S. economy, and the Fed's implementation of monetary policy and supervision and regulation activities.

Since our last Humphrey–Hawkins hearing in March, Congress passed, with significant bipartisan support, and the President signed into law, S. 2155, the Economic Growth, Regulatory Relief, and Consumer Protection Act.

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

A key provision of the bill provides immediate relief from enhanced prudential standards to banks with $100 billion in total assets or less.

The bill also authorizes the Fed to provide immediate relief from enhanced prudential standards to banks with between $100 billion and $250 billion in assets.

It is my hope that the Fed promptly provides relief to those within those thresholds.

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

And, the banking regulators are already considering this bill in some of their statements and rulemakings.

Earlier this month, the Fed, FDIC and OCC issued a joint statement outlining rules and reporting requirements immediately impacted by the bill, including a separate letter issued by the Fed that was particularly focused on those impacting smaller, less complex banks.

But, there is still much work to do on the bill's implementation.

As the Fed and other agencies revisit past rules and develop new rules in conjunction with the bill, it is my expectation that such rules be developed consistent with the purpose of the bill and intent of the members of Congress who voted for the bill.

With respect to monetary policy, the Fed continues to monitor and respond to market developments and economic conditions.

In recent comments at a European Central Bank Forum on Central Banking, Chairman Powell described the state of the U.S. economy, saying, "Today, most Americans who want jobs can find them. High demand for workers should support wage growth and labor force participation . . . Looking ahead, the job market is likely to strengthen further. Real gross domestic product in the United States is now reported to have risen 2.75 percent over the past four quarters, well above most estimates of its long-run trend . . . Many forecasters expect the unemployment rate to fall into the mid-3s and to remain there for an extended period."

According to the FOMC's June meeting minutes, the FOMC meeting participants agreed that the labor market has continued to strengthen and economic activity has been rising at a solid rate.

Additionally, job gains have been strong and inflation has moved closer to the 2 percent target.

The Fed also noted that the recently passed tax reform legislation has contributed to these favorable economic factors.

I am encouraged by these recent economic developments, and look forward to seeing our bill's meaningful contribution to the prosperity of consumers and households.

As economic conditions continue to improve, the Fed faces critical decisions with respect to the level and trajectory of short-term interest rates and the size of its balance sheet.

I look forward to hearing more from Chairman Powell about the Fed's monetary policy outlook and the ongoing effort to review, improve and tailor regulations consistent with the Economic Growth, Regulatory Relief and Consumer Protection Act.

PREPARED STATEMENT OF SENATOR SHERROD BROWN

Thank you, Mr. Chairman. This week, the President went overseas, and sided with President Putin while denigrating critical American institutions, including the press, the intelligence community, and the rule of law.

Our colleague Senator John McCain expressed clearly what every patriotic American thought, "No prior president has ever abased himself more abjectly before a tyrant. Not only did President Trump fail to speak the truth about an adversary; but speaking for America to the world, our president failed to defend all that makes us

who we are—a republic of free people dedicated to the cause of liberty at home and abroad. American presidents must be the champions of that cause if it is to succeed."

With our democratic institutions under threat, we cannot ignore what happened in Helsinki yesterday. But we must not lose sight of the other policies of this Administration—including the rollback of the rules put in place to prevent the next economic crisis.

Mr. Powell, thank you for appearing before the Committee to discuss these policies.

Just last week, a Federal Reserve official said, "There are definitely downside risks, but the strength of the economy is really pretty important at the moment. The fundamentals for the U.S. economy are very strong."

That may be true for Wall Street, but for most of America workers haven't seen a real raise in years, young Americans drowning in student loan debt, families trying to buy their first home—the strength of the economy is an open question at best.

Last month, former Fed Chair Ben Bernanke was very clear about the long-term impact of the tax cut and the recent bump in Federal spending when he said, "in 2020 Wile E. Coyote is going to go off the cliff."

Last week, the San Francisco Fed released a study finding that the rosy forecasts of the tax bill are likely "overly optimistic." It found that the bill's boost to growth is likely to be well below projections—or as small as zero. It also suggested that these policies could make it difficult to respond to future economic downturns and manage growing Federal debt.

And it's not just the tax bill—the economic recovery hasn't been evenly felt across the country, either. Mr. Chair, I'd like to enter into the record an article from the *New York Times* this weekend which talks about those families still struggling from the lack of meaningful raises and other job opportunities.

While hours have increased a bit over the past year for workers as a whole, real hourly earnings have not.[1] And for production and nonsupervisory workers, hours are flat and pay has actually dropped slightly, according to the Bureau of Labor Statistics.

The number of jobs created in 2017 was smaller than in each of the previous 4 years. Some of the very companies that announced billions in buybacks and dividends are now announcing layoffs, shutting down factories, and offshoring more jobs.

Some of the biggest buybacks are in the banking industry, assisted in part by the Federal Reserve's increasingly lax approach to financial oversight.

Earlier this month, as part of the annual stress tests, the Fed allowed the seven largest banks to redirect $96 billion to dividends and buybacks. This money might have been used to pay workers, reduce fees for consumers, protect taxpayers from bailouts, or be deployed to help American businesses.

Three banks—Goldman Sachs, Morgan Stanley, and State Street—all had capital below the amount required to pass the stress tests, but the Fed gave them passing grades anyway.

The Fed wants to make the tests easier next year. And Vice Chair Quarles has suggested he wants to give bankers more leeway to comment on the tests before they're administered—that's like letting the students help write the exam.

The Fed is considering dropping the qualitative portion of the stress tests all together—even though banks like Deutsche Bank, Santander, Citigroup, HSBC, and RBS have failed on qualitative grounds before.

That doesn't even include the changes the Fed is working on after Congress passed S. 2155 to weaken Dodd–Frank, making company-run stress tests for the largest banks "periodic" instead of annual, and exempting more banks from stress tests altogether.

Vice Chair Quarles has also made it clear that massive foreign banks can expect goodies, too.

And on and on and on it goes. The regulators are loosening rules around big bank capital, dismantling the CFPB, ignoring the role of the FSOC, undermining the Volcker Rule, and weakening the Community Reinvestment Act.

When banks are making record profits, we should be preparing the financial system for the next crisis, building up capital, investing in workers, and combating asset bubbles.

And we should be turning our attention to bigger issues that don't get enough attention, like how the value placed on work has declined in this country, and how our economy increasingly measures success only in quarterly earnings reports.

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[1] *https://www.bls.gov/news.release/realer.nr0.htm*

Much of that is up to Congress to address, but over the last 6 months, I have only seen the Fed moving in the direction of making it easier for financial institutions to cut corners, and I have only become more worried about our preparedness for the next crisis.

I look forward to your testimony. Thank you.

PREPARED STATEMENT OF JEROME H. POWELL

CHAIR, BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM

JULY 17, 2018

Good morning. Chairman Crapo, Ranking Member Brown, 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 the Congress has set for monetary policy—maximum employment and price stability. We also support clear and open communication about the policies we undertake to achieve these goals. We owe you, and the public in general, clear explanations of what we are doing and why we are doing it. Monetary policy affects everyone and should be a mystery to no one. For the past 3 years, we have been gradually returning interest rates and the Fed's securities holdings to more normal levels as the economy strengthens. We believe this is the best way we can help set conditions in which Americans who want a job can find one, and that inflation remains low and stable.

I will review the current economic situation and outlook and then turn to monetary policy.

Current Economic Situation and Outlook

Since I last testified here in February, the job market has continued to strengthen and inflation has moved up. In the most recent data, inflation was a little above 2 percent, the level that the Federal Open Market Committee, or FOMC, thinks will best achieve our price stability and employment objectives over the longer run. The latest figure was boosted by a significant increase in gasoline and other energy prices.

An average of 215,000 net new jobs were created each month in the first half of this year. That number is somewhat higher than the monthly average for 2017. It is also a good deal higher than the average number of people who enter the work force each month on net. The unemployment rate edged down 0.1 percentage point over the first half of the year to 4.0 percent in June, near the lowest level of the past two decades. In addition, the share of the population that either has a job or has looked for one in the past month—the labor force participation rate—has not changed much since late 2013. This development is another sign of labor market strength. Part of what has kept the participation rate stable is that more working-age people have started looking for a job, which has helped make up for the large number of baby boomers who are retiring and leaving the labor force.

Another piece of good news is that the robust conditions in the labor market are being felt by many different groups. For example, the unemployment rates for African Americans and Hispanics have fallen sharply over the past few years and are now near their lowest levels since the Bureau of Labor Statistics began reporting data for these groups in 1972. Groups with higher unemployment rates have tended to benefit the most as the job market has strengthened. But jobless rates for these groups are still higher than those for whites. And while three-fourths of whites responded in a recent Federal Reserve survey that they were doing at least okay financially in 2017, only two-thirds of African Americans and Hispanics responded that way.

Incoming data show that, alongside the strong job market, the U.S. economy has grown at a solid pace so far this year. The value of goods and services produced in the economy—or gross domestic product—rose at a moderate annual rate of 2 percent in the first quarter after adjusting for inflation. However, the latest data suggest that economic growth in the second quarter was considerably stronger than in the first. The solid pace of growth so far this year is based on several factors. Robust job gains, rising after-tax incomes, and optimism among households have lifted consumer spending in recent months. Investment by businesses has continued to grow at a healthy rate. Good economic performance in other countries has supported U.S. exports and manufacturing. And while housing construction has not increased this year, it is up noticeably from where it stood a few years ago.

I will turn now to inflation. After several years in which inflation ran below our 2 percent objective, the recent data are encouraging. The price index for personal consumption expenditures, which is an overall measure of prices paid by consumers,

increased 2.3 percent over the 12 months ending in May. That number is up from 1.5 percent a year ago. Overall inflation increased partly because of higher oil prices, which caused a sharp rise in gasoline and other energy prices paid by consumers. Because energy prices move up and down a great deal, we also look at core inflation. Core inflation excludes energy and food prices and generally is a better indicator of future overall inflation. Core inflation was 2.0 percent for the 12 months ending in May, compared with 1.5 percent a year ago. We will continue to keep a close eye on inflation with the goal of keeping it near 2 percent.

Looking ahead, my colleagues on the FOMC and I expect that, with appropriate monetary policy, the job market will remain strong and inflation will stay near 2 percent over the next several years. This judgment reflects several factors. First, interest rates, and financial conditions more broadly, remain favorable to growth. Second, our financial system is much stronger than before the crisis and is in a good position to meet the credit needs of households and businesses. Third, Federal tax and spending policies likely will continue to support the expansion. And, fourth, the outlook for economic growth abroad remains solid despite greater uncertainties in several parts of the world. What I have just described is what we see as the most likely path for the economy. Of course, the economic outcomes we experience often turn out to be a good deal stronger or weaker than our best forecast. For example, it is difficult to predict the ultimate outcome of current discussions over trade policy as well as the size and timing of the economic effects of the recent changes in fiscal policy. Overall, we see the risk of the economy unexpectedly weakening as roughly balanced with the possibility of the economy growing faster than we currently anticipate.

Monetary Policy

Over the first half of 2018 the FOMC has continued to gradually reduce monetary policy accommodation. In other words, we have continued to dial back the extra boost that was needed to help the economy recover from the financial crisis and recession. Specifically, we raised the target range for the Federal funds rate by ¼ percentage point at both our March and June meetings, bringing the target to its current range of 1¾ to 2 percent. In addition, last October we started gradually reducing the Federal Reserve's holdings of Treasury and mortgage-backed securities. That process has been running smoothly. Our policies reflect the strong performance of the economy and are intended to help make sure that this trend continues. The payment of interest on balances held by banks in their accounts at the Federal Reserve has played a key role in carrying out these policies, as the current *Monetary Policy Report* explains. Payment of interest on these balances is our principal tool for keeping the Federal funds rate in the FOMC's target range. This tool has made it possible for us to gradually return interest rates to a more normal level without disrupting financial markets and the economy.

As I mentioned, after many years of running below our longer-run objective of 2 percent, inflation has recently moved close to that level. Our challenge will be to keep it there. Many factors affect inflation—some temporary and others longer lasting. Inflation will at times be above 2 percent and at other times below. We say that the 2 percent objective is "symmetric" because the FOMC would be concerned if inflation were running persistently above or below our objective.

The unemployment rate is low and expected to fall further. Americans who want jobs have a good chance of finding them. Moreover, wages are growing a little faster than they did a few years ago. That said, they still are not rising as fast as in the years before the crisis. One explanation could be that productivity growth has been low in recent years. On a brighter note, moderate wage growth also tells us that the job market is not causing high inflation.

With a strong job market, inflation close to our objective, and the risks to the outlook roughly balanced, the FOMC believes that—for now—the best way forward is to keep gradually raising the Federal funds rate. We are aware that, on the one hand, raising interest rates too slowly may lead to high inflation or financial market excesses. On the other hand, if we raise rates too rapidly, the economy could weaken and inflation could run persistently below our objective. The Committee will continue to weigh a wide range of relevant information when deciding what monetary policy will be appropriate. As always, our actions will depend on the economic outlook, which may change as we receive new data.

For guideposts on appropriate policy, the FOMC routinely looks at monetary policy rules that recommend a level for the Federal funds rate based on the current rates of inflation and unemployment. The July *Monetary Policy Report* gives an update on monetary policy rules and their role in our policy discussions. I continue to find these rules helpful, although using them requires careful judgment.

Thank you. I will now be happy to take your questions.

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

Q.1. In response to questions at your confirmation hearing on Federal Reserve efforts to increase diversity in the System, you said, "I assure you that diversity will remain a high priority objective for the Federal Reserve. Reserve banks, working closely with the Board, have also been looking at ways to further develop a diverse pool of talent in a thoughtful, strategic fashion, readying them for leadership roles through the Federal Reserve System."

Since you have become chair, what specific steps have you taken to encourage more diversity in the Federal Reserve System?

A.1. The Federal Reserve System (System) needs people with a variety of personal and professional backgrounds to be fully effective in discharging its responsibilities, and we have observed that better decisions are made when there are many different perspectives represented around the table. Since 2016, my colleagues and I on the Federal Reserve Board (Board) have implemented a framework to better understand and discuss a range of Board and System efforts that address diversity and inclusion as well as research on economic inclusion and economic disparities in the economy. Since becoming the Chairman in February, I have worked with Board staff to refresh the framework and prioritize our focus on diversity and economic inclusion initiatives both at the Board and elsewhere in the System and have ongoing discussions with staff, including the Board's Office of Minority and Women Inclusion (OMWI) Director, on ways to support various efforts.

I continue to stress to Federal Reserve leaders and staff the importance of having a diverse workforce and providing an inclusive work environment to our people. System leaders have fostered a range of diversity and inclusion initiatives, including the development of leadership pipelines and ongoing engagements with our own staff and with the financial services, economic, and academic communities more broadly. Of the various efforts, I would like to highlight the following:

- The System launched a leadership development initiative to provide a structured way to share information about our talent pool and to find opportunities throughout the System to more rapidly grow our talent and prepare them to take on expanded roles.
- Through the Financial Services Pipeline Initiative,[1] the Federal Reserve Bank of Chicago is working to increase the representation of people of color in the financial services industry in the Chicago region. Over the last several months, the Reserve Bank of Chicago has hosted events designed to develop leadership skills for high-performing people of color.
- Researchers throughout the System continue to produce cutting-edge research on how and why disparities exist for different demographic groups in their experiences in employment, education, and health, and in the housing and credit markets. In addition, seminars and panels about diversity and inclusion

[1] For more information about the Financial Services Pipeline initiative, go to: *https://www.fspchicago.org/*.

topics are being fostered by local leadership and employee resource networks and are shared across the System.

- Through the Opportunity & Inclusive Growth Institute,[2] the Reserve Bank of Minneapolis is conducting research on structural barriers that limit full participation in economic opportunity and advancement in the country. The Institute looks beyond aggregate economic indicators in order to examine how national policies impact diverse communities of people within the U.S. economy.
- The Board cosponsored a Gender and Career Progression[3] conference with the European Central Bank and the Bank of England in May of this year. There were about 140 people in attendance, including participants from central banks, academia, think tanks, private industry, as well as a number of local students. The topics and papers from the conference focused on gender diversity in economics, finance, and central banking, including gender-based discrimination, the benefits of increased diversity, the role of culture, and the approaches that could be used to improve gender diversity. We continue to explore ways to leverage the knowledge gained from this event for the Board, the System, and the broader economic community. The Board subsequently held a panel discussion for its employees sharing key insights from the conference.
- Throughout the System, we continue to increase our outreach to local universities, with a particular focus on outreach to under-represented groups. The Board will soon be hosting Exploring Careers in Economics,[4] an event for high school and college students, in October. Organized to broaden awareness of careers in economics and to further develop a diverse pool of talent interested in the field, Exploring Careers in Economics will offer students a chance to learn about and discuss opportunities in economics generally, and learn about mentoring opportunities, resources, and career opportunities within the System. The agenda includes a discussion of why inclusion and diversity matter for economics. In addition to welcoming students to the Board in Washington, students from around the country will participate in this event via webcast.
- The Board's OMWI Office, in collaboration with the OMWI Directors from the Office of the Comptroller of the Currency (OCC), Federal Deposit Insurance Corporation (FDIC), National Credit Union Administration (NCUA), and Consumer Financial Protection Bureau (CFPB) (collectively, the Agencies), hosted a Diversity and Inclusion Summit (Summit) on September 13 at the Federal Reserve Bank of New York for the institutions regulated by each regulatory agency. The primary purpose of the Summit was for the Agencies' OMW is to provide feedback on submissions received from regulated entities responding to the questionnaire developed through the Policy

[2] For more information about the Opportunity & Inclusive Growth Institute, go to: *https://www.minneapolisfed.org/institute.*

[3] The conference program and discussion materials are available on the Bank of England's website at: *https://www.bankofengland.co.uk/events/2018/may/gender-and-career-progression.*

[4] For more information about the Exploring Careers in Economics event, go to *https://www.federalreserve.gov/newsevents/pressreleases/other20180823a.htm.*

Standards for Assessing Diversity Policies and Practices pursuant to section 342 of the Dodd–Frank Wall Street Reform and Consumer Protection Act (Dodd–Frank Act). Additionally, an important aspect of the Summit was the dialogue and insights between representatives from the regulated entities and the OMWI Directors on leading diversity practices.

Q.2. In your role as the head of the Reserve Bank Affairs Committee and now as Chair of the Board of Governors of the Federal Reserve System, did you ever ask the search committees in Atlanta, Richmond, or New York for a lists of candidates under consideration? At any point did you urge the search committees at any of the Banks to broaden their searches to include more women or minority candidates?

A.2. As the Chair of the Reserve Bank Affairs Committee, I had worked closely with the search committees to ensure a strong and transparent process that identifies a broad and diverse slate of qualified candidates for president searches. Now as Chairman of the Board, I continue to work closely with my colleague Lael Brainard, Chair of the Reserve Bank Affairs Committee, to exercise the Board's oversight responsibility and stress the importance of conducting a broad search throughout the search process. We also recognize that the appointment of a president is, as a legal matter, a responsibility of the Class Band Class C directors.

During the recent Reserve Bank president searches, the search committees proactively sought out candidates from a variety of sources. The search committees have also carried out extensive outreach programs intended to solicit input and candidate recommendations from a range of constituencies across the districts. These engagement efforts were done with the goal of having as broad and diverse of candidate pools as possible for the searches. Throughout the search process, the chair of the search committee typically provides status updates, including information about the candidate pools, and discusses potential candidates with the Chair of the Reserve Bank Affairs Committee.

Q.3. What is your role, directly and indirectly, in the San Francisco Federal Reserve Bank's search to select its next President?

A.3. The San Francisco Fed announced the appointment of Mary Daly as its new president on September 14. As Chairman of the Board, I stayed abreast of the search through the Chair of the Reserve Bank Affairs Committee. When the search committee settled on the finalist, my colleagues and I at the Board interviewed Ms. Daly. Upon final approval by all Class B and Class C directors of the Federal Reserve Bank of San Francisco, my colleagues and I at the Board voted on the Bank board's request for approval of the appointment of Ms. Daly as the new president for the Reserve Bank.

Q.4. Recently proposed legislation would override the Securities and Exchange Commission's (SEC) 2014 reforms to money market funds. Specifically, that legislation would permit sponsors of money market funds that satisfy certain conditions to utilize a stable net asset value, or NAV. In addition, the proposal would exempt those funds from the liquidity fee requirements in the SEC's rules.

As you know, the SEC's 2014 reforms require institutional money market funds investing in corporate or municipal debt securities to use a floating NAV and provide nongovernment money market fund boards with new tools—liquidity fees and redemption gates—to prevent runs. Those mechanisms are intended to prevent runs on money market funds and the freezing of the short-term liquidity market that occurred during the financial crisis.

Nellie Liang, who served for 11 years in senior roles at the Federal Reserve in the Division of Financial Stability and the Division of Research and Statistics, recently wrote an article titled, "Why Congress shouldn't roll back the SEC's money market rules" (attached).

Ms. Liang's article explains the market dislocation that occurred during the crisis that led to the SEC's implementation of the 2014 reforms. Ms. Liang highlights several important improvements to the structure of money funds, explaining that during the crisis "there was no doubt that the structure of prime MMF's amplified losses and spread problems to many companies when their investors ran." She concludes that the "post crisis rules aim not only to prevent a repeat of the last crisis but to reduce the probability and costs of the next one," and that, "reverting to precrisis rules would risk a return to high levels of private short-term liabilities and another destabilizing run on money market funds, and threaten stability in the financial system and the economy as a whole".

Do you agree with Ms. Liang's concerns that reverting to precrisis rules could create vulnerabilities in the stability of the financial system?

A.4. Susceptibility of money market funds (MMFs) to runs was a significant vulnerability and flashpoint in the U.S. financial system during the financial crisis and afterwards. The run on MMFs in September 2008 destabilized wholesale funding markets used by banks, dealers, nonfinancial firms, and municipalities for short-term financing. The Securities and Exchange Commission's (SEC) reforms were designed to mitigate these risks. In part due to these regulatory changes, funding markets have undergone significant shifts; while markets have largely adjusted to these shifts, considering additional changes at this moment would likely be unhelpful to the funding markets.

Q.5. In your testimony, you noted that the banking industry is well-capitalized. Recent research from the Fed system suggests that large banks may hold less capital than is optimal in terms of balancing the cost of another financial crisis with any incremental increase in bank lending rates.[5]

[5] Former Fed Chair Yellen cited research noting that "research points to benefits from capital requirements in excess of those adopted." See remarks by Chair Janet L. Yellen. "Financial Stability a Decade After the Onset of the Crisis". Speech at the "Fostering a Dynamic Global Recovery" Symposium Sponsored by the Federal Reserve Bank of Kansas City, Jackson Hole, Wyoming, August 25, 2017. Available at: *https://www.federalreserve.gov/newsevents/speech/yellen20170825a.htm*; Firestone, Simon, Amy Lorenc, and Ben Ranish, "An Empirical Economic Assessment of the Costs and Benefits of Bank Capital in the U.S.", Board of Governors of the Federal Reserve System, 2017. Available at: *https://www.federalreserve.gov/econres/feds/files/2017034pap.pdf*; Federal Reserve Bank of Minneapolis, "The Minneapolis Plan To End Too Big To Fail", December 2017. Available at: *https://www.minneapolisfed.org/-/media/files/publications/studies/endingtbtf/the-minneapolis-plan/the-minneapolis-plan-to-end-too-big-to-fail-final.pdf?la=en.*

What do you think of this research? Do G–SIBs need to hold additional capital?

A.5. Maintaining the safety and soundness of the largest U.S. banks is critical to maintaining the stability of the U.S. financial system and the broader economy. These firms must be well-capitalized in order to be considered safe and sound. Accordingly, the U.S. banking agencies have substantially strengthened regulatory capital requirements for large banking firms, thereby improving the quality and increasing the amount of capital in the banking system. From before the crisis to today, large U.S. banking firms have roughly doubled their capital positions, making them significantly more resilient, as well as able to support lending and financial intermediation in times of financial stress.

Firestone et al., the staff working paper that you cite, analyzes aggregate capital levels across the U.S. banking sector and does not address targeted capital requirements that apply to specific banks. A firm identified as a global systematically important bank (G–SIB) is currently subject to more stringent capital requirements than those required of other, less systemic firms.

Under the Federal Reserve's final G–SIB surcharge rule, a G–SIB is required to hold an additional amount of risk-based capital that is calibrated to its overall systemic risk as well as an additional supplementary leverage ratio buffer of 2 percent above the 3 percent minimum in order to avoid restrictions on distributions and certain discretionary bonus payments. G–SIBs, together with certain other large banks, also are subject to annual examination of capital planning practices through the Federal Reserve's Comprehensive Capital Analysis and Review (CCAR) and to a supervisory stress test. Finally, G–SIBs are required to maintain minimum levels of unsecured, long-term debt and total loss-absorbing capacity (TLAC), which is made up of both capital and long-term debt, in order to further help reduce the systemic impact of the failure of a G–SIB. The purpose of these more stringent requirements is to increase a G–SIB's resiliency in light of the greater threat it poses to U.S. financial stability. This capital regulatory framework is designed to ensure that G–SIBs, as well as the banking industry as a whole, maintain strong capital positions.

Q.6. When asked at the July 17 hearing about your plans to implement S. 2155, you said it is your intention "implement the bill as quickly as we possibly can." Does that mean you are going to move to the rulemakings and implementation of S. 2155 before you finish the remaining unfinished rulemakings required by the Wall Street Reform and Consumer Protection Act enacted 8 years ago?

A.6. Many of Economic Growth, Regulatory Relief, and Consumer Protection Act's (EGRRCPA) changes require amendments to existing rules. The Board is working expeditiously on these rulemakings and plans to solicit public comment on the proposed rule changes. EGRRCPA includes a number of statutory deadlines for implementing certain sections of the law. It is our intention to prioritize rulemakings with statutory deadlines in order to ensure that the Board's rules are compliant with the law in the timeframe mandated by Congress.

The Board has implemented the majority of its assigned provisions from the Dodd–Frank Act. Sections of EGRRCPA, along with the remaining unimplemented sections of the Dodd–Frank Act, which do not have statutory deadlines, may take longer to complete.

Q.7. Does the Fed view any provisions in S. 2155 as providing a statutory requirement to revisit or recalibrate the enhanced prudential standards applicable to bank holding companies with more than $250 billion in total consolidated assets?

A.7. One of the fundamental lessons from the financial crisis was that the largest, most interconnected financial firms needed to maintain substantially more capital, take substantially less liquidity risk, and face an effective orderly resolution regime if they fail. Firms with assets of $250 billion or more can present a range of safety and soundness and financial stability concerns. Therefore, the Board has tailored, and will continue to tailor, as appropriate, our regulations to the risk profiles of the firms subject to those regulations.

In light of EGRRCPA's amendments, and consistent with the Board's ongoing refinement and evaluation of its supervisory program, the Board is evaluating whether any changes to the enhanced prudential standards applicable to bank holding companies with more than $250 billion in total consolidated assets are appropriate. In doing so, the Board will consider individual firms' capital structure, riskiness, complexity, financial activities (including the financial activities of their subsidiaries), size, and any other risk-related factors that the Board deems appropriate, as provided in EGRRCPA.

Q.8. Either pursuant to S. 2155 or pursuant to other authority conferred to the Fed, does the Board intend to alter the threshold at which foreign banking organizations must establish a U.S. Intermediate Holding Company? Does the Fed intend to provide any regulatory relief to foreign banking organizations that have more than $50 billion in domestic assets? If so, what regulatory relief is the Fed planning to propose?

A.8. Pursuant to the Board's regulations, foreign bank organizations (FBOs) with global assets of at least $100 billion and U.S. nonbranch assets of at least $50 billion are required to establish or designate a U.S. intermediate holding company (IHC). In our supervisory experience, the requirement to establish an IHC has worked effectively, providing for appropriate application of capital, liquidity, and other prudential requirements across the U.S. nonbranch operations of the FBO, as well as a single nexus for risk management of those U.S. nonbranch operations. The Board presently sees no reason to modify this threshold. We continue to review our regulatory framework to improve the manner in which we deal with the particular risks of FBOs in light of the distinct characteristics of such institutions.

Q.9. Does the Fed have any economic evidence suggesting that the recently enacted tax bill, S. 2155, or any deregulation finalized by regulators since 2017 has benefited the overall economy through increased lending?

A.9. Economic conditions remain strong. Gross domestic product growth thus far this year is estimated to have averaged a little above 3 percent at an annual rate. Households and businesses have been able to obtain the financing needed to support this growth. Financial institutions are well-positioned to meet the needs of borrowers. However, it is too early to determine the economic effects of the tax bill or recently implemented changes in regulation. Generally speaking, it is difficult to isolate the effects of such changes given the myriad factors influencing the economy.

Q.10. Does the Fed intend to revisit the calculation of the G–SIB surcharge? If so, when and in what ways?

A.10. The Board's capital rules have been designed to reduce significantly 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 G–SIB surcharge so that—given the circumstances of the financial system—each G–SIB 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- G–SIB.

The bulk of the postcrisis regulation is largely complete, with the 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 is conducting a comprehensive review of the regulations in the core areas of postcrisis 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.

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 leverage ratio. Work is underway to finalize the calibration of these fundamental building blocks, all of which form part of the system in which the G–SIB surcharge has an effect. In this regard, I would note that the G–SIB surcharge rule does not take full effect until January 2019.

Q.11. When does the Fed intend to finalize a 2016 proposed rulemaking related to bank holding companies' allowable activities in physical commodities markets?

A.11. The Board undertook a review of the physical commodities activities of financial holding companies after a substantial increase in these activities during the financial crisis. In January 2014, the Board invited public comment on a range of issues related to these activities through an advance notice of proposed rule-

making. In response, the Board received a large number of comments from a variety of perspectives.

The Board considered those comments in developing the proposed rulemaking that was issued in September 2016. The proposed rulemaking would address the potential catastrophic, legal, and reputational risks of financial holding companies' (FHC) physical commodities activities by applying additional risk-based capital requirements to some of these activities; tightening some of the existing limitations on physical commodities trading by FHCs; and establishing new reporting requirements for physical commodities holdings and activities of FHCs. Under the proposal, FHCs would be permitted to continue to engage in a number of physical commodities trading activities with end users subject to new limits on physical commodities trading activities.

After providing an extended comment period (150 days) to allow comm enters time to understand and address the important and complex issues raised by the proposal, the Board again received a large number of comments from a variety of perspectives, including Members of Congress, academics, users and producers of physical commodities, and banking organizations. The Board continues to consider the proposal in light of the many comments received.

Q.12. At the July 17 hearing, when asked when the Fed will finalize the rulemaking required under Dodd–Frank related to incentive-based compensation at large bank holding companies, you stated that the interagency regulators have been unable to reach consensus and that the Fed has accomplished some of the goals of the rulemaking through the supervisory process.

Please provide specific examples.

A.12. Section 956 of the Dodd–Frank Act[5] prohibits incentive-based compensation arrangements that encourage inappropriate risks. Federal Reserve staff have worked with firms in the implementation of the 2010 Federal Banking Agency Guidance on Sound Incentive Compensation Policies,[6] a core principle of which is that incentive compensation should appropriately balance risk and reward. In so doing, Federal Reserve staff have observed improvement in incentive compensation practices in the following areas:

- Risk adjustment: Firms have increasingly begun adjusting compensation to more appropriately take into account the risk an employee's activities may pose to the organization, including through use of deferral and forfeiture features in compensation arrangements. Firms also have increasingly focused on nonfinancial risk (e.g., compliance failures, misconduct, and operational challenges) in risk adjustment decisions.
- Involvement of risk management and control personnel: Risk management and control personnel generally play a greater role in the design and operation of incentive compensation programs than before the financial crisis.
- Director oversight: Boards of directors are now increasingly focused on the relationship between incentive compensation and risk. For example, at the board level, finance and audit com-

[5] Public Law 111-203, 124 Stat. 1376 (2010).
[6] 75 Federal Register 36395.

mittees generally work together with compensation committees with the goal of promoting prudent risk-taking.

- Policies and procedures: Firms have increasingly developed written policies and procedures to guide managers in making appropriate risk adjustments.

Q.13. What is the your view on the Fed's role as the consolidated Federal regulator for insurance companies that have a savings and loan holding company?

A.13. The Federal Reserve is charged with consolidated supervision of savings and loan holding companies to promote the safety and soundness of the subsidiary insured depository institution (IDI) and the holding company. Our principal supervisory objectives for consolidated supervision of insurance savings and loan holding companies (ISLHCs) are to ensure that they operate in a safe-and-sound manner so that the subsidiary insured depository institution is protected from risks related to nonbanking activities, including insurance, as well as intercompany transactions between the parent and IDI, and to ensure that the IDI is not adversely affected. To avoid duplication, we rely on the State insurance departments to the greatest extent possible, including their supervision of the business of insurance. In applying our consolidated supervision, we work to ensure that regulations, supervisory guidance, and expectations are appropriately tailored to account for the unique complexities and characteristics of ISLHCs. We remain committed to tailoring our supervision of ISLHCs to the firms and their insurance operations, as well as conducting our consolidated supervision of these firms in coordination with State insurance regulators. Moreover, the Board continues to welcome feedback from ISLHCs and other interested parties on the potential impact of our supervision and proposed rulemakings in the context of ISLHCs' business and practices.

Q.14. Vice Chair Quarles recently gave a speech suggesting that the Fed should "consider scaling back or removing entirely resolution planning requirements for most of the firms" in the $100 billion to $250 billion total consolidated asset range. Please describe further the Fed's plans in this regard, along with any cost-benefit analysis suggesting that the economy would benefit from such a change.

How does the Fed view the directive in S. 2155 that company-run and certain supervisory stress tests be made "periodic" rather than semi-annual or annual? Does the Fed anticipate changing the frequency of stress tests for banks with more than $250 billion in total consolidated assets?

A.14. Consistent with the Economic Growth, Regulatory Relief, and Consumer Protection Act (EGRRCPA), the Board is considering the application of enhanced prudential standards, including resolution planning requirements, to firms in the $100 billion to $250 billion total consolidated assets range. Resolution planning is especially critical to ensure that the largest, most complex, and most interconnected banking firms structure their operations in ways that make it more possible for them to be resolved upon failure without causing systemic risks for the broader economy. The Board therefore anticipates focusing resolution planning requirements on these

firms. Firms with total assets between $100 billion and $250 billion, especially those that are less complex and less interconnected, do not pose a high degree of resolvability risk. Therefore, we should consider no longer imposing the resolution planning requirement on at least a subset of the firms with total assets between $100 billion $250 billion. The Board will solicit feedback, including feedback on costs and benefits, on any proposed changes to the applicability of resolution planning requirements through the public notice and comment process.

The provisions of EGRRCPA are generally consistent with the Board's view that supervision and regulation should be appropriately tailored to the risks posed by firms to the financial system. The Board also recognizes that the complexity of banks can vary significantly from bank to bank, even for institutions within the $100 billion to $250 billion group. Those banks, which provide a significant amount of credit to the economy, range from large regional banks to an institution that has been designated a systemically important financial institution given its size and complexity. That suggests we may need to consider factors beyond size when we consider whether it is appropriate to reduce the frequency of the stress test.

Pursuant to the provisions of EGRRCPA, the Board will assess the necessary and appropriate frequency of supervisory and company-run stress tests to effectively ensure the safety, soundness, and resiliency of the financial system while concurrently minimizing regulatory burden. In general, firms that pose limited risk to financial stability would be expected to be subject to less frequent supervisory and company-run stress tests than those with a large systemic footprint. Of course, we would invite public comment on any proposal to change the frequency of the stress test.

Q.15. Does the Fed intend to exempt any firms from the requirement to calculate risk-weighted assets according to Advanced Approaches?

A.15. The Board is currently focused on ways to simplify the existing capital rules and to reduce any unwarranted complexity of the applicable capital requirements overall, rather than on considering exemptions for particular firms. The Board believes there is room to simplify the capital framework, while preserving the stringency of the overall capital requirements. The Board is also actively reviewing the requirements applicable to firms with more than $250 billion in total assets to make sure they are appropriately tailored to the firms to which they are applied.

Q.16. How does the Fed's planned rulemaking regarding "reach back" application of enhanced prudential standards anticipate expeditiously capturing quickly growing firms whose risk to the economy may rapidly escalate? For example, Countrywide grew from $26 billion in total consolidated assets in 2000 to $211 billion in 2007, and posed systemic threat to the economy.

A.16. EGRRCPA tailors supervisory requirements to the size and complexity of banking organizations. As is reflected in EGRRCPA, regulations should be the most stringent for the largest and most complex institutions. Rulemakings proposed by the Board to tailor existing requirements would be designed to maintain a safe, sound,

and stable banking system that supports economic growth without imposing unnecessary costs. Under this principle, if a bank grows in size and complexity, the Board's regulatory framework would apply increasingly stringent requirements to that banking organization commensurate with the organization's size and complexity.

Q.17. In what ways, if any, does the Fed intend to revamp the Community Reinvestment Act (CRA)?

A.17. The Federal Reserve supports modernizing the Community Reinvestment Act (CRA) regulations so that they better reflect structural and technological changes in the banking industry and strengthen the rules to help address the credit needs of low- and moderate-income communities. We think an Advance Notice of Proposed Rulemaking (ANPR) is a good starting point to gather input on the impact of the significant advancements in technology and other changes in the financial services marketplace since the regulations were last revised. We value input from all stakeholders on the impact of the significant advancements in technology and other changes in the financial services marketplace since the regulations were last revised. We look forward to reviewing suggestions that result from the OCC's ANPR on possible refinements to CRA regulations.

While there are many positive aspects of the current regulations, we believe that there are opportunities to improve clarity and consistency through modernization efforts, which would benefit both banks and the communities they serve. The Board also believes that revised regulations should recognize that banks vary widely in size and business strategy and serve communities with different credit needs. An interagency modernization process is also an opportunity to define ways to evaluate a bank's CRA performance in light of its size, business strategy, capacity, and constraints, as well as its community's demographics, economic conditions, and credit needs and opportunities. To this end, more metrics could provide clarity. It is important that the use of metrics is sufficiently responsive to local credit needs and account for differences in performance expectations based on a bank's size, business model, and strategy.

The Board values the interagency process, and we look forward to working with the OCC and the FDIC on any regulatory revisions that would promote consistency in the implementation of CRA across the industry, as well as offer the greatest impact to benefit reinvestment in local communities, consistent with the spirit and intent of the law.

Q.18. Assessment Areas under CRA are geographical areas where bank performance is evaluated on CRA exams. Currently, these areas include bank branches and deposit-taking ATMs. Many banks are making loans outside of branch networks, using alternative delivery channels including the Internet.

Has the Federal Reserve given thought to changing the definition of Assessment Areas to reflect the changing landscape of banking?

A.18. Yes. The central focus of the law is on a bank's affirmative obligation to meet the credit needs of the communities it serves, including low- and moderate-income communities, consistent with safe-and-sound lending. The Board believes it is time to modernize

the regulations, including making changes to the definition of a bank's "assessment area," in which its CRA performance is evaluated.

The banking environment has changed significantly since CRA's enactment and since the current CRA regulation was adopted. The regulation focuses on assessing performance where banks have branches, but many banks may now serve consumers in areas far from their physical branches. Therefore, the Board agrees that it is sensible for the agencies to consider expanding the assessment area definition to reflect the various ways a bank can serve local communities, while retaining the core focus on place.

Q.19. Comptroller Otting, during Committee testimony in June, suggested reducing CRA performance measurement to a simple formula system comparing the sum of CRA activities to bank assets. Making this ratio the totality of a CRA exam would abandon current examination weights which judge certain activities as more important than others, based on local needs.

Do you support this single ratio approach?

A.19. We support updating the CRA regulations to make them more effective in making credit available in low- and moderate-income areas. In enforcing CRA, we have identified principles to guide our work. For example, the Board believes that revised regulations should be tailored recognizing that banks vary widely in size and business strategy and serve communities with widely varying needs. We believe this can be done while retaining the flexibility to evaluate a bank's CRA performance in light of its size, business strategy, capacity, and constraints as well as its community's demographics, economic conditions, and credit needs and opportunities.

We recognize the importance of considering the ways in which a bank's business strategy, no matter its size, influences the types of activities it undertakes to meet its CRA obligations.

BROOKINGS

Up Front

Why Congress shouldn't roll back the SEC's money market rules

Nellie Liang Friday, January 12, 2018

At the height of the financial crisis in 2008, the Primary Reserve Fund ran into triggering a run on money market mutual funds. Investors pulled nearly $450 out of prime money market funds (MMFs) in just a few weeks, causing the fun stop lending to big banks and industrial giants General Electric and Ford and endangering their ability to promptly meet payrolls and other bills. The government responded, quickly and creatively, with both a guarantee for existing MMF investors to stop the run, as well as an emergency liquidity facility, the Commercial Paper Funding Facility, to provide financing to companies that lost their access to short-term funds amid the turmoil.

In 2014, the Securities and Exchange Commission changed the rules for money market funds so this would never happen again. Those rules are working well. But some in the industry want Congress to undo them. That would be a mistake.

Before the crisis, prime MMFs (those permitted to invest in short-term IOUs issued by borrowers other than governments) were allowed to promise investors $1 for their shares even when the value of their portfolios fell below $1 a share. If values fell to less than $0.995 a share, the fund could no longer round up to $1, and a board could close a fund. Unlike banks, the money market funds weren't required to hold capital or insurance to back up their $1 promise—even though they were investing in securities that fluctuated in value.

This structure created a classic investor run problem similar to the runs that banks faced before the creation of deposit insurance in the 1930s. Investors who believe the value of the investments will fall to less than $1 have an incentive to pull out their funds before others. The first investors to withdraw money will receive $1 per share. Those who wait will get only the (lower) market value—often with a delay. As investors run for the exits, funds sell assets to meet these redemptions. The sales cascade through the economy, pushing down the price

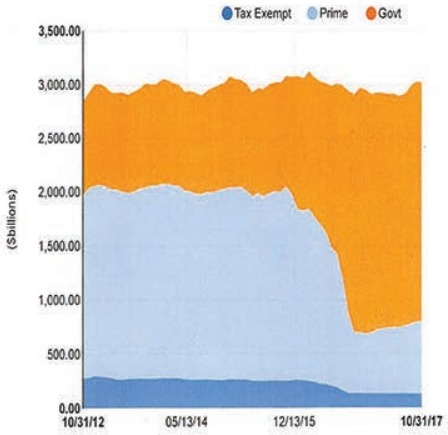
of these assets and forcing big companies who borrow from money market funds to scramble for funding, making the problem worse.

In 2010, the SEC tightened the rules to reduce the credit and liquidity risk of the assets that prime money market mutual funds could hold. The SEC also required greater disclosure of the assets, but the rules cannot eliminate the risk of price fluctuations and thus the incentive for investors to be the first out the door.

So in 2014, the SEC changed the rules, which ultimately took effect in October 2016. Today, the value of both prime money market shares and shares of municipal tax-exempt securities sold to institutional investors float with the value of the securities in their portfolios. (The rules didn't apply to money market funds sold to retail investors.) Funds that invest in U.S. Treasury and other sovereign securities were permitted to maintain the fixed $1/share value.

Since the rules went into effect, short-term markets have been functioning smoothly—and in a much less risky environment. Anticipating the change, some money market investors moved money from institutional prime funds and tax-exempt funds to funds that invested in less risky Treasury and government securities. The total amount of money invested in money market funds—nearly $3 trillion—did not change. It just shifted from riskier prime investments to more stable government funds that can maintain the $1/share value.

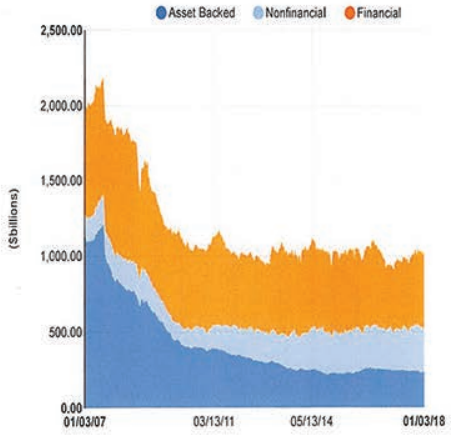
Money Market Mutual Fund Assets by Type of Fund



Source: Securities and Exchange Commission

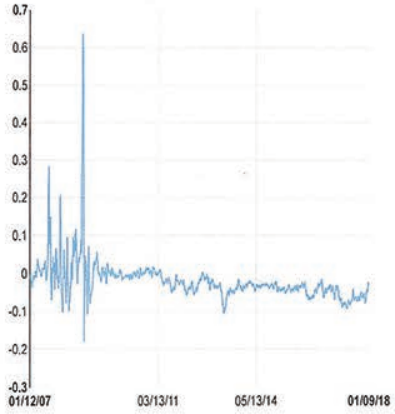
Moreover, the shift has not led to any notable disruptions in short-term funding markets. The commercial paper market, an important source of short-term funding for large corporations, remains at roughly $1 trillion outstanding, after having shrunk dramatically in the financial crisis. Nonfinancial companies have been increasing their commercial paper outstanding, despite the drop in prime MMF assets, and are issuing at spreads that have remained quite low.

Commercial Paper Outstanding



Source: Federal Reserve Board

Overnight CP Spreads, Nonfinancial 10 day moving average



Source: Federal Reserve Board

Most big money managers adjusted to the new rules, but a few—apparently unhappy that the changes have cut into their revenues—are pushing Congress to undo them. These managers want to allow institutional prime and tax-exempt funds to once again be able to promise to redeem shares at $1/share, even when they hold risky assets. Their argument is that these funds didn't cause the financial crisis and reforms have gone too far.

But there is no doubt that the structure of prime MMFs amplified losses and spread the problems to many companies when their investors ran. Prime MMFs that promise a fixed $1 are a source of systemic risk. Post-crisis rules aim not only to prevent a repeat of the last crisis, but to reduce the probability and costs of the next one. Reverting to pre-crisis rules would risk a return to high levels of private short-term liabilities and another destabilizing run on money market funds, and threaten stability in the financial system and the economy as a whole.

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

Q.1. The Federal Housing Finance Agency (FHFA) has proposed a new regulatory capital framework for the Federal National Mortgage Association and the Federal Home Loan Mortgage Corporation (each, an "enterprise"). See Proposed Rule, Enterprise Capital Requirements (83 Federal Register 33,312) (Jul. 17, 2018). FHFA's proposed rule contemplates that the credit risk transfers (CRT) of the enterprises would provide capital relief. Id. at 33,356. According to FHFA, with respect to capital relief for CRT, "the proposed approach is analogous to the Simplified Supervisory Formula Approach (SSFA) under the banking regulators' capital rules applicable to banks, savings associations, and their holding companies." Id. at 33,358. But FHFA also acknowledges that "the proposed approach deviates from the SSFA in that it: (i) [p]rovides for a more refined view of risk differentiation across transactions by accounting for differences in maturities between the CRT and its underlying whole loans and guarantees, and (ii) docs not discourage CRT transactions by elevating aggregate post-transaction risk-based capital requirements above risk-based capital requirements on the underlying whole loans and guarantees." Id.

What are the material differences between (i) the rules governing the capital relief afforded a CRT of an enterprise under FHFA's proposed rule and (ii) the rules governing the asset credit, liability reduction or other capital relief afforded a similar transaction of a banking organization under the rules of the Board of Governors of the Federal Reserve System (the Board)?

A.1. The Federal Housing Finance Agency's (FHFA) proposal on "Enterprise Capital Requirements" recognizes the risk mitigation effects of credit risk transfers (CRTs). CRTs are transfers of credit risk from Fannie Mae and Freddie Mac on a portion of their loan portfolio to private sector investors. If CRTs meet certain qualifying criteria, Fannie Mae and Freddie Mac are able to reduce the amount of capital held against those portfolios.

The treatment for CRTs proposed by the FHFA is tailored for two types of products: single-family home loans and multifamily loans. These products have standardized characteristics that are incorporated in the FHFA's proposed approach for risk weighting these exposures.

The regulatory capital rule, adopted by the Federal Reserve Board of Governors, the Office of the Comptroller of the Currency, and the Federal Deposit Insurance Corporation (collectively, "banking agencies"), similarly recognizes credit risk mitigation effects of credit risk transfers and allows a banking organization to assign a lower risk weight to an exposure. However, relative to the approach proposed by the FHFA, the banking agencies' capital rule recognizes credit risk mitigation for a much broader variety of exposures.

The banking agencies' approach for recognizing credit risk transfer through a securitization needs to be flexible enough to accommodate a wide variety of securitized asset classes without standardized characteristics. The approach may require more capital on a transaction-wide basis than would be required if the underlying assets had not been securitized, in order to account for the com-

plexity introduced by the securitization structure. Furthermore, the banking agencies' capital rule requires banking organizations to meet certain operational requirements. An inability by a banking organization to meet these operational requirements may lead to higher risk weighting, relative to the FHFA's proposed approach.

Q.2. Does the Board expect to consider FHFA's approach to capital relief for CRT, and also the experience of the enterprises with CRT, when the Board next reviews its own rules governing the capital relief afforded to banking organizations for CRT and similar transactions?

A.2. The FHFA's proposal is specifically designed for Fannie Mae and Freddie Mac and their specialized lending purposes. The FHFA has calibrated its proposed capital requirements and tailored its credit risk mitigation rules to two specific categories of exposures: single-family home loan and multifamily loan portfolios.

Banks have a wider variety of exposures than Fannie Mae and Freddie Mac. Thus, banks require a different calibration of capital requirements and a more general set of rules governing the recognition of credit risk mitigation.

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

Q.1. *International Organizations.* Background: The Federal Reserve has membership in several international standard-setting bodies. Among them are the Bank for International Settlements (BIS) and the Financial Stability Board (FSB). These standard-setting bodies provide opportunities to push U.S. interests and greater regulatory harmonization globally. The level of participation by the Federal Reserve going forward is unclear. The question is intended to give Chairman Powell an opportunity to describe his vision for the Federal Reserve's participation in these international organizations.

Chairman Powell, the Federal Reserve has traditionally played an important and active role in international standard-setting bodies such as the Bank for International Settlements (BIS) and the Financial Stability Board (FSB). This has been important for both representing the interests of the United States and promoting policies that benefit the global financial system. In the Treasury Department's first report to the President on financial regulatory reform, it advocated for robust U.S. engagement in international financial regulatory standard-setting bodies as a way to "promote financial stability, level the playing field for U.S. financial institutions, prevent unnecessary regulatory standard-setting that could stifle financial innovation, and assure the competitiveness of U.S. companies and markets . . . ." The Treasury Department recommended in its report that U.S. regulators advocate for international regulatory standards that are aligned with U.S. interests.

As Chairman, what will be your top priorities when representing the United States in international standard-setting bodies such as BIS and FSB?

A.1. One of our top priorities in international standard setting bodies is to consolidate the financial reform gains we have achieved globally. These include a responsible increase in bank capital

standards, introduction of liquidity standards, recovery and resolution planning for the most globally active and systematically important banks, and mandates to increase incentives for financial firms to centrally clear derivatives. As we get further from the financial crisis, it will become easier to forget the reasons for which we took actions to strengthen significantly the prudential framework for banks and global financial stability. Therefore, it is important that the United States, with its large number of globally active financial firms, continue to play a central role in reenforcing this message at the international level.

At the same time, we believe now is an appropriate time to evaluate the reforms to ensure that they are working as efficiently and effectively as they can and do not give rise to adverse incentives. The evaluation work, already underway, may lead us to adjust various standards to achieve these objectives while maintaining the strength and resiliency of the system.

Q.2. Can you describe the work you hope to accomplish or new initiatives you hope to pursue in BIS, FSB and other relevant international standard-setting bodies?

A.2. One priority is to finalize the bank capital framework for trading activities. Strong standards are necessary for these activities as trading activities facilitated many of the riskier bank practices that led to the crisis. At the same time, it is important to ensure that these standards are well-crafted in order to avoid adverse effects on market liquidity. The international standard-setters are also working to build up financial firms' resiliency to operational risks, including those emanating from cyber-risks. These risks are some of the most important risks that financial firms face today. These international efforts are aimed at ensuring that we have common terminology to discuss these risks and have a common set of expectations for firms' resiliency in the face of operational risk incidents.

Q.3. *EU.* Background: Legislative bodies in Europe are considering draft revisions to the European Market Infrastructure Regulation (EMIR) that would bring U.S.-based and other third-country central counterparties (CCPs) under the regulation and supervision of the EU for the first time. The proposed changes would expand the European Securities and Markets Authority's (ESMA) and the European System of Central Banks' supervisory authority over third-country CCPs, including U.S. CCPs, that are recognized to do business in Europe. EMIR's stated purpose for making these changes is to address the potential risks that third-country CCPs could pose to the EU's financial system. These changes could also reopen a 2016 equivalence agreement for derivatives clearinghouse supervision between the CFTC and the EU authorities. CFTC Chairman Giancarlo has expressed significant concerns regarding the potential impact this proposed legislation could have on U.S. CCPs. In recent testimony before the U.S. Senate Agriculture Committee, Chairman Giancarlo stated that "regulatory and supervisory deference needs to remain the key principle underpinning cross border supervision of CCPs. Deference continues to be the right approach to ensure that oversight over these global markets is effective and robust without fragmenting markets and trading activity." The question is intended to determine how Chairman Powell's intends

to address this issue and whether his views align with that of other U.S. regulators.

The European Union is considering legislation that, for the first time, would permit EU regulators, including the European Central Banks, to directly supervise systemically important U.S.-based and other third-country CCPs, including U.S. CCPs in the securities and derivatives markets. This approach itself could pose risks and potentially interfere with the Federal Reserve's ability to ensure its policies are being effectuated without interference by EU supervisors. The U.S. Congress and regulators have chosen to not take this approach and instead adhere to the long-standing principal of regulatory deference.

How do you plan to address this situation as Chair?

The proposed legislation (EMIR 2.2) would subject U.S. CCPs to overlapping EU regulation and supervision without deferring to U.S. regulators that oversee these entities; namely, the Federal Reserve, SEC, and CFTC. Do you share CFTC Chairman Giancarlo's concerns about this proposal? If so, are you coordinated in your position and messaging to the EU?

A.3. The U.S. central counterparties (CCPs) that may potentially fall within the scope of the proposed European Union (EU) legislation to amend the European Market Infrastructure Regulation include those designated as systemically important financial market utilities (DFMUs) by the Financial Stability Oversight Council under Title VIII of the Dodd–Frank Wall Street Reform and Consumer Protection Act (Dodd–Frank Act). The Commodity Futures Trading Commission and the Securities and Exchange Commission are the supervisory agencies with primary responsibility for supervising and regulating these firms. The Federal Reserve Board (Board) plays a secondary role in the oversight of these CCPs under Title VIII of the Dodd–Frank Act. The proposed EU legislation has more direct implications for the primary supervisors of these firms, and those agencies are actively involved in a dialogue with EU authorities. To date, Board staff has worked to educate EU authorities on the legal framework created by Title VIII, explained the nature of the Board's role in the oversight of DFMUs, pointed out differences considered in the proposed EU legislation, and expressed support for cooperation among authorities.

The Board has a long-standing policy objective to foster the safety and efficiency of payment, clearing, and settlement systems and to promote financial stability, more broadly.[1] In that policy, the Board has set out its views, and related standards, regarding the management of risks that financial market infrastructures, including CCPs, present to the financial system and the Federal Reserve Banks. It has also described how it will engage cooperatively with authorities with direct responsibility for particular CCPs located outside of the United States.

As a central bank, the Federal Reserve has a particular interest in liquidity issues. As far as liquidity risks are concerned, it is immaterial whether a CCP is based in the United States or abroad so long as it clears U.S. dollar denominated assets and makes and

[1] See, Federal Reserve Policy on Payment System Risk: *https://www.federalreserve.gov/paymentsystems/files/psr_policy.pdf*.

receives U.S. dollar payments. The current EU legislative proposal outlines that the European Commission, in consultation with the European Securities and Markets Authority and the relevant EU member central bank, may determine a third country CCP to be of such systemic importance to the EU that the only way to mitigate the risks posed would be for that CCP to establish its clearing business within the EU. This aspect of the proposed legislation presents a risk of splintering central clearing by currency area, which could fragment liquidity and reduce netting opportunities. Given the extensive cross-border nature of the firms potentially covered by the proposed EU legislation, we support the EU and U.S. authorities' efforts to search for cooperative solutions to these issues that promote CCP resilience while upholding the aims of both U.S. and international authorities.

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

Q.1. Supervising large, globally active banking organizations—such as those covered by the Federal Reserve's Large Institution Supervision Coordinating Committee (LISCC)—are among your agency's most important responsibilities. While LISCC supervision traditionally relates to areas such as lending, credit risk, and capital and liquidity risk, many of the strategic and operational risks that larger banks manage are in areas unrelated to traditional banking services and functions.

My concern is that as these areas become a larger potential source of risk, supervisory teams may not have the technical expertise to properly oversee these complex financial institutions and may in fact be tempted to substitute their judgement rather than apply bright line regulations. In fact, if regulators without technical expertise begin to substitute their judgement for that of bank management in these areas, this could lead to increased systemic risk.

How do you make certain that your field supervisory teams possess the requisite amount of technical experience in areas like cybersecurity, technology, incentive compensation planning, and human resources management to oversee banks in the LISSC portfolio?

Do you agree that supervisory staff should not substitute their judgment on such matters of general corporate strategy, especially when they do not have the requisite technical expertise?

A.1. As you note, supervising Large Institution Supervision Coordinating Committee (LISCC) firms is one of the most important responsibilities of the Federal Reserve. The purpose of this supervision is to ensure that these firms operate in a safe-and-sound manner, consistent with U.S. financial stability. The Federal Reserve conducts supervision of LISCC firms by assessing the adequacy of firms' capital and liquidity positions, effectiveness of resolution and recovery planning, the strength of risk management, governance and controls, and compliance with laws and regulations, including those related to consumer protection. All areas of supervision—including quantitative assessments—require some amount of judgment. Supervisors undergo extensive training to en-

sure that this judgment is exercised in a fair and consistent manner that furthers the safety and soundness of the supervised firms.

While the Federal Reserve has significant experience in evaluating lending, credit risk, and capital and liquidity risk, it also has a depth of experience in evaluating strategic and operational risks. We assess these risks by considering the effectiveness of boards of directors, senior management oversight, reporting quality, independent risk management, and internal audits, among others. As needed, the Federal Reserve develops or hires personnel with the necessary expertise.

In all technical areas, the Federal Reserve uses both quantitative and qualitative analysis to assess the strength of firms' practices.[1] We also use cross-firm comparative analysis, commonly referred to as horizontal analysis, to ensure that our assessments reflect the range of practices that constitute safety and soundness standards; furthermore, this tool allows for a more consistent application of supervisory standards.

To ensure the appropriateness of supervisory findings, material supervisory judgments and assessments of LISCC firms are subject to a rigorous internal governance process, which includes oversight by committees of individuals from different parts of the Federal Reserve System. This process is designed to bring the collective expertise and perspective of the Federal Reserve to bear on assessments of LISCC firms.

A key objective of LISCC supervision, and in fact, supervision for all firms, is to ensure that a firm's governance, risk management activities, and internal controls adequately support the firm's current risk taking and strategic objectives. To this end, the Federal Reserve has well-defined and controlled processes that are appropriate for technical and specialized activities.

Q.2. For several years, banking organizations that provide services such as safekeeping and custody to asset managers, have engaged with the Federal Reserve on the critical need to refine exposure measurement calculations for use in capital rules and credit exposure limits. These discussions have led to the inclusion of technical changes to these capital rules in the finalization of the Basel Committee's postcrisis capital reforms agreed to by the Federal Reserve in December 2017.

One of the most important portions of this agreement relates to securities lending which provides a critical source of revenue to pension funds, mutual funds, endowments, and other institutional investors. Given the importance of securities lending to these asset managers which include pension funds, such as the South Dakota Retirement System, enacting these technical changes to the capital rules for securities financing transactions is an urgent matter. I hope the Federal Reserve will consider separating these targeted, technical changes from the rest of the Basel IV package and begin domestic implementation.

Is there an opportunity for the Federal Reserve to propose rules to implement these technical changes, and perhaps others, separately and ahead of its longer range plan to solicit public input on

[1] Other technical areas include, for example, trading and counterparty credit risk management, stress testing, and credit underwriting, and risk management monitoring models.

the broader and more substantive capital changes later this year through the Advanced Notice of Proposed Rulemaking (ANPR) process?

A.2. The Federal Reserve Board (Board) understands the concerns with respect to the capital rules' treatment of securities financing transactions, and Board staff participated with their international colleagues on the technical changes provided by the Basel Committee in December 2017. These changes would provide a more risk-sensitive treatment of such products, including to better account for diversification and correlation. Board staff, in coordination with the other Federal banking agencies, are evaluating this new standard as well as other standards adopted by the Basel Committee at the end of 2017 to determine whether and how best to incorporate them into the capital rules.

In addition, the Board has been tailoring its regulations regarding the treatment of securities lending and, more generally, securities financing transactions. On June 14, 2018, the Board finalized the Single-Counterparty Credit Limits rule. The final rule applies to the largest banking firms, placing limits on a firm's credit exposures to a single counterparty. These limits address the risks to the economy that are created when large firms are highly interconnected.

During the public comment period, commenters argued that the measurement methodology for exposures resulting from securities financing transactions would not create proper incentives for risk reduction and would not accurately measure the actual exposures associated with securities lending activities. In order to address this concern, the final rule allows a firm to use any methodology that it is authorized to use under the Board's risk-based capital rules to measure exposure resulting from securities financing transactions. This approach is consistent with other Board regulations, including the capital rules.

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

Q.1. I appreciate your timely response to my written questions from your March 1, 2018, appearance for this Committee. In your reply, you wrote that "the State-based system of insurance regulation provides an invaluable service in protecting policyholders." I could not agree more—and believe that the U.S. system of insurance regulation is the best in the world.

That is why I'm concerned that recent International Association of Insurance Supervisors (IAIS) negotiations on the International Capital Standard (ICS) in Kula Lumpur (KL) suggest an embrace of a European-centric approach to insurance capital standards. For example, in the KL agreement, it was decided that the reference ICS shall have European-like capital requirements (Prescribed Capital Requirement) and use a European accounting method (Market Adjusted Valuation).

In the past, the Federal Reserve has stated that the IAIS does not have any authority to impose enforceable obligations on U.S. insurance firms and that there is no way that IAIS negotiations could result in the application of a capital standard on U.S. insur-

ance firms that is inconsistent with U.S. laws and regulations. However, if U.S. negotiators agree to a standard at the IAIS that does not formally recognize the U.S. insurance regulatory system or, worse, requires that the U.S. change its regulatory system to match the agreed upon standard and we do not change our laws, then the EU or other jurisdictions could penalize U.S. firms operating in said jurisdictions.

Please answer the following with specificity: What positions will you take during upcoming IAIS negotiations on the ICS to ensure the protection of the U.S. system of insurance regulation?

A.1. I agree that, in order for an Insurance Capital Standard (ICS) being developed through the International Association of Insurance Supervisors (IAIS) to be implementable, it cannot be unsuited or inappropriate for the United States, which remains the world's largest insurance market. As such, an overly European-centric ICS would face challenges to being readily implementable in the United States. As the Federal Reserve Board (Board) has suggested in relation to insurance firms supervised by the Board, such a framework may not adequately account for U.S. Generally Accepted Accounting Principles (GAAP), may introduce excessive volatility, and may involve excessive reliance on supervised firms' internal models.[1] Indeed, the Board strongly supports the U.S. State-based insurance supervisory system, which has proven its strength and resilience for well over a century.

Among other things, this motivates our advocacy of an aggregation alternative, and the use of the GAAP-plus valuation method, in the ICS. We continue to advocate, and contribute to developing, the GAAP-plus valuation method for inclusion in the ICS. In addition, we support the collection of information through the monitoring period on an aggregation-based approach.

We also participate along with the other U.S. members, together with other jurisdictions including Canada, Hong Kong, and South Africa, in the development of such an approach through the IAIS. Furthermore, the Federal Reserve continues to develop the Building Block Approach, an aggregation-based approach that, together with the Group Capital Calculation of the National Association of Insurance Commissioners (NAIC), can be used to advocate the aggregation method. Through field testing and monitoring, we will advocate that an aggregation method provides comparable outcomes in supervisory actions and insurance company results relative to the standard calculation method for ICS that is emerging from the IAIS.

As a member of the IAIS, the Federal Reserve, in partnership with the NAIC and Federal Insurance Office, remains committed to pursuing an engaged dialogue to achieve outcomes that are appropriate for the United States. As a general proposition, we believe in the utility of having effective global standards for regulation and supervision of internationally active financial firms. When implemented consistently across global jurisdictions, such standards help provide a level playing field for global financial institutions. Further, consistent global regulatory standards can help limit regu-

[1] See Advance Notice of Proposed Rulemaking, Capital Requirements for Supervised Institutions Significantly Engaged in Insurance Activities, 81 Federal Register 38631, 38637 (June 14 2016).

latory arbitrage and jurisdiction shopping, as well as promote financial stability. While we would refrain from agreeing to any international standard that is inappropriate for the United States, it is important to recall that the IAIS has no ability to impose requirements on any national jurisdiction, and any standards developed through this forum are not self-executing or binding upon the United States unless adopted by the appropriate U.S. lawmakers or regulators in accordance with applicable domestic laws and rulemaking procedures.

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

Q.1. Chairman Powell, I'd like to turn to S. 2155 implementation. Many of us are hoping that you and Vice Chairman Quarles will be taking a robust role in crafting the rules to implement the newly enacted law. What role are you currently playing in the implementation of S. 2155?

A.1. The Federal Reserve Board (Board) is working in an expeditious manner to implement the recently enacted Economic Growth, Regulatory Relief, and Consumer Protection Act (EGRRCPA). The Board has a well-established governance process for implementing rulemakings and ensuring that such rulemakings are compliant with the law, including statutory deadlines set by Congress. Draft rulemakings are carefully reviewed and considered by the Board's Committee on Supervision and Regulation, which is chaired by Vice Chairman Quarles. I meet with staff on a regular basis to discuss regulatory proposals and provide direction. The Committee's proposals for amendments to the Board's regulations are finalized only after a vote by the full Board of Governors.

Q.2. Many of your staff are the same staff that helped write the implementing rules for the Dodd–Frank Act. In some sense, the new law mandates they revise their own prior work. From experience, I would say that such a mandate will take robust oversight on your part and on our part—do you agree? Can you give us some insight into how you and Vice Chair Quarles are managing these workstreams and orchestrating the workstreams?

A.2. As I mentioned above, the Board is working in an expeditious manner to implement the recently enacted EGRRCPA. The highest priority of the Federal Reserve is to implement the laws that we have been entrusted to administer and to work to protect and enhance the safety and soundness of financial firms and the financial stability of the U.S. financial system. The Board has a well-established governance process for implementing rulemakings and ensuring that such rulemakings are compliant with the law. I meet with staff on a regular basis to discuss regulatory proposals and provide direction. Of course, Vice Chairman Quarles has a statutory obligation to develop policy recommendations for the Board regarding supervision and regulation of depository institution holding companies and other firms we supervise. He is actively involved in the development of proposals to implement EGRRCPA from the initial design through finalization.

I would also note that, in general, Board staff regularly revisits, revises, and tailors previously approved rulemakings. Through the rule implementation process, the Board receives feedback from affected banking organizations and other interested parties. The Board also learns from the experience of the on-the-ground Reserve Bank examiners. Because of this continuous dialogue, the Board may conclude that aspects of a regulation require amendment or streamlining.

Q.3. One area where I would hope that congressional intent is followed is with respect to the SIFI threshold in Section 401 of the bill. My view is that all banks under $250 billion in assets are out of the enhanced prudential standards and that those above $250B are able to take advantage of the mandated robust tailoring so that the larger regional banks are not treated like the money center banks and that we are taking business model and risk into account when applying enhanced regulations. Is this your view?

A.3. Section 401 of the EGRRCPA raised the threshold for automatic application of enhanced prudential standards for bank holding companies from $50 billion to $250 billion in total consolidated assets. Under this section, the Board has the discretion to apply enhanced prudential standards to bank holding companies with total consolidated assets between $100 billion and $250 billion, based on consideration of various factors, such as capital structure, riskiness, complexity, financial activities, size, and any other risk-related factors that the Board deems appropriate.

The core reforms put in place after the financial crisis—stronger capital and liquidity requirements, stress testing, and resolution planning—have made our financial system more resilient. Firms with assets of $100 billion or more can present a range of safety and soundness and financial stability concerns, depending on their risks and systemic profile. These concerns typically increase for firms with assets of $250 billion or more. Therefore, the Board has tailored, and will work to continue to appropriately tailor, our regulations to the risk profiles of the films subject to those regulations.

The Board is carefully considering the statutory criteria under the EGRRCPA for determining which enhanced prudential standards should continue to apply to firms with $100 billion to $250 billion in total consolidated assets. The Board is also evaluating whether any changes to the enhanced prudential standards applicable to bank holding companies with more than $250 billion in total consolidated assets are appropriate.

Board staff have begun working on proposals to amend these aspects of our rules and we look forward to hearing feedback through the public notice and comment process in the coming months.

Q.4. I also expect the agencies to take a look at all of the regulations where they used $50 billion as the asset threshold for application, including those outside of DFA Section 165, and raise the number accordingly. What are your thoughts?

A.4. As part of its implementation of EGRRCPA, the Board is considering which of its regulations require changes given the amended applicability thresholds in the Dodd–Frank Wall Street Reform and Consumer Protection Act (Dodd–Frank Act), including section 165, as well as section 11 of the Federal Reserve Act. In addition,

in light of EGRRCPA's amendments to section 165 and consistent with the Board's ongoing refinement and evaluation of its supervisory program, the Board is evaluating whether any other changes to the prudential standards applicable to large banking organizations are appropriate.

The Board's capital plan rule utilizes a $50 billion asset threshold and was not affected by the changes made to section 165. Per the Board's public statement on July 6, 2018, the Board will not take action to require bank holding companies with total consolidated assets greater than or equal to $50 billion but less than $100 billion to comply with the capital plan rule.

Q.5. Chairman Powell, the Federal Reserve and the Office of Financial Research have studied systemic risk and have determined that banks under $250BB do not pose a systemic risk and Congress passed and the President signed S. 2155 to raise the threshold to $250BB for the application of enhanced prudential standards. I believe that the FED should expeditiously follow this directive and should follow the will of Congress, and not wait 18 months. Will you commit to me that you will direct Fed staff to effectuate this new threshold and then move on to tailoring above the $250BB threshold?

A.5. As stated above, the core reforms put in place after the financial crisis—stronger capital and liquidity requirements, stress testing, and resolution planning—have made our financial system more resilient, and I would not want to see any material weakening of these reforms. The Board has the discretion under the EGRRCPA to apply enhanced prudential standards to firms with total consolidated assets between $100 billion and $250 billion. When doing so, the enacted legislation requires us to consider various factors, such as capital structure, riskiness, complexity, financial activities, size, and any other risk-related factors that the Board deems appropriate.

The Board is carefully considering the statutory criteria under the EGRRCPA and is evaluating whether any changes to the enhanced prudential standards applicable to bank holding companies with more than $250 billion in total consolidated assets are appropriate.

Board staff have begun working on proposals to amend these aspects of our rules and we look forward to hearing feedback through the public notice and comment process in the coming months.

Q.6. The relief in S. 2155 is not immediate, and without prompt action, the relief will not come until Nov. 24, 2018, 18 months after enactment. Do you plan to take action immediately?

A.6. There are a number of provisions in EGRRCPA that provided relief immediately upon enactment. The Board, along with the other Federal banking agencies, have taken action to address the EGRRCPA changes that took effect immediately. As described in the Board's July 6, 2018, statements, the Board will not take action to enforce existing regulatory and reporting requirements in a manner inconsistent with EGRRCPA. For example, the Board will not take action to require bank holding companies with less than $100 billion in total consolidated assets to comply with certain existing regulatory requirements. These requirements include the en-

hanced prudential standards in the Board's Regulation YY, the liquidity coverage ratio requirements in the Board's Regulation WW, and the capital planning requirements in the Board's Regulation Y. The Board's statement and interagency statements also discuss other changes that took effect upon enactment and the interim positions that will be taken until the relevant regulations are amended to conform with EGRRCPA, including the treatment of high volatility commercial real estate exposures and certain municipal securities in the context of liquidity regulations.

EGRRCPA also raised the threshold for automatic application of enhanced prudential standards for bank holding companies from $50 billion to $250 billion in total consolidated assets. Under this section, the Board has the discretion within 18 months of enactment to apply enhanced prudential standards to bank holding companies with total consolidated assets between $100 billion and $250 billion based on consideration of various factors. The Board is carefully considering the statutory criteria under the EGRRCPA for determining which enhanced prudential standards should continue to apply to firms with $100 billion to $250 billion in total consolidated assets.

In addition, in light of EGRRCPA's amendments, and consistent with the Board's ongoing refinement and evaluation of its supervisory program, the Board is evaluating whether any changes to the enhanced prudential standards applicable to bank holding companies with more than $250 billion in total consolidated assets are appropriate.

Board staff have begun working on proposals to amend these aspects of our rules and we look forward to hearing feedback through the public notice and comment process in the coming months.

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

Q.1. If changes are made to the Community Reinvestment Act that lead to financial institutions, including those that have an online presence, to take deposits from communities but actually make less of an effort to reinvest in these same communities, would you consider that to be a good or bad outcome?

A.1. I would view revisions to the regulation that cause financial institutions to make less of an effort to reinvestment in these communities as an undesirable outcome. In addition, a successful update to the Community Reinvestment Act (CRA) regulations should encourage banks to spread their community investment activities across the areas they serve and encourage them to seek opportunities in areas that are underserved.

Currently, a bank's performance in its major markets is evaluated most closely and weighs most heavily in its CRA rating. This emphasis has resulted in what banks and community organizations refer to as credit "hot spots" where there is a high density of banks relative to investment opportunities. Meanwhile, other areas have a difficult time attracting capital because they are not in a bank's major market, if they are served by a bank at all.

We believe that any new set of regulations should eliminate such market distortions and avoid creating new ones. No matter how we

define a bank's assessment area in the future, new regulations need to be designed and implemented in a way that encourages performance throughout the areas banks serve.

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

Q.1. In response to my question about the joint agency rulemaking required by Section 956 of Dodd–Frank, you said, "We tried—we were not able to achieve consensus over a period of many years between the various regulatory agencies that need to sign off on that. But that didn't stop us from acting, you should know. We—particularly, for the largest institutions, we do expect that they will have in place compensation plans that—that do not provide incentives for excessive risk-taking. And we expect that the board of directors will make sure that that's the case. And so, it's not something that we haven't done. We've, in fact, moved ahead through supervisory practice to—to make sure that these things are better than they were and they're substantially better than they were. You see much better compensation practices here, focusing mainly on the big firms where the problem really was."[1]

Your response suggests that the relevant agencies have ceased work on this rulemaking.

Is that correct?

A.1. After the Federal Reserve Board (Board), Office of the Comptroller of the Currency, Federal Deposit Insurance Corporation, Securities Exchange Committee, National Credit Union Association, and the Federal Housing Finance Agency (the agencies), jointly published and requested comment on the revised proposed rule in June 2016, the agencies received over one hundred comments. These comments raised many important and complicated questions. The agencies continue to consider the comments.

The Federal Reserve believes that supervision of incentive compensation programs at financial institutions can play an important role in helping safeguard financial institutions against practices that threaten safety and soundness, provide for excessive compensation, or could lead to material financial loss. In particular, supervision can help address incentive compensation practices that encourage inappropriate risk-taking, which may have effects on not only the institution in question, but also on other institutions or the broader economy.

Additionally, The Federal Reserve continues to work with firms to improve incentive compensation practices and promote prudent risk-taking at supervised entities.

Q.2. Please provide a detailed explanation of how the Federal Reserve is either limiting or prohibiting incentive-based compensation practices that encourage excessive risk-taking through supervision.

A.2. The Federal Reserve, along with the other Federal banking agencies, issued Guidance on Sound Incentive Compensation Policies (Guidance) in June 2010. The interagency guidance is anchored by three principles:

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[1] *https://plus.cq.com/doc/congressionaltranscripts-5358712?4*

- Balance between risks and results: Incentive compensation arrangements should balance risk and financial results in a manner that does not encourage employees to expose their organizations to imprudent risks;
- Processes and controls that reinforce balance: A banking organization's risk-management processes and internal controls should reinforce and support the development and maintenance of balanced incentive compensation arrangements; and
- Effective corporate governance: Banking organizations should have strong and effective corporate governance to help ensure sound incentive compensation practices, including active and effective oversight by the board of directors.

The Guidance explains how banking organizations should develop incentive compensation policies that take into account the full range of current and potential risks, and are consistent with safe-and-sound practices. Relevant risks would vary based on the organization, but could include credit, market, operational, liquidity, interest rate, legal, conduct, and related risks. The Guidance also discusses the importance of considering compliance risks (including consumer compliance) when evaluating whether incentive compensation arrangements balance risk and rewards.

Currently, supervisory oversight focuses most intensively on large and complex banking organizations, which warrant the most intensive supervisory attention because they are significant users of incentive compensation arrangements and because flawed approaches at these organizations are more likely to have adverse effects on the broader financial system.

Q.3. Please provide any guidance issued to regulated institutions or materials provided to bank examiners on incentive-based compensation practices.

A.3. Attached to this response are:

- Guidance on Sound Incentive Compensation Policies, issued by the Federal banking agencies in June 2010;[2] and
- A Report on the Horizontal Review of Practices at Large Banking Organizations, issued by the Board in October 2011.[3]

Q.4. What metrics, thresholds, and standards is the Federal Reserve using to evaluate incentive-based compensation practices?

A.4. The Federal Reserve's approach is principles-based, and recognizes that organizations have unique incentive compensation practices that vary depending on the firm's organizational model and operating structure. The supervisory process focuses on assessing how firms have integrated their approaches to incentive compensation arrangements with their risk-management and internal control frameworks to better monitor and control the risks these arrangements may create for the organization. Supervision also considers whether appropriate personnel, including risk-management personnel, have input into the organization's processes for design-

[2] *https://www.federalreserve.gov/newsevents/pressreleases/bcreg201000621a.htm*

[3] *https://www.federalreserve.gov/publications/other-reports/incentive-compensation-report-201110.htm*

ing incentive compensation arrangements and assessing their effectiveness in restraining imprudent risk-taking.

Q.5. Which institutions are subject to the Federal Reserve's supervision of incentive-based compensation practices?

A.5. The Guidance, issued by the Federal banking agencies in June 2010, applies to global consolidated operations of all U.S.-headquartered banking organizations and to the U.S. operations of foreign banking organizations with a branch, agency, or commercial lending company in the United States that use incentive compensation. Because of the size and complexity of their operations, Federal Reserve supervision focuses on large banking organizations, those with the most significant use of incentive compensation, and those with the most complex operations.

Q.6. Were those institutions selected for supervision by asset size or some other factor?

A.6. The principles-based Guidance issued by the Federal banking agencies in June 2010, applies regardless of size; however, the Federal Reserve focuses supervisory oversight on the largest banking organizations, those with the most significant use of incentive compensation, and those with the most complex operations.

The banking organizations involved in the horizontal reviews[4] were selected based on asset size and complexity of operations.

Q.7. If there is no rule clearly delineating prohibited practices, how are you ensuring consistency across regulated institutions?

A.7. Supervision of incentive compensation by the Federal Reserve is governed by the Guidance, which is integrated into the Bank Holding Company Supervision Manual. Federal Reserve understanding of incentive compensation practices was developed through the information collected during the horizontal reviews. With that understanding, the Federal Reserve has integrated incentive compensation in ongoing supervisory reviews, whether targeted (such as sales incentives or compliance reviews) or within individual lines of business (such as mortgage lending operations, or trading). A team at the Board monitors these reviews to encourage constituency.

To foster implementation of improved incentive compensation practices, the Federal Reserve initiated multidisciplinary, horizontal reviews of incentive compensation practices at larger banking organizations. The primary goal was to consistently guide firms in implementing the interagency guidance.

[4] For additional information on the Federal Reserve's horizontal reviews of compensation practices, see: "Incentive Compensation Practices: A Report on the Horizontal Review of Practices at Large Banking Organizations", October 2011, available at: *https://www.federalreserve.gov/publications/other-reports/incentive-compensation-report-201110.htm.*

an exemption under the Freedom of Information Act (5 U.S.C. 552(b)(4) and (b)(6)). The confidentiality status of the information submitted will be judged on a case-by-case basis.

Abstract: The information collected assists the Federal Reserve, the Office of the Comptroller of the Currency, the Federal Deposit Insurance Corporation, and the Office of Thrift Supervision in fulfilling their statutory responsibilities as supervisors. Each of these forms is used to collect information in connection with applications and notices filed prior to proposed changes in the ownership or management of banking organizations. The agencies use the information to evaluate the controlling owners, senior officers, and directors of the insured depository institutions subject to their oversight.

4. *Report title:* Recordkeeping and Disclosure Requirements Associated with Regulation R.

Agency form number: FR 4025.

OMB control number: 7100–0316.

Frequency: On occasion.

Reporters: Commercial banks and savings associations.

Estimated annual reporting hours: Section 701, disclosures to customers—12,500 hours; Section 701, disclosures to brokers—375 hours; Section 723, recordkeeping—188 hours; Section 741, disclosures to customers—62,500 hours.

Estimated average hours per response: Section 701, disclosures to customers—5 minutes; Section 701, disclosures to brokers—15 minutes; Section 723, recordkeeping—15 minutes; Section 741, disclosures to customers—5 minutes.

Number of respondents: Section 701, disclosures to customers—1,500; Section 701, disclosures to brokers—1,500; Section 723, recordkeeping—75; Section 741, disclosures to customers—750.

General description of report: This information collection is required to obtain a benefit pursuant to section 3(a)(4)(F) of the Securities Exchange Act (15 U.S.C. 78c(a)(4)(F)) and may be given confidential treatment under the authority of the Freedom of Information Act (5 U.S.C. 552(b)(4) and (b)(8)).

Abstract: Regulation R implements certain exceptions for banks from the definition of broker under Section 3(a)(4) of the Securities Exchange Act of 1934, as amended by the Gramm-Leach-Bliley Act. Sections 701, 723, and 741 of Regulation R contain information collection requirements. Section 701 requires banks that wish to utilize the exemption in that section to make certain disclosures to the high net worth customer or institutional customer. In addition, section 701 requires banks that wish to utilize the exemption in that section to provide a notice to its broker-dealer partner regarding names and other identifying information about bank employees. Section 723 requires a bank that chooses to rely on the exemption in that section to exclude certain trust or fiduciary accounts in determining its compliance with the chiefly compensated test in section 721 to maintain certain records relating to the excluded accounts. Section 741 requires a bank relying on the exemption provided by that section to provide customers with a prospectus for the money market fund securities, not later than the time the customer authorizes the bank to effect the transaction in such securities, if the class of series of securities are not no-load.

Board of Governors of the Federal Reserve System, June 22, 2010.

Jennifer J. Johnson,

Secretary of the Board.

[FR Doc. 2010–15492 Filed 6–24–10; 8:45 am]

BILLING CODE 6210–01–P

FEDERAL RESERVE SYSTEM

Formations of, Acquisitions by, and Mergers of Bank Holding Companies

The companies listed in this notice have applied to the Board for approval, pursuant to the Bank Holding Company Act of 1956 (12 U.S.C. 1841 *et seq.*) (BHC Act), Regulation Y (12 CFR Part 225), and all other applicable statutes and regulations to become a bank holding company and/or to acquire the assets or the ownership of, control of, or the power to vote shares of a bank or bank holding company and all of the banks and nonbanking companies owned by the bank holding company, including the companies listed below.

The applications listed below, as well as other related filings required by the Board, are available for immediate inspection at the Federal Reserve Bank indicated. The applications also will be available for inspection at the offices of the Board of Governors. Interested persons may express their views in writing on the standards enumerated in the BHC Act (12 U.S.C. 1842(c)). If the proposal also involves the acquisition of a nonbanking company, the review also includes whether the acquisition of the nonbanking company complies with the standards in section 4 of the BHC Act (12 U.S.C. 1843). Unless otherwise noted, nonbanking activities will be conducted throughout the United States. Additional information on all bank holding companies may be obtained from the National Information Center website at *www.ffiec.gov/nic/*.

Unless otherwise noted, comments regarding each of these applications must be received at the Reserve Bank indicated or the offices of the Board of Governors not later than July 22, 2010.

A. Federal Reserve Bank of Atlanta (Clifford Stanford, Vice President) 1000 Peachtree Street, N.E., Atlanta, Georgia 30309:

1. USAmeriBancorp, Inc., Largo, Florida; to acquire at least 50 percent of the voting shares of Aliant Financial Corporation, and thereby indirectly acquire voting shares of Aliant Bank, both of Alexander City, Alabama.

B. Federal Reserve Bank of Minneapolis (Jacqueline G. King, Community Affairs Officer) 90 Hennepin Avenue, Minneapolis, Minnesota 55480–0291:

1. First Holding Company of Park River, Inc., Park River, North Dakota; to establish a wholly owned subsidiary, Sheyenne Bancorp, Inc., Park River, North Dakota, and thereby acquire 100 percent of the voting shares of First Sharon Holding Company, Inc., Aneta, North Dakota, and indirectly acquire voting shares of First State Bank of Sharon, Sharon, North Dakota. In connection with this application, Sheyenne Bancorp, Inc., has also applied to become a bank holding company.

Board of Governors of the Federal Reserve System, June 22, 2010.

Robert deV. Frierson,

Deputy Secretary of the Board.

[FR Doc. 2010–15474 Filed 6–24–10; 8:45 am]

BILLING CODE 6210–01–S

DEPARTMENT OF THE TREASURY

Office of the Comptroller of the Currency

[Docket ID OCC–2010–0013]

FEDERAL RESERVE SYSTEM

[Docket No. OP–1374]

FEDERAL DEPOSIT INSURANCE CORPORATION

DEPARTMENT OF THE TREASURY

Office of Thrift Supervision

[Docket ID OTS–2010–0020]

Guidance on Sound Incentive Compensation Policies

AGENCY: Office of the Comptroller of the Currency, Treasury (OCC); Board of Governors of the Federal Reserve System, (Board or Federal Reserve);

Federal Deposit Insurance Corporation (FDIC); Office of Thrift Supervision, Treasury (OTS).

ACTION: Final guidance.

SUMMARY: The OCC, Board, FDIC and OTS (collectively, the Agencies) are adopting final guidance designed to help ensure that incentive compensation policies at banking organizations do not encourage imprudent risk-taking and are consistent with the safety and soundness of the organization.

DATES: *Effective Date:* The guidance is effective on June 25, 2010.

FOR FURTHER INFORMATION CONTACT:

OCC: Karen M. Kwilosz, Director, Operational Risk Policy, (202) 874–9457, or Reggy Robinson, Policy Analyst, Operational Risk Policy, (202) 874–4438.

Board: William F. Treacy, Adviser, (202) 452–3859, Division of Banking Supervision and Regulation; Mark S. Carey, Adviser, (202) 452–2784, Division of International Finance; Kieran J. Fallon, Associate General Counsel, (202) 452–5270 or Michael W. Waldron, Counsel, (202) 452–2798, Legal Division. For users of Telecommunications Device for the Deaf ("TDD") only, contact (202) 263–4869.

FDIC: Mindy West, Chief, Policy and Program Development, Division of Supervision and Consumer Protection, (202) 898–7221, or Robert W. Walsh, Review Examiner, Policy and Program Development, Division of Supervision and Consumer Protection, (202) 898–6649.

OTS: Rich Gaffin, Financial Analyst, Risk Modeling and Analysis, (202) 906–6181, or Richard Bennett, Senior Compliance Counsel, Regulations and Legislation Division, (202) 906–7409; Donna Deale, Director, Holding Company and International Policy, (202) 906–7488, Grovetta Gardineer, Managing Director, Corporate and International Activities, (202) 906–6068; Office of Thrift Supervision, 1700 G Street, NW., Washington, DC 20552.

SUPPLEMENTARY INFORMATION:

I. Background

Compensation arrangements are critical tools in the successful management of financial institutions. These arrangements serve several important and worthy objectives, including attracting skilled staff, promoting better organization-wide and employee performance, promoting employee retention, providing retirement security to employees, and allowing an organization's personnel costs to vary along with revenues.

It is clear, however, that compensation arrangements can provide executives and employees with incentives to take imprudent risks that are not consistent with the long-term health of the organization. For example, offering large payments to managers or employees to produce sizable increases in short-term revenue or profit—without regard for the potentially substantial short or long-term risks associated with that revenue or profit—can encourage managers or employees to take risks that are beyond the capability of the financial institution to manage and control.

Flawed incentive compensation practices in the financial industry were one of many factors contributing to the financial crisis that began in 2007. Banking organizations too often rewarded employees for increasing the organization's revenue or short-term profit without adequate recognition of the risks the employees' activities posed to the organization.

Having witnessed the damaging consequences that can result from misaligned incentives, many financial institutions are now re-examining their compensation structures with the goal of better aligning the interests of managers and other employees with the long-term health of the institution. Aligning the interests of shareholders and employees, however, is not always sufficient to protect the safety and soundness of a banking organization. Because banking organizations benefit directly or indirectly from the protections offered by the Federal safety net (including the ability of insured depository institutions to raise insured deposits and access the Federal Reserve's discount window and payment services), shareholders of a banking organization in some cases may be willing to tolerate a degree of risk that is inconsistent with the organization's safety and soundness. Thus, a review of incentive compensation arrangements and related corporate governance practices to ensure that they are effective from the standpoint of shareholders is not sufficient to ensure they adequately protect the safety and soundness of the organization.

A. Proposed Guidance

In October 2009, the Federal Reserve issued and requested comment on Proposed Guidance on Sound Incentive Compensation Policies ("proposed guidance") to help protect the safety and soundness of banking organizations supervised by the Federal Reserve and to promote the prompt improvement of incentive compensation practices throughout the banking industry.[1] The proposed guidance was based on three key principles. These principles provided that incentive compensation arrangements at a banking organization should—

- Provide employees incentives that appropriately balance risk and reward;
- Be compatible with effective controls and risk-management; and
- Be supported by strong corporate governance, including active and effective oversight by the organization's board of directors.

Because incentive compensation arrangements for executive and non-executive employees may pose safety and soundness risks if not properly structured, the proposed guidance applied to senior executives as well as other employees who, either individually or as part of a group, have the ability to expose the relevant banking organization to material amounts of risk.

With respect to the first principle, the proposed guidance, among other things, provided that a banking organization should ensure that its incentive compensation arrangements do not encourage short-term profits at the expense of short- and longer-term risks to the organization. Rather, the proposed guidance indicated that banking organizations should adjust the incentive compensation provided so that employees bear some of the risk associated with their activities. To be fully effective, these adjustments should take account of the full range of risks that the employees' activities may pose for the organization. The proposed guidance highlighted several methods that banking organizations could use to adjust incentive compensation awards or payments to take account of risk.

With respect to the second principle, the proposed guidance provided that banking organizations should integrate their approaches to incentive compensation arrangements with their risk-management and internal control frameworks to better monitor and control the risks these arrangements may create for the organization. Accordingly, the proposed guidance provided that banking organizations should ensure that risk-management personnel have an appropriate role in designing incentive compensation arrangements and assessing whether the arrangements may encourage imprudent risk-taking. In addition, the proposed guidance provided that banking organizations should track incentive compensation awards and payments, risks taken, and actual risk outcomes to

[1] 74 FR 55227 (October 27, 2009).

determine whether incentive compensation payments to employees are reduced or adjusted to reflect adverse risk outcomes.

With respect to the third principle, the proposed guidance provided that a banking organization's board of directors should play an informed and active role in ensuring that the organization's compensation arrangements strike the proper balance between risk and profit not only at the initiation of a compensation program, but on an ongoing basis. Thus, the proposed guidance provided that boards of directors should review and approve key elements of their organizations' incentive compensation systems across the organization, receive and review periodic evaluations of whether their organizations' compensation systems for all major segments of the organization are achieving their risk-mitigation objectives, and directly approve the incentive compensation arrangements for senior executives.

The Board's proposed guidance applied to all banking organizations supervised by the Federal Reserve. However, the proposed guidance also included provisions intended to reflect the diversity among banking organizations, both with respect to the scope and complexity of their activities, as well as the prevalence and scope of incentive compensation arrangements. Thus, for example, the proposed guidance provided that the reviews, policies, procedures, and systems implemented by a smaller banking organization that uses incentive compensation arrangements on a limited basis would be substantially less extensive, formalized, and detailed than those at a large, complex banking organization (LCBO)[2] that uses incentive compensation arrangements extensively. In addition, because sound incentive compensation practices are important to protect the safety and soundness of all banking organizations, the Federal Reserve announced that it would work with the other Federal banking agencies to promote application of the guidance to all banking organizations.

The Board invited comment on all aspects of the proposed guidance. The Board also specifically requested comments on a number of issues, including whether:

- The three core principles are appropriate and sufficient to help ensure that incentive compensation arrangements do not threaten the safety and soundness of banking organizations;
- There are any material legal, regulatory, or other impediments to the prompt implementation of incentive compensation arrangements and related processes that would be consistent with those principles;
- Formulaic limits on incentive compensation would likely promote the safety and soundness of banking organizations, whether applied generally or to specific types of employees or banking organizations;
- Market forces or practices in the broader financial services industry, such as the use of "golden parachute" or "golden handshake" arrangements to retain or attract employees, present challenges for banking organizations in developing and maintaining balanced incentive compensation arrangements;
- The proposed guidance would impose undue burdens on, or have unintended consequences for, banking organizations, particularly smaller, less complex organizations, and whether there are ways such potential burdens or consequences could be addressed in a manner consistent with safety and soundness; and
- There are types of incentive compensation plans, such as organization-wide profit sharing plans that provide for distributions in a manner that is not materially linked to the performance of specific employees or groups of employees, that could and should be exempted from, or treated differently under, the guidance because they are unlikely to affect the risk-taking incentives of all, or a significant number of employees.

B. Supervisory Initiatives

In connection with the issuance of the proposed guidance, the Federal Reserve announced two supervisory initiatives:

- A special horizontal review of incentive compensation practices at LCBO's; and
- A review of incentive compensation practices at other banking organizations as part of the regular, risk-focused examination process for these organizations.

The horizontal review was designed to assess: The potential for these arrangements or practices to encourage imprudent risk-taking; the actions an organization has taken or proposes to take to correct deficiencies in its incentive compensation practices; and the adequacy of the organization's compensation-related risk-management, control, and corporate governance processes.

II. Overview of Comments

The Board received 34 written comments on the proposed guidance, which were shared and reviewed by all of the Agencies. Commenters included banking organizations, financial services trade associations, service providers to financial organizations, representatives of institutional shareholders, labor organizations, and individuals. Most commenters supported the goal of the proposed guidance—to ensure that incentive compensation arrangements do not encourage imprudent or undue risk-taking at banking organizations. Commenters also generally supported the principles-based approach of the proposed guidance. For example, many commenters specifically supported the avoidance of formulaic or one-size-fits-all approaches to incentive compensation in the proposed guidance. These commenters noted financial organizations are very diverse and should be permitted to adopt incentive compensation measures that fit their needs, while also being consistent with safe and sound operations. Several commenters also asserted that a formulaic approach would inevitably lead to exaggerated risk-taking incentives in some situations while discouraging employees from taking reasonable and appropriate risks in others. One commenter also argued that unintended consequences would be more likely to result from a "rigid rulemaking" than from a flexible, principles-based approach.

Many commenters requested that the Board revise or clarify the proposed guidance in one or more respects. For example, several commenters asserted that the guidance should impose specific restrictions on incentive compensation at banking organizations or mandate certain corporate governance or risk-management practices. One commenter recommended a requirement that most compensation for senior executives be provided in the form of variable, performance-vested equity awards that are deferred for at least five years, and that stock option compensation be prohibited. Another commenter advocated a ban on "golden parachute" payments and on bonuses based on metrics related to one year or less of performance. Other commenters suggested that the guidance should require banking organizations to have an independent chairman of the board of directors, require annual majority voting for all directors, or provide for shareholders to have a vote (so called

[2] In the proposed guidance (issued by the Federal Reserve), the term LCBO was used as this is the term utilized by the Federal Reserve in describing such organizations. The final guidance uses the term Large Banking Organization (LBO), which encompasses terminology utilized by the OCC, FDIC and OTS.

"say-on-pay" voting provisions) on the incentive compensation arrangements for certain employees of banking organizations. Other commenters requested that certain types of compensation plans, such as organization-wide profit sharing plans or 401(k) plans or plans covered by the Employee Retirement Income Security Act (29 U.S.C. 1400 *et seq.*), be exempted from the scope of the guidance because they were unlikely to provide employees incentives to expose their banking organization to undue risk.

Several commenters, however, did not support the proposed guidance. Some of these commenters felt that the proposed guidance was unnecessary and that the principles used in the proposed guidance were not needed. These commenters argued that the existing system of financial regulation and enforcement is sufficient to address the concerns raised in the proposed guidance. Several commenters also thought that the proposed guidance was too vague to be helpful, and that the ambiguity of the proposed guidance would make compliance more difficult, leading to increased costs and regulatory uncertainty. Some commenters also argued that the guidance was not warranted because there is insufficient evidence that incentive compensation practices contributed to safety and soundness or financial stability problems, or questioned the authority of the Federal Reserve or the other Federal banking agencies to act in this area.

In addition, a number of commenters expressed concern that the proposed guidance would impose undue burden on banking organizations, particularly smaller, less complex organizations. These commenters believed that incentive compensation practices at smaller banking organizations were generally not problematic from a safety and soundness perspective.[3] A number of commenters suggested that all or most smaller banking organizations should be exempt from the guidance. A number of commenters expressed concerns that the proposed guidance would impose unreasonable demands on the boards of directors of banking organizations and especially smaller organizations.

Several commenters also expressed concern that the proposed guidance, if implemented, could impede the ability of banking organizations to attract or retain qualified staff and compete with other financial services providers. In light of these concerns, some commenters suggested that the guidance expressly allow banking organizations to enter into such compensation arrangements as they deem necessary for recruitment or retention purposes. A number of commenters also encouraged the Federal Reserve to work with other domestic and foreign supervisors and authorities to promote consistent standards for incentive compensation practices at financial institutions and a level competitive playing field for financial service providers.

The comments received on the proposed guidance are further discussed below.

III. Final Guidance

After carefully reviewing the comments on the proposed guidance, the Agencies have adopted final guidance that retains the same key principles embodied in the proposed guidance, with a number of adjustments and clarifications that address matters raised by the commenters. These principles are: (1) Incentive compensation arrangements at a banking organization should provide employees incentives that appropriately balance risk and financial results in a manner that does not encourage employees to expose their organizations to imprudent risk; (2) these arrangements should be compatible with effective controls and risk-management; and (3) these arrangements should be supported by strong corporate governance, including active and effective oversight by the organization's board of directors. The Agencies believe that it is important that incentive compensation arrangements at banking organizations do not provide incentives for employees to take risks that could jeopardize the safety and soundness of the organization. The final guidance seeks to address the safety and soundness risks of incentive compensation practices by focusing on the basic problem they can pose from a risk-management perspective, that is, incentive compensation arrangements—if improperly structured—can give employees incentives to take imprudent risks.

The Agencies believe the principles of the final guidance should help protect the safety and soundness of banking organizations and the stability of the financial system, and that adoption of the guidance is fully consistent with the Agencies' statutory mandate to protect the safety and soundness of banking organizations.[4]

The final guidance applies to all the banking organizations supervised by the Agencies, including national banks, State member banks, State nonmember banks, savings associations, U.S. bank holding companies, savings and loan holding companies, the U.S. operations of foreign banks with a branch, agency or commercial lending company in the United States, and Edge and agreement corporations (collectively, "banking organizations").

A number of changes have been made to the proposed guidance in response to comments. For example, the final guidance includes several provisions designed to reduce burden on smaller banking organizations and other banking organizations that are not significant users of incentive compensation. The Agencies also have made a number of changes to clarify the scope, intent, and terminology of the final guidance.

A. Scope of Guidance

Compensation practices were not the sole cause of the financial crisis, but they certainly were a contributing cause—a fact recognized by 98 percent of the respondents to a survey of banking organizations engaged in wholesale banking activities conducted in 2009 by the Institute of International Finance and publicly by a number of individual financial institutions.[5] Moreover, the problems caused by improper compensation practices were not limited to U.S. financial institutions, but were evident at major financial institutions worldwide, a fact recognized by international bodies such

[3] On the other hand, one commenter requested that the proposed guidance not be enforced differently at larger institutions solely because of their size.

[4] *See, e.g.* 12 U.S.C. 1818(b). The Agencies regularly issue supervisory guidance based on the authority in section 8 of the Federal Deposit Insurance (FDI) Act. Guidance is used to identify practices that the Agencies believe would constitute an unsafe or unsound practice and/or identify risk-management systems, controls, or other practices that the Agencies believe would assist banking organizations in ensuring that they operate in a safe and sound manner. Savings associations should also refer to OTS's rule on employment contracts 12 CFR 563.39.

[5] *See,* Institute of International Finance, Inc. (2009), *Compensation in Financial Services: Industry Progress and the Agenda for Change* (Washington: IIF, March) available at *http://www.oliverwyman.com/ow/pdf_files/OW_En_FS_Publ_2009_CompensationInFS.pdf. See also* UBS, Shareholder Report on UBS's Write-Downs, April 18, 2008, pp. 41–42 (identifies incentive effects of UBS compensation practices as contributing factors in losses suffered by UBS due to exposure to the subprime mortgage market) available at *http://www.ubs.com/1/ShowMedia/investors/agm?contentId=140336&name=080418ShareholderReport.pdf.*

as the Financial Stability Board (FSB) and the Senior Supervisors Group.[6]

Because compensation arrangements for executive and non-executive employees alike may pose safety and soundness risks if not properly structured, these principles and the final guidance apply to senior executives as well as other employees who, either individually or as part of a group, have the ability to expose the banking organization to material amounts of risk.[7] These employees are referred to as "covered employees" in the final guidance. In response to comments, the final guidance clarifies that an employee or group of employees has the ability to expose a banking organization to material amounts of risk if the employees' activities are material to the organization or are material to a business line or operating unit that is itself material to the organization.

Some commenters suggested that certain categories of employees, such as tellers, bookkeepers, administrative assistants, or employees who process but do not originate transactions, do not expose banking organizations to significant levels of risk and therefore should be exempted from coverage under the final guidance. The final guidance, like the proposed guidance, indicates that the facts and circumstances will determine which jobs or categories of employees have the ability to expose the organization to material risks and which jobs or categories of employees may be outside the scope of the guidance. The final guidance recognizes, for example, that tellers, bookkeepers, couriers, and data processing personnel would likely not expose organizations to significant risks of the types meant to be addressed by the guidance. On the other hand, employees or groups of employees who do not originate business or approve transactions could still expose a banking organization to material risk in some circumstances. Therefore, the Agencies do not believe it would be appropriate to provide a blanket exemption from the final guidance for any category of covered employees that would apply to all banking organizations.

After reviewing the comments, the Agencies have retained the principles-based framework of the proposed guidance. The Agencies believe this approach is the most effective way to address incentive compensation practices, given the differences in the size and complexity of banking organizations covered by the guidance and the complexity, diversity, and range of use of incentive compensation arrangements by those organizations. For example, activities and risks may vary significantly across banking organizations and across employees within a particular banking organization. For this reason, the methods used to achieve appropriately risk-sensitive compensation arrangements likely will differ across and within organizations, and use of a single, formulaic approach likely will provide at least some employees with incentives to take imprudent risks.

The Agencies, however, have not modified the guidance, as some commenters requested, to provide that a banking organization may enter into incentive compensation arrangements that are inconsistent with the principles of safety and soundness whenever the organization believes that such action is needed to retain or attract employees. The Agencies recognize that while incentive compensation serves a number of important goals for banking organizations, including attracting and retaining skilled staff, these goals do not override the requirement for banking organizations to have incentive compensation systems that are consistent with safe and sound operations and that do not encourage imprudent risk-taking. The final guidance provides banking organizations with considerable flexibility in structuring their incentive compensation arrangements in ways that both promote safety and soundness and that help achieve the arrangements' other objectives.

The Agencies are mindful, however, that banking organizations operate in both domestic and international competitive environments that include financial services providers that are not subject to prudential oversight by the Agencies and, thus, not subject to the final guidance. The Agencies also recognize that international coordination in this area is important both to promote competitive balance and to ensure that internationally active banking organizations are subject to consistent requirements. For this reason, the Agencies will continue to work with their domestic and international counterparts to foster sound compensation practices across the financial services industry. Importantly, the final guidance is consistent with both the Principles for Sound Compensation Practices and the related Implementation Standards adopted by the FSB in 2009.[8] A number of commenters expressed concern about the levels of compensation paid to some employees of banking organizations. As noted above, several commenters requested that the Board eliminate or limit certain types of incentive compensation for employees of banking organizations. Other commenters advocated that certain forms of compensation be required. For example, some commenters urged a ban on incentive compensation payments made in stock options, while others supported their mandatory use. Comments also were received with regard to the use of other types of stock-based compensation, such as restricted stock and stock appreciation rights. Consistent with its principles-based approach, the final guidance does not mandate or prohibit the use of any specific forms of payment for incentive compensation or establish mandatory compensation levels or caps. Rather, the forms and levels of incentive compensation payments at banking organizations are expected to reflect the principles of the final guidance in a manner tailored to the business, risk profile, and other attributes of the banking organization. Incentive compensation structures that offer employees rewards for increasing short-term profit or revenue, without taking into account risk, may encourage imprudent risk-taking even if they meet formulaic levels or include or exclude certain forms of compensation. On the other hand, incentive compensation arrangements of various forms and levels may be properly structured so as not to encourage imprudent risk-taking.

In response to comments, the final guidance clarifies in a number of respects the expectation of the Agencies that the impact of the final guidance on

[6] See, Financial Stability Forum (2009), *FSF Principles for Sound Compensation Practices (87 KB PDF)* (Basel, Switzerland: FSF, April), available at *http://www.financialstabilityboard.org/publications/r_0904b.pdf*; and Senior Supervisors Group (2009), *Risk-management Lessons from the Global Banking Crisis of 2008* (Basel, Switzerland: SSG, October), available at *http://www.newyorkfed.org/newsevents/news/banking/2009/ma091021.html*. The Financial Stability Forum was renamed the Financial Stability Board in April 2009.

[7] In response to a number of comments requesting clarification regarding the scope of the term "senior executives" as used in the guidance, the final guidance states that "senior executive" includes, at a minimum, "executive officers" within the meaning of the Board's Regulation O (12 CFR 215.2(e)(1)) and, for publicly traded companies, "named officers" within the meaning of the Securities and Exchange Commission's rules on disclosure of executive compensation (17 CFR 229.402(a)(3)). Savings associations should also refer to OTS's rule on loans by savings associations to their executive officers, directors, and principal shareholders. 12 CFR 563.43.

[8] See, Financial Stability Forum, FSF Principles for Sound Compensation Practices, in note 6; and Financial Stability Board (2009), FSB Principles for Sound Compensation Practices: Implementation Standards (35 KB PDF) (Basel, Switzerland: FSB, September), available at *http://www.financialstabilityboard.org/publications/r_090925c.pdf*.

banking organizations will vary depending on the size and complexity of the organization and its level of usage of incentive compensation arrangements. It is expected that the guidance will generally have less impact on smaller banking organizations, which typically are less complex and make less use of incentive compensation arrangements than larger banking organizations. Because of the size and complexity of their operations, large banking organizations (LBOs)[9] should have and adhere to systematic and formalized policies, procedures and processes. These are considered important in ensuring that incentive compensation arrangements for all covered employees are identified and reviewed by appropriate levels of management (including the board of directors where appropriate and control units), and that they appropriately balance risks and rewards . The final guidance highlights the types of policies, procedures, and systems that LBOs should have and maintain, but that are not expected of other banking organizations. It is expected that, particularly in the case of LBO's, adoption of this principles-based approach will require an iterative supervisory process to ensure that the embedded flexibility that allows for customized arrangements for each banking organization does not undermine effective implementation of the guidance.

With respect to U.S. operations of foreign banks, incentive compensation policies, including management, review, and approval requirements for a foreign bank's U.S. operations should be coordinated with the foreign banking organization's group-wide policies developed in accordance with the rules of the foreign banking organization's home country supervisor. These policies and practices should be consistent with the foreign bank's overall corporate and management structure and its framework for risk-management and internal controls, as well as with the final guidance.

[9] For purposes of the final guidance, LBOs include, in the case of banking organizations supervised by (i) the Federal Reserve, large, complex banking organizations as identified by the Federal Reserve for supervisory purposes; (ii) the OCC, the largest and most complex national banks as defined in the Large Bank Supervision booklet of the Comptroller's Handbook; (iii) the FDIC, large complex insured depository institutions (IDIs); and (iv) the OTS, the largest and most complex savings associations and savings and loan holding companies. The term "smaller banking organizations" is used to refer to banking organizations that are not LBOs under the relevant agency's standard.

B. Balanced Incentive Compensation Arrangements

The first principle of the final guidance is that incentive compensation arrangements should provide employees incentives that appropriately balance risks and rewards in a manner that does not encourage imprudent risk-taking. The amounts of incentive pay flowing to covered employees should take account of and adjust for the risks and losses—as well as gains—associated with employees' activities, so that employees do not have incentives to take imprudent risk. The formulation of this principle is slightly different from that used in the proposed guidance, which stated that organizations should provide employees incentives that do not encourage imprudent risk-taking beyond the organization's ability to effectively identify and manage risk. This change was made to clarify that risk-management procedures and control functions that ordinarily limit risk-taking do not obviate the need to identify covered employees and to develop incentive compensation arrangements that properly balance risk-taking incentives. To be fully effective, balancing adjustments to incentive compensation arrangements should take account of the full range of risks that employees' activities may pose for the organization, including credit, market, liquidity, operational, legal, compliance, and reputational risks.

A number of commenters expressed the view that increased controls could mitigate a lack of balance in incentive compensation arrangements. Under this view, unbalanced incentive compensation arrangements could be addressed either through the modification of the incentive compensation arrangements or through the application of additional or more effective risk controls to the business. The final guidance recognizes that strong and effective risk-management and internal control functions are critical to the safety and soundness of banking organizations. However, the Agencies believe that poorly designed or managed incentive compensation arrangements can themselves be a source of risk to banking organizations and undermine the controls in place. Unbalanced incentive compensation arrangements can place substantial strain on the risk-management and internal control functions of even well-managed organizations. Furthermore, poorly balanced incentive compensation arrangements can encourage employees to take affirmative actions to weaken the organization's risk-management or internal control functions.

The final guidance, like the proposed guidance, outlines four methods that are currently in use to make compensation more sensitive to risk. These are risk adjustment of awards; deferral of payment; longer performance periods; and reduced sensitivity to short-term performance. Each method has advantages and disadvantages. For example, incentive compensation arrangements for senior executives at LBOs are likely to be better balanced if they involve deferral of a substantial portion of the executives' incentive compensation over a multi-year period, with payment made in the form of stock or other equity-based instruments and with the number of instruments ultimately received dependent on the performance of the organization (or, ideally, the performance of the executive) during the deferral period. Deferral, however, may not be effective in constraining the incentives of employees who may have the ability to expose the organization to long-term risks, as these risks may not be realized during a reasonable deferral period. For this reason, the final guidance recognizes that in some cases, two or more methods may be needed in combination (*e.g.*, risk adjustment of awards and deferral of payment) to achieve an incentive compensation arrangement that properly balances risk and reward.

Furthermore, the few methods noted in the final guidance are not exclusive, and other effective methods or variations may exist or be developed. Methods for achieving balanced compensation arrangements at one organization may not be effective at another organization. Each organization is responsible for ensuring that its incentive compensation arrangements are consistent with the safety and soundness of the organization. The guidance clarifies that LBOs should actively monitor industry, academic, and regulatory developments in incentive compensation practices and theory and be prepared to incorporate into their incentive compensation systems new or emerging methods that are likely to improve the organization's long-term financial well-being and safety and soundness.

In response to a question asked in the proposed guidance, several commenters requested that certain types of compensation plans be treated as beyond the scope of the final guidance because commenters believed these plans do not threaten the safety and soundness of banking organizations. These included organization-wide profit sharing plans, 401(k) plans, defined benefit plans, and ERISA plans.

The final guidance does not exempt any broad categories of compensation plans based on their tax structure, corporate form, or status as a retirement or other employee benefit plans, because any type of incentive compensation plan may be implemented in a way that increases risk inappropriately. In response to these comments, however, the final guidance recognizes that the term "incentive compensation" does not include arrangements that are based solely on the employees' level of compensation and that do not vary based on one or more performance metrics (*e.g.*, a 401(k) plan under which the organization contributes a set percentage of an employee's salary). In addition, the final guidance notes that incentive compensation plans that provide for awards based solely on overall organization-wide performance are unlikely to provide employees, other than senior executives and individuals who have the ability to materially affect the organization's overall performance, with unbalanced risk-taking incentives.

In many cases, there were comments on both sides of an issue, with some wanting less or no guidance and others wanting tough, or very specific prohibitions. For example, a number of commenters argued that the use of "golden parachutes" and similar retention and recruitment provisions to retain employees should be prohibited because such provisions have been abused in the past.[10] A larger number of commenters, however, argued against a per se ban on such arrangements, stating that these provisions were in some cases essential elements of effective recruiting and retention packages and are not necessarily a threat to safety and soundness. One commenter stated that golden parachute payments triggered by changes in control of a banking organization are too speculative to encourage imprudent risk-taking by employees.

The final guidance, like the proposed guidance, provides that banking organizations should carefully consider the potential for golden parachutes and similar arrangements to affect the risk-taking behavior of employees. The final guidance adds language noting that arrangements that provide an employee with a guaranteed payout upon departure from an organization regardless of performance may neutralize the effect of any balancing features included in the arrangement to help prevent imprudent risk-taking. Organizations should consider including balancing features—such as risk adjustments or deferral requirements—in golden parachutes and similar arrangements to mitigate the potential for the arrangements to encourage imprudent risk-taking.

Provisions that require a departing employee to forfeit deferred incentive compensation payments may also weaken the effectiveness of a deferral arrangement if the departing employee is able to negotiate a "golden handshake" arrangement with the employee's new organization.[11] Golden handshake provisions present special issues for banking organizations and supervisors, some of which are discussed in the final guidance, because it is the action of the employee's new employer—which may not be a regulated institution—that can affect the current employer's ability to properly align the employee's interest with the organization's long-term health. The final guidance states that LBOs should monitor whether golden handshake arrangements are materially weakening the organization's efforts to constrain the risk-taking incentives of employees. The Agencies will continue to work with banking organizations and others to develop appropriate methods for addressing any effect that such arrangements may have on the safety and soundness of banking organizations.

C. Compatibility With Effective Controls and Risk-Management

The second principle of the final guidance states that a banking organization's risk-management processes and internal controls should reinforce and support the development and maintenance of balanced incentive compensation arrangements. Banking organizations should integrate incentive compensation arrangements into their risk-management and internal control frameworks to ensure that balance is achieved. In particular, banking organizations should have appropriate controls to ensure that processes for achieving balance are followed. Appropriate personnel, including risk-management personnel, should have input in the design and assessment of incentive compensation arrangements. Compensation for risk-management and control personnel should be sufficient to attract and retain appropriately qualified personnel and such compensation should not be based substantially on the financial performance of the business unit that they review. Rather, their performance should be based primarily on the achievement of the objectives of their functions (*e.g.*, adherence to internal controls).

Banking organizations should monitor incentive compensation awards, risks taken and actual risk outcomes to determine whether incentive compensation payments to employees are reduced to reflect adverse risk outcomes. Incentive compensation arrangements that are found not to appropriately reflect risk should be modified as necessary. Organizations should not only provide rewards when performance standards are met or exceeded, they should also reduce compensation when standards are not met. If senior executives or other employees are paid substantially all of their potential incentive compensation when risk outcomes are materially worse than expected, employees may be encouraged to take large risks in the hope of substantially increasing their personal compensation, knowing that their downside risks are limited. Simply put, incentive compensation arrangements should not create a "heads I win, tails the firm loses" expectation.

A significant number of comments expressed concerns about the scope of the applicability of the proposed guidance to smaller banking organizations as well as the burden the proposed guidance would impose on these organizations. In response to these comments, the final guidance has made more explicit the Agencies' view that the monitoring methods and processes used by a banking organization should be commensurate with the size and complexity of the organization, as well as its use of incentive compensation. Thus, for example, a smaller organization that uses incentive compensation only to a limited extent may find that it can appropriately monitor its arrangements through normal management processes. The final guidance also discusses specific aspects of policies and procedures related to controls and risk-management that are applicable to LBOs and are not expected of other banking organizations.

D. Strong Corporate Governance

The third principle of the final guidance is that incentive compensation programs at banking organizations should be supported by strong corporate governance, including active and effective oversight by the organization's

[10] Arrangements that provide for an employee (typically a senior executive), upon departure from an organization or a change in control of the organization, to receive large additional payments or the accelerated payment of deferred amounts without regard to risk or risk outcomes are sometimes called "golden parachutes."

[11] Golden handshakes are arrangements that compensate an employee for some or all of the estimated, non-adjusted value of deferred incentive compensation that would have been forfeited upon departure from the employee's previous employment.

board of directors.[12] The board of directors of an organization is ultimately responsible for ensuring that the organization's incentive compensation arrangements for all covered employees—not solely senior executives—are appropriately balanced and do not jeopardize the safety and soundness of the organization. Boards of directors should receive data and analysis from management or other sources that are sufficient to allow the board to assess whether the overall design and performance of the organization's incentive compensation arrangements are consistent with the organization's safety and soundness. These reviews and reports should be appropriately scoped to reflect the size and complexity of the banking organization's activities and the prevalence and scope of its incentive compensation arrangements. The structure, composition, and resources of the board of directors should be constructed to permit effective oversight of incentive compensation. The board of directors should, for example, have, or have access to, a level of expertise and experience in risk-management and compensation practices in the financial services sector that is appropriate for the nature, scope, and complexity of the organization's activities.[13]

Given the key role of senior executives in managing the overall risk-taking activities of an organization, the board of directors should directly approve compensation arrangements involving senior executives and closely monitor such payments and their sensitivity to risk outcomes. If the compensation arrangements for a senior executive include a deferral of payment or "clawback" provision, then the review should include sufficient information to determine if the provision has been triggered and executed as planned. The board also should approve and document any material exceptions or adjustments to the incentive compensation arrangements established for senior executives and should carefully consider and monitor the effects of any approved exceptions or adjustments to the arrangements.

In response to comments expressing concern about the impact of the proposed guidance on smaller banking organizations, the final guidance identifies specific aspects of the corporate governance provisions of the final guidance that are applicable to LBOs or other organizations that use incentive compensation to a significant degree, and are not expected of other banking organizations. In particular, boards of directors of LBOs and other organizations that use incentive compensation to a significant degree should actively oversee the development and operation of the organization's incentive compensation policies, systems and related control processes. If such an organization does not already have a compensation committee, reporting to the full board, with primary responsibility for incentive compensation arrangements, the board should consider establishing one. LBOs, in particular, should follow a systematic approach, outlined in the final guidance, in developing compensation systems that have balanced incentive compensation arrangements.

Several commenters expressed concern that the proposed guidance appeared to create a new substantive qualification for boards of directors that requires the boards of all banking organizations to have members with expertise in compensation and risk-management issues. A group of commenters noted that such a requirement could limit an already small pool of people suitable to serve on boards of directors of banking organizations and that smaller organizations may not have access to, or the resources to compensate, directors meeting these additional requirements. Some commenters also stated that terms such as "closely monitor" and "actively oversee" could be read to impose a higher standard on directors for their oversight of incentive compensation issues. On the other hand, one commenter noted that current law requires financial expertise on the boards of directors and audit committees of public companies and recommended that specialized risk-management competencies be required on the boards of all banking organizations.

To address concerns raised by these commenters, the final guidance clarifies that risk-management and compensation expertise and experience at the board level may be present collectively among the members of the board, and may come from formal training or from experience in addressing risk-management and compensation issues, including as a director, or may be obtained from advice received from outside counsel, consultants, or other experts with expertise in incentive compensation and risk-management. Furthermore, the final guidance recognizes that smaller organizations with less complex and extensive incentive compensation arrangements may not find it necessary or appropriate to require specially tailored board expertise or to retain and use outside experts in this area.

A banking organization's disclosure practices should support safe and sound incentive compensation arrangements. Specifically, a banking organization should supply an appropriate amount of information concerning its incentive compensation arrangements and related risk-management, control, and governance processes to shareholders to allow them to monitor and, where appropriate, take actions to restrain the potential for such arrangements to encourage employees to take imprudent risks.

While some commenters supported increased public disclosure of the incentive compensation practices of banking organizations, a greater number expressed concerns that any required disclosures of incentive compensation information by banking organizations be tailored to protect the privacy of employees and take account of the impact of such disclosures on the ability of organizations to attract and retain talent. Several commenters supported an alignment of required disclosures with existing requirements for public companies, arguing that additional requirements would add to the regulatory burden on banking organizations.

The proposed guidance did not impose specific disclosure requirements on banking organizations. The final guidance makes no significant changes from the proposed guidance with regard to disclosures, and states that the scope and level of information disclosed by a banking organization should be tailored to the nature and complexity of the organization and its incentive compensation arrangements. The final guidance notes that banking organizations should comply with the incentive compensation disclosure requirements of the Federal securities law and other laws, as applicable.

A number of commenters supported additional governance requirements for banking organizations, such as "say on pay" provisions requiring shareholder approval of compensation plans, separation of the board chair and chief executive officer positions, majority voting for directors, annual elections for all directors, and improvements to the audit function. Some of these comments seek changes in Federal laws beyond the jurisdiction of the Agencies; others

[12] In the case of foreign banking organizations (FBOs), the term "board of directors" refers to the relevant oversight body for the firm's U.S. operations, consistent with the FBO's overall corporate and management structure.

[13] Savings associations should also refer to OTS's rule on directors, officers, and employees. 12 CFR 563.33.

address issues—such as "say on pay" requirements—that are currently under consideration by the Congress. The final guidance does not preempt or preclude these proposals, and indicates that the Agencies expect organizations to comply with all applicable statutory disclosure, voting and other requirements.

E. Continuing Supervisory Initiatives

The horizontal review of incentive compensation practices at LBOs is well underway. While this initiative is being led by the Federal Reserve, the other Federal banking agencies are participating in the work. Supervisory teams have collected substantial information from LBOs concerning existing incentive compensation practices and related risk-management and corporate governance processes. In addition, LBOs have submitted analyses of shortcomings or "gaps" in existing practices relative to the principles contained in the proposed guidance, as well as plans for addressing identified weaknesses. Some organizations already have implemented changes to make their incentive compensation arrangements more risk sensitive. Indeed, many organizations are recognizing that strong risk-management and control systems are not sufficient to protect the organization from undue risks, including risks arising from unbalanced incentive compensation arrangements. Other organizations have considerably more work to do, such as developing processes that can effectively compare incentive compensation payments to risks and risk outcomes. The Agencies intend to continue to regularly review incentive compensation arrangements and related risk-management, control, and corporate governance practices of LBOs and to work with these organizations through the supervisory process to promptly correct any deficiencies that may be inconsistent with safety and soundness.[14]

The Agencies intend to actively monitor the actions being taken by banking organizations with respect to incentive compensation arrangements and will review and update this guidance as appropriate to incorporate best practices that emerge. In addition, in order to monitor and encourage improvements, Federal Reserve staff will prepare a report, in consultation with the other Federal banking agencies, after the conclusion of 2010 on trends and developments in compensation practices at banking organizations.

IV. Other Matters

In accordance with the Paperwork Reduction Act (PRA) of 1995 (44 U.S.C. 3506; 5 CFR Part 1320 Appendix A.1), the Agencies have determined that certain aspects of the final guidance constitute a collection of information. The Board made this determination under the authority delegated to the Board by the Office of Management and Budget (OMB).

An agency may not conduct or sponsor, and an organization is not required to respond to, an information collection unless the information collection displays a currently valid OMB control number. Any changes to the Agencies' regulatory reporting forms that may be made in the future to collect information related to incentive compensation arrangements would be addressed in a separate **Federal Register** notice.

The final guidance includes provisions that state large banking organizations (LBOs) should (i) have policies and procedures that identify and describe the role(s) of the personnel and units authorized to be involved in incentive compensation arrangements, identify the source of significant risk-related inputs, establish appropriate controls governing these inputs to help ensure their integrity, and identify the individual(s) and unit(s) whose approval is necessary for the establishment or modification of incentive compensation arrangements; (ii) create and maintain sufficient documentation to permit an audit of the organization's processes for incentive compensation arrangements; (iii) have any material exceptions or adjustments to the incentive compensation arrangements established for senior executives approved and documented by its board of directors; and (iv) have its board of directors receive and review, on an annual or more frequent basis, an assessment by management of the effectiveness of the design and operation of the organization's incentive compensation system in providing risk-taking incentives that are consistent with the organization's safety and soundness.

The OCC, FDIC, and OTS have obtained emergency approval under 5 CFR 1320.13 for issuance of the guidance and will issue a **Federal Register** notice shortly for 60 days of comment as part of the regular PRA clearance process. During the regular PRA clearance process the estimated average response time may be re-evaluated.

The Board has approved the collection of information under its delegated authority. As discussed earlier in this notice, on October 27, 2009, the Board published in the **Federal Register** a notice requesting comment on the proposed Guidance on Sound Incentive Compensation Policies (74 FR 55227). The comment period for this notice expired November 27, 2009. The Board received three comments that specifically addressed paperwork burden. The commenters asserted that the hourly estimate of the cost of compliance should be considerably higher than the Board projected.

The final guidance clarifies in a number of respects the expectation that the effect of the final guidance on banking organizations will vary depending on the size and complexity of the organization and its level of use of incentive compensation arrangements. For example, the final guidance makes more explicit the view that the monitoring methods and processes used by a banking organization should be commensurate with the size and complexity of the organization, as well as its use of incentive compensation. In addition, the final guidance highlights the types of policies, procedures, systems, and specific aspects of corporate governance that LBOs should have and maintain, but that are not expected of other banking organizations.

In response to comments and taking into account the considerations discussed above, the Board is increasing the burden estimate for implementing or modifying policies and procedures to monitor incentive compensation. For this purpose, consideration of burden is limited to items in the final guidance constituting an information collection within the meaning of the PRA. The Board estimates that 1,502 large respondents would take, on average, 480 hours (two months) to modify policies and procedures to monitor incentive compensation. The Board estimates that 5,058 small respondents would take, on average, 80 hours (two business weeks)

[14] For smaller banking organizations, the Federal Reserve is gathering consistent information through regularly scheduled examinations and the normal supervisory process. The focus of the data gathering is to identify the types of incentive plans in place, the job types covered and the characteristics, prevalence and level of documentation available for those incentive compensation plans. After comparing and analyzing the information collected, supervisory efforts and expectations will be scaled appropriately to the size and complexity of the organization and its incentive compensation arrangements. For these smaller banking organizations, the expectation is that there will be very limited, if any, targeted examination work or supervisory follow-up. To the extent that any of these organizations has incentive compensation arrangements, the policies and systems necessary to monitor these arrangements are expected to be substantially less extensive, formalized and detailed than those of larger, more complex organizations.

to establish or modify policies and procedures to monitor incentive compensation. The total one-time burden is estimated to be 1,125,600 hours. In addition, the Board estimates that, on a continuing basis, respondents would take, on average, 40 hours (one business week) each year to maintain policies and procedures to monitor incentive compensation arrangements and estimates the annual on-going burden to be 262,400 hours. The total annual PRA burden for this information collection is estimated to be 1,388,000 hours.

General Description of Report

This information collection is authorized pursuant to:

Board—Sections 11(a), 11(i), 25, and 25A of the Federal Reserve Act (12 U.S.C. 248(a), 248(i), 602, and 611,), section 5 of the Bank Holding Company Act (12 U.S.C. 1844), and section 7(c) of the International Banking Act (12 U.S.C. 3105(c)).

OCC—12 U.S.C. 161, and Section 39 of the Federal Deposit Insurance Act (12 U.S.C. 1831p–1).

FDIC—Section 39 of the Federal Deposit Insurance Act (12 U.S.C. 1831p–1).

OTS—Section 39 of the Federal Deposit Insurance Act (12 U.S.C. 1831p–1) and Sections 4, 5, and 10 of the Home Owners' Loan Act (12 U.S.C. 1463, 1464, and 1467a).

The Agencies expect to review the policies and procedures for incentive compensation arrangements as part of their supervisory processes. To the extent the Agencies collect information during an examination of a banking organization, confidential treatment may be afforded to the records under exemption 8 of the Freedom of Information Act (FOIA), 5 U.S.C. 552(b)(8).

Board

Title of Information Collection: Recordkeeping Provisions Associated with the Guidance on Sound Incentive Compensation Policies.

Agency form number: FR 4027.

OMB control number: 7100—to be assigned.

Frequency: Annually.

Affected Public: Businesses or other for-profit.

Respondents: U.S. bank holding companies, State member banks, Edge and agreement corporations, and the U.S. operations of foreign banks with a branch, agency, or commercial lending company subsidiary in the United States.

Estimated average hours per response: Implementing or modifying policies and procedures: large respondents 480 hours; small respondents 80 hours. Maintenance of policies and procedures: 40 hours.

Estimated number of respondents: Large respondents, 1,502; Small respondents, 5,058.

Estimated total annual burden: 1,388,000 hours.

As mentioned above, the OCC, FDIC, and OTS have obtained emergency approval under 5 CFR 1320.13. The OCC and OTS approvals were obtained prior to the Board revising its burden estimates based on the comments received. For this reason, the OCC and OTS are publishing in this notice the original burden estimates. They will issue a **Federal Register** notice shortly for 60 days of comment as part of the regular PRA clearance process. During the regular PRA clearance process the estimated average response time may be re-evaluated based on comments received. The FDIC is publishing in this notice the revised burden estimates developed by the Board based on the comments received. The FDIC will issue a **Federal Register** notice shortly for 60 days of comment as part of the regular PRA clearance process and, during the regular PRA clearance process, the estimated average response time may be re-evaluated based on comments received.

OCC

Title of Information Collection: Guidance on Sound Incentive Compensation Policies.

Agency form number: N/A.

OMB control number: 1557–0245.

Frequency: Annually.

Affected Public: Businesses or other for-profit.

Respondents: National banks.

Estimated average hours per response: 40 hours.

Estimated number of respondents: 1,650.

Estimated total annual burden: 66,000 hours.

FDIC

Title of Information Collection: Guidance on Sound Incentive Compensation Policies.

Agency form number: N/A.

OMB control number: 3064–0175.

Frequency: Annually.

Affected Public: Businesses or other for-profit.

Respondents: Insured State nonmember banks.

Estimated average hours per response: Implementing or modifying policies and procedures: large respondents 480 hours; small respondents 80 hours. Maintenance of policies and procedures: 40 hours.

Estimated number of respondents: Implementing or modifying policies and procedures: large respondents—20; small respondents—4,870; Maintenance of policies and procedures: 4,890.

Estimated total annual burden: 594,800 hours.

OTS

Title of Information Collection: Sound Incentive Compensation Guidance.

Agency form number: N/A.

OMB control number: 1550–0129.

Frequency: Annually.

Affected Public: Businesses or other for-profit.

Respondents: Savings associations.

Estimated average hours per response: 40 hours.

Estimated number of respondents: 765.

Estimated total annual burden: 30,600 hours.

The Agencies have a continuing interest in the public's opinions of our collections of information. At any time, comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, may be sent to:

Board

Secretary, Board of Governors of the Federal Reserve System, 20th and C Streets, NW., Washington, DC 20551.

OCC

Communications Division, Office of the Comptroller of the Currency, Mailstop 2–3, Attention: 1557–0245, 250 E Street, SW., Washington, DC 20219. In addition, comments may be sent by fax to (202) 874–5274 or by electronic mail to *regs.comments@occ.treas.gov*. You may personally inspect and photocopy comments at the OCC, 250 E Street, SW., Washington, DC 20219. For security reasons, the OCC requires that visitors make an appointment to inspect comments. You may do so by calling (202) 874–4700. Upon arrival, visitors will be required to present valid government-issued photo identification and to submit to security screening in order to inspect and photocopy comments.

FDIC

All comments should refer to the name of the collection, "Guidance on Sound Incentive Compensation Policies." Comments may be submitted by any of the following methods:

- *http://www.FDIC.gov/regulations/laws/federal/propose.html.*
- *E-mail: comments@fdic.gov.*
- *Mail:* Gary Kuiper (202.898.3877), Counsel, Federal Deposit Insurance

Corporation, F–1072, 550 17th Street, NW., Washington, DC 20429.

• *Hand Delivery:* Comments may be hand-delivered to the guard station at the rear of the 550 17th Street Building (located on F Street), on business days between 7 a.m. and 5 p.m.

OTS

Information Collection Comments, Chief Counsel's Office, Office of Thrift Supervision, 1700 G Street, NW., Washington, DC 20552; send a facsimile transmission to (202) 906–6518; or send an e-mail to *infocollection.comments@ots.treas.gov*. OTS will post comments and the related index on the OTS Internet Site at *http://www.ots.treas.gov*. In addition, interested persons may inspect comments at the Public Reading Room, 1700 G Street, NW., Washington DC 20552 by appointment. To make an appointment, call (202) 906–5922, send an e-mail to *public.info@ots.treas.gov*, or send a facsimile transmission to (202) 906–7755.

OMB

Additionally, please send a copy of your comments by mail to: Office of Management and Budget, 725 17th Street, NW., #10235, Paperwork Reduction Project (insert Agency OMB control number), Washington, DC 20503. Comments can also be sent by fax to (202) 395–6974.

While the Regulatory Flexibility Act (5 U.S.C. 603(b)) does not apply to this guidance, because it is not being adopted as a rule, the Agencies have considered the potential impact of the proposed guidance on small banking organizations. For the reasons discussed in the **SUPPLEMENTARY INFORMATION** above, the Agencies believe that issuance of the proposed guidance is needed to help ensure that incentive compensation arrangements do not pose a threat to the safety and soundness of banking organizations, including small banking organizations. The Board in the proposed guidance sought comment on whether the guidance would impose undue burdens on, or have unintended consequences for, small organizations and whether there were ways such potential burdens or consequences could be addressed in a manner consistent with safety and soundness.

It is estimated that the guidance will apply to 8,763 small banking organizations. *See* 13 CFR 121.201. As noted in the "Supplementary Information" above, a number of commenters expressed concern that the proposed guidance would impose undue burden on smaller organizations. The Agencies have carefully considered the comments received on this issue. In response to these comments, the final guidance includes several provisions designed to reduce burden on smaller banking organizations. For example, the final guidance has made more explicit the Agencies' view that the monitoring methods and processes used by a banking organization should be commensurate with the size and complexity of the organization, as well as its use of incentive compensation. The final guidance also highlights the types of policies, procedures, and systems that LBOs should have and maintain, but that are not expected of other banking organizations. Like the proposed guidance, the final guidance focuses on those employees who have the ability, either individually or as part of a group, to expose a banking organization to material amounts of risk and is tailored to account for the differences between large and small banking organizations.

V. Final Guidance

The text of the final guidance is as follows:

Guidance on Sound Incentive Compensation Policies

I. Introduction

Incentive compensation practices in the financial industry were one of many factors contributing to the financial crisis that began in mid-2007. Banking organizations too often rewarded employees for increasing the organization's revenue or short-term profit without adequate recognition of the risks the employees' activities posed to the organization.[1] These practices exacerbated the risks and losses at a number of banking organizations and resulted in the misalignment of the interests of employees with the long-term well-being and safety and soundness of their organizations. This document provides guidance on sound incentive compensation practices to banking organizations supervised by the Federal Reserve, the Office of the Comptroller of the Currency, the Federal Deposit Insurance Corporation, and the Office of Thrift Supervision (collectively, the "Agencies").[2] This guidance is intended to assist banking organizations in designing and implementing incentive compensation arrangements and related policies and procedures that effectively consider potential risks and risk outcomes.[3]

Alignment of incentives provided to employees with the interests of shareholders of the organization often also benefits safety and soundness. However, aligning employee incentives with the interests of shareholders is not always sufficient to address safety-and-soundness concerns. Because of the presence of the Federal safety net, (including the ability of insured depository institutions to raise insured deposits and access the Federal Reserve's discount window and payment services), shareholders of a banking organization in some cases may be willing to tolerate a degree of risk that is inconsistent with the organization's safety and soundness. Accordingly, the Agencies expect banking organizations to maintain incentive compensation practices that are consistent with safety and soundness, even when these practices go beyond those needed to align shareholder and employee interests.

To be consistent with safety and soundness, incentive compensation arrangements[4] at a banking organization should:

• Provide employees incentives that appropriately balance risk and reward;

• Be compatible with effective controls and risk-management; and

• Be supported by strong corporate governance, including active and effective oversight by the organization's board of directors.

These principles, and the types of policies, procedures, and systems that banking organizations should have to help ensure compliance with them, are discussed later in this guidance.

The Agencies expect banking organizations to regularly review their incentive compensation arrangements

[1] Examples of risks that may present a threat to the organization's safety and soundness include credit, market, liquidity, operational, legal, compliance, and reputational risks.

[2] As used in this guidance, the term "banking organization" includes national banks, State member banks, State nonmember banks, savings associations, U.S. bank holding companies, savings and loan holding companies, Edge and agreement corporations, and the U.S. operations of foreign banking organizations (FBOs) with a branch, agency, or commercial lending company in the United States.

[3] This guidance and the principles reflected herein are consistent with the *Principles for Sound Compensation Practices* issued by the Financial Stability Board (FSB) in April 2009, and with the FSB's *Implementation Standards* for those principles, issued in September 2009.

[4] In this guidance, the term "incentive compensation" refers to that portion of an employee's current or potential compensation that is tied to achievement of one or more specific metrics (e.g., a level of sales, revenue, or income). Incentive compensation does not include compensation that is awarded solely for, and the payment of which is solely tied to, continued employment (e.g., salary). In addition, the term does not include compensation arrangements that are determined based solely on the employee's level of compensation and does not vary based on one or more performance metrics (e.g., a 401(k) plan under which the organization contributes a set percentage of an employee's salary).

for all executive and non-executive employees who, either individually or as part of a group, have the ability to expose the organization to material amounts of risk, as well as to regularly review the risk-management, control, and corporate governance processes related to these arrangements. Banking organizations should immediately address any identified deficiencies in these arrangements or processes that are inconsistent with safety and soundness. Banking organizations are responsible for ensuring that their incentive compensation arrangements are consistent with the principles described in this guidance and that they do not encourage employees to expose the organization to imprudent risks that may pose a threat to the safety and soundness of the organization.

The Agencies recognize that incentive compensation arrangements often seek to serve several important and worthy objectives. For example, incentive compensation arrangements may be used to help attract skilled staff, induce better organization-wide and employee performance, promote employee retention, provide retirement security to employees, or allow compensation expenses to vary with revenue on an organization-wide basis. Moreover, the analysis and methods for ensuring that incentive compensation arrangements take appropriate account of risk should be tailored to the size, complexity, business strategy, and risk tolerance of each organization. The resources required will depend upon the complexity of the firm and its use of incentive compensation arrangements. For some, the task of designing and implementing compensation arrangements that properly offer incentives for executive and non-executive employees to pursue the organization's long-term well-being and that do not encourage imprudent risk-taking is a complex task that will require the commitment of adequate resources.

While issues related to designing and implementing incentive compensation arrangements are complex, the Agencies are committed to ensuring that banking organizations move forward in incorporating the principles described in this guidance into their incentive compensation practices.[5]

As discussed further below, because of the size and complexity of their operations, LBOs[6] should have and adhere to systematic and formalized policies, procedures, and processes. These are considered important in ensuring that incentive compensation arrangements for all covered employees are identified and reviewed by appropriate levels of management (including the board of directors where appropriate and control units), and that they appropriately balance risks and rewards. In several places, this guidance specifically highlights the types of policies, procedures, and systems that LBOs should have and maintain, but that generally are not expected of smaller, less complex organizations. LBOs warrant the most intensive supervisory attention because they are significant users of incentive compensation arrangements and because flawed approaches at these organizations are more likely to have adverse effects on the broader financial system. The Agencies will work with LBOs as necessary through the supervisory process to ensure that they promptly correct any deficiencies that may be inconsistent with the safety and soundness of the organization.

The policies, procedures, and systems of smaller banking organizations that use incentive compensation arrangements[7] are expected to be less extensive, formalized, and detailed than those of LBOs. Supervisory reviews of incentive compensation arrangements at smaller, less-complex banking organizations will be conducted by the Agencies as part of the evaluation of those organizations' risk-management, internal controls, and corporate governance during the regular, risk-focused examination process. These reviews will be tailored to reflect the scope and complexity of an organization's activities, as well as the prevalence and scope of its incentive compensation arrangements. Little, if any, additional examination work is expected for smaller banking organizations that do not use, to a significant extent, incentive compensation arrangements.[8]

For all banking organizations, supervisory findings related to incentive compensation will be communicated to the organization and included in the relevant report of examination or inspection. In addition, these findings will be incorporated, as appropriate, into the organization's rating component(s) and subcomponent(s) relating to risk-management, internal controls, and corporate governance under the relevant supervisory rating system, as well as the organization's overall supervisory rating.

An organization's appropriate Federal supervisor may take enforcement action against a banking organization if its incentive compensation arrangements or related risk-management, control, or governance processes pose a risk to the safety and soundness of the organization, particularly when the organization is not taking prompt and effective measures to correct the deficiencies. For example, the appropriate Federal supervisor may take an enforcement action if material deficiencies are found to exist in the organization's incentive compensation arrangements or related risk-management, control, or governance processes, or the organization fails to promptly develop, submit, or adhere to an effective plan designed to ensure that its incentive compensation arrangements do not encourage imprudent risk-taking and are consistent with principles of safety and soundness. As provided under section 8 of the Federal Deposit Insurance Act (12 U.S.C. 1818), an enforcement action may, among other things, require an organization to take affirmative action, such as developing a corrective action plan that is acceptable to the appropriate Federal supervisor to rectify safety-and-soundness deficiencies in its incentive compensation arrangements or related processes. Where warranted, the appropriate Federal supervisor may require the organization to take additional affirmative action to correct or remedy deficiencies related to the

[5] In December 2009 the Federal Reserve, working with the other Agencies, initiated a special horizontal review of incentive compensation arrangements and related risk-management, control, and corporate governance practices of large banking organizations (LBOs). This initiative was designed to spur and monitor the industry's progress towards the implementation of safe and sound incentive compensation arrangements, identify emerging best practices, and advance the state of practice more generally in the industry.

[6] For supervisory purposes, the Agencies segment organizations they supervise into different supervisory portfolios based on, among other things, size, complexity, and risk profile. For purposes of the final guidance, LBOs include, in the case of banking organizations supervised by (i) the Federal Reserve, large, complex banking organizations as identified by the Federal Reserve for supervisory purposes; (ii) the OCC, the largest and most complex national banks as defined in the Large Bank Supervision booklet of the Comptroller's Handbook; (iii) the FDIC, large, complex insured depository institutions (IDIs); and (iv) the OTS, the largest and most complex savings associations and savings and loan holding companies.

[7] This guidance does not apply to banking organizations that do not use incentive compensation.

[8] To facilitate these reviews, where appropriate, a smaller banking organization should review its compensation arrangements to determine whether it uses incentive compensation arrangements to a significant extent in its business operations. A smaller banking organization will not be considered a significant user of incentive compensation arrangements simply because the organization has a firm-wide profit-sharing or bonus plan that is based on the bank's profitability, even if the plan covers all or most of the organization's employees.

organization's incentive compensation practices.

Effective and balanced incentive compensation practices are likely to evolve significantly in the coming years, spurred by the efforts of banking organizations, supervisors, and other stakeholders. The Agencies will review and update this guidance as appropriate to incorporate best practices that emerge from these efforts.

II. Scope of Application

The incentive compensation arrangements and related policies and procedures of banking organizations should be consistent with principles of safety and soundness.[9] Incentive compensation arrangements for executive officers as well as for non-executive personnel who have the ability to expose a banking organization to material amounts of risk may, if not properly structured, pose a threat to the organization's safety and soundness. Accordingly, this guidance applies to incentive compensation arrangements for:

- Senior executives and others who are responsible for oversight of the organization's firm-wide activities or material business lines;[10]
- Individual employees, including non-executive employees, whose activities may expose the organization to material amounts of risk (*e.g.*, traders with large position limits relative to the organization's overall risk tolerance); and
- Groups of employees who are subject to the same or similar incentive compensation arrangements and who, in the aggregate, may expose the organization to material amounts of risk, even if no individual employee is likely to expose the organization to material risk (*e.g.*, loan officers who, as a group, originate loans that account for a material amount of the organization's credit risk).

For ease of reference, these executive and non-executive employees are collectively referred to hereafter as "covered employees" or "employees." Depending on the facts and circumstances of the individual organization, the types of employees or categories of employees that are outside the scope of this guidance because they do not have the ability to expose the organization to material risks would likely include, for example, tellers, bookkeepers, couriers, or data processing personnel.

In determining whether an employee, or group of employees, may expose a banking organization to material risk, the organization should consider the full range of inherent risks arising from, or generated by, the employee's activities, even if the organization uses risk-management processes or controls to limit the risks such activities ultimately may pose to the organization. Moreover, risks should be considered to be material for purposes of this guidance if they are material to the organization, or are material to a business line or operating unit that is itself material to the organization.[11] For purposes of illustration, assume that a banking organization has a structured-finance unit that is material to the organization. A group of employees within that unit who originate structured-finance transactions that may expose the unit to material risks should be considered "covered employees" for purposes of this guidance even if those transactions must be approved by an independent risk function prior to consummation, or the organization uses other processes or methods to limit the risk that such transactions may present to the organization.

Strong and effective risk-management and internal control functions are critical to the safety and soundness of banking organizations. However, irrespective of the quality of these functions, poorly designed or managed incentive compensation arrangements can themselves be a source of risk to a banking organization. For example, incentive compensation arrangements that provide employees strong incentives to increase the organization's short-term revenues or profits, without regard to the short- or long-term risk associated with such business, can place substantial strain on the risk-management and internal control functions of even well-managed organizations.

Moreover, poorly balanced incentive compensation arrangements can encourage employees to take affirmative actions to weaken or circumvent the organization's risk-management or internal control functions, such as by providing inaccurate or incomplete information to these functions, to boost the employee's personal compensation. Accordingly, sound compensation practices are an integral part of strong risk-management and internal control functions. A key goal of this guidance is to encourage banking organizations to incorporate the risks related to incentive compensation into their broader risk-management framework. Risk-management procedures and risk controls that ordinarily limit risk-taking do not obviate the need for incentive compensation arrangements to properly balance risk-taking incentives.

III. Principles of a Sound Incentive Compensation System

Principle 1: Balanced Risk-Taking Incentives

Incentive compensation arrangements should balance risk and financial results in a manner that does not encourage employees to expose their organizations to imprudent risks.

Incentive compensation arrangements typically attempt to encourage actions that result in greater revenue or profit for the organization. However, short-run revenue or profit can often diverge sharply from actual long-run profit because risk outcomes may become clear only over time. Activities that carry higher risk typically yield higher short-term revenue, and an employee who is given incentives to increase short-term revenue or profit, without regard to risk, will naturally be attracted to opportunities to expose the organization to more risk.

An incentive compensation arrangement is balanced when the amounts paid to an employee appropriately take into account the risks (including compliance risks), as well as the financial benefits, from the employee's activities and the impact of those activities on the organization's safety and soundness. As an example, under a balanced incentive compensation arrangement, two employees who generate the same amount of short-term revenue or profit for an organization should not receive the same amount of incentive compensation if the risks taken by the employees in generating that revenue or profit differ materially. The employee whose activities create materially larger risks for the organization should receive

[9] In the case of the U.S. operations of FBOs, the organization's policies, including management, review, and approval requirements for its U.S. operations, should be coordinated with the FBO's group-wide policies developed in accordance with the rules of the FBO's home country supervisor. The policies of the FBO's U.S. operations should also be consistent with the FBO's overall corporate and management structure, as well as its framework for risk-management and internal controls. In addition, the policies for the U.S. operations of FBOs should be consistent with this guidance.

[10] Senior executives include, at a minimum, "executive officers" within the meaning of the Federal Reserve's Regulation O (see 12 CFR 215.2(e)(1)) and, for publicly traded companies, "named officers" within the meaning of the Securities and Exchange Commission's rules on disclosure of executive compensation (see 17 CFR 229.402(a)(3)). Savings associations should also refer to OTS's rule on loans by saving associations to their executive officers, directors, and principal shareholders. (12 CFR 563.43).

[11] Thus, risks may be material to an organization even if they are not large enough to themselves threaten the solvency of the organization.

less than the other employee, all else being equal.

The performance measures used in an incentive compensation arrangement have an important effect on the incentives provided employees and, thus, the potential for the arrangement to encourage imprudent risk-taking. For example, if an employee's incentive compensation payments are closely tied to short-term revenue or profit of business generated by the employee, without any adjustments for the risks associated with the business generated, the potential for the arrangement to encourage imprudent risk-taking may be quite strong. Similarly, traders who work with positions that close at year-end could have an incentive to take large risks toward the end of a year if there is no mechanism for factoring how such positions perform over a longer period of time. The same result could ensue if the performance measures themselves lack integrity or can be manipulated inappropriately by the employees receiving incentive compensation.

On the other hand, if an employee's incentive compensation payments are determined based on performance measures that are only distantly linked to the employee's activities (*e.g.*, for most employees, organization-wide profit), the potential for the arrangement to encourage the employee to take imprudent risks on behalf of the organization may be weak. For this reason, plans that provide for awards based solely on overall organization-wide performance are unlikely to provide employees, other than senior executives and individuals who have the ability to materially affect the organization's overall risk profile, with unbalanced risk-taking incentives.

Incentive compensation arrangements should not only be balanced in design, they also should be implemented so that actual payments vary based on risks or risk outcomes. If, for example, employees are paid substantially all of their potential incentive compensation even when risk or risk outcomes are materially worse than expected, employees have less incentive to avoid activities with substantial risk.

• Banking organizations should consider the full range of risks associated with an employee's activities, as well as the time horizon over which those risks may be realized, in assessing whether incentive compensation arrangements are balanced.

The activities of employees may create a wide range of risks for a banking organization, such as credit, market, liquidity, operational, legal, compliance, and reputational risks, as well as other risks to the viability or operation of the organization. Some of these risks may be realized in the short term, while others may become apparent only over the long term. For example, future revenues that are booked as current income may not materialize, and short-term profit-and-loss measures may not appropriately reflect differences in the risks associated with the revenue derived from different activities (*e.g.*, the higher credit or compliance risk associated with subprime loans versus prime loans).[12] In addition, some risks (or combinations of risky strategies and positions) may have a low probability of being realized, but would have highly adverse effects on the organization if they were to be realized ("bad tail risks"). While shareholders may have less incentive to guard against bad tail risks because of the infrequency of their realization and the existence of the Federal safety net, these risks warrant special attention for safety-and-soundness reasons given the threat they pose to the organization's solvency and the Federal safety net.

Banking organizations should consider the full range of current and potential risks associated with the activities of covered employees, including the cost and amount of capital and liquidity needed to support those risks, in developing balanced incentive compensation arrangements. Reliable quantitative measures of risk and risk outcomes ("quantitative measures"), where available, may be particularly useful in developing balanced compensation arrangements and in assessing the extent to which arrangements are properly balanced. However, reliable quantitative measures may not be available for all types of risk or for all activities, and their utility for use in compensation arrangements varies across business lines and employees. The absence of reliable quantitative measures for certain types of risks or outcomes does not mean that banking organizations should ignore such risks or outcomes for purposes of assessing whether an incentive compensation arrangement achieves balance. For example, while reliable quantitative measures may not exist for many bad-tail risks, it is important that such risks be considered given their potential effect on safety and soundness. As in other risk-management areas, banking organizations should rely on informed judgments, supported by available data, to estimate risks and risk outcomes in the absence of reliable quantitative risk measures.

Large banking organizations. In designing and modifying incentive compensation arrangements, LBOs should assess in advance of implementation whether such arrangements are likely to provide balanced risk-taking incentives. Simulation analysis of incentive compensation arrangements is one way of doing so. Such analysis uses forward-looking projections of incentive compensation awards and payments based on a range of performance levels, risk outcomes, and levels of risks taken. This type of analysis, or other analysis that results in assessments of likely effectiveness, can help an LBO assess whether incentive compensation awards and payments to an employee are likely to be reduced appropriately as the risks to the organization from the employee's activities increase.

• An unbalanced arrangement can be moved toward balance by adding or modifying features that cause the amounts ultimately received by employees to appropriately reflect risk and risk outcomes.

If an incentive compensation arrangement may encourage employees to expose their banking organization to imprudent risks, the organization should modify the arrangement as needed to ensure that it is consistent with safety and soundness. Four methods are often used to make compensation more sensitive to risk. These methods are:

○ *Risk Adjustment of Awards:* The amount of an incentive compensation award for an employee is adjusted based on measures that take into account the risk the employee's activities may pose to the organization. Such measures may be quantitative, or the size of a risk adjustment may be set judgmentally, subject to appropriate oversight.

○ *Deferral of Payment:* The actual payout of an award to an employee is delayed significantly beyond the end of the performance period, and the amounts paid are adjusted for actual losses or other aspects of performance that are realized or become better known only during the deferral period.[13] Deferred payouts may be

[12] Importantly, the time horizon over which a risk outcome may be realized is not necessarily the same as the stated maturity of an exposure. For example, the ongoing reinvestment of funds by a cash management unit in commercial paper with a one-day maturity not only exposes the organization to one-day credit risk, but also exposes the organization to liquidity risk that may be realized only infrequently.

[13] The deferral-of-payment method is sometimes referred to in the industry as a "clawback." The term "clawback" also may refer specifically to an arrangement under which an employee must return incentive compensation payments previously received by the employee (and not just deferred) if certain risk outcomes occur. Section 304 of the

altered according to risk outcomes either formulaically or judgmentally, subject to appropriate oversight. To be most effective, the deferral period should be sufficiently long to allow for the realization of a substantial portion of the risks from employee activities, and the measures of loss should be clearly explained to employees and closely tied to their activities during the relevant performance period.

○ *Longer Performance Periods:* The time period covered by the performance measures used in determining an employee's award is extended (for example, from one year to two or more years). Longer performance periods and deferral of payment are related in that both methods allow awards or payments to be made after some or all risk outcomes are realized or better known.

○ *Reduced Sensitivity to Short-Term Performance:* The banking organization reduces the rate at which awards increase as an employee achieves higher levels of the relevant performance measure(s). Rather than offsetting risk-taking incentives associated with the use of short-term performance measures, this method reduces the magnitude of such incentives. This method also can include improving the quality and reliability of performance measures in taking into account both short-term and long-term risks, for example improving the reliability and accuracy of estimates of revenues and long-term profits upon which performance measures depend.[14]

These methods for achieving balance are not exclusive, and additional methods or variations may exist or be developed. Moreover, each method has its own advantages and disadvantages. For example, where reliable risk measures exist, risk adjustment of awards may be more effective than deferral of payment in reducing incentives for imprudent risk-taking. This is because risk adjustment potentially can take account of the full range and time horizon of risks, rather than just those risk outcomes that occur or become more evident during the deferral period. On the other hand, deferral of payment may be more effective than risk adjustment in mitigating incentives to take hard-to-measure risks (such as the risks of new activities or products, or certain risks such as reputational or operational risk that may be difficult to measure with respect to particular activities), especially if such risks are likely to be realized during the deferral period. Accordingly, in some cases two or more methods may be needed in combination for an incentive compensation arrangement to be balanced.

The greater the potential incentives an arrangement creates for an employee to increase the risks associated with the employee's activities, the stronger the effect should be of the methods applied to achieve balance. Thus, for example, risk adjustments used to counteract a materially unbalanced compensation arrangement should have a similarly material impact on the incentive compensation paid under the arrangement. Further, improvements in the quality and reliability of performance measures themselves, for example improving the reliability and accuracy of estimates of revenues and profits upon which performance measures depend, can significantly improve the degree of balance in risk-taking incentives.

Where judgment plays a significant role in the design or operation of an incentive compensation arrangement, strong policies and procedures, internal controls, and ex post monitoring of incentive compensation payments relative to actual risk outcomes are particularly important to help ensure that the arrangements as implemented are balanced and do not encourage imprudent risk-taking. For example, if a banking organization relies to a significant degree on the judgment of one or more managers to ensure that the incentive compensation awards to employees are appropriately risk-adjusted, the organization should have policies and procedures that describe how managers are expected to exercise that judgment to achieve balance and that provide for the manager(s) to receive appropriate available information about the employee's risk-taking activities to make informed judgments.

Large banking organizations. Methods and practices for making compensation sensitive to risk are likely to evolve rapidly during the next few years, driven in part by the efforts of supervisors and other stakeholders. LBOs should actively monitor developments in the field and should incorporate into their incentive compensation systems new or emerging methods or practices that are likely to improve the organization's long-term financial well-being and safety and soundness.

• The manner in which a banking organization seeks to achieve balanced incentive compensation arrangements should be tailored to account for the differences between employees—including the substantial differences between senior executives and other employees—as well as between banking organizations.

Activities and risks may vary significantly both across banking organizations and across employees within a particular banking organization. For example, activities, risks, and incentive compensation practices may differ materially among banking organizations based on, among other things, the scope or complexity of activities conducted and the business strategies pursued by the organizations. These differences mean that methods for achieving balanced compensation arrangements at one organization may not be effective in restraining incentives to engage in imprudent risk-taking at another organization. Each organization is responsible for ensuring that its incentive compensation arrangements are consistent with the safety and soundness of the organization.

Moreover, the risks associated with the activities of one group of non-executive employees (*e.g.*, loan originators) within a banking organization may differ significantly from those of another group of non-executive employees (*e.g.*, spot foreign exchange traders) within the organization. In addition, reliable quantitative measures of risk and risk outcomes are unlikely to be available for a banking organization as a whole, particularly a large, complex organization. This factor can make it difficult for banking organizations to achieve balanced compensation arrangements for senior executives who have responsibility for managing risks on an organization-wide basis solely through use of the risk-adjustment-of-award method.

Furthermore, the payment of deferred incentive compensation in equity (such as restricted stock of the organization) or equity-based instruments (such as options to acquire the organization's stock) may be helpful in restraining the risk-taking incentives of senior executives and other covered employees whose activities may have a material effect on the overall financial performance of the organization. However, equity-related deferred compensation may not be as effective in restraining the incentives of lower-level covered employees (particularly at large organizations) to take risks because such

Sarbanes-Oxley Act of 2002 (15 U.S.C. 7243), which applies to chief executive officers and chief financial officers of public banking organizations, is an example of this more specific type of "clawback" requirement.

[14] Performance targets may have a material effect on risk-taking incentives. Such targets may offer employees greater rewards for increments of performance that are above the target or may provide that awards will be granted only if a target is met or exceeded. Employees may be particularly motivated to take imprudent risk in order to reach performance targets that are aggressive, but potentially achievable.

employees are unlikely to believe that their actions will materially affect the organization's stock price.

Banking organizations should take account of these differences when constructing balanced compensation arrangements. For most banking organizations, the use of a single, formulaic approach to making employee incentive compensation arrangements appropriately risk-sensitive is likely to result in arrangements that are unbalanced at least with respect to some employees.[15]

Large banking organizations. Incentive compensation arrangements for senior executives at LBOs are likely to be better balanced if they involve deferral of a substantial portion of the executives' incentive compensation over a multi-year period in a way that reduces the amount received in the event of poor performance, substantial use of multi-year performance periods, or both. Similarly, the compensation arrangements for senior executives at LBOs are likely to be better balanced if a significant portion of the incentive compensation of these executives is paid in the form of equity-based instruments that vest over multiple years, with the number of instruments ultimately received dependent on the performance of the organization during the deferral period.

The portion of the incentive compensation of other covered employees that is deferred or paid in the form of equity-based instruments should appropriately take into account the level, nature, and duration of the risks that the employees' activities create for the organization and the extent to which those activities may materially affect the overall performance of the organization and its stock price. Deferral of a substantial portion of an employee's incentive compensation may not be workable for employees at lower pay scales because of their more limited financial resources. This may require increased reliance on other measures in the incentive compensation arrangements for these employees to achieve balance.

• Banking organizations should carefully consider the potential for "golden parachutes" and the vesting arrangements for deferred compensation to affect the risk-taking behavior of employees while at the organizations.

Arrangements that provide for an employee (typically a senior executive), upon departure from the organization or a change in control of the organization, to receive large additional payments or the accelerated payment of deferred amounts without regard to risk or risk outcomes can provide the employee significant incentives to expose the organization to undue risk. For example, an arrangement that provides an employee with a guaranteed payout upon departure from an organization, regardless of performance, may neutralize the effect of any balancing features included in the arrangement to help prevent imprudent risk-taking.

Banking organizations should carefully review any such existing or proposed arrangements (sometimes called "golden parachutes") and the potential impact of such arrangements on the organization's safety and soundness. In appropriate circumstances an organization should consider including balancing features—such as risk adjustment or deferral requirements that extend past the employee's departure—in the arrangements to mitigate the potential for the arrangements to encourage imprudent risk-taking. In all cases, a banking organization should ensure that the structure and terms of any golden parachute arrangement entered into by the organization do not encourage imprudent risk-taking in light of the other features of the employee's incentive compensation arrangements.

Large banking organizations. Provisions that require a departing employee to forfeit deferred incentive compensation payments may weaken the effectiveness of the deferral arrangement if the departing employee is able to negotiate a "golden handshake" arrangement with the new employer.[16] This weakening effect can be particularly significant for senior executives or other skilled employees at LBOs whose services are in high demand within the market.

Golden handshake arrangements present special issues for LBOs and supervisors. For example, while a banking organization could adjust its deferral arrangements so that departing employees will continue to receive any accrued deferred compensation after departure (subject to any clawback or malus[17]), these changes could reduce the employee's incentive to remain at the organization and, thus, weaken an organization's ability to retain qualified talent, which is an important goal of compensation, and create conflicts of interest. Moreover, actions of the hiring organization (which may or may not be a supervised banking organization) ultimately may defeat these or other risk-balancing aspects of a banking organization's deferral arrangements. LBOs should monitor whether golden handshake arrangements are materially weakening the organization's efforts to constrain the risk-taking incentives of employees. The Agencies will continue to work with banking organizations and others to develop appropriate methods for addressing any effect that such arrangements may have on the safety and soundness of banking organizations.

• Banking organizations should effectively communicate to employees the ways in which incentive compensation awards and payments will be reduced as risks increase.

In order for the risk-sensitive provisions of incentive compensation arrangements to affect employee risk-taking behavior, the organization's employees need to understand that the amount of incentive compensation that they may receive will vary based on the risk associated with their activities. Accordingly, banking organizations should ensure that employees covered by an incentive compensation arrangement are informed about the key ways in which risks are taken into account in determining the amount of incentive compensation paid. Where feasible, an organization's communications with employees should include examples of how incentive compensation payments may be adjusted to reflect projected or actual risk outcomes. An organization's communications should be tailored appropriately to reflect the sophistication of the relevant audience(s).

Principle 2: Compatibility With Effective Controls and Risk-management

A banking organization's risk-management processes and internal controls should reinforce and support the development and maintenance of balanced incentive compensation arrangements.

[15] For example, spreading payouts of incentive compensation awards over a standard three-year period may not appropriately reflect the differences in the type and time horizon of risk associated with the activities of different groups of employees, and may not be sufficient by itself to balance the compensation arrangements of employees who may expose the organization to substantial longer-term risks.

[16] Golden handshakes are arrangements that compensate an employee for some or all of the estimated, non-adjusted value of deferred incentive compensation that would have been forfeited upon departure from the employee's previous employment.

[17] A malus arrangement permits the employer to prevent vesting of all or part of the amount of a deferred remuneration award. Malus provisions are invoked when risk outcomes are worse than expected or when the information upon which the award was based turns out to have been incorrect. Loss of unvested compensation due to the employee voluntarily leaving the firm is not an example of malus as the term is used in this guidance.

In order to increase their own compensation, employees may seek to evade the processes established by a banking organization to achieve balanced compensation arrangements. Similarly, an employee covered by an incentive compensation arrangement may seek to influence, in ways designed to increase the employee's pay, the risk measures or other information or judgments that are used to make the employee's pay sensitive to risk.

Such actions may significantly weaken the effectiveness of an organization's incentive compensation arrangements in restricting imprudent risk-taking. These actions can have a particularly damaging effect on the safety and soundness of the organization if they result in the weakening of risk measures, information, or judgments that the organization uses for other risk-management, internal control, or financial purposes. In such cases, the employee's actions may weaken not only the balance of the organization's incentive compensation arrangements, but also the risk-management, internal controls, and other functions that are supposed to act as a separate check on risk-taking. For this reason, traditional risk-management controls alone do not eliminate the need to identify employees who may expose the organization to material risk, nor do they obviate the need for the incentive compensation arrangements for these employees to be balanced. Rather, a banking organization's risk-management processes and internal controls should reinforce and support the development and maintenance of balanced incentive compensation arrangements.

• Banking organizations should have appropriate controls to ensure that their processes for achieving balanced compensation arrangements are followed and to maintain the integrity of their risk-management and other functions.

To help prevent damage from occurring, a banking organization should have strong controls governing its process for designing, implementing, and monitoring incentive compensation arrangements. Banking organizations should create and maintain sufficient documentation to permit an audit of the effectiveness of the organization's processes for establishing, modifying, and monitoring incentive compensation arrangements. Smaller banking organizations should incorporate reviews of these processes into their overall framework for compliance monitoring (including internal audit).

Large banking organizations. LBOs should have and maintain policies and procedures that (i) identify and describe the role(s) of the personnel, business units, and control units authorized to be involved in the design, implementation, and monitoring of incentive compensation arrangements; (ii) identify the source of significant risk-related inputs into these processes and establish appropriate controls governing the development and approval of these inputs to help ensure their integrity; and (iii) identify the individual(s) and control unit(s) whose approval is necessary for the establishment of new incentive compensation arrangements or modification of existing arrangements.

An LBO also should conduct regular internal reviews to ensure that its processes for achieving and maintaining balanced incentive compensation arrangements are consistently followed. Such reviews should be conducted by audit, compliance, or other personnel in a manner consistent with the organization's overall framework for compliance monitoring. An LBO's internal audit department also should separately conduct regular audits of the organization's compliance with its established policies and controls relating to incentive compensation arrangements. The results should be reported to appropriate levels of management and, where appropriate, the organization's board of directors.

• Appropriate personnel, including risk-management personnel, should have input into the organization's processes for designing incentive compensation arrangements and assessing their effectiveness in restraining imprudent risk-taking.

Developing incentive compensation arrangements that provide balanced risk-taking incentives and monitoring arrangements to ensure they achieve balance over time requires an understanding of the risks (including compliance risks) and potential risk outcomes associated with the activities of the relevant employees. Accordingly, banking organizations should have policies and procedures that ensure that risk-management personnel have an appropriate role in the organization's processes for designing incentive compensation arrangements and for assessing their effectiveness in restraining imprudent risk-taking.[18] Ways that risk managers might assist in achieving balanced compensation arrangements include, but are not limited to, (i) reviewing the types of risks associated with the activities of covered employees; (ii) approving the risk measures used in risk adjustments and performance measures, as well as measures of risk outcomes used in deferred-payout arrangements; and (iii) analyzing risk-taking and risk outcomes relative to incentive compensation payments.

Other functions within an organization, such as its control, human resources, or finance functions, also play an important role in helping ensure that incentive compensation arrangements are balanced. For example, these functions may contribute to the design and review of performance measures used in compensation arrangements or may supply data used as part of these measures.

• Compensation for employees in risk-management and control functions should be sufficient to attract and retain qualified personnel and should avoid conflicts of interest.

The risk-management and control personnel involved in the design, oversight, and operation of incentive compensation arrangements should have appropriate skills and experience needed to effectively fulfill their roles. These skills and experiences should be sufficient to equip the personnel to remain effective in the face of challenges by covered employees seeking to increase their incentive compensation in ways that are inconsistent with sound risk-management or internal controls. The compensation arrangements for employees in risk-management and control functions thus should be sufficient to attract and retain qualified personnel with experience and expertise in these fields that is appropriate in light of the size, activities, and complexity of the organization.

In addition, to help preserve the independence of their perspectives, the incentive compensation received by risk-management and control personnel staff should not be based substantially on the financial performance of the business units that they review. Rather, the performance measures used in the incentive compensation arrangements for these personnel should be based primarily on the achievement of the objectives of their functions (*e.g.*, adherence to internal controls).

• Banking organizations should monitor the performance of their incentive compensation arrangements and should revise the arrangements as needed if payments do not appropriately reflect risk.

Banking organizations should monitor incentive compensation awards and payments, risks taken, and actual risk outcomes to determine whether

[18] Involvement of risk-management personnel in the design and monitoring of these arrangements also should help ensure that the organization's risk-management functions can properly understand and address the full range of risks facing the organization.

incentive compensation payments to employees are reduced to reflect adverse risk outcomes or high levels of risk taken. Results should be reported to appropriate levels of management, including the board of directors where warranted and consistent with Principle 3 below. The monitoring methods and processes used by a banking organization should be commensurate with the size and complexity of the organization, as well as its use of incentive compensation. Thus, for example, a small, noncomplex organization that uses incentive compensation only to a limited extent may find that it can appropriately monitor its arrangements through normal management processes.

A banking organization should take the results of such monitoring into account in establishing or modifying incentive compensation arrangements and in overseeing associated controls. If, over time, incentive compensation paid by a banking organization does not appropriately reflect risk outcomes, the organization should review and revise its incentive compensation arrangements and related controls to ensure that the arrangements, as designed and implemented, are balanced and do not provide employees incentives to take imprudent risks.

Principle 3: Strong Corporate Governance

Banking organizations should have strong and effective corporate governance to help ensure sound compensation practices, including active and effective oversight by the board of directors.

Given the key role of senior executives in managing the overall risk-taking activities of an organization, the board of directors of a banking organization should directly approve the incentive compensation arrangements for senior executives.[19] The board also should approve and document any material exceptions or adjustments to the incentive compensation arrangements established for senior executives and should carefully consider and monitor the effects of any approved exceptions or adjustments on the balance of the arrangement, the risk-taking incentives of the senior executive, and the safety and soundness of the organization.

The board of directors of an organization also is ultimately responsible for ensuring that the organization's incentive compensation arrangements for all covered employees are appropriately balanced and do not jeopardize the safety and soundness of the organization. The involvement of the board of directors in oversight of the organization's overall incentive compensation program should be scaled appropriately to the scope and prevalence of the organization's incentive compensation arrangements.

Large banking organizations and organizations that are significant users of incentive compensation. The board of directors of an LBO or other banking organization that uses incentive compensation to a significant extent should actively oversee the development and operation of the organization's incentive compensation policies, systems, and related control processes. The board of directors of such an organization should review and approve the overall goals and purposes of the organization's incentive compensation system. In addition, the board should provide clear direction to management to ensure that the goals and policies it establishes are carried out in a manner that achieves balance and is consistent with safety and soundness.

The board of directors of such an organization also should ensure that steps are taken so that the incentive compensation system—including performance measures and targets—is designed and operated in a manner that will achieve balance.

• The board of directors should monitor the performance, and regularly review the design and function, of incentive compensation arrangements.

To allow for informed reviews, the board should receive data and analysis from management or other sources that are sufficient to allow the board to assess whether the overall design and performance of the organization's incentive compensation arrangements are consistent with the organization's safety and soundness. These reviews and reports should be appropriately scoped to reflect the size and complexity of the banking organization's activities and the prevalence and scope of its incentive compensation arrangements.

The board of directors of a banking organization should closely monitor incentive compensation payments to senior executives and the sensitivity of those payments to risk outcomes. In addition, if the compensation arrangement for a senior executive includes a clawback provision, then the review should include sufficient information to determine if the provision has been triggered and executed as planned.

The board of directors of a banking organization should seek to stay abreast of significant emerging changes in compensation plan mechanisms and incentives in the marketplace as well as developments in academic research and regulatory advice regarding incentive compensation policies. However, the board should recognize that organizations, activities, and practices within the industry are not identical. Incentive compensation arrangements at one organization may not be suitable for use at another organization because of differences in the risks, controls, structure, and management among organizations. The board of directors of each organization is responsible for ensuring that the incentive compensation arrangements for its organization do not encourage employees to take risks that are beyond the organization's ability to manage effectively, regardless of the practices employed by other organizations.

Large banking organizations and organizations that are significant users of incentive compensation. The board of an LBO or other organization that uses incentive compensation to a significant extent should receive and review, on an annual or more frequent basis, an assessment by management, with appropriate input from risk-management personnel, of the effectiveness of the design and operation of the organization's incentive compensation system in providing risk-taking incentives that are consistent with the organization's safety and soundness. These reports should include an evaluation of whether or how incentive compensation practices may increase the potential for imprudent risk-taking.

The board of such an organization also should receive periodic reports that review incentive compensation awards and payments relative to risk outcomes on a backward-looking basis to determine whether the organization's incentive compensation arrangements may be promoting imprudent risk-taking. Boards of directors of these organizations also should consider periodically obtaining and reviewing simulation analysis of compensation on a forward-looking basis based on a range of performance levels, risk outcomes, and the amount of risks taken.

[19] As used in this guidance, the term "board of directors" is used to refer to the members of the board of directors who have primary responsibility for overseeing the incentive compensation system. Depending on the manner in which the board is organized, the term may refer to the entire board of directors, a compensation committee of the board, or another committee of the board that has primary responsibility for overseeing the incentive compensation system. In the case of FBOs, the term refers to the relevant oversight body for the firm's U.S. operations, consistent with the FBO's overall corporate and management structure.

• The organization, composition, and resources of the board of directors should permit effective oversight of incentive compensation.

The board of directors of a banking organization should have, or have access to, a level of expertise and experience in risk-management and compensation practices in the financial services industry that is appropriate for the nature, scope, and complexity of the organization's activities. This level of expertise may be present collectively among the members of the board, may come from formal training or from experience in addressing these issues, including as a director, or may be obtained through advice received from outside counsel, consultants, or other experts with expertise in incentive compensation and risk-management. The board of directors of an organization with less complex and extensive incentive compensation arrangements may not find it necessary or appropriate to require special board expertise or to retain and use outside experts in this area.

In selecting and using outside parties, the board of directors should give due attention to potential conflicts of interest arising from other dealings of the parties with the organization or for other reasons. The board also should exercise caution to avoid allowing outside parties to obtain undue levels of influence. While the retention and use of outside parties may be helpful, the board retains ultimate responsibility for ensuring that the organization's incentive compensation arrangements are consistent with safety and soundness.

Large banking organizations and organizations that are significant users of incentive compensation. If a separate compensation committee is not already in place or required by other authorities,[20] the board of directors of an LBO or other banking organization that uses incentive compensation to a significant extent should consider establishing such a committee—reporting to the full board—that has primary responsibility for overseeing the organization's incentive compensation systems. A compensation committee should be composed solely or predominantly of non-executive directors. If the board does not have such a compensation committee, the board should take other steps to ensure that non-executive directors of the board are actively involved in the oversight of incentive compensation systems. The compensation committee should work closely with any board-level risk and audit committees where the substance of their actions overlap.

• A banking organization's disclosure practices should support safe and sound incentive compensation arrangements.

If a banking organization's incentive compensation arrangements provide employees incentives to take risks that are beyond the tolerance of the organization's shareholders, these risks are likely to also present a risk to the safety and soundness of the organization.[21] To help promote safety and soundness, a banking organization should provide an appropriate amount of information concerning its incentive compensation arrangements for executive and non-executive employees and related risk-management, control, and governance processes to shareholders to allow them to monitor and, where appropriate, take actions to restrain the potential for such arrangements and processes to encourage employees to take imprudent risks. Such disclosures should include information relevant to employees other than senior executives. The scope and level of the information disclosed by the organization should be tailored to the nature and complexity of the organization and its incentive compensation arrangements.[22]

• Large banking organizations should follow a systematic approach to developing a compensation system that has balanced incentive compensation arrangements.

At banking organizations with large numbers of risk-taking employees engaged in diverse activities, an ad hoc approach to developing balanced arrangements is unlikely to be reliable. Thus, an LBO should use a systematic approach—supported by robust and formalized policies, procedures, and systems—to ensure that those arrangements are appropriately balanced and consistent with safety and soundness. Such an approach should provide for the organization effectively to:

○ Identify employees who are eligible to receive incentive compensation and whose activities may expose the organization to material risks. These employees should include (i) senior executives and others who are responsible for oversight of the organization's firm-wide activities or material business lines; (ii) individual employees, including non-executive employees, whose activities may expose the organization to material amounts of risk; and (iii) groups of employees who are subject to the same or similar incentive compensation arrangements and who, in the aggregate, may expose the organization to material amounts of risk;

○ Identify the types and time horizons of risks to the organization from the activities of these employees;

○ Assess the potential for the performance measures included in the incentive compensation arrangements for these employees to encourage the employees to take imprudent risks;

○ Include balancing elements, such as risk adjustments or deferral periods, within the incentive compensation arrangements for these employees that are reasonably designed to ensure that the arrangement will be balanced in light of the size, type, and time horizon of the inherent risks of the employees' activities;

○ Communicate to the employees the ways in which their incentive compensation awards or payments will be adjusted to reflect the risks of their activities to the organization; and

○ Monitor incentive compensation awards, payments, risks taken, and risk outcomes for these employees and modify the relevant arrangements if payments made are not appropriately sensitive to risk and risk outcomes.

III. Conclusion

Banking organizations are responsible for ensuring that their incentive compensation arrangements do not encourage imprudent risk-taking behavior and are consistent with the safety and soundness of the organization. The Agencies expect banking organizations to take prompt action to address deficiencies in their incentive compensation arrangements or related risk-management, control, and governance processes.

The Agencies intend to actively monitor the actions taken by banking organizations in this area and will promote further advances in designing and implementing balanced incentive compensation arrangements. Where appropriate, the Agencies will take supervisory or enforcement action to ensure that material deficiencies that pose a threat to the safety and soundness of the organization are promptly addressed. The Agencies also

[20] *See*, New York Stock Exchange Listed Company Manual Section 303A.05(a); Nasdaq Listing Rule 5605(d); Internal Revenue Code section 162(m) (26 U.S.C. 162(m)).

[21] On the other hand, as noted previously, compensation arrangements that are in the interests of the shareholders of a banking organization are not necessarily consistent with safety and soundness.

[22] A banking organization also should comply with the incentive compensation disclosure requirements of the Federal securities law and other laws as applicable. *See, e.g.*, Proxy Disclosure Enhancements, SEC Release Nos. 33–9089, 34–61175, 74 FR 68334 (Dec. 23, 2009) (to be codified at 17 CFR pts. 229 and 249).

will update this guidance as appropriate to incorporate best practices as they develop over time.

This concludes the text of the Guidance on Sound Incentive Compensation Policies.

Dated: June 17, 2010.

John C. Dugan,

Comptroller of the Currency.

By order of the Board of Governors of the Federal Reserve System, June 21, 2010.

Robert deV. Frierson,

Deputy Secretary of the Board.

Dated: June 21, 2010.

Valerie J. Best,

Assistant Executive Secretary, Federal Deposit Insurance Corporation.

Dated: June 10, 2010.

By the Office of Thrift Supervision.

John E. Bowman,

Acting Director.

[FR Doc. 2010–15435 Filed 6–24–10; 8:45 am]

BILLING CODE 6210–01–P 4810–33–P 6714–01–P 6720–01–P

GENERAL SERVICES ADMINISTRATION

[Docket 2010–009; Sequence 3]

Federal Travel Regulation (FTR); Directions for Reporting Other Than Coach-Class Accommodations for Employees on Official Travel

AGENCY: Office of Governmentwide Policy, General Services Administration (GSA).

ACTION: Notice of GSA Bulletin FTR 10–05.

SUMMARY: The General Services Administration (GSA), in conjunction with the Government Accountability Office (GAO) report, *Premium Class Travel: Internal Control Weaknesses Governmentwide Led to Improper and Abusive Use of Premium Class Travel* (GAO–07–1268), has issued GSA Bulletin FTR 10–05. This bulletin provides directions to Federal Agencies for reporting other than coach-class accommodations for employees on official travel. GSA Bulletin FTR 10–05 may be found at *http://www.gsa.gov/federaltravelregulation.*

DATES: The provisions in this Bulletin are effective June 9, 2010.

FOR FURTHER INFORMATION CONTACT: Mr. Patrick O'Grady, Office of Governmentwide Policy (M), Office of Travel, Transportation, and Asset Management (MT), General Services Administration at (202) 208–4493 or via e-mail at *patrick.ogrady@gsa.gov.* Please cite GSA Bulletin FTR 10–05.

Dated: June 16, 2010.

Becky Rhodes,

Associate Administrator, Office of Travel, Transportation, and Asset Management.

[FR Doc. 2010–15433 Filed 6–24–10; 8:45 am]

BILLING CODE 6820–14–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Indian Health Service

American Indians Into Psychology; Notice of Competitive Grant Applications for American Indians Into Psychology Program

Announcement Type: New.

Funding Opportunity Number: HHS–IHS–2010–INPSY–0001.

CFDA Number: 93.970.

Key Dates

Application Deadline: July 23, 2010.

Review Date: July 29, 2010.

Earliest Anticipated Start Date: September 1, 2010.

I. Funding Opportunity Description

The Indian Health Service (IHS) is accepting competitive grant applications for the American Indians into Psychology Program. This program is authorized under the authority of "25 U.S.C. 1621p(a–d).", Indian Health Care Improvement Act, Public Law 94–437, as amended by Public Law 102–573 and Public Law 111–148.

Purpose

The purpose of the Indians into Psychology Program is to develop and maintain Indian psychology career recruitment programs as a means of encouraging Indians to enter the behavioral health field. This program is described at 93.970 in the Catalog of Federal Domestic Assistance. Costs will be determined in accordance with applicable Office of Management and Budget Circulars. The Public Health Service (PHS) is committed to achieving the health promotion and disease prevention objectives of Healthy People 2010, a PHS-led activity for setting priority areas. This program announcement is related to the priority area of Educational and Community-based programs. Potential applicants may obtain a copy of Healthy People 2010, summary report in print, Stock No. 017–001–00547–9, or via CD–ROM, Stock No. 107–001–00549–5, through the Superintendent of Documents, Government Printing Office, P.O. Box 371954, Pittsburgh, PA 15250–7945, (202) 512–1800. You may also access this information via the Internet at the following Web site: *http://www.health.gov/healthypeople.*

The PHS strongly encourages all grant and contract recipients to provide a smoke-free workplace and promote the non-use of all tobacco products. In addition, Public Law 103–227, the Pro-Children Act of 1994, prohibits smoking in certain facilities (or in some cases, any portion of the facility) in which regular or routine education, library, day care, health care, or early childhood development services are provided to children. This is consistent with the PHS mission to protect and advance the physical and mental health of the American people.

II. Award Information

Type of Awards: Grant.

Estimated Funds Available: The total amount identified for Fiscal Year 2010 is $757,386. The award is for 12 months in duration and the average award is approximately $252,462. Awards under this announcement are subject to the availability of funds. In the absence of funding, the agency is under no obligation to make awards funded under this announcement.

Anticipated Number of Awards: An estimated two awards will be made under the program. If funding becomes available, additional awards may be made.

Project Period: 4 years.

Award Amount: $252,462, per year.

III. Eligibility Information

1. Eligible Applicants

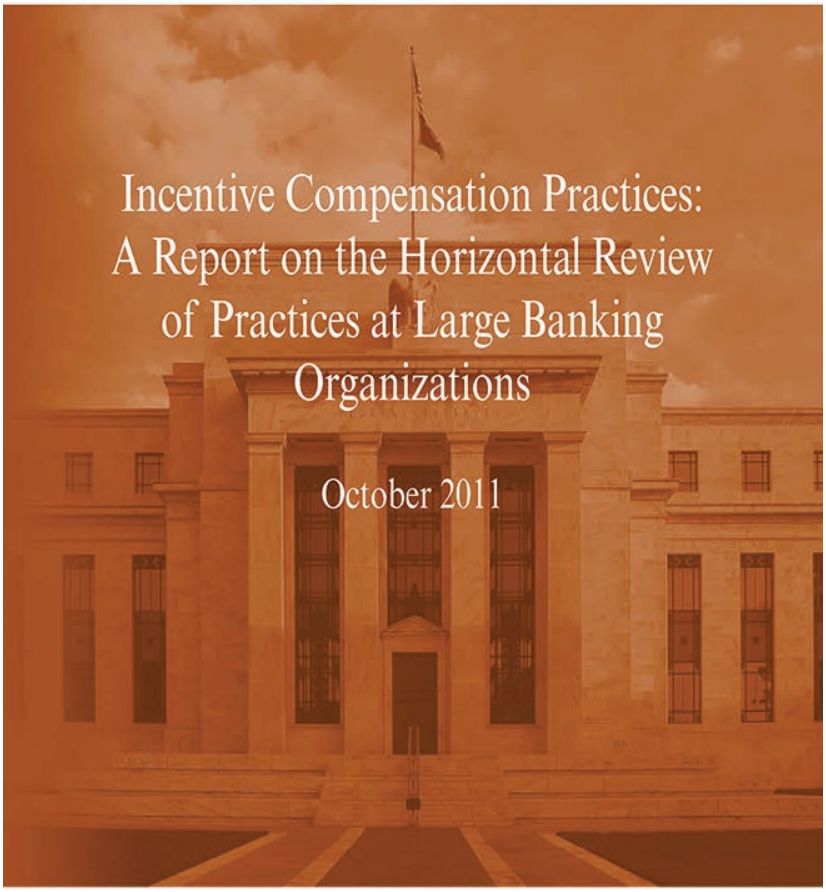
Public and nonprofit private colleges and universities that offer a Ph.D. in clinical programs accredited by the American Psychological Association will be eligible to apply for a grant under this announcement. However, only one grant will be awarded and funded to a college or university per funding cycle.

2. Cost Sharing/Matching

This announcement does not require matching funds or cost sharing.

3. Other Requirements

Required Affiliations—The grant applicant must submit official documentation indicating a Tribe's cooperation with and support of the program within the schools on its reservation and its willingness to have a Tribal representative serving on the program advisory board. Documentation must be in the form prescribed by the Tribe's governing body, *i.e.,* letter of support or Tribal resolution. Documentation must be submitted from every Tribe involved in the grant program. If application budgets exceed



BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM

Incentive Compensation Practices: A Report on the Horizontal Review of Practices at Large Banking Organizations

October 2011

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Executive Summary

Risk-taking incentives provided by incentive compensation arrangements in the financial services industry were a contributing factor to the financial crisis that began in 2007. To address such practices, the Federal Reserve first proposed guidance on incentive compensation in 2009 that was adopted by all of the federal banking agencies in June 2010.

To foster implementation of improved practices, in late 2009 the Federal Reserve initiated a multidisciplinary, horizontal review of incentive compensation practices at 25 large, complex banking organizations.[1] One goal of this horizontal review was to help fill out our understanding of the range of incentive compensation practices across firms and categories of employees within firms. The second, more important goal was to guide each firm in implementing the interagency guidance.

Given the variety of activities at these complex firms, and the number and range of employees who are in a position to assume significant risk, our approach has been to require each firm to develop, under our supervision, its own practices and governance mechanisms to ensure risk-appropriate incentive compensation that accords with the interagency guidance throughout the organization. Supervisors assessed areas of weakness at the firms, in response to which the firms have developed comprehensive plans outlining how those weaknesses will be addressed. These plans, as modified based on comments from supervisors, will be the basis for further progress and evaluation.

As explained in more detail in this report, every firm in the review has made progress during the review in developing practices and procedures that will internalize the principles in the interagency guidance into the management systems in each firm. Many of these changes are already evident in the actual compensation arrangements of firms. For example, senior executives now have more than 60 percent of their incentive compensation deferred on average, higher than illustrative international guidelines agreed by the Financial Stability Board, and some of the most senior executives have more than 80 percent deferred with additional stock retention requirements after deferred stock vests. Moreover, firms are now attentive to risk-taking incentives for large numbers of employees below the executive level—at many firms thousands or tens of thousands of employees—which was not the case before the beginning of the horizontal review, when most firms paid little attention to risk-taking incentives, or were attentive only for the top employees.

Yet every firm also needs to do more. As oversight of incentive compensation moves into the regular supervisory process, the Federal Reserve will continue to work to ensure progress continues both in the implementation of the firms' plans and in the risk-appropriate character of actual compensation practices.

Steps Taken by Firms

With the oversight of the Federal Reserve and other banking agencies, the firms in the horizontal review have implemented new practices to make employees' incentive compensation sensitive to risk. The following is a brief progress report on four key areas of the review. More details can be found in the report:

[1] The financial institutions in the Incentive Compensation Horizontal Review are Ally Financial Inc.; American Express Company; Bank of America Corporation; The Bank of New York Mellon Corporation; Capital One Financial Corporation; Citigroup Inc.; Discover Financial Services; The Goldman Sachs Group, Inc.; JPMorgan Chase & Co.; Morgan Stanley; Northern Trust Corporation; The PNC Financial Services Group, Inc.; State Street Corporation; SunTrust Banks, Inc.; U.S. Bancorp; and Wells Fargo & Company; and the U.S. operations of Barclays plc, BNP Paribas, Credit Suisse Group AG, Deutsche Bank AG, HSBC Holdings plc, Royal Bank of Canada, The Royal Bank of Scotland Group plc, Societe Generale, and UBS AG.

- **Effective Incentive Compensation Design.** All firms in the horizontal review have implemented new practices to balance risk and financial results in a manner that does not encourage employees to expose their organizations to imprudent risks. The most widely used methods for doing so are risk adjustment of awards and deferral of payments.

  —*Risk adjustments* make the amount of an incentive compensation award for an employee take into account the risk the employee's activities may pose to the organization. At the beginning of the horizontal review, no firm had a well-developed strategy to use risk adjustments and many had no effective risk adjustments. Every firm has made progress in developing appropriate risk adjustments, but most have more work to do to ensure the full range of risks are appropriately balanced. An example of a leading-edge practice that is now used by a few firms is including in internal profit measures used in incentive compensation awards a charge for liquidity risk that takes into account stressed conditions. This reduces incentives to take imprudent liquidity risk. An example of a challenge for many firms is development of policies and procedures to guide judgmental adjustments of incentive compensation awards. Such internal guidelines help promote consistency and effectiveness in incentive compensation decisionmaking.

  —*Deferring payout* of a portion of incentive compensation awards can help promote prudent incentives if done in a way that takes into account risk taking, especially bad outcomes. Deferring payouts was fairly common before the crisis, especially for senior executives and highly paid employees. However, pre-crisis deferral arrangements typically were not structured to fully take account of risk or actual outcomes. Almost all firms now use vehicles for some employees that adjust downward the amount of deferred incentive compensation that is paid if losses are large. However, most firms still have work to do to implement such arrangements for a larger set of employees and to more closely link such reductions to individual employees' actions, particularly for employees below the senior executive level.

- **Progress in Identifying Key Employees.** At most large banking organizations, thousands or tens of thousands of employees have a hand in risk taking. Yet, before the crisis, the conventional wisdom at most firms was that risk-based incentives were important only for a small number of senior or highly paid employees and no firm systematically identified the relevant employees who could, either individually or as a group, influence risk. All firms in the horizontal review have made progress in identifying the employees for whom incentive compensation arrangements may, if not properly structured, pose a threat to the organization's safety and soundness. All firms in the horizontal review now recognize the importance of establishing sound incentive compensation programs that do not encourage imprudent risk taking for those who can individually affect the risk profile of the firm. In addition, slightly more than half of the firms have identified groups of similarly compensated employees whose combined actions may expose the organization to material amounts of risk. However, some firms are still working to identify a complete set of mid- and lower-level employees and to fully assess the risks associated with their activities.

- **Changing Risk-Management Processes and Controls.** Because firms did not consider risk in the design of incentive compensation arrangements before the crisis, firms rarely involved risk-management and control personnel when considering and carrying out incentive compensation arrangements. All firms in the horizontal review have changed risk-management processes and internal controls to reinforce and support the development and maintenance of balanced incentive compensation arrangements. Risk-management and control personnel are engaged in the design and operation of incentive compensation arrangements of other employees to ensure that risk is properly considered. Some firms have further work to do to provide sufficiently active and robust engagement by risk management and control staff.

- **Progress in Altering Corporate Governance Frameworks.** At the outset of the horizontal review, the boards of directors of most firms had begun to consider the relationship between incentive compensation and risk, though many were focused exclusively on the incentive compensation of their firm's most senior executives. Since then, all firms in the horizontal review have made progress in altering their corporate governance frameworks to be attentive to risk-taking incentives created by the incentive compensation process for employees throughout the firm. The role of boards of directors in incentive compensation has expanded, as has the amount of risk information provided to boards related to incentive compensation. The

appropriateness of the degree of engagement of the boards will be evaluated after a few years of experience.

Scope and Status of Reform Effort

Supervisors in the horizontal review gathered confidential supervisory information from all firms and found important differences in practices across business lines and banking organizations. Additionally, practices are changing rapidly in response to the Federal Reserve's efforts and industry developments. Therefore, a moment-in-time, comparative analysis of individual firms from the horizontal review is not possible and could be misleading. That said, the Federal Reserve is working to foster market discipline in the area of incentive compensation. On this front, the Federal Reserve intends to implement the Basel Committee's recent "Pillar 3 disclosure requirements for remuneration," issued in July 2011,[2] which will provide more complete information about risk-related elements of incentive compensation practices of individual institutions.

In part spurred by the horizontal review, incentive compensation practices at banking organizations are continuing to evolve and develop. We expect this evolution to continue. The Federal Reserve will continue to work with these firms through the supervisory process to ensure improvement and progress are sustained.

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[2] See "Pillar 3 disclosure requirements on remuneration issued by the Basel Committee," *Bank for International Settlements*, (www.bis.org/press/p110701.htm).

Introduction

Risk-taking incentives provided by incentive compensation arrangements in the financial services industry were a contributing factor to the financial crisis that began in 2007. To address such practices, the Federal Reserve first proposed guidance on incentive compensation in 2009 that was adopted by all of the federal banking agencies in June 2010. In 2009, the Federal Reserve announced a horizontal review of incentive compensation practices at a group of large, complex banking organizations. (See "Principles of the Interagency Guidance and Supervisory Expectations" on page 9 and "Incentive Compensation Horizontal Review" on page 11.)

Pre-Crisis Conditions and Response

As discussed in the interagency guidance, the activities of employees may create a wide range of risks for a banking organization, such as credit, market, liquidity, operational, legal, compliance, and reputational risks, as well as other risks to the viability or operation of the organization. Some of these risks may be realized in the short term, while others may become apparent only over the long term. For example, future revenues that are booked as current income may not materialize, and short-term profit-and-loss measures may not appropriately reflect differences in the risks associated with the revenue derived from different activities. In addition, some risks—or combinations of risky strategies and positions—may have a low probability of being realized but would have highly adverse effects on the organization if they were to be realized ("bad tail risks"). While shareholders may have less incentive to guard against bad tail risks because of the infrequency of their realization and the existence of the federal safety net, these risks warrant special attention for safety-and-soundness reasons given the threat they pose to the organization's solvency and the federal safety net.

Before the crisis, large banking organizations did not pay adequate attention to risk when designing and operating their incentive compensation systems, and some employees were provided incentives to take imprudent risks. For example, an employee who made a high-risk loan may have generated more revenue in the short run than one who made a low-risk loan. Incentive compensation arrangements based solely on the level of short-term revenue paid more to the employee taking more risk, thereby incentivizing employees to take more, sometimes imprudent, risk. Led by supervisors in the horizontal review, over the past two years banking organizations have improved their incentive compensation arrangements to take appropriate account of risk. The two most common ways to do so—risk adjustments and deferral— make use of risk information that becomes available at different points in time.

Risk-Based Adjustments to Compensation

Information about risks taken that is known before incentive compensation is awarded can be used to make risk adjustments to those awards. For example, if an employee in a lending unit makes many high-risk loans during a year, the estimated profit from the loans can be adjusted when designing the employee's incentive compensation package, using either quantitative or qualitative information. In all cases, risk adjustments should consider likely losses under stressed conditions, and not merely business-as-usual, so that larger, but lower-probability, loss outcomes can be taken into account.

Both quantitative and qualitative risk information can be used in making such adjustments. They can be applied either through use of a formula or through the exercise of judgment and may play a role in setting amounts of incentive compensation pools (bonus pools), in allocating pools to individuals' incentive compensation, or both. The effectiveness of the different types of adjustments varies with the situation of the employee and the banking organization, as well as the thoroughness of their implemen-

tation. Banking organizations in the horizontal review have made significant progress in improving their risk adjustments, but most still have work to do. The first topic in "Balancing Incentives at Large Banking Organizations" on page 13 describes the main types of risk adjustments and some areas in which further work is needed.[3]

Deferred incentive compensation can contribute to prudent incentives because risk taking and risk outcomes often become clearer over time. If payout of a portion of incentive compensation awards is deferred for a period of time after the award date, late-arriving information about risk taking and outcomes of such risk taking can be used to alter the payouts in ways that will improve the balance of risk-taking incentives. Banking organizations in the horizontal review have made progress in improving deferral practices, but many still have work to do on performance conditions for vesting. Deferral practices are described in the second topic in "Balancing Incentives at Large Banking Organizations" on page 15.

Risk adjustments and deferral are not the only ways of improving the balance of risk-taking incentives. Some alternatives, such as the use of longer performance periods when evaluating employees' performance and awards and reducing the sensitivity of awards to measures of short-term performance are briefly described in the third topic in "Balancing Incentives at Large Banking Organizations" on page 17.

At the beginning of the horizontal review, the conventional wisdom at most firms was that risk-taking incentives were important only for a small number of senior or highly paid employees. Though the decisions and incentives of senior executives are indeed very important, the combined risk taking by a group of similarly compensated employees can also be material to the firm's risk profile. Thus, identifying the set of employees, who may individually or collectively expose the firm to material amounts of risk, is a key element of practice. The interagency guidance notes that such "covered employees" should include not only those who can individually affect the risk profile of the firm, but also groups of similarly compensated employees whose actions when taken together can affect the risk profile. Examples of such groups may include many types of traders and loan originators. Most firms in the horizontal review have made progress in identifying covered employees, but some still have work to do. The fourth topic in "Balancing Incentives at Large Banking Organizations" on page 18 discusses covered employees and progress in identifying them.

As described in the interagency guidance, establishment of prudent risk-taking incentives should be critically supported by risk-management and control personnel. In addition, practices to promote improvements in the reliability and effectiveness of incentive compensation systems over time can usefully support development of prudent risk-taking incentives on a sustained basis. These elements are described in "Risk Management, Controls, and Corporate Governance" on page 21, which notes progress in most areas.

Some observers have been particularly interested in comparing progress of incentive compensation practices of firms headquartered in different jurisdictions. Approximately one-third of the large banking organizations included in the horizontal review are headquartered outside the United States (foreign banking organizations, or FBOs). In general, progress in conforming to the interagency guidance is similar at the U.S. banking organizations and at the FBOs in the horizontal review, and progress in conforming to the Financial Stability Board's (FSB) *Principles for Sound Compensation Practices* (Principles) and the related *Implementation Standards*,[4] which are somewhat less demanding than the interagency guidance, is also similar, as described in "International Context" on page 25.

As the horizontal review of incentive compensation practices draws to a close, further work on incentive compensation will continue through the normal supervisory process. Much supervisory work is already focused on risk management and control systems. Risk-taking incentives are a complementary focus for supervisors. However, incentive compensation practices are likely to evolve rapidly over the next several years, so both firms and supervisors must continue to adapt and improve. The Federal Reserve also intends to implement the Basel Committee's recent "Pillar 3 disclosure requirements for remuneration," issued in July 2011. Increased public disclosure about risk-related incentive compensation practices at major firms may improve market disci-

[3] Employees sometimes take risk in pursuit of goals other than short-term financial performance. In such cases, risk adjustments may also contribute to balanced risk-taking incentives.

[4] The FSB issued the *Principles* in April 2009 and the *Implementation Standards* in September 2009. These FSB documents are available at www.financialstabilityboard.org/list/fsb_publications/tid_123/index.htm.

pline of such practices. Finally, the Federal Reserve is working with other banking and financial regulatory agencies to develop an interagency rule on incentive compensation practices, as mandated by the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act).

Principles of the Interagency Guidance and Supervisory Expectations

The interagency guidance is anchored by three principles:

1. **Balance between risks and results.** Incentive compensation arrangements should balance risk and financial results in a manner that does not encourage employees to expose their organizations to imprudent risks;
2. **Processes and controls that reinforce balance.** A banking organization's risk-management processes and internal controls should reinforce and support the development and maintenance of balanced incentive compensation arrangements; and
3. **Effective corporate governance.** Banking organizations should have strong and effective corporate governance to help ensure sound incentive compensation practices, including active and effective oversight by the board of directors.

The interagency guidance is consistent with both the FSB *Principles* and *Implementation Standards* adopted in 2009.[5]

Affected Bank Personnel: Executive and Non-Executive Employees

Incentive compensation arrangements for executive and non-executive employees able to control or influence risk taking at a banking organization may pose safety-and-soundness risks if not properly structured. Accordingly, the interagency guidance applies to senior executives as well as other employees who, either individually or as part of a group of similarly compensated employees, have the ability to expose the banking organization to material amounts of risk. In identifying employees covered by the interagency guidance, banking organizations are directed to consider the full range of inherent risks associated with an employee's work activities, rather than just the level or type of risk that may remain after application of the organization's internal controls for managing risk ("residual risk").

Four Methods for Linking Compensation and Risk

The interagency guidance discusses four methods that banking organizations often use to make incentive compensation more sensitive to risk: (1) risk-adjusting incentive compensation awards based on measurements of risk; (2) deferring payment of awards using mechanisms that allow for actual award payouts to be adjusted as risks are realized or become better known; (3) using longer performance periods (for example, more than one year) when evaluating employees' performance and granting awards; and (4) reducing the sensitivity of awards to measures of short-term performance.[6] Each method has advantages and disadvantages.

A key premise of the interagency guidance is that the methods used to achieve appropriately risk-sensitive incentive compensation arrangements likely will differ across and within firms. Employees' activities and the risks associated with those activities vary significantly across banking organizations and potentially across employees within a particular banking organization. Differences across firms may be based on their principal chosen lines of business and the char-

[5] On April 14, 2011, as mandated by the Dodd-Frank Act, the Federal Reserve, along with the Office of the Comptroller of the Currency, the Federal Deposit Insurance Corporation, the former Office of Thrift Supervision, the National Credit Union Administration, the Securities and Exchange Commission, and the Federal Housing Finance Agency, issued for comment a proposed rule on incentive compensation practices. The proposed rule builds off the interagency guidance. This report focuses on the observations from the horizontal review, which was conducted in the context of the interagency guidance and does not discuss the proposed rule. The proposed rule is available at www.gpo.gov/fdsys/pkg/FR-2011-04-14/pdf/2011-7937.pdf.

[6] As noted in the interagency guidance, this list of methods is not intended to be exhaustive—other methods may exist or be developed.

acteristics of the markets in which they operate, among other factors, affecting both the types of risk faced by the firm and the time horizon of those risks. Even within firms, employees' activities and the attendant risks can depend on many different variables, including the specific sales targets or business strategies and the nature and degree of control or influence that different employees may have over risk taking. These differences naturally create different opportunities and different potential incentives, broadly speaking, for employees to take or influence risk. Thus, the use of any single, formulaic approach to incentive compensation by banking organizations or supervisors is unlikely to be effective at addressing all incentives to take imprudent risks.

Avoiding "One-Size-Fits-All" Limits or Formulas

The interagency guidance helps to avoid the potential hazards or unintended consequences that would be associated with rigid, one-size-fits-all supervisory limits or formulas. Subject to supervisory oversight, each organization is responsible for ensuring that its incentive compensation arrangements are consistent with its safety and soundness. Methods for achieving balanced incentive compensation arrangements at one organization may not be effective at another organization, in part because of the importance of integrating incentive compensation arrangements with the firm's own risk-management systems and business model. Similarly, the effectiveness of methods is likely to differ across business lines and units within a large banking organization. In general, large banking organizations are likely to need multiple methods to ensure that incentive compensation arrangements do not encourage imprudent risk taking.

Well-Designed Management and Control Functions

The interagency guidance also places great emphasis on the role of risk-management and internal control functions in providing for balanced risk-taking incentives. Poorly designed or implemented incentive compensation arrangements can themselves be a source of risk to banking organizations and undermine existing controls. For example, unbalanced incentive compensation arrangements can place substantial strain on the risk-management and internal control functions of even well-managed organizations. Therefore, risk-management and internal control functions should be involved in designing, implementing, and evaluating incentive compensation arrangements to ensure that the arrangements properly take risk into account.

The interagency guidance recognizes that large banking organizations tend to be significant users of incentive compensation arrangements, and that flawed approaches to incentive compensation at these institutions are more likely to have adverse effects on the broader financial system. Accordingly, the interagency guidance elaborates with greater specificity certain supervisory expectations for large banking organizations.[7]

Timelines for Adoption

In adopting the interagency guidance, the banking agencies recognized that achieving conformance with its terms and principles would likely require significant changes and enhancements to firm practices and that fully implementing such changes would require some time. For the large banking organizations in the horizontal review, we communicated our expectation that each firm should demonstrate significant progress toward consistency with the interagency guidance in 2010, should achieve substantial conformance with the interagency guidance by the end of 2011 (affecting the award of incentive compensation awards for the 2011 performance year), and should fully conform thereafter.

[7] For example, the interagency guidance states that large banking organizations should have a systematic approach to incentive compensation supported by formalized and well-developed policies, procedures, and systems to ensure that incentive compensation arrangements are appropriately balanced and consistent with safety and soundness. Such institutions should also have robust procedures for collecting information about the effects of their incentive compensation programs on employee risk taking, as well as systems and processes for using this information to adjust compensation arrangements to eliminate or reduce unintended incentives for risk taking. Similarly, the interagency guidance urges large banking organizations to actively monitor industry, academic, and regulatory developments in incentive compensation practices and theory and be prepared to incorporate into their incentive compensation systems new or emerging methods that are likely to improve the organization's long-term financial well-being and safety and soundness.

Incentive Compensation Horizontal Review

In late 2009, in conjunction with its initial proposal of principles-based guidance on incentive compensation, the Federal Reserve launched a special simultaneous, horizontal review of incentive compensation practices and related risk management, internal controls, and corporate governance practices at a group of large complex banking organizations. These firms were chosen because flawed approaches to incentive compensation at these institutions are more likely to have adverse effects on the broader financial system and because of their extensive use of incentive compensation practices. The special work associated with the horizontal review is now nearing completion, but supervisory work on incentive compensation will continue through the ongoing supervisory process.

The Federal Reserve has communicated to the firms our assessment of their practices and our expectations for remediation in areas where improvements are needed. The firms, with the oversight and input of the Federal Reserve, have each developed remediation plans. These remediation plans, along with updates and discussion around them, have been a key mechanism for bringing clarity about needed changes.

Scope of the Horizontal Review and Feedback Provided

To carry out this major supervisory initiative, the Federal Reserve made a substantial commitment of staff resources and senior management attention. More than 150 individuals from the Federal Reserve and the other banking agencies have been involved in the horizontal review. In addition to senior supervisory staff, these included a multidisciplinary group of professionals, including supervisors, economists and lawyers, several specially constituted incentive compensation on-site review teams, and the permanent supervisory teams assigned to each of the involved banking organizations. Federal Reserve staff has coordinated with other banking regulators in conducting the horizontal review and communicating with the firms.

To perform the supervisory assessments of conformance with the interagency guidance, we gathered extensive information from the firms on their incentive compensation arrangements and associated processes, policies, and procedures. We reviewed internal documents governing existing incentive compensation practices as well as self-assessments of incentive compensation practices relative to the interagency guidance. We conducted many face-to-face meetings with senior executive officers and members of boards of directors' compensation committees. To supplement this information and to evaluate specifically how incentive compensation programs were implemented at the line-of-business level, the Federal Reserve conducted focused examinations of incentive compensation practices in trading and mortgage-origination business lines at a number of the organizations involved in the horizontal review.

The Federal Reserve has continued to provide individualized feedback to each of the firms as additional information and updates of remediation plans have been received. All of the firms have made progress toward achieving consistency with the interagency guidance. The nature and extent of remaining work varies across organizations and sometimes within organizations. Achieving conformance with the interagency guidance depends on the successful build-out of systems and processes, achievement of intermediate implementation milestones, and successful completion of remediation plans. Even then, in many cases, it will be important for the firms to keep in mind that new systems and practices have not been fully tested by experience, so ongoing monitoring of these new systems and practices will be important.

With regard to FBOs with activities in the United States, we have acknowledged the particular challenges that arise as they seek to conform their U.S. operations with the details of their home-country

consolidated regulator's expectations and those of the interagency guidance. As noted, the interagency guidance is consistent with international regulatory efforts on incentive compensation practices, including the FSB *Principles* and *Implementation Standards*. We have indicated our intent to follow the complementary principles of effective consolidated supervision and national treatment of banking organizations operating in the United States.[8]

[8] For observations regarding incentive compensation practices at FBOs, see "International Context" on page 25.

Balancing Incentives at Large Banking Organizations

This section describes methods firms use to provide employees with prudent risk-taking incentives, as well as identifies the relevant set of employees. It is mostly related to the first of the three principles in the interagency guidance.

Incentive compensation arrangements achieve balance between risk and financial reward when the amount of money ultimately received by an employee depends not only on the employee's performance, but also on the risks taken in achieving this performance. Firms often determine the dollar amount of incentive compensation awards for a performance year immediately after the end of the year. Part of the award may be paid immediately and part may be deferred. Risk adjustments (see Topic 1 below) are features of incentive compensation arrangements that incorporate information about risks taken into decisions about the total amount of awards. Deferred payouts can also be adjusted for risk using information that becomes available during the deferral period, as described under Topic 2. Topic 3 focuses on other balancing methods, and Topic 4 on identification of covered employees (those employees for whom prudent risk-taking incentives are particularly important).

Topic 1: Risk Adjustment and Performance Measures

At the beginning of the horizontal review, no firm had a well-developed strategy to use risk adjustments and many had no effective risk adjustments. Currently, all firms in the horizontal review employ some sort of risk adjustment for at least some subset of employees, but the role of risk adjustments in the overall mix of balancing strategies varies across firms and across businesses within firms. Some adjustments rely on quantitative measures of risk, while others are based on perceptions of risks taken by employees or business units. Quantitative measures of risk may be applied mechanically (although this is relatively unusual) or as an element in judgment-based decisions. Risk adjustments may play a role in setting amounts of bonus pools, in allocating pools to individuals' incentive compensation, or both. In all cases, risk adjustments should consider likely losses under stressed conditions, and not merely business-as-usual, so that larger, but lower-probability loss outcomes can influence incentives to take risk.

Every firm has made progress in developing and implementing appropriate risk adjustments, but the progress is uneven, not only across firms, but within firms. Substantial work remains to be done to achieve consistency and effectiveness of such adjustments in providing balanced risk-taking incentives. Because most incentive compensation decisions involve some judgment, a key element of that work is improved written policies and procedures and improved monitoring practices.

Disciplined, Judgment-Based Decisionmaking

Judgment is an element of decisionmaking at every firm and at nearly every step in the design and operation of incentive compensation arrangements.[9] This poses two challenges: (1) ensuring that decisions based on judgment are made consistently can be difficult and (2) risk adjustments may be only one of many inputs into decisionmaking about incentive compensation awards. Without appropriate restraint, judgments about other aspects of an employee's performance, such as achieving a certain level of market share, could be made in a way that would undermine the desired incentive effects of the risk adjustments. To promote consistency and effectiveness of the impact of judgment on balanced risk-taking incentives, the interagency guidance notes that firms are expected to have robust policies and procedures to guide the consistent use of judgment, and that decisions should be documented so that firms can review

[9] An exception is formulaic compensation plans, such as commission sales plans, which sometimes specify amounts of incentive compensation according to a specific formula set at the beginning of the year.

whether policies and procedures are being followed and can assess the effectiveness of the policies and procedures over time.[10]

At the beginning of the horizontal review, most firms lacked written policies and procedures to guide managers in making risk adjustments, and policies and procedures for incentive compensation decisionmaking often did not clearly identify the weight to be given to risks taken during the performance year. Such policies and procedures, along with training for managers and *ex post* review of decisions, are important to achieving consistent application of *risk* adjustments. Some firms have made progress in developing written policies and procedures and related processes, but others are still in the process of completing this work.[11]

Quantitative and Qualitative Risk Measures

In cases where risk adjustments are applied based on a formula, incentive compensation decisions are made using measures of financial performance that are net of a risk charge based on a quantitative measure of risk. Such adjustments balance incentives to take risk to the extent that such charges offset increases in financial performance (or reductions in costs) that are associated with increased risk taking. The use of mechanical risk adjustments is possible when suitable quantitative risk measures are available, and the effectiveness of this type of risk adjustment depends on the quality of the risk measure. One leading edge practice, observed at some firms, is to assess a charge against internal profit measures for liquidity risk that takes into account stressed conditions and to use this adjusted profit measure in determining incentive compensation awards.

Most firms in the horizontal review also used quantitative risk measures as an input to judgment-based incentive compensation decisionmaking. For example, boards of directors usually take into account available risk measures when making decisions about bonus pools for the firm or about awards for senior executives. Some risk measures can be difficult to convert into quantitative risk charges, but nevertheless convey useful information. However, as noted previously, achieving a consistent balancing impact through judgmental decisionmaking is a challenge. Firms with more well-developed policies and procedures to guide decisionmakers in judgmentally using quantitative risk information seemed more likely to achieve a consistent balancing impact. This is an area in which many firms are working to improve effectiveness.

Almost all firms in the horizontal review use nonquantitative perceptions of risk taking as a basis for some risk adjustments. Such adjustments have the potential to address hard-to-measure risks and limitations of existing data and risk-measurement methods. For example, the manager of a lending business might be aware that some employees of the business make riskier loans and others safer loans, even though the quantitative risk measures available to the manager do not show it. Based on this information, the manager could risk adjust by giving lower incentive compensation awards per unit of revenue to the employees making the riskier loans. As in other cases where incentive compensation awards are based on judgment-based decisionmaking, they are more likely to be consistently effective where firms have clear policies and procedures to guide application. Developing such policies and procedures is particularly challenging because the information about risk is qualitative and the nature of the information tends to change over time.

Risk Adjustment and Bonus Pools

Incentive compensation practices of firms differ in the process of determining the total bonus pools and the allocation of incentive compensation to individuals. In a top-down process, senior management and the board of directors determine the size of an overall amount of funding for the firm as a whole near the end of the performance year, and this bonus pool is then split into sub-pools for each business. Pools

[10] For example, an organization should have policies and procedures that describe how managers are expected to exercise judgment to achieve balance, including a description, as warranted, of the appropriate available information about the employee's risk-taking activities to be considered in making informed judgments. Such policies and procedures need not involve a precise analysis to be followed in developing discretionary risk adjustments, but should provide enough structure and instruction that decisions can be justified and documented on a clear and consistent basis and thereby allow for *ex post* monitoring.

[11] Some firms have identified in their policies and procedures specific factors appropriate to the line of business and employee role, including reference points, to be considered by management when making discretionary risk adjustments. Some firms have introduced new management processes aimed at governing discretion-based risk adjustments and aimed at providing documentation sufficient to support review of such decisions by Internal Audit. Some firms also have assigned control-function employees to focus on compliance with enhanced policies and procedures, and on documentation processes. They have improved communication to managers and employees about how risk adjustments work, which is crucial to full impact on risk-taking decisions.

are allocated to individual employees in a manner related to their individual performance. In a bottom-up process, the firm assesses performance of each employee and assigns him or her an incentive compensation award, with the total amount of incentive compensation for the year for the firm as a whole simply being the sum of individual incentive compensation awards. Most firms' processes are a mixture of top-down and bottom-up, but the emphasis can differ markedly.[12]

Risk adjustments balance incentive compensation arrangements to the extent they affect the incentives provided to individuals. The impact on incentives may be limited in cases where a firm makes risk adjustments only when deciding amounts of pools because the award to each employee under the pool will receive the same adjustment. This is appropriate when the nature and extent of risk taking of all employees under the pool is the same, such as cases where a pool applies to a business unit in which all risk decisions are influenced in the same way by all employees. Where individual employees in a single pool can have varied levels of impact on the amount of risk, the differences will not be fully addressed by risk adjustments to the pool alone. In such cases, additional adjustments incorporated into decisions about individual incentive compensation awards would be needed to make the risk adjustment fully effective.

Next Steps

Most of the firms in the horizontal review have made significant changes to their risk adjustment practices for awards for the 2011 performance year. Still, most continue to have work to do, including development of appropriate policies and procedures to guide judgmental adjustments of incentive compensation awards. Most firms should continue to evaluate the effectiveness of the quantitative and qualitative risk adjustments they are using and whether risks are appropriately balanced. Additionally, in 2012 firms should evaluate how effective the risk adjustments used for the 2011 awards were, and make improvements as necessary. The Federal Reserve will continue to work with the firms to make sure progress continues and to evaluate best practices in this area as they evolve.

Topic 2: Deferred Incentive Compensation

Another method for balancing incentive compensation arrangements is to defer the actual payout of a portion of an award to an employee significantly beyond the end of the performance period, adjusting the payout for actual losses or other aspects of the employee's performance that are realized or become better known only during the deferral period. Such deferral arrangements make it possible for the amount ultimately paid to the employee to reflect information about risks taken that arrives during the deferral period.

The interagency guidance does not require that deferral be used for all employees; does not suggest any specific formula for deferral arrangements; and does not mandate the use of any specific vehicle for payment, such as stock. However, the interagency guidance does have some specific suggestions relating to deferral arrangements for senior executives. A substantial fraction of incentive compensation awards should be deferred for senior executives of the firm because other methods of balancing risk-taking incentives are less likely to be effective by themselves for such individuals.

Elements of Deferral Practices

The proportion of incentive compensation awards to be deferred was substantial at the firms in the horizontal review. For example, senior executives now have more than 60 percent of their incentive compensation deferred on average, higher than illustrative international guidelines agreed by the FSB, and some of the most senior executives have more than 80 percent deferred with additional stock retention requirements after deferred stock vests. Most firms assign deferral rates to employees using a fixed schedule or "cash/stock table" under which employees receiving higher incentive compensation awards generally are subject to higher deferral rates, though deferral rates for the most senior executives are often set separately and are higher than those for other employees.

Deferral periods generally range from three to five years, with three years the most common. Most organizations in the horizontal review use the same deferral period for all employees in a given incentive com-

[12] Even at firms with a bottom-up emphasis, budget constraints place a practical limit on the size of the aggregate bonus for the firm as a whole, so some top-down element is present. Similarly, top-down firms take some account of perceived performance of key individuals in setting pools.

pensation plan and often for all employees. Some firms transfer ownership of the entire deferred award to the employee at the end of the vesting period ("cliff vesting"), while others adopted a schedule under which a portion of the award vests at given intervals.

The most common vehicles for conveying deferred incentive compensation to employees are shares of the firm's stock, stock options, and performance units (an instrument with a payout value that depends on a measure of performance during the deferral period, often an accounting measure like earnings or return-on-equity). Some firms use deferred cash or debt-like instruments.

Performance-Based Deferral

At the beginning of the horizontal review, few firms adjusted payouts of deferred awards for risk outcomes or other information about risks taken that became available during the deferral period. Without such performance conditions, deferral arrangements are unlikely to contribute to balancing risk-taking incentives (for ease of reference, deferral with performance conditions is referred to as "performance-based deferral").[13]

Firms in the horizontal review have made progress in implementing performance-based deferral arrangements that promote balanced risk-taking incentives. Each firm's setup is somewhat different, but three broad styles of arrangement were observed—formulaic, judgment-based, and a hybrid of the two. In a formulaic approach, the percentage of the award that vests is directly related to a measure of performance during the deferral period. In a judgment-based arrangement, the circumstances under which less than full vesting will occur are decided judgmentally rather than being linked to fixed values of performance metrics, and the amount of incentive compensation paid out under those circumstances is also decided through a judgment-based process. In a hybrid setup, a specific trigger value of performance is set at the beginning of the deferral period, and if performance falls below that trigger value, a judgment-based process determines how much of the deferred incentive compensation will not vest.[14] To the extent that judgment plays a role in the vesting decision, firms are expected to have robust policies and procedures to guide the consistent use of judgment, and decisions should be appropriately documented so that firms can monitor whether their policies and procedures are being followed.[15] Policies and procedures need to be clear to employees, or they will not have a clear understanding when risk-taking decisions are made of which outcomes will lead to forfeiture, in which case deferral arrangements are not likely to have a significant impact on risk-taking behavior. Many firms still have work to do on their policies and procedures in this area.

Most firms in the horizontal review have clawback arrangements for at least some employees that are triggered by malfeasance, violations of the firm's policies, and material restatement of financial results.[16] Such clawback provisions can contribute to

[13] Two common issues with performance-based deferral became clear during the horizontal review. The first is related to payment of deferred incentive compensation in share-based instruments. Where vehicles are share-based, at the time shares are awarded, risk-taking actions during the performance year might have either upside or downside effects on the stock price in the future, so the net effect on incentives is not clear. Moreover, most employees below the senior executive level are not likely to believe that their own risk-taking decisions will have a material impact on the firm's stock price. For example, if the leader of a business unit knows that a particular strategy may lead to losses that are large from the standpoint of the unit, the leader may believe any such losses would be more than offset by profits from other business units. Thus, the leader would not expect the losses to affect the ultimate value of deferred pay received, and deferral would have little impact on his or her risk-taking incentives. In order for a deferral arrangement to meaningfully contribute to balance, vesting triggers should be based on measures of performance that are linked to the employee's risk-taking activities, especially those taken before the incentive compensation award.

The second common issue that became clear during the horizontal review related to the particular performance conditions (triggers) chosen by firms. Some firms have performance-based deferral arrangements that allow for a large or outsized payout when the values of triggers reflect positive performance. However, these arrangements may encourage employees to take more risk during the deferral period, in order to maximize the value of such triggers and thus may not balance risk-taking incentives. One example of a trigger that may be appropriate is one that reduces the amount of deferred compensation that is vested if the firm (or business line or unit, depending on the level of the employee) experiences negative net income in any fiscal year during the deferral period. The relevant triggers for any performance-based deferral arrangement also should be clearly explained to employees covered by those arrangements.

[14] In a common variant of the hybrid process, once the trigger is met for a particular group (e.g., a business unit), the discretionary process determines not only the percentage of incentive compensation that vests, but also which employees are subject to less than full vesting, usually based on which employees were responsible for losses or for imprudent risk taking.

[15] Concerns about the use of discretion in deferral arrangements are similar to concerns about the use of discretion in *ex ante* risk adjustment, as discussed under Topic I of this report.

[16] The word "clawback" is sometimes used to refer to any deferral-of-payment method. The term "clawback" also may refer specifically to an arrangement under which an employee must return incentive compensation payments previously received by the employee if certain risk outcomes occur. Section 304 of the Sarbanes-Oxley Act of 2002 (15 U.S.C. 7243), which applies to

balanced risk-taking incentives by discouraging specific types of behavior. While potentially effective, they do not affect most risk-related decisions and are not triggered by most risk outcomes—the narrow focus of these arrangements mean that they are unlikely to contribute meaningfully to balance.

Progress on performance-based deferral for the 2010 performance year was most common for senior executives. Many firms are now in the process of revising arrangements to be used for the 2011 performance year and are extending performance-based deferral coverage to more employees as a mechanism to provide prudent risk-taking incentives. Some firms have implemented, or are implementing, performance-based deferral for all employees receiving deferred incentive compensation, while others are doing so mainly for employees whose authorities and influence over risk taking are such that risk adjustments might have only limited effectiveness in balancing risk-taking incentives, such as senior managers within business lines and other employees engaged in activities that involve risks over a long duration.

Next Steps

Most of the firms in the horizontal review have made significant changes to their deferral arrangements. Many firms in the horizontal review have increased the fraction of incentive compensation that is deferred for both senior executives and other employees. All firms have more work to do to improve their performance-based deferral arrangements. Firms may also fine-tune the role of deferral relative to risk adjustments as they gain experience with how the two work together. As firms develop and fine-tune deferral arrangements, firms should evaluate how well these deferral arrangements have worked and make improvements as necessary. The Federal Reserve will monitor and encourage progress and work to ensure that practices are effective.

Topic 3: Other Methods that Promote Balanced Risk-Taking Incentives

Risk adjustments and deferral with performance-sensitive features represent important mechanisms for achieving balanced incentives for taking risk. The interagency guidance also identifies the use of longer performance periods (for example, more than one year) and reduced sensitivity of awards to short-term performance as methods for achieving balance. During the horizontal review, we observed the use of both methods, though neither was universally used.

Evaluating Performance: Emphasis on Long-Term over Short-Term

Firms used longer performance periods (that is, a backward-looking multiyear assessment horizon), for example, for senior executives in some cases, and in others for non-executive employees. Measuring and evaluating performance or awards on a multiyear basis allows for a greater portion of risks and risk outcomes to be observed within the performance assessment horizon, thus garnering many of the benefits of a deferral arrangement with performance-sensitive features. One simple variation involves using risk outcomes from prior-year actions as a consideration in reducing current-year incentive compensation award decisions. To be effective, multiyear assessments should be based on policies and procedures that give appropriate weight to poor outcomes due to past decisions. Otherwise, adverse outcomes may be effectively ignored due to an emphasis on current-year performance.

Damping the sensitivity of incentives to measures of short-term performance was a choice made by some institutions to rein in incentives when, for example, concerns arose about the significance of the incentives or risks involved. For example, increasing bonus pools or individual award amounts at a lower rate when financial performance is well above target levels can limit incentives to take large risks to achieve extreme levels of performance. A cap on incentive compensation awards beyond a certain level of performance is another example. However, in the horizontal review, there were few instances where such caps and reduced sensitivity were sufficient by themselves to balance risk-taking incentives.

Next Steps

The interagency guidance urges large banking organizations to actively monitor industry, academic, and regulatory developments in incentive compensation practices and theory to identify new or emerging methods that are likely to improve the organization's long-term financial well-being and safety and sound-

chief executive officers and chief financial officers of public banking organizations, is an example of this more specific type of "clawback" requirement. Nearly all U.S.-based firms in the horizontal review are publicly traded, and therefore subject to this provision.

ness. The Federal Reserve will do the same and will encourage firms to use methods that are most appropriate for their circumstances.

Topic 4: Covered Employees

Identifying the full set of employees who may individually or collectively expose the firm to material amounts of risk is a crucial step toward managing risks associated with incentive compensation. Without identifying the relevant employees, a firm cannot be sure it has properly designed its incentive compensation arrangements to provide appropriate risk-taking incentives.

Three Categories of Covered Employees

The interagency guidance describes three categories of such employees, which together are referred to as "covered employees":

- senior executives;
- other individual employees able to take or influence material risks; and
- groups of similarly compensated individuals who, in aggregate, can take or influence material risks.

Incentive compensation arrangements for all covered employees should be appropriately balanced, regardless of whether the covered employee is a senior executive, an individual, or part of a group of similarly compensated individuals. Though the Federal Reserve has no target number or quota of covered employees for any firm, many of the largest firms have determined they have thousands or tens of thousands of covered employees.

Standard Approaches to Covered Employee Identification

Firms follow one of two general approaches to identify covered employees. One approach involves developing and following a systematic process that identifies types of risk that each employee (or group of employees) takes or influences and that assesses the materiality of the risks. Such a process should "cast a wide net" and should consider the full range of types and severities of risk. Some firms have invested in enhanced information systems to facilitate this process. Many firms in the horizontal review follow this approach.

The second approach designates a very large set of employees as covered, such as all employees receiving any incentive compensation, or all employees subject to a subset of the firm's incentive compensation plans. Although this reduces the effort required to identify covered employees, firms still need to identify the relevant types and severities of risks that are incentivized through incentive compensation arrangements to be sure incentives to take such risks are balanced.

Many firms appropriately identify at least some groups of similarly compensated employees who may collectively expose the firm to material risk. Examples include originators of mortgages, commercial lending officers, or groups of traders subject to similar incentive compensation arrangements.

Establishing Robust Processes Going Forward

Several firms have yet to establish robust processes for identifying covered employees that are consistent with the interagency guidance, especially for identifying groups of covered employees. Some firms rely heavily on mechanical materiality thresholds in their identification process. For example, only employees able to make decisions that commit at least $1 billion of the firm's economic capital might be eligible for consideration as covered employees, or only employees above a given level of total compensation. Such materiality thresholds as applied by most firms to exclude employees from being considered covered employees have three common weaknesses: (1) they often fail to capture the full extent to which an employee may expose the firm to risk, (2) they tend to exclude potential covered employees who may significantly influence risk taking but do not make final risk decisions, and (3) they often ignore groups of similarly compensated employees. In reviewing the firms' use of thresholds, we found that under some circumstances, a suitably chosen materiality threshold could appropriately play a complementary role in identifying covered employees if used to include employees as covered employees.

FBOs with U.S. operations that were part of the horizontal review face special challenges in developing procedures for identifying covered employees for purposes of the interagency guidance. Generally, home-country supervisors expect their standards to be met by the consolidated organization, and so in its

U.S. operations, an FBO must meet both home-country and U.S. regulatory expectations. Many of these firms have home-country supervisors whose regulations focus on a more limited set of employees than described in the interagency guidance.[17] As a result, these firms need to develop processes to identify both covered employees in their U.S. operations for application of the interagency guidance and those employees subject to home-country regulation. The number of covered employees for purposes of the interagency guidance in U.S. operations of an FBO may exceed the number of employees subject to home-country regulation.

Next Steps

All firms in the horizontal review now recognize the importance of establishing sound incentive compensation programs that do not encourage imprudent risk taking for those employees who can individually affect the risk profile of the firm. In addition, many firms have identified groups of similarly compensated employees whose combined actions may expose the organization to material amounts of risk. Some firms have put in place a robust process for identifying relevant individuals and groups of employees, with the flexibility to adapt to the changing business environment over time. However, some firms are still working to identify a complete set of mid- and lower-level employees, and others are working to ensure their process is sufficiently robust. The Federal Reserve will work with the firms to ensure that progress continues.

[17] Supervisors in many other jurisdictions require their firms to identify only their equivalent of individual covered employees, often using materiality standards that restrict attention to a relatively small number of individuals.

Risk Management, Controls, and Corporate Governance

Establishment of balanced risk-taking incentives should be supported by the engagement of risk-management and control personnel in the design and implementation of incentive compensation arrangements, incentive compensation for such personnel that is independent of the financial performance of the businesses they oversee (in order to limit conflicts of interest), practices to promote improvements in the reliability and effectiveness of incentive compensation systems over time, and improvements in corporate governance. These features are discussed in topics 5 through 8 below.

Topic 5: Risk-Management and Control Personnel and the Design of Incentive Arrangements

Properly identifying risks attendant to employees' activities and setting suitable balancing mechanisms are critical elements of providing balanced risk-taking incentives. The interagency guidance notes that risk-management processes and internal controls should reinforce and support the development and maintenance of balanced incentive compensation arrangements. Risk-management and control personnel (including Internal Audit) should be involved in the design, operation, and monitoring of incentive compensation arrangements because their skills and expertise provide essential perspective and support. Risk-management staff, in particular, should participate in the firm's analysis and decisionmaking regarding the identification of covered employees, the selection of any risk-sensitive performance metrics, the development of risk-adjustment methodologies and vesting triggers, and the overall effectiveness of the firm's balancing efforts.

At all firms in the horizontal review, certain functions, such as human resources and finance, traditionally were involved in incentive compensation decisions and in the design and implementation of incentive compensation arrangements. However, this role traditionally involved little or no focus on incentives to take risk or the risk associated with the employee's activities. Risk-management personnel traditionally had relatively little involvement in incentive compensation design, and their involvement in decisionmaking was often limited, for example, to only supplying information about breaches of internal policy and procedure by individual employees or units. However, a few firms did incorporate risk measures produced by risk-management personnel into financial performance measures used in incentive compensation decisionmaking before the crisis.

Increased Involvement of Risk-Management Personnel in Design and Decisionmaking

Risk-management personnel are now involved in incentive compensation system design and decisionmaking at virtually all firms in the horizontal review. However, the intensity and nature of involvement varies. For example, risk-management functions now provide significant risk-related input to the board-level decisionmaking process for individual senior executive incentive compensation at all firms and for bonus pool size decisions at firms at which pools play a role. Most firms consider some quantitative risk measures in making at least some incentive compensation decisions; and these are usually provided by the risk and finance functions. Nonetheless, at some firms, risk experts primarily play a peripheral or informal role

Control, finance, and risk-management staff members provide some input to individual employee performance reviews at many firms. For example, they report breaches of policy and procedure or rate the "risk awareness" or adherence to the firm's risk appetite of individual employees or business units. At firms that use committee structures in their incentive compensation decisionmaking process, control, finance, or risk-management personnel usually are among the members of committees. At most firms in

the horizontal review, risk-management and control functions are also involved in identification of covered employees.

At firms where risk-management personnel are intensely involved in basic design decisions for the incentive compensation system, as well as in determining details of the risk-related elements of the incentive compensation process overall, progress on risk-taking incentives has tended to be faster. At firms where risk experts play a peripheral, informal role, progress has tended to be slower, primarily because other personnel tend to have less experience and expertise in designing risk identification and measurement features. Several firms remain in the latter category.

Next Steps

The main challenge going forward is to ensure that risk-management and control personnel are actively engaged with incentive compensation and that improvements in risk management and in recognition of risks the firm takes are incorporated into incentive compensation decisionmaking. The Federal Reserve will continue to work with firms to ensure that such personnel have an appropriate role.

Topic 6: Incentive Compensation Arrangements for Staff in Risk-Management and Control Roles

Improper incentive compensation arrangements can compromise the independence of staff in risk-management and control roles. For example, a conflict of interest is created if the performance measures applied to them, or the bonus pool from which their awards are drawn, depend substantially on the financial results of the lines of business or business activities that such staff oversee. Such dependence can give staff an incentive to allow or foster risk taking that is inconsistent with the firm's risk-management policies and control framework or the safety and soundness of the firm. Thus, risk-management and control personnel should be compensated in a way that makes their incentives independent of the lines of business whose risk taking and incentive compensation they monitor and control. Such staff includes not only employees assigned to firmwide risk-management or control functions, but also employees who perform similar roles while embedded within individual lines of business within the firm.

Maintaining the Independence of Risk-Management and Control Personnel

The firms in the horizontal review have completed much of the necessary work in this area. Performance measures applied to staff in risk-management and control roles are usually oriented to the performance of their oversight duties and not the performance of the line of business they oversee. Their incentive compensation may be indirectly related to financial performance, if, for example, the bonus pool is drawn from the firmwide pool, which is related to firmwide performance. In most cases, linkage to firmwide performance is likely to be too weakly linked to control and risk-management decisions to pose a significant conflict of interest.

Where more direct or substantial potential conflicts of interest have arisen, some firms achieved independence by moving risk-management and control function personnel out of line-of-business incentive compensation plans or line-of-business bonus pools, establishing separate plans or pools for them. Other firms established separate bonus pools for staff in risk-management and control roles, the sizes of which do not depend directly on the financial performance of a particular line of business or business activity.

At some firms, lower-level risk-management or control staff members who are embedded in business lines receive their incentive compensation awards from the business line bonus pool. Such practices can be acceptable if the relevant staff members perform functions that are unrelated to risk-taking decisions and if the product of their work is unrelated to incentive compensation decisionmaking.

Some firms include comments from cross-function reviews (such as 360 degree reviews) in incentive compensation decisionmaking for all staff members. This raises the possibility that business line reviews could influence incentive compensation decisions for risk-management and control staff members even if no formal link to financial performance exists. In addition, some firms have incentive compensation arrangements for staff in risk-management and control functions that are subject to adjustments based on management judgment. Clear guidance from policies and procedures, clear documentation of indi-

vidual judgment-based adjustments (and decisions made under such policies and procedures), and review by internal audit help to ensure the incentive compensation awards are not swayed by business line results.

Next Steps

As part of its normal supervision of the independence of risk and control functions, the Federal Reserve will continue to be attentive to the risk-related incentives provided by the incentive compensation arrangements for their personnel.

Topic 7: Practices Promoting Reliability

Firms should regularly review whether the design and implementation of their incentive compensation systems deliver appropriate risk-taking incentives and should correct deficiencies and make improvements that are suggested by the findings. The interagency guidance mentions several practices that can contribute to the effectiveness of such activity, including internal reviews and audits of compliance with policies and procedures, monitoring of results relative to expectations, and simulation of the operation of incentive compensation arrangements before implementation.

Importance of Internal Reviews and Audits

Internal reviews and audits of compliance with policies and procedures are important to ensure that the incentive compensation system is implemented as intended by those employees involved in incentive compensation decisionmaking. For example, if procedures require that specific quantitative measures of risk are to be included in financial performance measures used in decisionmaking, but they are not, the sensitivity of decisions to risk taking probably would not be as intended. Though the internal audit function should play a key role in this activity, other functions such as risk management, finance, and human resources also should be involved.

An incentive compensation system may be implemented as intended, but it may still fail to achieve the desired relationship between risk and reward because features of its design and operation do not work out as expected. Detecting such problems requires that a firm monitor relationships among measures of short- and long-run financial performance, amounts of incentive compensation awards, measures of risk and risk outcomes, amounts of ultimate payments of deferred incentive compensation, and other factors relevant to incentive compensation decisions. Such monitoring bears some resemblance to the "backtesting" that is often done for risk-management models and systems. To be effective, such monitoring should include some quantitative analysis, but because all incentive compensation systems involve some exercise of human judgment in decisionmaking, effective monitoring is not likely to be purely quantitative or mechanical. Large banking organizations are more likely to require some use of automated systems to adequately monitor the effectiveness of incentive compensation arrangements in balancing risk-taking incentives, especially systems that support capture of relevant data in databases that support monitoring and analysis.

Next Steps

All organizations in the horizontal review have considerable work remaining to fully implement practices promoting balanced risk incentives in their incentive compensation arrangements. Few organizations performed extensive reviews and analyses related to risk-taking incentives before the crisis. In some cases internal audit reviewed other aspects of incentive compensation activities, such as incentive compensation award disbursement practices or adherence to vesting policies related to time-of-service.

Over time, as incentive compensation is awarded and paid out and risk outcomes become better known, firms and their supervisors will learn more about the reliability of methods for balancing risk-taking incentives and the effectiveness of different methods of assessing reliability. In the meantime, the Federal Reserve will work with firms as they develop the necessary systems and capabilities and will promote experimentation and innovation.

Topic 8: Strong Corporate Governance

Active and effective oversight of incentive compensation practices by the board of directors is a key element of the interagency guidance. The board of directors of a large banking organization, or its delegated committee, should actively oversee the development and operation of the organization's incentive compensation policies, systems, and related control

processes. The board of directors or the delegated committees of such organizations should also monitor the effectiveness of incentive compensation arrangements in balancing the risk-taking incentives of covered employees.

Most of the firms in the horizontal review already had in place a board-level compensation committee composed of independent directors. While historically these committees have been actively engaged in decisions relating to the incentive compensation arrangements for certain senior executives, their involvement in overseeing the incentive compensation practices and arrangements relating to other covered employees (including non-executives) has increased considerably during the horizontal review. All firms in the horizontal review have enhanced the role of the board in overseeing the incentive compensation system for all covered employees and are now paying increased attention to risk-related aspects of incentive compensation. Some firms have established management committees that include representatives of risk-management and control functions to support their efforts. Notwithstanding progress made to date, firms indicated that they will continue to implement enhanced corporate governance practices and that these practices will continue to evolve.

Progress in Facilitating Effective Internal Communications

Most firms have established mechanisms to facilitate communication between the compensation committee and the risk and audit committees. Many firms have members of the compensation committee that are also members of the risk and audit committees. Other firms rely on regular meetings between the compensation and risk committees, while others have not yet enhanced their communications systems and rely on communications that are more ad hoc in nature.

The board of directors or its delegated committee should review and approve policies and procedures that appropriately address corporate standards and processes governing the design, approval, administration, and monitoring of incentive compensation arrangements for covered employees. At some firms in the horizontal review, the relevant body is not yet consistently reviewing and approving these standards.

The board of directors should regularly review the results of monitoring of incentive compensation arrangements described in the previous section and results of other activities undertaken to promote reliability of the incentive compensation system. For example, boards should receive periodic reports that review incentive compensation awards and payments relative to risk outcomes on a backward-looking basis to determine whether the organization's incentive compensation arrangements may be promoting imprudent risk taking. As noted previously, at most firms such reports are at a relatively early stage of development. While some boards undertake an annual review of the effectiveness of incentive compensation in avoiding inappropriate incentives to incur risk, many currently rely on periodic presentations by the chief risk officer or other risk-management staff to the board of directors or its compensation committee, the content of which varies considerably from firm to firm.

Next Steps

Though firms have implemented improved corporate governance practices, the effectiveness of such practices will not be known until some years of experience have been accumulated. Effectiveness will depend on the attentiveness of members of compensation committees to risk-taking incentives. The Federal Reserve will continue to work to promote effective governance of incentive compensation practices at banking organizations.

International Context

Some observers have been interested in comparing progress of firms headquartered in different jurisdictions in improving their incentive compensation practices, for example, in progress relative to the FSB *Principles* and *Implementation Standards.*

About one-third of the large banking organizations included in the horizontal review are headquartered outside the United States. Almost all of the FBOs in the horizontal review are headquartered in Europe (including the United Kingdom). We observed progress in implementing the interagency guidance, which is consistent with the FSB documents, at both U.S. banking organizations and FBOs. However, the interagency guidance, while consistent with the FSB *Principles* and *Implementation Standards*, is more detailed and demanding in many respects. Thus, satisfying the expectations implied by the FSB documents is not necessarily enough to satisfy the expectations in the interagency guidance.

Conformance with Interagency Guidance

In general, progress on conforming to the interagency guidance is similar at the U.S. banking organizations and at the FBOs in the horizontal review. Firms that are more and less far along can be found in both sets of firms. With respect to particular aspects of the guidance, the FBOs have had more difficulty in identifying covered employees in their U.S. operations (as noted previously, few foreign supervisors employ the concept of groups of covered employees, instead focusing their attention on relatively small numbers of senior and highly paid employees). Progress on conforming to the elements of the interagency guidance that focus on corporate governance and the role of risk-management and control personnel is similar at FBOs and U.S. banking organizations.

Progress on achieving balanced incentive compensation arrangements is similar on the whole across the two groups, but the balancing methods employed and the rate of innovation are different between the groups. For risk adjustments, some foreign supervisors have emphasized risk adjustments mainly at the level of firmwide or business line bonus pools. Thus, some FBOs have made progress risk adjusting such pools but have made less progress implementing risk adjustments down to the level of the individual employee.

Some observers have been particularly interested in the details of deferral practices, focusing on the share of incentive compensation awards that is deferred and the use of equity as a vehicle for deferred incentive compensation. Numerical examples of deferral fractions set out in the FSB *Principles* and *Implementation Standards* are sometimes used as a benchmark (60 percent or more for senior executives, 40 percent or more for other individual "material risk takers," which are not the same as covered employees). Deferral fractions are at or above these benchmarks at both the U.S. banking organizations and the FBOs in the horizontal review.

In some cases, substantial deferral fractions are achieved in different ways. As noted previously, most U.S. firms and some FBOs use a cash-stock table that increases the deferral rate as the amount of incentive compensation increases. As a practical matter, this results in substantial deferral rates for senior executives and for some employees. In contrast, as noted previously, some European Union (EU) supervisors prescribe some elements of pay structure for some employees at EU banking organizations. This also results in substantial deferral rates for those employees.

European Union Approach to Deferred Incentive Compensation

In many cases the pay structure under the EU regulation is somewhat different than that seen at U.S. banking organizations. Under some national implementations within the EU, the deferred portion of an

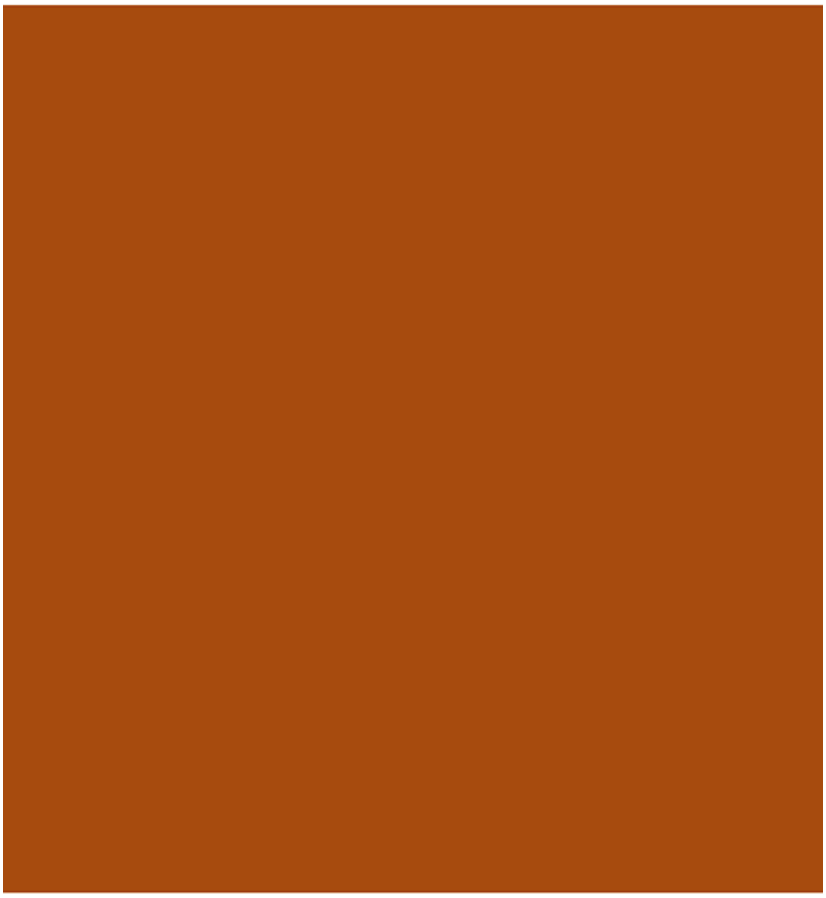
incentive compensation award is required to be granted half in an equity-linked instrument and half in cash or a cash-like vehicle. The upfront portion of the incentive compensation award is required to be paid half in cash and half in stock subject to a retention requirement of six months to one year. Though the overall fraction of the incentive compensation award granted in stock is substantial in such implementations, the upfront stock subject to a retention requirement is likely to have a limited balancing impact on risk-taking incentives due to the short retention period. The impact of the deferred portion depends on performance conditions; in the absence of performance conditions, deferred cash will have only a modest balancing impact since the amount ultimately received by the employee is reduced only in the event of the firm's failure.

Overall, the net exposure of an employee to a firm's performance over time is not necessarily larger under the EU regulation than under the simpler structures often seen at U.S. firms. For example, if 60 percent of an incentive compensation award is deferred for three years, half in stock and half in cash that vests unless the firm fails, then only 30 percent of the incentive compensation award is exposed to poor performance short of failure. In contrast, suppose all deferred awards are in stock deferred for three years, as is common in the United States. If the same 60 percent of the incentive compensation award is deferred, the whole 60 percent is exposed to the variation in the value of the stock. If the stock is also subject to effective performance conditions, the whole 60 percent is exposed to the conditions. The details of vesting and other performance conditions are particularly important to the overall balancing impact.

Conclusion

Reinforced by the supervisory activities undertaken through the horizontal review, the large banking organizations in the review have made significant progress toward enhancing their incentive compensation arrangements in ways that provide appropriately balanced incentives to take risks (as outlined in the interagency guidance) and promote safety and soundness. As described in this report, however, most firms still have significant work to do to achieve full conformance with the interagency guidance.

The Federal Reserve remains committed to helping move the industry forward in developing and implementing incentive compensation practices that are consistent with prudent risk management and safety and soundness. Continued supervisory attention will be focused on further refinement and implementation and on making appropriate changes as business conditions change and business strategies evolve.



Q.8. Many economists, including President Trump's Chair of the Council of Economic Advisers, have long advocated for less restrictive immigration policies to help grow the U.S. labor force, especially in light of an aging population and low birth rate. According to the Pew Research Center, without a steady stream of a total of 18 million immigrants between now and 2035, the share of the U.S. working-age population could decrease to 166 million.[5]

What repercussions would restrictive immigration policies have on our workforce and economy?

A.8. Immigration is an important contributor to the rise in the U.S. population, accounting for roughly one-half of population growth annually. And population growth, in turn, affects the growth rate of the labor force as well as the growth of the overall economy. Thus, from an economic growth standpoint, reduced immigration would result in lower population growth and thus, all else equal, slower trend economic growth. However, immigration policy is not the purview of the Federal Reserve but rather is the responsibility of the Congress and the Administration.

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

Q.1. *Alternative Reference Rate:* Some underappreciated work that you have guided at the Federal Reserve is that of the Alternative Reference Rate Committee. Global regulators have acknowledged that at the end of 2021, banks will no longer be required to submit to the panel that determines LIBOR, meaning that the rate could stop publication at that time. LIBOR is currently critical to the smooth functioning of our financial system, as it underlies $200 trillion in notional value, or ten times U.S. GDP, including a significant amount of floating-rate mortgages. As the FSOC's annual report highlighted, if LIBOR disappears without a liquid market in the replacement rate, the effects could be catastrophic. Yet a switch to an alternative rate, the secured overnight financing rate, requires tremendous collaboration by the private sector and the official sector and the creation of financial markets that would facilitate the arbitrage between LIBOR and the secured rate, and the creation of new products in the new secured rate.

Do you believe end users will demand products in the new secured rate sufficient to build a deep and liquid market in the secured rate before the end of 2021, even though first movers in this space are likely to pay a premium for the product before the market is fully developed? Why?

A.1. As you note, the Financial Stability Oversight Council (FSOC) has highlighted the potential risks to U.S. financial stability from the London Interbank Offered Rate (LIBOR) since 2014. These concerns led the Federal Reserve to convene the Alternative Reference Rates Committee (or ARRC) at that time. The ARRC is a diverse group of private sector firms and institutions that has widespread support from the U.S. official sector. In addition to the Federal Reserve Board, the Consumer Financial Protection Bureau, the Com-

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[5] *http://www.pewresearch.org/fact-tank/2017/03/08/immigration-projected-to-drive-growth-in-us-working-age-population-through-at-least-2035/*

modity Futures Trading Commission (CFTC), the Federal Deposit Insurance Commission (FDIC), the Federal Housing Finance Authority, the Federal Reserve Bank of New York, the Office of the Comptroller of the Currency (OCC), the Office of Financial Research, the Securities and Exchange Commission (SEC), and the U.S. Treasury Department (U.S. Treasury) all act as ex officio members of the ARRC. The ARRC's work in identifying the secured overnight financing rate (SOFR) as a recommended alternative to U.S. dollar LIBOR and developing a plan to promote use of SOFR on a voluntary basis has unquestionably been necessary in helping to make sure that the financial stability risks identified by the FSOC do not materialize.

I have been greatly encouraged by the response of the private sector since SOFR began publication in April of this year. Even in this short period of time, we have already seen evidence that SOFR can and will be used by a wide range of market participants. The Chicago Mercantile Exchange is offering futures contracts on SOFR, and trading activity has already risen to above 5,000 contracts (or about $15 billion) per day with a total open interest of $75 billion. SOFR futures already have far more daily transactions underlying them than LIBOR. In addition, the London Clearing House group has begun offering clearing of SOFR swaps. And importantly, we have already seen two recent issuances of debt tied to SOFR. Both of these issuances were met with high demand and were oversubscribed, indicating that there is a robust pmt of the market that recognizes that SOFR instruments have value to them.

There are several reasons that I believe we will see liquidity in SOFR instruments continue to grow. First, as a fully transactions-based, International Organization of Securities Commissions compliant benchmark based on the overnight U.S. Treasury repo market—the largest rates market in the world—SOFR really does represent a robust alternative to U.S. dollar LIBOR. Because so many firms are active in the Treasury repo market, they naturally have incentives to trade SOFR instruments. Second, many market participants have come to realize that the risks the FSOC has pointed to in LIBOR are quite likely to materialize, and I believe they see that it is in their own interest to move away from LIBOR and toward SOFR. The ARRC and the official sector will 'need to continue to educate market participants about the risks to LIBOR, and work to make sure that this transition is a smooth one.

Q.2. *Foreign banks and prudential rules:* I noticed that in the single-counterparty credit limit (SCCL) final rule, the Fed applied limitations on domestic bank holding companies that have $250 billion or more in total assets and the intermediate holding companies of foreign banks with at least $50 billion in total assets. And in the recent CCAR results, the Fed exempted three U.S. banks with assets between $50 billion and $100 billion, but continued to apply CCAR to the intermediate holding company of one foreign bank that has nearly $900 billion in total assets but only $86 billion in the U.S.

Can you describe the philosophy guiding the Fed's decisions to keep foreign banks' U.S. holding companies covered by these important prudential rules?

A.2. In 2014, recognizing that the U.S. operations of foreign banking organizations (FBOs) had become more complex, interconnected, and concentrated, the Board adopted a final rule that established enhanced prudential standards for large U.S. bank holding companies (BHCs) and FBOs to help increase the resiliency of their operations. These standards include liquidity, risk management and capital, and require a FBO with a significant U.S. presence to establish an intermediate holding company (IHC) over its U.S. subsidiaries to facilitate consistent supervision and regulation of the U.S. operations of the foreign bank. The standards applied to the U.S. operations of FBOs are broadly consistent with the standards applicable to U.S. bank holding companies. However, the standards can also take into account the combined footprint of FBOs' U.S. operations, including their branches and agencies.

Accordingly, the 2018 final rule to implement single-counterparty credit limits (SCCL) for large U.S. bank holding companies tailors the application of SCCL to U.S. IHCs such that U.S. IHCs of similar size to U.S. BHCs covered under the rule are subject to the same SCCL, but the final rule also takes into account the IHC's role as one portion of a significantly larger banking organization.

Similarly, the Board's annual Comprehensive Capital Analysis and Review (CCAR) applies more stringent standards to an IHC based on whether it is large and complex, meaning it (1) has average total consolidated assets over $250 billion or (2) has average total nonbank assets of $75 billion or more, and (3) is not a U.S. global systemically important firm.

The Board monitors the impact of its regulations after implementation to assess whether the regulations continue to function as intended. In implementing enhanced prudential standards for FBOs with a large U.S. presence, the Board sought to ensure that FBOs hold capital and liquidity in the United States and have a risk management infrastructure commensurate with the risks in their U.S. operations. In general, FBOs with $50 billion in U.S. subsidiary assets are among the largest and most interconnected foreign banks operating in the United States. As a result of the IHC requirement, these films have become less fragmented, hold capital and liquidity buffers in the United States that align with their U.S. footprint, and operate on more equal regulatory footing with their domestic counterparts. I believe our current IHC framework with the current threshold is working well.

Q.3. *Volcker Rule:* The policy behind the Volcker Rule is to reduce risky activities in banks, in particular high risk proprietary trading. I've long been a supporter of the Volcker Rule, and I think this is a worthy goal, as we never want banks to go back to that type of risky trading. The rule aims to achieve this in part by prohibiting banks from investing in hedge funds and private equity funds. I've heard, however, that the current definition has captured investments that seem far removed from the statute's original concern—such as an incubator for women-run businesses—and prohibits bank investments in funds where banks are permitted to make the investment directly. The proposed rulemaking seems focused on easing compliance burdens that have been associated with the subjective intent test under the current rule, but it provides little clarity on the agencies' thinking on the covered fund side.

Can you describe how the Federal Reserve is thinking about changes to the covered fund rules?

A.3. The Board, along with the OCC, FDIC, CFTC, and SEC (the agencies) adopted regulations to implement section 13 of the BHC Act, the "Volcker Rule", in 2013. These regulations included a definition of "covered fund" that, in the agencies' view, was consistent with the statutory purpose of the Volcker Rule to limit certain investment activities of banking entities. Subsequently, and based on experience with the Volcker Rule regulations, the agencies identified opportunities for improvement and proposed amendments to the Volcker Rule regulations in June 2018.

The proposal requests comment on how to tailor the regulations governing a banking entity's covered fund activities. For example, the proposal asks whether a different definition of "covered fund" would be appropriate. In addition, the proposal requests comment on potential exemptions for particular types of funds, or funds with particular characteristics.

Since proposing the amendments in June, the agencies have held meetings with and received comments from interested patties regarding the treatment of covered funds. The agencies expect to meet with and receive comments from interested parties throughout the comment period, and will carefully consider each comment to determine whether any changes to the covered fund regulations would be appropriate.

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

Q.1. *Home Mortgage Disclosure Act.* I remain concerned about discrimination in mortgage lending, especially as we no longer have publicly available data on loan quality for 85 percent of the banks and credit unions. This means we need to rely on the staff of regulators to ensure banks comply with the Equal Credit Opportunity Act and the Fair Housing Act.

How will you make sure that your bank examiners are looking at credit scores, loan-to-value ratios, interest rates, and other indicators of loan quality to ensure African Americans, Latinos, and single women are not getting lower quality mortgage loans?

A.1. The Federal Reserve's fair lending supervisory program reflects our commitment to promoting financial inclusion and ensuring that the financial institutions under our jurisdiction fully comply with applicable Federal consumer protection laws and regulations. For all State member banks, we enforce the Fair Housing Act, which means we can review all Federal Reserve-regulated institutions for potential discrimination in mortgages, including potential redlining, pricing, and underwriting discrimination. For State member banks of $10 billion dollars or less in assets, we also enforce the Equal Credit Opportunity Act, which means we can review these State member banks for potential discrimination in any credit product. Together, these laws prohibit discrimination on the basis of race, color, national origin, sex, religion, marital status, familial status, age, handicap/disability, receipt of public assistance, and the good faith exercise of rights under the Consumer Credit Protection Act (collectively, the "prohibited basis").

We evaluate fair lending risk at every consumer compliance exam based on the risk factors set forth in the interagency fair lending examination procedures. Relevant to an evaluation of loan quality, those procedures include risk factors related to potential discrimination in pricing, underwriting, and steering. With respect to potential discrimination in the pricing or underwriting of mortgages, if warranted by risk factors, the Federal Reserve will request data beyond the public Home Mortgage Disclosure Act (HMDA) data, including any data related to relevant pricing or underwriting criteria, such as applicant interest rates and credit scores. This data can be requested from any Board-supervised institution, including the institutions that were exempted from reporting additional HMDA data by the Economic Growth, Regulatory Relief, and Consumer Protection Act (EGRRCPA).[1] The analysis then incorporates the additional data to determine whether applicants with similar characteristics received different pricing or underwriting outcomes on a prohibited basis (for example, on the basis of race), or whether legitimate pricing or underwriting criteria can explain the differences.

At every examination, the Federal Reserve evaluates whether a lender might be discriminatorily steering consumers towards certain loans. An institution that offers a variety of lending products or product features, either through one channel or through multiple channels, may benefit consumers by offering greater choices and meeting the diverse needs of applicants. Greater product offerings and multiple channels, however, may also create a fair lending risk that applicants will be illegally steered to certain choices based on prohibited characteristics. The distinction between guiding consumers toward a specific product or feature and illegal steering centers on whether the institution did so on a prohibited basis, rather than based on an applicant's needs or other legitimate factors. If warranted by risk factors, the Federal Reserve will request additional data, such as consumers' credit scores and loan-to-value ratios, to determine that consumers would not have qualified for conventional loans.

Q.2. Is it your expectation that the Fed will have the time and resources to proactively monitor these banks, without the required reporting in place?

A.2. Provisions in the recently enacted bill, EGRRCPA, related to HMDA data collection requirements for certain institutions will not impact the Federal Reserve's ability to fully evaluate the risk of mortgage pricing or underwriting discrimination. Although not included in the public HMDA data, if warranted by risk factors, the Federal Reserve will request any data related to relevant pricing and underwriting criteria, such as the interest rate and credit score. The Federal Reserve's practice of requesting data relevant to pricing and underwriting criteria where warranted by risk factors predates EGRRCPA's enactment, and the practice will continue.

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[1] See "Economic Growth, Regulatory Relief, and Consumer Protection Act", Public Law 115-174, S. 2155 §104(a) (May 24, 2018).

Q.3. How many additional staff will it take to proactively monitor the more than 5,000 banks now exempted from reporting requirements?

A.3. With respect to HMDA, the Federal Reserve supervises approximately 800 State member banks. Recently enacted EGRRCPA exempts certain institutions from reporting the additional HMDA data fields required by the Dodd–Frank Wall Street Reform and Consumer Protection Act (Dodd–Frank Act). However, institutions exempted by EGRRCPA that meet HMDA's data reporting threshold[2] must continue to report the HMDA data fields that are not the additional fields required by the Dodd–Frank Act. As noted above in response subpart (b), the Federal Reserve's practice of requesting data relevant to pricing and underwriting criteria, where warranted by risk factors, predates EGRRCPA's enactment, and the practice will continue. The Federal Reserve continually evaluates its workload and staffing needs to ensure that we are fulfilling our supervisory responsibilities.

Q.4. *Volcker—Postpone the Deadline for Comment.* Congress passed the Volcker Rule to prevent taxpayer backed banks from gambling with insured deposits, destabilizing the financial system and failing or requiring bailouts. Recently, the SEC, CFTC, Federal Reserve, the OCC, and the FDIC have issued a new Volcker Rule proposal. However, I am concerned that regulators have only allowed for a 60-day comment period to respond to a 689 page rule. That rule includes 342 enumerated questions, dozens of additional questions on the costs or benefits of aspects of the proposal, and invitations to comment on numerous technical concepts and provisions. A limited 2 month comment period may not allow for outside groups, academics and researchers the full time needed to analyze the proposal.

Will you extend the comment period by an additional 90 days?

A.4. In early June 2018, the Board of Governors of the Federal Reserve System, the Office of the Comptroller of the Currency, the Federal Deposit Insurance Corporation, the Securities and Exchange Commission, and the Commodity Futures Trading Commission (together, the "agencies") proposed revisions to the rules implementing section 13 of the Bartle Holding Company Act (12 U.S.C. §1851), also known as the Volcker Rule. The proposal's comment period was for 60 days after publication in the Federal Register on July 17, 2018. On September 4, 2018, in response to requests from commenters, the agencies announced an extension of the comment period for an additional 30 days, until October 17, 2018. The extension will allow interested persons additional time to analyze the proposal and prepare their comments. The agencies will carefully consider all comments in formulating the final rule.

Q.5. *Wage Stagnation.* For the past 8 years, we have added jobs every quarter. However, wages are not going up. In fact, worker

[2] In general, if a financial institution has assets exceeding $45 million and originated at least 25 closed-end mortgage loans in each of the two preceding calendar years, or originated at least 500 open-end lines of credit in each of the two preceding calendar years, it must meet the HMDA reporting requirements for its asset size. See "A Guide to HMDA Reporting: Getting it Right!", Federal Financial Institutions Examination Council (Eff. Jan. 1, 2018), *https://www.ffiec.gov/Hmda/pdf/2018guide.pdf.*

pay in the second quarter dropped nearly one percent below its first-quarter level, according to the PayScale Index, one measure of worker pay. When accounting for inflation, the drop is even steeper. Year-over-year, rising prices have eaten up still-modest pay gains for many workers, with the result that real wages fell 1.4 percent from the prior year, according to PayScale. The drop was broad, with 80 percent of industries and two-thirds of metro areas affected.

Meanwhile, many corporate profits have never been stronger. Banks are making record profits. Companies spent more than $480 billion buying their own stocks. The increased profits are not going to workers' salaries. Additionally, productivity has increased by 73.7 percent from 1973 to 2016.

Please expand on your views about the connection between wages and productivity.

A.5. Over long periods of time, I believe that the best way to get faster sustainable wage growth (adjusted for inflation) is to raise productivity growth. The linkage between real wages and productivity is well-grounded in economic theory and both tended to rise together in the several decades following World War II. However, wage growth and productivity growth do not necessarily track closely over shorter periods, and even over a longer period of time, higher productivity growth does not guarantee a faster rise in real wages, as there are other factors that influence wages as well. This was evident between 1990 and 2010, when real wage growth for the average worker lagged despite a pickup in productivity growth.[3] That said, in recent years, both productivity growth and wage growth have been disappointing, and my sense is that efforts to boost productivity growth will be needed to support a faster sustained pace of real wage gains.

Q.6. At the hearing, you said that investment in education and skills were "the single best" way to increase wages for workers. But many have found that connection to be overstated. For example, Thomas Picketty, author of Capitalism in the 21st Century, wrote in a blogpost:[4]

> "there's a lot of hypocrisy' in the rhetoric of conservatives who condemn inequality while failing to support policies like an increased minimum wage and ramped-up infrastructure spending . . . You're saying let's tax the top and invest that money into education for all.
>
> [Jeb Bush] is a proponent of school choice, of giving schools vouchers so they can attend public school or private school, whatever they want. Is this a good solution in terms of dealing with what he calls the opportunity gap?" Ball asks Piketty.

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[3] This pattern is evident in many other industrialized countries as well. Economists have been actively researching this issue, but thus far have not come to a consensus about the cause. Plausible explanations include the rapid advances in information and computing technologies during that period, increased international trade and outsourcing, and increased product market concentration among firms. But this is clearly an issue that warrants further study.

[4] Brinker, Luke. "Thomas Picketty Slams Jeb Bush on Education and Inequality: 'I Think There's a Lot of Hypocrisy.'" *Salon*. March 11, 2015. Available at: *https://www.salon.com/2015/03/11/thomas-piketty-slams-jeb-bush-on-education-and-inequality-i-think-theres-a-lot-of-hypocrisy/*.

> "From what I can see, he doesn't want to invest more resources into education. He just wants more competition . . . there's limited evidence that this is working. And I think most of all what we need is to put more public resources in the education system. Again, if you look at the kind of school, high school, community college that middle social groups in America have access to, this has nothing to do with the very top schools and universities that some other groups have access to," Piketty replies. "[I]f we want to have more growth in the future and more equitable growth in the future, we need to put more resources in the education available to the bottom 50 percent or 80 percent of America. So it's not enough just say it, as Jeb Bush seems to be saying, but you need to act on it, and for this you need to invest resources," he says. Asked about claims by Bush and other conservatives that a so called "skills gap" is responsible for the growth in inequality, Piketty dings that narrative as simplistic. "The minimum wage today is lower than it was 50 years ago, unions are very weak, so you need to increase the minimum wage in this country today. The views that $7 and hour is the most you can pay low-skilled worker in America today . . . I think is just wrong—it was more 50 years ago and there was no more unemployment 50 years ago than there is today. So I think we could increase the minimum wage," Piketty says, adding that the U.S. should also invest in "high-productivity jobs that produce more than the minimum wage." Education is important, Piketty acknowledges, but education alone is not enough to ameliorate inequality. "You need wage policy and you need education policy," he says. "And in order to have adequate education policy, you also need a proper tax policy so that you have the proper public resources to invest in these public services. Also you need infrastructure. Many of the public infrastructure in this country are not at the level of what the very developed should have. You cannot say, like many of the Republicans are saying, we can keep cutting tax on these top income groups who have already benefited a lot from growth and globalization over the past 30 years." Data from the Survey of Consumer Finances indicates that, even when accounting for educational and racial disparities, black households headed by a college graduate are still less wealthy than less-educated white ones.[5]

Please provide citations for your argument that education is the main driver for falling wages.

How do you respond to analysis from other economists that say other reasons—tax policies, weakening unions, regulations that benefit the financial sector—are a stronger predictor for wage stagnation?

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[5] Reeves, Richard V., and Katherine Guyot. "Black Women Are Earning More College Degrees, but That Alone Won't Close Race Gaps". *Brookings.* December 4, 2017. Available at: *https://www.brookings.edu/blog/social-mobility-memos/2017/12/04/black-women-are-earning-more-college-degrees-but-that-alone-wont-close-race-gaps.*

Can you further elaborate on the wage inequities between racial and educational disparities?

A.6. I would like to start by noting two good references detailing the important link between education and wages are: The Race Between Education and Technology by Claudia Goldin and Lawrence F. Katz;[6] and "The Polarization of Job Opportunities in the U.S. Labor Market: Implications for Employment and Earnings" by David Autor.[7] The book by Goldin and Katz traces the coevolution of educational attainment and the wage structure in the United States through the twentieth century. They argue, in particular, that the demand for educated workers outpaced the supply beginning in about 1980, and that this supply–demand imbalance resulted in a rise in the wage premium for college-educated workers. In addition, both resources note that increases in educational attainment have not kept pace with rising educational returns, suggesting that the slowing pace of educational attainment has contributed to the rising gap between college and high school earnings. And, although the college wage premium has leveled off in recent years, it remains large.[8]

Of course, education is not the only factor that influences wage growth. For example, the paper by David Autor points out that the rise in the relative earnings of college graduates reflected both rising real earnings for college workers and falling real earnings for noncollege workers. He attributes these trends to the polarization of job growth, with job opportunities concentrated in relatively high-skill, high-wage jobs and low-skill, low-wage jobs, and cites the automation of routine work and the increased globalization of labor markets through trade and outsourcing as the primary influences on this trend. He acknowledges that changes in labor market institutions, in particular, weaker labor unions and a falling real minimum wage, may also play a role but argues that these factors are less important, in part because these wage trends are evident in many industrialized countries.

With regard to racial disparities in wages, research by economists at the Federal Reserve Bank of San Francisco shows that African American men and women earn persistently lower wages compared with their white counterparts and that these gaps cannot be fully explained by differences in age, education, job type, or location.[9] I agree with their conclusion that these disparities are troubling and warrant greater attention by policymakers.

Q.7. *Regulation.* Chair Powell, at your nomination hearing, you told me that you supported strong consumer protections.

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[6] Claudia Goldin and Lawrence F. Katz, "The Race Between Education and Technology", Belknap Press, 2010.

[7] David Autor, "The Polarization of Job Opportunities in the U.S. Labor Market: Implications for Employment and Earnings" *Brookings*, April 2010, *https://www.brookings.edu/wp-content/uploads/2016/06/04jobs_autor.pdf.*

[8] A recent paper by Robert Valletta estimates that the wage premium for a college-educated worker (relative to a high school graduate) rose from about 30 percent in 1980 to 57 percent in 2010 and has leveled off since then. See Robett Valetta, "Recent Flattening in the Higher Education Wage Premium: Polarization, Skill Downgrading, or Both?" Working Paper No. 2016-17, Federal Reserve Bank of San Francisco, August 2016.

[9] Mary C. Daly, Bart Hobijn, and Joseph H. Pedtke, "Disappointing Facts About the Black–White Wage Gap", FRBSF Economic Letter No. 2017-26, Federal Reserve Bank of San Francisco.

Please name at least five issues areas where the Federal Reserve will continue to lead in consumer protection.

A.7. The Federal Reserve has a strong commitment to promoting a fair and transparent financial services marketplace. We conduct consumer-focused supervision and enforcement; conduct research and policy analysis; develop and maintain relationships with a broad and diverse set of stakeholders; and work to foster community development.

Our consumer protection efforts include investigating consumer complaints, assuring consumers' fair and equal access to credit and treatment in financial markets, assessing the trends shaping consumers' financial situations, and offering consumer help via tools and resources developed by Reserve Banks and other agencies. Examples of the range of our consumer protection priorities and efforts are described below.

As part of our supervisory outreach, our Reserve Banks have various consumer and community advisory councils. Additionally, the Board meets semiannually with its Community Advisory Council (CAC) as well as with a wide range of consumer and community groups throughout the year. The CAC is a diverse group of experts and representatives of consumer and community development organizations and interests. This important line of communication provides the Board with broad perspectives on the economic circumstances and financial services needs of consumers and communities, with a particular focus on the concerns of low- and moderate-income populations.

With regard to our enforcement of fair lending laws and unfair or deceptive acts or practices (UDAP) laws, our supervisory program is rigorous and we are clear in our communications with firms about our expectations when we find weakness in their compliance management systems or violations of consumer laws. When we find consumer hmm, we make sure that consumers are provided any appropriate restitution, and when the situations warrant, we also impose civil money penalties.

Fair lending violations may cause significant consumer harm as well as legal, financial, and reputational risk to the institution. The Federal fair lending laws—the Equal Credit Opportunity Act (ECOA) and the Fair Housing Act (FHA)—prohibit discrimination in credit transactions, including transactions related to residential real estate. The ECOA, which is implemented by the Board's Regulation B (12 CFR part 202), prohibits discrimination in any aspect of a credit transaction. It applies to any extension of credit, including residential real estate lending and extensions of credit to small businesses, corporations, partnerships, and trusts. Lending acts and practices that are specifically prohibited, permitted, or required are described in the regulation.

Official staff interpretations of the regulation are contained in Supplement I to the regulation. The FHA, which is implemented by regulations promulgated by the U.S. Department of Housing and Urban Development,[10] prohibits discrimination in all aspects of residential real estate-related transactions.

[10] See 24 CFR part 100.

The Board is committed to ensuring that every bank it supervises complies fully with Federal financial consumer protection laws, including the fair lending laws. A specialized Fair Lending Enforcement Section at the Board works closely with Reserve Bank staff to provide guidance on fair lending matters and to ensure that the fair lending laws are enforced consistently and rigorously throughout the Federal Reserve System (System). Fair lending risk is evaluated at every consumer compliance examination. Additionally, examiners may conduct fair lending reviews outside of the usual supervisory cycle, if warranted by elevated risk.

Section 5 of the Federal Trade Commission Act (FTC Act) prohibits UDAP and applies to all persons engaged in commerce, including banks, and the law extends to bank arrangements with third parties. The Federal Reserve has the authority to take appropriate supervisory or enforcement action when unfair or deceptive acts or practices are discovered at institutions under the Federal Reserve's jurisdiction, regardless of asset size. We apply longstanding standards when weighing the need to take supervisory and enforcement actions and when seeking to ensure that unfair or deceptive practices do not recur. Examples of practices the Federal Reserve has found to be unfair or deceptive include certain practices related to overdrafts and student financial products and services.

With respect to these and other UDAP issues, the Federal Reserve's enforcement actions have collectively benefited hundreds of thousands of consumers and provided millions of dollars in restitution.

In addition to carrying out enforcement actions, we provide training, direction and support to Reserve Bank examiners in assessing institutions' compliance with applicable laws and regulations.

On the consumer level, the System also has a robust process for responding to consumer complaints about the banks we supervise. We investigate every complaint of an institution under our supervisory jurisdiction and refer them to the appropriate agency if it involves an institution that we do not supervise. Reserve Banks must respond in writing in a timely manner.

For the financial institutions we regulate, we develop and offer guidance to help reduce risk to consumers that supports our desire to ensure equitable treatment of all consumers, including those in underserved and economically vulnerable populations.

We collect and analyze risk data and trends in the financial services sector affecting consumers and the financial institutions that we supervise, and we identify emerging consumer protection issues and promote compliance by highlighting these areas in publications, webinars, and other outreach. Examples include our recently launched Consumer Compliance Supervision Bulletin, which provides to banks and others high-level summaries of pertinent supervisory observations related to consumer protections, as well as our Consumer Compliance Outlook, a System publication focused on consumer compliance issues, and its companion webinar series, Outlook Live, both of which are targeted to the industry to support banks' compliance efforts.

Another example is our annual Survey of Household Economic Decisions (SHED). The SHED is designed to enhance our under-

standing of how adults in the United States are faring financially, and the results of the survey are posted on our public website. Other areas include research particularly focused on the housing market, small business access to credit, and rural economic development issues.

Through a number of events and on a variety of matters, we provide outreach to consumer advocacy and community development organizations that outlines the risks in consumer financial product markets. Examples of such programs have focused on auto lending, FinTech/marketplace lending, and student lending.

Q.8. *Monetary Policy.* If the Fed usually cuts the Federal funds rate by 5 percentage points to fight a recession and the neutral rate is around 2.5 percent, what steps can the Federal Reserve currently take to offset a recession?[11] Expand the balance sheet by buying treasuries?

A.8. The possibility that the Federal funds rate could be constrained by the effective lower bound in future economic downturns appears larger than in the past because of an apparent decline in the neutral rate of interest in the United States and abroad. Several developments could have contributed to such a decline, including slower growth in the working-age populations of many countries, smaller productivity gains in the advanced economies, a decreased propensity to spend in the wake of the financial crises around the world since the late 1990s, and perhaps a paucity of attractive capital projects worldwide.

In any case, the Federal Reserve has a number of tools that it can use in the event that the Federal funds rate is constrained by the effective lower bound. One such tool is explicit forward guidance about the path of future policy. By announcing that it intends to keep short-term interest rates lower for longer than might have otherwise been expected, the Federal Reserve can put significant downward pressure on longer-term borrowing rates for American families and businesses. Another tool is large-scale asset purchases, which can also put downward pressure on longer-term borrowing rates and ease financial conditions. These tools have been an important part of the Federal Reserve's efforts to support economic recovery over the past decade. Studies have found that these tools eased financial conditions and helped spur growth in demand for goods and services, lower the unemployment rate, and prevent inflation from falling further below the Federal Open Market Committee's (FOMC) 2 percent objective. The Federal Reserve is prepared to use its full range of tools if future economic conditions were to warrant a more accommodative monetary policy than can be achieved solely by reducing the Federal funds rate.

Q.9. Many Federal Reserve officials—including most recently outgoing New York Fed President Bill Dudley—have talked about the need for Congress to beef up fiscal stabilizers that can react automatically to a downturn.

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[11] Bosley, Catherine. "Summers Warns Next U.S. Recession Could Outlast Previous One", *Bloomberg.* February 28, 2018. Available at: *https://www.bloomberg.com/news/articles/2018-02-28/summers-warns-next-u-s-recession-could-outlast-the-previous-one.*

Do you agree that Congress should be working on this? If so, which stabilizers do you think are most effective?[12]

A.9. The current monetary policy tools available to the Federal Reserve can provide significant accommodation in the event of an economic downturn, although we recognize that there are limits stemming importantly from the effective lower bound on the nominal Federal funds rate. As a matter of prudent planning, we continue to evaluate potential monetary policy options in advance of an episode in which our primary policy tool is constrained by the effective lower bound. Since monetary policy is not a panacea, countercyclical fiscal policy actions are a potentially important tool in addressing a future economic downturn. In particular, automatic fiscal stabilizers have been and continue to be helpful in providing timely accommodation and thus tempering the extent of a downturn. A range of fiscal policy tools and approaches could enhance their effectiveness in helping to provide cyclical stability to the economy. However, it is appropriate that the details of fiscal policy changes be left to the Congress and the Administration.

Q.10. At your most recent press conference you said—"we can't be too attached to these unobservable variables." If that's the case, do you think it is possible that the United States could sustain a long period of unemployment at 3 percent or even lower? Japan's unemployment has fallen to 2.7 percent and Germany is at 3.4 percent.

A.10. Monetary policy necessarily involves making judgments about aspects of the economy that cannot be measured directly but instead must be inferred. One of those aspects is the level of the unemployment rate that can be sustained in the longer term without generating either upward or downward pressure on inflation. That level is sometimes referred to as the natural rate of unemployment. Economic modelers have only a limited ability to estimate the natural rate of unemployment at any given moment; moreover, there is every reason to believe that the natural rate can and does change over time. For both of these reasons, policymakers must always be vigilant in looking for evidence that might cause them to revise their existing estimates of parameters such as the natural rate of unemployment.

As of today, most estimates of the natural rate of unemployment in the United States range between 4 percent and 5 percent. Other countries will have different rates of unemployment that are sustainable in the longer run (sometimes markedly so), depending on the characteristics of the workforces in those countries (such as age and education), the geographic mobility of jobs and workers, and structural labor market policies, to name a few factors.

Q.11. At the last hearing you described the risks to the economy as balanced, but it seems like the Fed has much more room to tighten policy—by raising rates and running down the balance sheet—than it does to loosen policy. Doesn't that change the balance of risks? If you hike interest rates too fast, you have limited tools to address an economic slowdown. If you hike too slowly, you have ample tools to address the overheating.

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[12] "Officials on Record: Automatic Stabilizers", Dudley, William C. "Speech: Important Choices for the Federal Reserve in the Years Ahead", *The Federal Reserve in the Years Ahead*. April 18, 2018. Available at: *https://www.newyorkfed.org/newsevents/speeches/2018/dud180418a.*

A.11. The FOMC recognizes that the effective lower bound (ELB) on the Federal funds rate can impose a significant constraint on the conduct of monetary policy. This is one of the reasons that the Committee has normalized the stance of monetary policy at a gradual pace during the current economic expansion. That said, the Federal Reserve has other tools at its disposal to provide economic stimulus when the Federal funds rate is constrained by the ELB, including explicit forward guidance about the path of Federal funds rate and large-scale asset purchases. Moreover, with strong labor market conditions, inflation close to 2 percent, and the level of the Federal funds rate at a bit below 2 percent, the risk of returning to the ELB has diminished substantially since earlier in the recovery. Overall, the FOMC currently sees the risks to its economic outlook as roughly balanced.

History has shown that moving interest rates either too quickly or too slowly can lead to bad economic outcomes. If the FOMC raises interest rates too rapidly, the economy could weaken and inflation could run persistently below the FOMC's objective. Conversely, there are risks associated with raising interest rates too slowly. Waiting too long to remove policy accommodation could cause inflation expectations to begin ratcheting up, driving actual inflation higher and making it harder to control. Moreover, the combination of persistently low interest rates and strong labor market conditions could lead to undesirable increases in leverage and other financial excesses. While the Federal Reserve has tools to address such developments, these circumstances could require the FOMC to raise interest rates rapidly, which could risk disrupting financial markets and push the economy into recession.

Q.12. *Fed Governance, Diversity, and the San Francisco Fed Vacancy.* At your confirmation hearing, you expressed your support for more diversity among the Federal Reserve's leadership, saying, "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." [13] You also commented on the role that the Board of Governors plays in approving new Reserve Bank presidents, and assured the Senate Banking Committee that there is always a "diverse pool" in searching for candidates to fill those positions. However, the December selection of Thomas Barkin as the president of the Richmond Fed gives reason for doubt. [14] Press reports note that you were very involved in vetting candidates. [15]

Then, in April, John Williams was announced as the new New York Fed president. A source close to the process said that the New York Fed search committee just could not find qualified candidates who were interested in this position, even though community

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

[14] Sebastian, Shawn. "Fed Up Blasts Process, Outcome of Richmond Federal Reserve Presidential Appointment", The Center for Popular Democracy. Available at: *https://populardemocracy.org/news-and-publications/fed-blasts-process-outcome-richmond-federal-reserve-presidential-appointment.*

[15] Condon, Christopher. "Fed Documents Show Powell's Hand in Richmond President Search", *Bloomberg.* July 16, 2018. Available at: *https://www.bloomberg.com/news/articles/2018-07-16/fed-documents-show-powell-s-hand-in-richmond-president-search.*

groups had given a list of qualified and diverse candidates to the New York Fed board in January.[16]

Can you explain why these candidates were not considered?

A.12. It is crucial for us to conduct search processes that are transparent and open to public input, and that encourage interest and applications from qualified candidates with as wide a variety of personal and professional backgrounds as possible. The Federal Reserve System needs such diversity to be fully effective in discharging its responsibilities, and we have observed that better decisions are made when there are many different perspectives represented around the table. I am firmly committed to conducting each president search in as open a manner as possible. However, I also recognize the importance of maintaining the privacy of candidates and the confidentiality of the composition of the candidate pool in order to encourage as many qualified individuals to apply as possible. Therefore, it is not appropriate for me to comment on the qualification of individual candidates.

During the recent Reserve Bank president searches, the search committees proactively sought out candidates from a variety of sources. More specifically, in addition to engaging the search firm Spencer Stuart, the Federal Reserve Bank of New York (FRBNY) search committee engaged Bridge Partners, which has a specific expertise in the identification of diverse talent. The FRBNY search committee itself also undertook an extensive program of outreach intended to solicit input and views from a range of constituencies across the district:

- The search committee sent approximately 400 letters soliciting feedback on the attributes that would enable success in the role of FRBNY president, as well as specific names for consideration.
- Members of the search committee met with the FRBNY's standing advisory committees, including the Advisory Council on Small Business and Agriculture, the Community Advisory Group (comprised of nonprofit organizations), the Economic Advisory Panel (comprised of academic economists), and the Upstate New York Regional Advisory Board.
- The search committee also held two meetings at the FRBNY with ad hoc groups of invitees, one focused on labor and advocacy organizations and the other on business and industry.

Out of these large candidate pools, the search committees identified candidates who not only had the desired experiences and key attributes but also confirmed their interests in the president positions. The FRBNY search committee, at the conclusion of its search process, published the process timeline and the characteristics of the candidate pool.[17]

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[16] Guida, Victoria, and Aubree Eliza Weaver. "In Defense of the NY Fed Search Committee", *Politico*. March 30, 2018. Available at: *https://www.politico.com/newsletters/morning-money/2018/03/30/in-defense-of-the-ny-fed-search-committee-154624.* Guida, Victoria. "Warren Leads Crusade for Diversity at Fed", *Politico.* April 2, 2018. Available at: *https://www.politico.com/story/2018/04/02/federal-reserve-diversity-elizabeth-warren-452122.*

[17] For more information about the FRBNY's president search timeline, see *https://www.newyorkfed.org/aboutthefed/presidential-search-timeline.*

Q.13. Former Honeywell CEO David Cote served as a banker-elected member of the New York Fed board and search committee, but abruptly stepped down in mid-March. We later learned he had resigned this position to take a job with Goldman Sachs.[18] According to the New York Fed, the search committee had already settled on John Williams by the time that Cote resigned from the board. The outgoing New York Fed president was formerly Goldman Sachs' chief economist, and there have been many reported instances of an overly cozy relationship between the Fed and Goldman Sachs, including tapes that leaked in 2014 showing that the New York Fed was very lenient in supervising Goldman.[19]

Do you think it is appropriate that one of the people responsible for choosing a top Wall Street regulating position was negotiating a job with Goldman Sachs at the very moment he was making the decision about who the next New York Fed president should be?

Does this event raise concerns that the financial industry has too much influence on regional Reserve Banks boards?

A.13. The process for selecting a Federal Reserve Bank president is set forth in the Federal Reserve Act. Subject to the approval of the Board of Governors, a Reserve Bank president is appointed by that Bank's Class Band Class C directors. These are the directors who are not affiliated with banks or other entities supervised by the Federal Reserve. Class A directors, who are bankers, are not involved in the search process.

Since 2014, Mr. Cote served on the board of the FRBNY and on the search committee as a Class B director, representing the public. Mr. Cote brought to the board his background in the manufacturing and represented the industry while serving as a director. Mr. Cote promptly resigned his position on the FRBNY board of directors, recognizing that pursuing new business opportunities in the banking sector would affect his eligibility to serve as a Class B director.[20]

Q.14. A recent analysis by the Center for Popular Democracy found that although there has been an increase in the gender and racial diversity of the Federal Reserve Bank's directors, the Fed is still falling short of true public representativeness.[21] Williams' selection has opened up a vacancy at the San Francisco Federal Reserve Bank. The twelfth Federal Reserve district is the largest and most diverse in the country, including a significant Latino population. Latinos comprise 30 percent of the district. There has never in the Fed's history been a Latino Federal Open Markets Committee participant, either as a governor or as a Reserve Bank president.

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[18] Campbell, Dakin. "Goldman Sacks Teaming up With Former Honeywell CEO Cote To Strike an Unusual Acquisition", *Business Insider*. Accessed July 16, 2018. Available at: *http://www.businessinsider.com/goldman-sachs-and-former-honeywell-ceo-cote-teaming-up-to-buy-an-industrial-company-filing-2018-5.*

[19] Haedtler, Jordan. "Why Do Former Golden Sachs Bankers Keep Landing Top Slots at the Federal Reserve?" *The Nation.* November 30, 2015. Available at: *https://www.thenation.eom/article/why-do-former-goldman-sachs-bankers-keep-landing-top-slots-at-the-federal-reserve/*.
Bernstein, Jake. "The Carmen Segarra Tapes", *ProPublica*. November 17, 2014. Available at: *https://www.propublica.org/article/the-carmen-segarra-tapes*.

[20] For more information about our policies governing the directors, see *https://www.federalreserve.gov/aboutthefed/directors/policy-governing-directors.htm.*

[21] Fed Up. "New Report Analyzes Diversity at the Federal Reserve in 2018", The Center for Popular Democracy. February 14, 2018. Available at: *https://populardemocracy.org/blog/new-report-analyzes-diversity-federal-reserve-2018.*

Do you think it would be valuable for you and your colleagues to hear the perspective of a Latino FOMC participant?

A.14. As I have said, we make better decisions when we have diverse voices around the table, and that is something we are very committed to at the Federal Reserve. The Federal Reserve seeks diversity in personal and professional backgrounds to be more effective in discharging its responsibilities. We value a broad representation of perspectives, and are working hard towards greater diversity at all levels of the Federal Reserve. Recognizing that the appointment of a Reserve Bank president is, as a legal matter, the responsibility of the Class B and Class C directors who are by definition not affiliated with financial institutions in the district, we at the Board worked closely with the search committee to ensure a strong and transparent process that identified a broad and diverse slate of qualified candidates.

As you know, the Federal Reserve Bank of San Francisco (FRBSF) recently selected Mary Daly as its next president. The processes of the FRBSF search committee were fair, transparent, and inclusive.[22] The FRBSF search committee included eligible directors from its board who brought diverse backgrounds and experiences to the process. Further, the search committee partnered with Diversified Search, the largest female-founded and owned firm that specializes in identifying candidates from diverse backgrounds. The search committee carried out an extensive outreach program, both in person and virtually, with a range of constituencies across the district, to gain their input on the search process, obtain their views on the most important attributes for the Bank president role, and solicit their recommendations of potential candidates.

At the conclusion of its search process, the FRBSF published additional information about the outreach conducted, timeline, and characteristics of the candidate pool. The FRBSF noted that of 283 prospective candidates 33 percent were from a minority background and 33 percent were female.

Q.15. *Inflation Target.* In a paper that was recently presented to Atlanta Fed President Raphael Bostic, economist Dean Baker argued that the Fed should consider removing the shelter component from its core inflation indexes.[23] The reason is that higher housing costs, particularly in a handful of metropolitan areas, are significantly outpacing other measures of inflation—and that these increases stem from a lack of supply. Baker further argues that continued interest rate increases from the Fed might have the perverse effect of sapping housing construction, thereby exacerbating the very problem (rising inflation) that the Fed is trying to address. What do you make of this analysis?

A.15. We interpret the Federal Reserve's price-stability mandate as applying to a broad measure of the price of goods and services purchased by consumers. Shelter makes up a large component of con-

[22] For more information about the San Francisco search, go to: *https://www.frbsf.org/our-district/press/news-releases/2018/mary-c-daly-named-federal-reserve-bank-of-san-francisco-president-and-chief-executive-officer/?utm_source=frbsf-home-in-the-news&utm_medium=frbsf&utm_campaign=in-the-news.*

[23] Baker, Dean, "Measuring the Inflation Rate: Is Housing Different?" Center for Economic and Policy Research. June 2018. Available at: *http://cepr.net/publications/reports/measuring-the-inflation-rate-is-housing-different.*

sumers' expenditures, and a price index that excludes shelter would provide a highly incomplete measure of the cost of living.

To be sure, because monetary policymakers need to be forward looking in setting policy, we also pay attention to less-comprehensive inflation measures to help gauge whether a particular inflation movement is likely to persist. For example, we examine price indexes excluding food and energy items, as food and energy prices often exhibit large transitory movements. But idiosyncratic price movements are by no means limited to food and energy, and they could well occur in shelter prices at times; we need to be attentive to whether such movements might be providing a misleading signal about inflation's likely future course. My fellow policymakers and I will continue to factor such judgments into our analyses, even as we remember that overall consumer price inflation must be the ultimate focus of our policy.

Q.16. *Immigration.* Neel Kashkari, the chief of the Minneapolis Fed, stated that immigration has a net benefit on economic growth. He said slowing down immigration may slow down job growth and the U.S. economy as a whole.

Do you agree with President Kashkari?

A.16. Immigration is an important contributor to the rise in the U.S. population, accounting for roughly one-half of population growth annually. And population growth, in turn, affects the growth rate of the labor force as well as the growth of the overall economy. Thus, from an economic growth standpoint, reduced immigration would result in lower population growth and thus, all else equal, slower trend economic growth. However, as you know, immigration policy is for Congress and the Administration to decide.

Q.17. *SIFI Designation.* As a voting member of FSOC, you and your fellow members are tasked with the mission of identifying and responding to risks that threaten the financial stability of the United States, particularly in the shadowy nonbank ecosystem that required numerous massive bailouts following the 2008 financial crisis. Despite the large number of bail-outs conferred, only four nonbanks were designated as systematically significant by the FSOC.

As you considering whether to reduce monitoring and oversight of one of those institutions?

What about the financial state or inherent systemic risk of large nonbank institutions has changed since FSOC made the considerations that warrants removing any enhanced prudential oversight?

A.17. The financial crisis showed that the distress of large and systemic nonbank financial companies could imperil the financial stability of the United States, ultimately putting the American economy at risk. The Dodd–Frank Wall Street Reform and Consumer Protection Act (Dodd–Frank Act) gave regulators new tools to address this problem, including authorizing the Financial Stability Oversight Council (FSOC) to determine that a nonbank financial company's material financial distress would threaten the financial stability of the United States. If such a determination is made, such firms are then subject to supervision by the Federal Reserve Board (Board). The Dodd–Frank Act authorizes the Board, in con-

sultation with the FSOC, to establish enhanced prudential requirements and to supervise nonbank financial companies that have been designated as systemically important. Further, the Dodd–Frank Act requires the FSOC to reevaluate each determination of a nonbank financial institution as systemically important on at least an annual basis. The FSOC is also responsible for making the determination to retain or rescind the designation of a nonbank financial institution.

Financial vulnerabilities, such as high leverage levels and maturity mismatches between assets and liabilities, are not at the elevated levels they were prior to the crisis. Regulators have developed a deeper understanding of the ways in which nonbank financial institutions differ from banks, particularly in terms of their vulnerability to runs and the potential systemic impact this may have on the U.S. financial system. Further, several nonbank financial institutions have made significant changes to the organizational structure of their firms as well as the markets that they participate in, which has further reduced their overall risk to the U.S. financial system.

However, the regulatory community has learned from the experience of the financial crisis that it is important to focus on potential regulatory gaps and to deal with vulnerabilities that may build in nonbank financial institutions before the risks become material. In this context, it is important to continue to monitor large nonbank financial firms to ensure that, should they encounter distress, the functioning of the broader economy is not threatened. Finally, the possibility of de-designation provides an incentive for designated firms to significantly reduce their systemic footprint.

Q.18. *Stock Buybacks.* The Fed's 2018 CCAR cycle allowed the 22 largest banks to payout $170 billion in dividends and buybacks, around a quarter more than 2017. Banks subject to the CCAR process are likewise paying out close to 102 percent in buybacks and dividends as a percentage of forecasted earnings.[24]

In the wake of the Federal Reserve's annual stress testing, Wells Fargo announced plans to buy back up to $24.5 billion in stock, and boost its quarterly dividend. Twenty-eight other firms were also allowed to proceed with additional proposals to boost stock buybacks and dividends.[25]

In your testimony before the Committee, you noted that investments in training and education were "the single best thing we can do to have a productive workforce."

What does research suggest about whether dividends and buybacks raise wages for American workers?

Does the Fed have any researching suggesting the impact on economic growth if a larger percentage of bank earnings instead went to raise wages of nonmanagerial and/or frontline bank workers?

A.18. Productivity growth is a key determinant of wage growth, and investments in new capital equipment or innovative tech-

[24] Larkin, Michael. "All Banks Clear Stress Test—But This Big Name's Payout Plan at Risk", *Investor's Business Daily*. June 21, 2018. Available at: *https://www.investors.com/news/stress-test-results-federal-reserve-bank-dividends-buybacks//*.

[25] *Bloomberg*. "Wells Fargo Plans $24.5 billion in Stock Buybacks After Passing Fed Stress Test". *Los Angeles Times*. June 28, 2018. Available at: *http://www.latimes.com/business/la-fi-wells-fargo-stock-buyback-20180628-story.html*.

nologies are important factors for improving productivity growth. Similarly, increased worker compensation can be a factor in encouraging individuals to join or remain in the labor force and to develop new skills, which can further increase productivity and wage growth. However, comparing the economic effects of these uses of a company's earnings to the eventual economic effects of stock buybacks is difficult because we do not know where the gains from buybacks will ultimately turn up. In particular, when a company buys back its shares or pays higher dividends, the resources do not disappear. Rather, they are redistributed to other uses in the economy. For instance, shareholders may decide to invest the windfall in another company, which may in turn make productivity-enhancing investments. Or they may decide to spend the windfall on goods and services that are produced by other companies, who may in turn hire new workers. In these ways, stock repurchases would also be likely to boost economic growth. Ultimately, companies themselves are the best judges of what to do with their profits, whether it is to invest in their business or increase returns to shareholders through dividends or share buybacks.

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

Q.1. In the Federal Reserve's 2018 Report on the Economic Well-Being of U.S. Households, the report finds that 40 percent of Americans do not have the sources to cover an unexpected $400 expense.

While the number of Americans responding in this manner has shrunk since 2013, as noted in the report, it is still an alarmingly high number.

The report notes that the most common response among those who could not cover an expense is to place the purchase on a credit card.

Are there broader economic implications of such a reliance on potentially high-priced consumer credit?

A.1. According to the survey, conducted in the fourth quarter of 2017, 18 percent of U.S. adults report that they would pay a hypothetical $400 emergency expense with a credit card that they then pay off over time.[1] In the initial survey in 2013, this fraction was 17 percent. The fraction of adults who said they would not be able to meet a $400 expense by any means declined to 12 percent in 2017 from 19 percent in 2013.

Broader implications of such responses are difficult to gauge. The costs of financing such an expense would add financial burden on these households, relative to paying in cash. However, for some households, such credit access may act as a relief valve of sorts, allowing them to meet the emergency or avoiding even costlier forms of credit such as payday loans.

Q.2. Does the Federal Reserve have further context on this response—how does the number of Americans unable to cover a $400 expense compare to previous decades, or to other advanced economies?

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[1] For the survey and report, see the Federal Reserve Board's Survey of Household Economics and Decision Making at *www.federalreserve.gov/consumerscommunities/shed.htm.*

A.2. The Federal Reserve first asked how individuals would handle a $400 unexpected expense in 2013. While we do not have an exact comparison in prior decades or in other countries, the Federal Reserve Board's triennial Survey of Consumer Finances (SCP) reports that the share of households with easily accessible savings remains low and has changed little in recent decades.[2] Liquid savings, such as cash, checking or saving accounts, are the least costly and easiest assets to use for unexpected expenses. The 2016 SCP reports that nearly half of all families did not have $3,000 in liquid savings, almost the same fraction since 1989 in inflation-adjusted terms.

Q.3. Does this inability to cover expenses increase dramatically across certain groups for example, seniors, young people, or minorities?

A.3. Yes, financial security and the ability to cover expenses, differs across demographic groups. As one example, in 2017, one-quarter of white adults without education beyond a high school degree did not expect to pay their current month's bills in full. Among African Americans and Hispanics with the same education level, that fraction was 41 percent and 35 percent respectively.

Financial security is more common with more education, but a gap by race and ethnicity remains. As a second example, only half of young adults (under the age of 30) would use cash or its equivalent to cover an unexpected $400 expense, versus 57 percent of middle-aged adults (ages 30 to 64) and 71 percent of seniors (age 65 and older). Even with such differences by age, race, and education, the economic recovery has improved the finances across many groups.

Q.4. I am concerned that for Americans that live paycheck to paycheck, the United States' payment system can, at times, fall short. In particular, I believe there is great need for faster payments, including quicker access to consumer funds after deposit. When consumers do not access to their own funds, they often resort to and rely on high-cost products that are outside of the traditional banking system.

The Federal Reserve has acknowledged the need to help foster a faster payments system with its work and creation of the Faster Payments Task Force. What are the next steps and future priorities for the Task Force?

A.4. In July 2017, the Faster Payments Task Force (FPTF) concluded its work upon release of its final report. The FPTF's Final Report reflected the task force's perspectives on challenges and opportunities with implementing faster payments in the United States, outlined its recommendations for next steps, and included the proposals and assessments for the 16 participants that opted to be included in the final report.[3] The FPTF recommendations identified the need for ongoing industry collaboration to address infrastructure gaps; to develop models for governance, rules, and

[2] For more information, see reports and research on the Federal Reserve Board's Survey of Consumer Finance at *www.federalreserve.gov/econres/scfindex.htm.*

[3] Faster Payments Task Force, "Final Report Part One: The Faster Payments Task Force Approach", January 2017, and "Final Report Part Two: A Call To Action", July 2017. Available at *https://fasterpaymentstaskforce.org/*.

standards; and to consider actions and investments that will contribute to a healthy and sustainable payments ecosystem. A number of recommendations called for Federal Reserve support to facilitate this ongoing collaboration.

Following up on the work of the FPTF and other efforts to advance the Federal Reserve's desired outcomes (focused on speed, security, efficiency, international payments, and collaboration) for the payment system, the Federal Reserve published, in September 2017, a paper presenting refreshed strategies and tactics that the Federal Reserve is employing in collaboration with payment system stakeholders.[4]

The Federal Reserve kicked off these refreshed strategies and tactics in the summer of 2017, by facilitating the industry's work to address the FPTF recommendations related to governance, directories, rules, standards, and regulations. In addition, consistent with the FPTF recommendations, the Federal Reserve has been assessing the needs and gaps to enabling 24x7x365 settlement in support of a future ubiquitous real-time retail payments environment.

Further, the Federal Reserve has started to explore and assess the need, if any, for any other operational roles to support ubiquitous, real-time retail payments. These efforts are being pursued in alignment with Federal Reserve's longstanding principles and criteria for the provision of payment services.

Q.5. As you know, new accounting standards, based on a "current expected credit loss" (CECL) model, developed by the Financial Accounting Standards Board (FASB) will go into effect in 2020. While the new accounting standards underwent multiple years of study, the implementation of these standards will result in one of the larger changes to banking accounting in recent memory.

The CECL standard is likely to affect bank capital in uncertain and potentially volatile ways, especially as banks begin the transition process to this new accounting standard. Did FASB consult with the Federal Reserve for how these changes might impact bank capital?

A.5. The Federal Reserve Board (Board) along with the other U.S. Federal financial institution regulatory agencies have supported the Financial Accounting Standards Board's (FASB) efforts to improve the accounting for credit losses and provide financial statement users with more decision-useful information about the expected credits losses on loans and certain other financial instruments.

Throughout the development of the current expected credit loss (CECL), the FASB conducted extensive outreach with a diverse group of stakeholders, including the Federal Reserve System. Stakeholders provided input and feedback through the public comment letters and participation in public forums. The FASB did not

[4] The desired outcomes are outlined in the Federal Reserve System's "Strategies for Improving the U.S. Payment System", January 26, 2015. Available at *https://fedpaymentsimprovement.org/wp-content/uploads/strategies-improving-us-payment-system.pdf*. The refreshed strategies and tactics are outlined in the Federal Reserve System's "Strategies for Improving the U.S. Payment System: Federal Reserve Next Steps in the Payments Improvement Journey", September 6, 2017. Available at *https://fedpaymentsimprovement.org/wp-content/uploads/next-step-payments-journey.pdf*.

specifically consult the Board regarding CECL's impact to bank capital since their mandate is to establish and improve financial accounting and reporting standards to provide decision-useful information to investors and other users of financial reports.

In response to CECL, the Board, with the Office of the Comptroller of the Currency (OCC) and the Federal Deposit Insurance Corporation (FDIC) (together, "the agencies"), recently issued a joint proposal that would address the forthcoming changes. In particular, the proposal would provide firms the option to phase in the day-one regulatory capital effects of CECL over a 3-year period.

The agencies intend for this transition provision to address films' challenges in capital planning for CECL implementation, particularly due to the uncertainty of economic conditions at the time a film adopts CECL.

The agencies are currently reviewing comments to the proposal in preparation for finalizing it. In addition, the agencies will continue to monitor the effects of CECL implementation on regulatory capital and bank lending practices to help determine whether any further changes to the capital rules are warranted.

Q.6. Is the Federal Reserve taking into these rule changes as it continues to implement capital rules created by the Dodd–Frank financial reform law?

A.6. The Board is indeed taking into consideration the impact of CECL in connection with the Board's ongoing regulatory and supervisory functions. For example, the agencies, earlier this year issued a joint proposal entitled Implementation and Transition of the Current Expected Credit Losses Methodology for Allowances and Related Adjustments to the Regulatory Capital Rules and Conforming Amendments to Other Regulations.[5] In the joint proposal, the agencies proposed to amend the regulatory capital rules of the agencies to address changes to U.S. generally accepted accounting principles (GAAP) resulting from the FASB's issuance of CECL. The proposal would provide firms subject to the capital rules with the option to phase in, over a 3-year period, the day-one adverse regulatory capital effects of CECL that may result from the adoption of the new accounting standard. This transition period is intended to address the potential challenges in planning for CECL implementation, including the uncertainty of economic conditions at the time that a firm adopts CECL. In addition, the proposal identifies certain credit loss allowances under the new accounting standard that would be eligible for inclusion in regulatory capital.

The agencies are currently reviewing comments received from the public on the proposal. The Board will continue to monitor the effects of CECL implementation on firms supervised by the Board and on the U.S. financial system.

Q.7. As the CECL requirements go into effect in 2020, the first tests of how they impact bank capital may come during annual CCAR process.

Will the Federal Reserve be taking into account these rule changes as it undertakes the 2019 and 2020 CCAR process?

[5] 83 Federal Register 22312 (May 14, 2018).

A.7. In May 2018, the Board published a joint notice of proposed rulemaking with the OCC and FDIC to address changes to U.S. GAAP associated with CECL, issued by FASB in June 2016. Under the proposal, the Board would not incorporate CECL into the supervisory stress tests, and would not require a firm to incorporate CECL into its stress tests, until the 2020 cycle. If a banking organization were to adopt CECL for the first time in 2021, it would not be required to include provisioning for credit losses under the new standard until the 2021 stress test cycle.

This proposal avoids "pulling forward" the effect of CECL, by aligning the dates that firms are expected to include CECL in their comprehensive capital analysis and review projections with the actual date of implementation for those firms implementing in 2020 and 2021.

In advance of CECL implementation, the Federal Reserve is considering feedback received during outreach discussions with industry representatives, developing approaches for incorporating provision for credit losses in its supervisory models, and preparing for parallel testing of those models.

ADDITIONAL MATERIAL SUPPLIED FOR THE RECORD

MONETARY POLICY REPORT TO THE CONGRESS DATED JULY 13, 2018

For use at 11:00 a.m., EDT
July 13, 2018

MONETARY POLICY REPORT

July 13, 2018

Board of Governors of the Federal Reserve System

Letter of Transmittal

Board of Governors of the
Federal Reserve System

Washington, D.C., July 13, 2018

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

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

Sincerely,

Jerome H. Powell

Jerome H. Powell, Chairman

Statement on Longer-Run Goals and Monetary Policy Strategy

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

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

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

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

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

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

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Note: This report reflects information that was publicly available as of noon EDT on July 12, 2018. Unless otherwise stated, the time series in the figures extend through, for daily data, July 11, 2018; for monthly data, June 2018; and, for quarterly data, 2018:Q1. 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 increased at a solid pace over the first half of 2018, and the labor market has continued to strengthen. Inflation has moved up, and in May, the most recent period for which data are available, inflation measured on a 12-month basis was a little above the Federal Open Market Committee's (FOMC) longer-run objective of 2 percent, boosted by a sizable increase in energy prices. In this economic environment, the Committee judged that current and prospective economic conditions called for a further gradual removal of monetary policy accommodation. In line with that judgment, the FOMC raised the target for the federal funds rate twice in the first half of 2018, bringing it to a range of 1¾ to 2 percent.

Economic and Financial Developments

The labor market. The labor market has continued to strengthen. Over the first six months of 2018, payrolls increased an average of 215,000 per month, which is somewhat above the average pace of 180,000 per month in 2017 and is considerably faster than what is needed, on average, to provide jobs for new entrants into the labor force. The unemployment rate edged down from 4.1 percent in December to 4.0 percent in June, which is about ½ percentage point below the median of FOMC participants' estimates of its longer-run normal level. Other measures of labor utilization were consistent with a tight labor market. However, hourly labor compensation growth has been moderate, likely held down in part by the weak pace of productivity growth in recent years.

Inflation. Consumer price inflation, as measured by the 12-month percentage change in the price index for personal consumption expenditures, moved up from a little below the FOMC's objective of 2 percent at the end of last year to 2.3 percent in May, boosted by a sizable increase 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 total figure, was 2 percent in May. This reading was ½ percentage point above where it had been 12 months earlier, as the unusually low readings from last year were not repeated. Measures of longer-run inflation expectations have been generally stable.

Economic growth. Real gross domestic product (GDP) is reported to have increased at an annual rate of 2 percent in the first quarter of 2018, and recent indicators suggest that economic growth stepped up in the second quarter. Gains in consumer spending slowed early in the year, but they rebounded in the spring, supported by strong job gains, recent and past increases in household wealth, favorable consumer sentiment, and higher disposable income due in part to the implementation of the Tax Cuts and Jobs Act. Business investment growth has remained robust, and indexes of business sentiment have been strong. Foreign economic growth has remained solid, and net exports had a roughly neutral effect on real U.S. GDP growth in the first quarter. However, activity in the housing market has leveled off this year.

Financial conditions. Domestic financial conditions for businesses and households have generally continued to support economic growth. After rising steadily through 2017, broad measures of equity prices are modestly higher, on balance, from their levels at the end of last year amid some bouts of heightened volatility in financial markets. While long-term Treasury yields, mortgage rates, and yields on corporate bonds have risen so far this year, longer-term interest rates remain low by historical standards, and corporate bond issuance has continued at a moderate pace. Moreover, most types of consumer loans

remained widely available for households with strong creditworthiness, and credit provided by commercial banks continued to expand. The foreign exchange value of the U.S. dollar has appreciated somewhat against the currencies of our trading partners this year, but it remains below its level at the start of 2017. Foreign financial conditions remain generally supportive of growth despite recent increases in financial stress in several emerging market economies.

Financial stability. The U.S. financial system remains substantially more resilient than during the decade before the financial crisis. Asset valuations continue to be elevated despite declines since the end of 2017 in the forward price-to-earnings ratio of equities and the prices of corporate bonds. In the private nonfinancial sector, borrowing among highly levered and lower-rated businesses remains elevated, although the ratio of household debt to disposable income continues to be moderate. Vulnerabilities stemming from leverage in the financial sector remain low, reflecting in part strong capital positions at banks, whereas some measures of hedge fund leverage have increased. Vulnerabilities associated with maturity and liquidity transformation among banks, insurance companies, money market mutual funds, and asset managers remain below levels that generally prevailed before 2008.

Monetary Policy

Interest rate policy. Over the first half of 2018, the FOMC has continued to gradually increase the target range for the federal funds rate. Specifically, the Committee decided to raise the target range for the federal funds rate at its meetings in March and June, bringing it to the current range of 1¾ to 2 percent. The decisions to increase the target range for the federal funds rate reflected the economy's continued progress toward the Committee's objectives of maximum employment and price stability. Even with these policy rate increases, the stance of monetary policy remains accommodative, thereby supporting strong labor market conditions and a sustained return to 2 percent inflation.

The FOMC expects that further gradual increases in the target range for the federal funds rate will be consistent with a sustained expansion of economic activity, strong labor market conditions, and inflation near the Committee's symmetric 2 percent objective over the medium term. Consistent with this outlook, in the most recent Summary of Economic Projections (SEP), which was compiled at the time of the June FOMC meeting, the median of participants' assessments for the appropriate level for the federal funds rate rises gradually over the period from 2018 to 2020 and stands somewhat above the median projection for its longer-run level by the end of 2019 and through 2020. (The June SEP is presented in Part 3 of this report.) However, as the Committee has continued to emphasize, 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 has continued to implement the balance sheet normalization program described in the Addendum to the Policy Normalization Principles and Plans that the Committee issued about a year ago. Specifically, the FOMC has been reducing its holdings of Treasury and agency securities by decreasing, in a gradual and predictable manner, the reinvestment of principal payments it receives from these securities.

Special Topics

Prime-age labor force participation. Labor force participation rates (LFPRs) for men and women between 25 and 54 years old—that is, the share of these individuals either working or actively seeking work—trended lower

between 2000 and 2013. Those trends likely reflect numerous factors, including a long-run decline in the demand for workers with lower levels of education and an increase in the share of the population with some form of disability. By contrast, the prime-age LFPR has increased notably since 2013, and the share of nonparticipants who report wanting a job remains above pre-recession levels. Thus, some continuation of the recent increase in the prime-age LFPR may be possible if labor demand remains strong. (See the box "The Labor Force Participation Rate for Prime-Age Individuals" in Part 1.)

Oil prices. Oil prices have climbed rapidly over the past year, reflecting both supply and demand factors. Although higher oil prices are likely to restrain household consumption in the United States, much of the negative effect on GDP from lower consumer spending is likely to be offset by increased production and investment in the growing U.S. oil sector. Consequently, higher oil prices now imply much less of a net overall drag on the economy than they did in the past, although they will continue to have important distributional effects. The negative effect of upward moves in oil prices should get smaller still as U.S. oil production grows and net oil imports decline further. (See the box "The Recent Rise in Oil Prices" in Part 1.)

Monetary policy rules. Monetary policymakers consider a wide range of information on current economic conditions and the outlook when deciding on a policy stance they deem most likely to foster the FOMC's statutory mandate of maximum employment and stable prices. They also routinely consult monetary policy rules that connect prescriptions for the policy interest rate with variables associated with the dual mandate. The use of such rules requires, among other considerations, careful judgments about the choice and measurement of the inputs into the rules such as estimates of the neutral interest rate, which are highly uncertain. (See the box "Complexities of Monetary Policy Rules" in Part 2.)

Interest on reserves. The payment of interest on reserves—balances held by banks in their accounts at the Federal Reserve—is an essential tool for implementing monetary policy because it helps anchor the federal funds rate within the FOMC's target range. This tool has permitted the FOMC to achieve a gradual increase in the federal funds rate in combination with a gradual reduction in the Fed's securities holdings and in the supply of reserve balances. The FOMC judged that removing monetary policy accommodation through first raising the federal funds rate and then beginning to shrink the balance sheet would best contribute to achieving and maintaining maximum employment and price stability without causing dislocations in financial markets or institutions that could put the economic expansion at risk. (See the box "Interest on Reserves and Its Importance for Monetary Policy" in Part 2.)

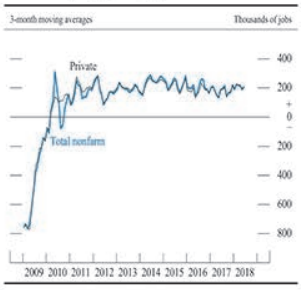
Part 1
Recent Economic and Financial Developments

Domestic Developments

The labor market strengthened further during the first half of the year . . .

Labor market conditions have continued to strengthen so far in 2018. According to the Bureau of Labor Statistics (BLS), gains in total nonfarm payroll employment averaged 215,000 per month over the first half of the year. That pace is up from the average monthly pace of job gains in 2017 and is considerably faster than what is needed to provide jobs for new entrants into the labor force (figure 1).[1] Indeed, the unemployment rate edged down from 4.1 percent in December to 4.0 percent in June (figure 2). This rate is below all Federal Open Market Committee (FOMC) participants' estimates of its longer-run normal level and is about ½ percentage point below the median of those estimates.[2] The unemployment rate in June is close to the lows last reached in 2000.

1. Net change in payroll employment



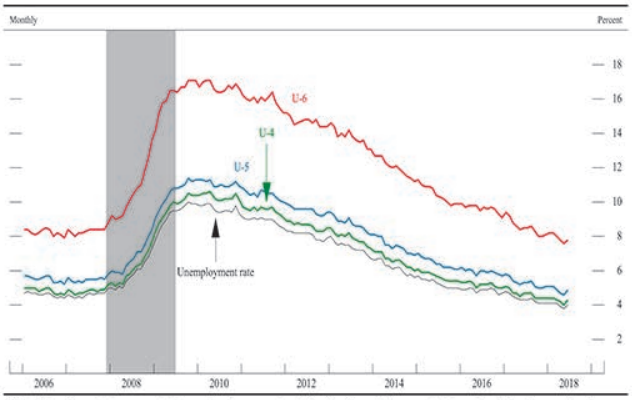
Source: Bureau of Labor Statistics via Haver Analytics.

The labor force participation rate (LFPR), which is the share of individuals aged 16 and older who are either working or actively looking for work, was 62.9 percent in June and has changed little, on net, since late 2013 (figure 3). The aging of the population is an important contributor to a downward trend in the overall participation rate. In particular, members of the baby-boom cohort are increasingly moving into their retirement years, a time when labor force participation is typically low. Indeed, the share of the civilian population aged 65 and over in the United States climbed from 16 percent in 2000 to 19 percent in 2017 and is projected to rise to 24 percent by 2026. Given this trend, the flat trajectory of the

1. Monthly job gains in the range of 130,000 to 160,000 are consistent with an unchanged unemployment rate and an unchanged labor force participation rate.

2. See the Summary of Economic Projections in Part 3 of this report.

2. Measures of labor underutilization



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

SOURCE: Bureau of Labor Statistics via Haver Analytics.

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

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

SOURCE: Bureau of Labor Statistics via Haver Analytics.

LFPR during the past few years is consistent with strengthening labor market conditions. Similarly, the LFPR for individuals between 25 and 54 years old—which is much less sensitive to population aging—has been rising for the past several years. (The box "The Labor Force Participation Rate for Prime-Age Individuals" examines the prospects for further increases in participation for these individuals.) The employment-to-population ratio for individuals 16 and over—the share of the total population who are working—was 60.4 percent in June and has been gradually increasing since 2011, reflecting the combination of the declining unemployment rate and the flat LFPR.

Other indicators are also consistent with a strong labor market. As reported in the Job Openings and Labor Turnover Survey (JOLTS), the rate of job openings has remained quite elevated.[3] The rate of quits has

3. Indeed, the number of job openings now about matches the number of unemployed individuals.

stayed high in the JOLTS, an indication that workers are able to successfully switch jobs when they wish to. In addition, the JOLTS layoff rate has been low, and the number of people filing initial claims for unemployment insurance benefits has remained near its lowest level in decades. Other survey evidence indicates that households perceive jobs as plentiful and that businesses see vacancies as hard to fill. Another indicator, the share of workers who are working part time but would prefer to be employed full time—which is part of the U-6 measure of labor underutilization from the BLS—fell further in the first six months of the year and now stands close to its pre-recession level (as shown in figure 2).

. . . and unemployment rates have fallen for all major demographic groups

The continued decline in the unemployment rate has been reflected in the experiences of multiple racial and ethnic groups (figure 4). The unemployment rates for blacks or African Americans and Hispanics tend to rise considerably more than rates for whites and Asians during recessions but decline

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.

The Labor Force Participation Rate for Prime-Age Individuals

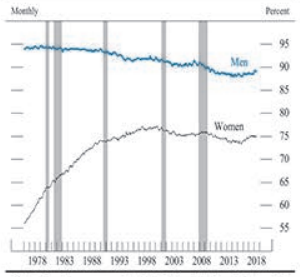
The overall labor force participation rate (LFPR) has generally been trending lower since 2000, and while the aging of the baby-boom generation into retirement ages provides an important reason for that decline, it is not the only reason. Another contributing factor, as shown in figure A, is that the LFPRs of prime-age men and women (those between 25 and 54 years old) trended lower through 2013 even though prime-age LFPRs are largely unaffected by the aging of the population: The prime-age male LFPR has been declining for six decades, and the prime-age female LFPR has drifted lower since 2000 after a multidecade increase. Nevertheless, prime-age LFPRs have moved up notably and consistently since 2013, as improving labor market conditions have drawn some individuals back into the labor force and encouraged others not to leave. These recent increases in the prime-age LFPR, in the context of the longer-run trend decline, raise the question of how much additional scope there is for further increases in prime-age labor force participation.

To gauge whether further increases are possible, a useful starting point is understanding the factors behind the longer-run decline in the prime-age LFPR, as these factors may limit additional increases if they continue to exert some downward pressure. One factor may be a secular decline in the demand for workers with lower levels of education. Indeed, as shown in figure B, the long-run declines in prime-age LFPR are much larger among adults without a college degree than among college-educated adults. Research suggests that increases in automation, such as the use of robotics, and various aspects of globalization have spurred the elimination of some types of jobs—in particular, some manufacturing jobs that have historically been held by workers without a college education—and emerging jobs may require a different set of skills. These developments may have led some workers to become discouraged over the lack of suitable job opportunities and drop out of the labor force.[1] The rising share of college-educated workers, which may partly reflect individuals responding over time to the declining demand for jobs that require less education, has likely prevented even steeper declines in the prime-age LFPR, as better-educated workers have higher LFPRs and may be more adaptable to unforeseen disruptions in particular jobs or industries.

Another potential factor may be that an increasing share of the prime-age population has some difficulty working because of physical or mental disabilities. For example, figure C shows that about 5 percent of both prime-age men and women report that they are out of the labor force and do not want a job due to disability or illness; those shares have trended higher over the past several decades. Other research suggests that increased opioid use may be associated with a lower prime-age LFPR, although it is unclear how much of the decline in the prime-age LFPR can be directly explained by opioid use or whether increases

(continued)

A. Prime-age labor force participation rates

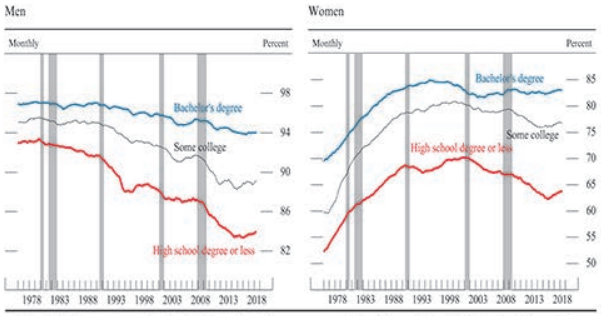


NOTE: The data are seasonally adjusted. The shaded bars indicate periods of business recession as defined by the National Bureau of Economic Research.

SOURCE: Bureau of Labor Statistics.

1. For evidence on displacement from technological changes, see David H. Autor, David Dorn, and Gordon H. Hanson (2015), "Untangling Trade and Technology: Evidence from Local Labor Markets," *Economic Journal*, vol. 125 (May), pp. 621–46; Daron Acemoglu and Pascual Restrepo (2017), "Robots and Jobs: Evidence from U.S. Labor Markets," NBER Working Paper Series 23285 (Cambridge, Mass.: National Bureau of Economic Research, March), www.nber.org/papers/w23285; and Daron Acemoglu and Pascual Restrepo (2018), "Artificial Intelligence, Automation, and Work," NBER Working Paper Series 24196 (Cambridge, Mass.: National Bureau of Economic Research, January), www.nber.org/papers/w24196. For evidence on globalization—in particular, import competition since the 2000s—see David H. Autor, David Dorn, and Gordon H. Hanson (2013), "The China Syndrome: Local Labor Market Effects of Import Competition in the United States," *American Economic Review*, vol. 103 (October), pp. 2121–68. A discussion of these and other explanations is also provided in Katharine G. Abraham and Melissa S. Kearney (2018), "Explaining the Decline in the U.S. Employment-to-Population Ratio: A Review of the Evidence," NBER Working Paper Series 24333 (Cambridge, Mass.: National Bureau of Economic Research, February), www.nber.org/papers/w24333.

B. Prime-age labor force participation rates by education



NOTE: The data are seasonally adjusted 12-month moving averages and extend through May 2018. The shaded bars indicate periods of business recession as defined by the National Bureau of Economic Research.
SOURCE: U.S. Census Bureau, Current Population Survey.

in opioid use are an indirect result of poor employment opportunities.[2]

Caregiving responsibilities play an important role in explaining why LFPRs for prime-age women are lower than for men, and they may play an increasing role in explaining declining prime-age LFPRs for men as well. As shown in figure C, roughly 15 percent of prime-age women report being out of the labor force for caregiving reasons—by far the largest reason for prime-age women to report not wanting a job—but this share has been fairly flat over time. In contrast, while a much smaller fraction of men are out of the labor force for caregiving reasons, that share has trended up in recent decades, likely reflecting some shift in household responsibilities as women participate in the workforce in greater numbers. For some—especially those for whom childcare costs are not a major concern—not participating in the labor force may represent an unconstrained choice to care for other members of their families. For others, however, this decision may reflect a lack of affordable childcare.

Additionally, the share of the population—particularly black men—with a history of incarceration has increased over time. Individuals who have previously been incarcerated often have trouble finding work, in part because many employers choose not to hire people with such a background and likely also in part because incarceration prevents people from accumulating work experience and developing skills valuable to employers. Discrimination could also help explain the lack of participation for some minority groups, as they recognize that such discrimination limits their job opportunities.

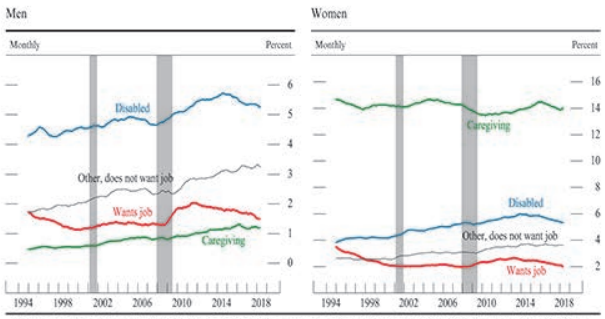
International comparisons may help clarify the importance of some of those factors. Since 1990, the

(continued on next page)

2. Evidence that opioid use could be significant for understanding the declining LFPR is provided by Alan B. Krueger (2017), "Where Have All the Workers Gone? An Inquiry into the Decline of the U.S. Labor Force Participation Rate," *Brookings Papers on Economic Activity*, Fall, pp. 1–82, https://www.brookings.edu/wp-content/uploads/2018/02/kruegertextfa17bpea.pdf, while little relationship between opioid prescriptions and employment at the county level is found in Janet Currie, Jonas Y. Jin, and Molly Schnell (2018), "U.S. Employment and Opioids: Is There a Connection?" NBER Working Paper Series 24440 (Cambridge, Mass.: National Bureau of Economic Research, March), www.nber.org/papers/w24440. Some evidence on whether the opioid epidemic varies with local economic conditions is provided by Jeff Larrimore, Alex Durante, Kimberly Kreiss, Ellen Merry, Christina Park, and Claudia Sahm (2018), "Shedding Light on Our Economic and Financial Lives," FEDS Notes, https://www.federalreserve.gov/econres/notes/feds-notes/shedding-light-on-our-economic-and-financial-lives-20180522.htm.

The Labor Force Participation Rate *(continued)*

C. Prime-age nonparticipation by reason



NOTE: The data are seasonally adjusted 12-month moving averages and extend through May 2018. The shaded bars indicate periods of business recession as defined by the National Bureau of Economic Research.
SOURCE: U.S. Census Bureau, Current Population Survey.

prime-age LFPR in the United States has declined considerably for both men and women relative to other advanced countries. Some factors, like automation and globalization, have affected all advanced economies to some degree and for some time, yet diverging long-run trends in prime-age labor force participation have still occurred. Research suggests that part of the relative decline in the United States is explained by differential changes in work-family policies across countries. Other parts of the divergence may be explained by other policies, including policies designed toward keeping those affected by automation and globalization attached to the labor force, or other factors—such as incarceration or opioid use—that differ across those countries.[3]

Although many of the factors behind the multidecade decline in the prime-age LFPR may persist, some continuation of the increases in the LFPR over the past few years nevertheless seems possible, especially if labor market conditions remain favorable. Indeed, as shown in figure C, although the share of nonparticipating prime-age men and women who self-report as wanting a job (despite not having actively searched for a job recently) has been declining since 2010, that share for men remains between ¼ and ½ percentage point above its 2007 level and earlier expansion peaks. Furthermore, prime-age men and women who had previously reported being out of the labor force and not wanting a job due to disability or illness have been entering the labor force at increasing rates in recent years.

Looking forward, how can policymakers support additional improvements in the prime-age LFPR? Favorable labor market conditions can likely help, and monetary policy can therefore play a role through supporting strong cyclical conditions as part of its maximum-employment objective. However, structural factors (in contrast with cyclical ones) are also important to address; policies to address such factors are beyond the scope of monetary policy.

3. For recent trends on prime-age LFPRs in the United States compared with other developed countries, see Organisation for Economic Co-operation and Development (2018), *OECD Economic Surveys: United States 2018* (Paris: OECD Publishing), dx.doi.org/10.1787/eco_surveys-usa-2018-en. For a description of policy differences across countries and how this may affect differences in LFPR, see International Monetary Fund (2018), "Labor Force Participation in Advanced Economies: Drivers and Prospects," chapter 2 in *World Economic Outlook: Cyclical Upswing, Structural Change* (Washington: IMF, April), pp. 71–128. For evidence on how work-family policies may affect prime-age LFPRs in the United States relative to other OECD countries, see Francine D. Blau and Lawrence M. Kahn (2013), "Female Labor Supply: Why Is the United States Falling Behind?" *American Economic Review*, vol. 103 (May), pp. 251–56.

more rapidly during expansions. Indeed, the declines in the unemployment rates for blacks and Hispanics have been particularly striking, and the rates have recently been at or near their lowest readings since these series began in the early 1970s. Although differences in unemployment rates across ethnic and racial groups have narrowed in recent years, they remain substantial and similar to pre-recession levels. The rise in LFPRs for prime-age individuals over the past few years has also been evident in each of these racial and ethnic groups, with increases again particularly notable for African Americans. Even so, the LFPR for whites remains higher than that for the other groups (figure 5).[4]

Increases in labor compensation have been moderate . . .

Despite the strong labor market, the available indicators generally suggest that increases in hourly labor compensation have been moderate. Compensation per hour in the business sector—a broad-based measure of wages, salaries, and benefits that is quite volatile—rose 2¾ percent over the four quarters ending in 2018:Q1, slightly more than the average annual increase over the preceding seven or so years (figure 6). The employment cost index—a less volatile measure of both wages and the cost to employers of providing benefits—likewise was 2¾ percent higher in the first quarter of 2018 relative to its year-earlier level; this increase was ½ percentage point faster than its gain a year earlier. Among measures that do not account for benefits, average hourly earnings rose 2¾ percent in June relative to 12 months earlier, a gain in line with the average increase in the preceding few years. According to the Federal Reserve Bank of Atlanta, the median 12-month wage

5. Prime-age labor force participation rate by race and ethnicity

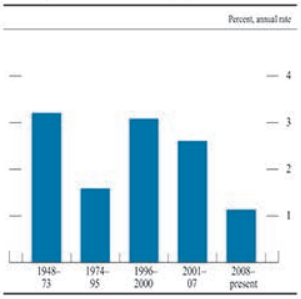
NOTE: The prime-age labor force participation rate is a percentage of the population aged 25 to 54. Persons whose ethnicity is identified as Hispanic or Latino may be of any race. The data are seasonally adjusted by Board staff and are 3-month moving averages. The shaded bar indicates a period of business recession as defined by the National Bureau of Economic Research.
SOURCE: Bureau of Labor Statistics.

6. Measures of change in hourly compensation

NOTE: Business-sector compensation is on a 4-quarter percentage change basis. For the employment cost index, change is over the 12 months ending in the last month of each quarter; for average hourly earnings, change is from 12 months earlier; for the Atlanta Fed's Wage Growth Tracker, the data are shown as a 3-month moving average of the 12-month percent change and extend through May 2018.
SOURCE: Bureau of Labor Statistics via Haver Analytics; Federal Reserve Bank of Atlanta, Wage Growth Tracker.

4. The lower levels of labor force participation for these other groups differ importantly by sex. For African Americans, men have a lower participation rate relative to white men, while the participation rate for African American women is as high as that of white women. By contrast, the lower LFPRs for Hispanics and Asians reflect lower participation among women.

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 final period is measured from 2007:Q4 through 2018:Q1.
SOURCE: Bureau of Labor Statistics via Haver Analytics.

growth of individuals reporting to the Current Population Survey increased about 3¼ percent in May, also similar to its readings from the past few years.[5]

. . . and likely have been restrained by slow growth of labor productivity

Those moderate rates of compensation gains likely reflect the offsetting influences of a strong labor market and persistently weak productivity growth. Since 2008, labor productivity has increased only a little more than 1 percent per year, on average, well below the average pace from 1996 through 2007 of 2.8 percent and also below the average gain in the 1974–95 period of 1.6 percent (figure 7). 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. However, considerable debate remains about the reasons for the recent slowdown in productivity growth and whether it will persist.[6]

Price inflation has picked up from the low readings in 2017

In 2017, inflation remained below the FOMC's longer-run objective of 2 percent. Partly because the softness in some price categories appeared idiosyncratic, Federal Reserve policymakers expected inflation to move higher in 2018.[7] This expectation appears to be

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.

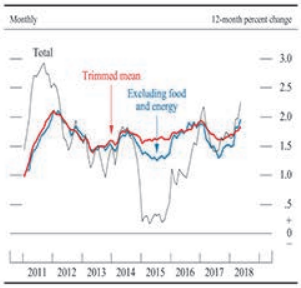
6. The box "Productivity Developments in the Advanced Economies" in the July 2017 *Monetary Policy Report* provides more information. See Board of Governors of the Federal Reserve System (2017), *Monetary Policy Report* (Washington: Board of Governors, July), pp. 12–13, https://www.federalreserve.gov/monetarypolicy/2017-07-mpr-part1.htm.

7. Additional details can be found in the June 2017 Summary of Economic Projections, an addendum to the minutes of the June 2017 FOMC meeting. See Board of Governors of the Federal Reserve System (2017), "Minutes of the Federal Open Market Committee,

on track so far. Consumer price inflation, as measured by the 12-month percentage change in the price index for personal consumption expenditures (PCE), moved up to 2.3 percent in May (figure 8). Core PCE inflation, which excludes consumer food and energy prices that are often quite volatile and typically provides a better indication than the total measure of where overall inflation will be in the future, was 2 percent over the 12 months ending in May—0.5 percentage point higher than it had been one year earlier. The total measure exceeded core inflation because of a sizable increase in consumer energy prices. In contrast, food price inflation has continued to be low by historical standards—data through May show the PCE price index for food and beverages having increased less than ½ percent over the past year.

The higher readings in both total and core inflation relative to a year earlier reflect faster price increases for a wide range of goods and services this year and the dropping out of the 12-month calculation of the steep one-month decline in the price index for wireless telephone services in March last year. The 12-month change in the trimmed mean PCE price index—an alternative indicator of underlying inflation produced by the Federal Reserve Bank of Dallas that may be less sensitive than the core index to idiosyncratic price movements—slowed by less than core inflation over 2017 and has also increased a bit less this year. This index rose 1.8 percent over the 12 months ending in May, up a touch from the increase over the same period last year.[8]

8. Change in the price index for personal consumption expenditures



NOTE: The data extend through May 2018; changes are from one year earlier.

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

June 13–14, 2017," press release, July 5, https://www.federalreserve.gov/newsevents/pressreleases/monetary20170705a.htm.

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

9. Brent spot and futures prices

NOTE: The data are weekly averages of daily data and extend through July 11, 2018.
SOURCE: ICE Brent Futures via Bloomberg.

10. Nonfuel import prices and industrial metals indexes

NOTE: The data for nonfuel import prices are monthly and extend through May 2018. The data for industrial metals are a monthly average of daily data and extend through June 29, 2018.
SOURCE: For nonfuel import prices, Bureau of Labor Statistics; for industrial metals, S&P GSCI Industrial Metals Spot Index via Haver Analytics.

Oil prices have surged amid supply concerns . . .

As noted, the faster pace of total inflation this year relative to core inflation reflects a substantial rise in consumer energy prices. Retail gasoline prices this year were driven higher by a rise in oil prices. The spot price of Brent crude oil rose from about $65 per barrel in December to around $75 per barrel in early July (figure 9). Although that increase took place against a backdrop of continued strength in global demand, supply concerns have become more prevalent in recent months. (For a discussion of the reasons behind the oil price increases along with a review of the effects of oil prices on U.S. economic growth, see the box "The Recent Rise in Oil Prices.")

. . . while prices of imports other than energy have also increased

Nonfuel import prices rose sharply in early 2018, partly reflecting the pass-through of earlier increases in commodity prices (figure 10). In particular, metals prices posted sizable gains late last year due to strong global demand but have retreated somewhat in recent weeks.

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 so far this year. In the Survey of Professional Forecasters conducted by the Federal Reserve Bank of Philadelphia, the median expectation for the annual rate of increase in the PCE price index over the next 10 years has been around 2 percent for the past several years (figure 11). In the University of Michigan Surveys of Consumers, the median value for inflation expectations over the next 5 to 10 years has been about 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 has been moving up recently and is currently at the top of the range it has occupied over the past couple of years.

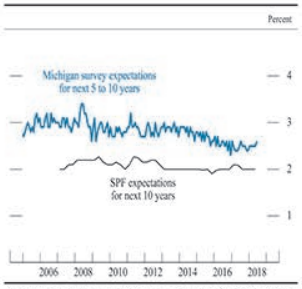
. . . while market-based measures of inflation compensation have largely moved sideways this year

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—have moved sideways for the most part this year after having returned to levels seen in early 2017 (figure 12).[9] The TIPS-based measure of 5-to-10-year-forward inflation compensation and the analogous measure of inflation swaps are now about 2 percent and 2½ percent, respectively, with both measures below the ranges that persisted for most of the 10 years before the start of the notable declines in mid-2014.[10]

9. 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. Focusing on inflation compensation 5 to 10 years ahead is useful, particularly for monetary policy, because such forward measures encompass market participants' views about where inflation will settle in the long term after developments influencing inflation in the short term have run their course.

10. As these measures are based on CPI inflation, one should probably subtract about ¼ to ½ percentage point—the average differential with PCE inflation over the past two decades—to infer inflation compensation on a PCE basis.

11. Median inflation expectations



NOTE: The Michigan survey data are monthly. The SPF data for inflation expectations for personal consumption expenditures are quarterly and extend from 2007:Q1 through 2018:Q2.
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 July 6, 2018. TIPS is Treasury Inflation-Protected Securities.
SOURCE: Federal Reserve Bank of New York; Barclays; Federal Reserve Board staff estimates.

The Recent Rise in Oil Prices

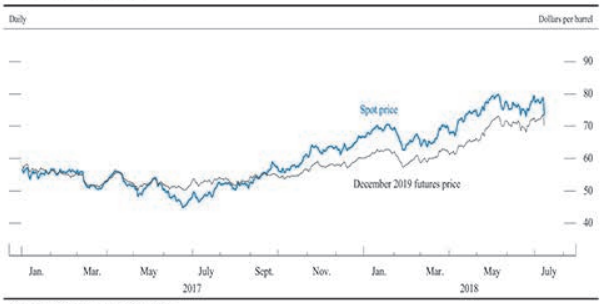
Oil prices have increased more than 50 percent over the past year, with the spot price of Brent crude oil rising from a bit below $50 per barrel to around $75 per barrel (figure A). For much of the period, further-dated futures prices remained relatively stable, in the neighborhood of $55 per barrel; however, since February, futures prices have moved up appreciably, reaching over $70 per barrel.

Both supply and demand factors have contributed to the oil price increase. In particular, the broad-based improvement in the outlook for the global economy was a key driver of the price increase in the second half of 2017. In recent months, supply concerns have become more prevalent, affecting both spot and further-dated futures prices. Despite sharply rising U.S. oil production, markets have been attuned to escalating conflict between Saudi Arabia and Iran as well as the precipitous decline in Venezuelan oil production amid the country's economic and political crisis. Prices also increased after President Trump announced on May 8 that the United States was withdrawing from the Iran nuclear deal and that sanctions against Iranian oil exports would be reinstated.

The pattern of spot and futures prices indicates that market participants generally anticipate that oil prices will decline slowly over the next few years, in part reflecting an expectation that supply, including U.S. shale oil production, will grow to meet demand. In addition, the higher prices put pressure on OPEC's November 2016 agreement with certain non-OPEC countries to restrain production. A stated aim of the agreement was to reduce the glut in global inventories, and, in recent months, inventory levels have fallen rapidly toward long-run averages. In response to both lower inventories and higher prices, OPEC leaders slightly relaxed the production agreement in June this

(continued)

A. Brent spot and futures prices



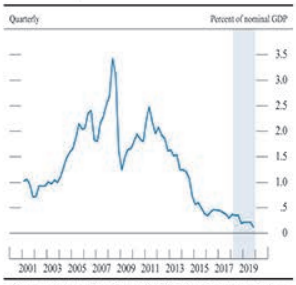
SOURCE: ICE Brent Futures via Bloomberg.

year, reducing some of the upward pressure on prices. That said, futures prices have not returned to their early 2018 levels, implying that market participants expect some of the recent increase in prices to be long lasting.

What is the expected effect of the recent rise in oil prices on the U.S. economy? To begin with, higher oil prices are likely to restrain household consumption. In particular, the increase in oil prices since last year is estimated to have translated into a roughly $300 increase in annual expenditures on gasoline for the average household, from about $2,100 to $2,400. However, as U.S. oil production has grown rapidly over the past decade, the ratio of net U.S. oil imports to U.S. gross domestic product (GDP) has declined substantially (figure B). As a result, higher oil prices now imply much less of a redistribution of purchasing power abroad than in the past, as much of the negative effect on GDP from lower household consumption is likely to be offset by increased production and investment in the growing U.S. oil sector. On net, the drag on GDP from higher oil prices is likely a small fraction of what it was a decade ago and should get smaller still if U.S. oil production continues to grow as projected—figure C—and the net oil import share shrinks toward zero.

Indeed, if U.S. oil trade moves fully into balance, the offsetting effects of a change in the relative price of oil might be expected to net out within the domestic economy. However, even if the United States is no longer a net oil importer, to the extent that higher oil prices cause credit-constrained consumers to cut spending by more than oil producers expand their investment, this redistribution of purchasing power could still have negative effects on overall GDP.

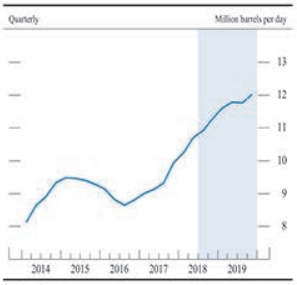
B. Net oil import share



NOTE: The data extending through 2018:Q1 are quarterly averages of daily oil futures prices, quarterly averages of monthly oil imports and exports, and quarterly GDP. The data from 2018:Q2 through 2019:Q4 are projections based on quarterly averages of monthly oil futures prices, quarterly averages of monthly oil imports and exports, and quarterly GDP.

SOURCE: Department of Energy via Haver Analytics; ICE Brent Futures via Bloomberg; Bureau of Economic Analysis; staff calculations.

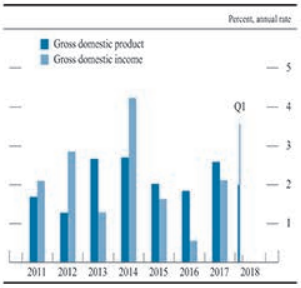
C. U.S. crude oil production



NOTE: The data are quarterly averages of monthly data. The data extend through 2018:Q2. Data from 2018:Q3 through 2019:Q4 are projections.

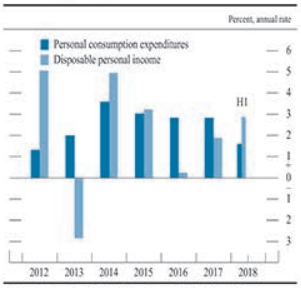
SOURCE: Department of Energy via Haver Analytics.

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



NOTE: The values for 2018:H1 are the annualized May/Q4 changes.
SOURCE: Bureau of Economic Analysis via Haver Analytics.

15. Personal saving rate

NOTE: Data are through May 2018.
SOURCE: Bureau of Economic Analysis via Haver Analytics.

Real gross domestic product growth slowed in the first quarter, but spending by households appears to have picked up in recent months

After having expanded at an annual rate of 3 percent in the second half of 2017, real gross domestic product (GDP) is now reported to have increased 2 percent in the first quarter of this year (figure 13). The step-down in growth during the first quarter was largely attributable to a sharp slowing in the growth of consumer spending that appears transitory, and gains in GDP appear to have rebounded in the second quarter. Meanwhile, business investment has remained strong, and net exports had little effect on output growth in the first quarter. On balance, over the first half of this year, overall economic activity appears to have expanded at a solid pace.

The economic expansion continues to be supported by favorable consumer and business sentiment, past increases in household wealth, solid economic growth abroad, and accommodative domestic financial conditions, including moderate borrowing costs and easy access to credit for many households and businesses.

Gains in income and wealth continue to support consumer spending . . .

Following exceptionally strong growth in the fourth quarter of 2017, consumer spending in the first quarter of this year was tepid, rising at an annual rate of 0.9 percent. The slowdown in growth was evident in outlays for motor vehicles and in retail sales more generally; moreover, unseasonably warm weather depressed spending on energy services. However, consumer spending picked up in more recent months as retail sales firmed, and PCE in April and May rose at an annual rate of 2¼ percent relative to the average over the first quarter (figure 14).

Real disposable personal income (DPI), a measure of after-tax income adjusted for inflation, has increased at a solid annual rate of about 3 percent so far this year. Real DPI

has been supported by the reduction in income taxes owing to the implementation of the Tax Cuts and Jobs Act (TCJA) as well as the continued strength in the labor market. With consumer spending rising just a little less than the gains in disposable income so far this year, the personal saving rate has edged up after having fallen for the past two years (figure 15).

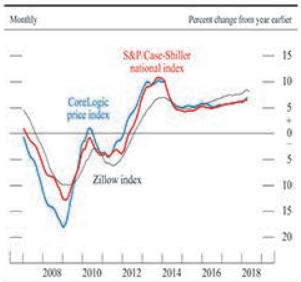
Ongoing gains in household net worth likely have also supported consumer spending. House prices, which are of particular importance for the balance sheet positions of a large set of households, have been increasing at an average annual pace of about 6 percent in recent years (figure 16).[11] Although U.S. equity prices have posted modest gains, on net, so far this year, this flattening followed several years of sizable gains. Buoyed by the cumulative increases in home and equity prices, aggregate household net worth was 6.8 times household income in the first quarter, down just slightly from its ratio in the fourth quarter—the highest-ever reading for that ratio, which dates back to 1947 (figure 17).

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

Financing conditions for consumers are generally favorable and remain supportive of growth in household spending. However, banks have continued to tighten standards for credit cards and auto loans for borrowers with low credit scores, possibly in response to some upward moves in the delinquency rates of those borrowers. Mortgage credit has remained readily available for households with solid credit profiles. For borrowers with low credit scores, mortgage financing conditions have eased somewhat further but remain tight overall. In this environment, consumer credit continued to increase in the first few months of 2018, though the rate of increase moderated some from its robust pace in the previous year (figure 18).

11. For the majority of households, home equity makes up the largest share of their wealth.

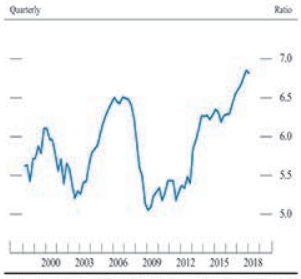
16. Prices of existing single-family houses



NOTE: The data for the S&P/Case-Shiller index extend through April 2018. The data for the Zillow index and the CoreLogic index extend through May 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.)

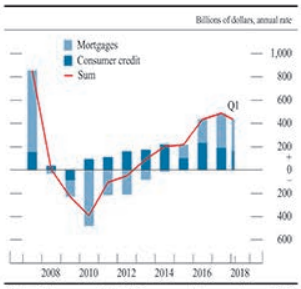
17. Wealth-to-income ratio



NOTE: 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.

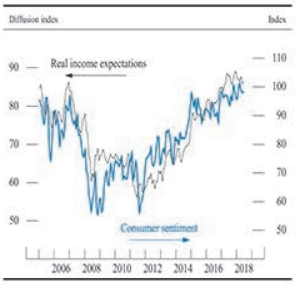
18. Changes in household debt



NOTE: Changes are calculated from year-end to year-end except 2018 changes, which are calculated from 2017:Q4 to 2018:Q1.

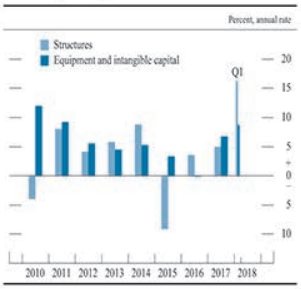
SOURCE: Federal Reserve Board, Statistical Release Z.1, "Financial Accounts of the United States."

19. Indexes of consumer sentiment and income expectations



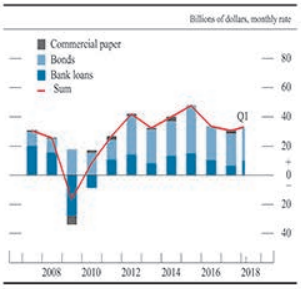
NOTE: The consumer sentiment data are monthly and are indexed to 100 in 1966. The real income expectations data are calculated as the net percentage of survey respondents expecting family income to go up more than prices during the next year or two plus 100 and are shown as a three-month moving average.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

20. Change in real private nonresidential fixed investment



SOURCE: Bureau of Economic Analysis via Haver Analytics.

21. Selected components of net debt financing for nonfinancial businesses



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

. . . while consumer confidence remains strong

Consumers have remained upbeat. So far this year, the Michigan survey index of consumer sentiment has been near its highest level since 2000, likely reflecting rising income, job gains, and low inflation (figure 19). Indeed, households' expectations for real income changes over the next year or two now stand above levels preceding the previous recession.

Business investment has continued to rebound . . .

Investment spending by businesses has continued to increase so far this year, with notable gains for spending, both on equipment and intangibles and on nonresidential structures (figure 20). Within structures, the rise in oil prices propelled another steep ramp-up in investment in drilling and mining structures—albeit not yet back to the levels recorded from 2012 to 2014—while investment in nonresidential structures outside of the energy sector picked up after declining in 2017. Forward-looking indicators of business investment spending remain favorable on balance. Business sentiment and the profit expectations of industry analysts have been positive overall, while new orders of capital goods have advanced on net this year.

. . . while corporate financing conditions have remained accommodative

Aggregate flows of credit to large nonfinancial firms remained strong in the first quarter, supported in part by relatively low interest rates and accommodative financing conditions (figure 21). The gross issuance of corporate bonds stayed robust during the first half of 2018, while yields on both investment- and speculative-grade corporate bonds moved up notably but remained low by historical standards (figure 22). Despite strong growth in business investment, outstanding commercial and industrial (C&I) loans on banks' books rose only modestly in the first quarter, although their pace of expansion in more recent months has strengthened on average. In

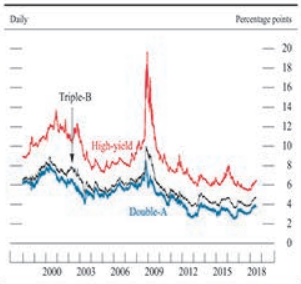
April, respondents to the Senior Loan Officer Opinion Survey on Bank Lending Practices, or SLOOS, reported that demand for C&I loans weakened in the first quarter even as lending standards and terms on such loans eased.[12] Respondents attributed this decline in demand in part to firms drawing on internally generated funds or using alternative sources of financing. Meanwhile, growth in commercial real estate loans has moderated some but remains strong. In addition, financing conditions for small businesses appear to have remained generally accommodative, with lending standards little changed at most banks and with most firms reporting that they are able to obtain credit. Although small business credit growth has been subdued, survey data suggest this sluggishness is largely due to continued weak demand for credit by small businesses.

But activity in the housing sector has leveled off

Residential investment, which rose a modest 2½ percent in 2017, appears to have largely moved sideways over the first five months of the year. The slowing in residential investment likely is partly a result of higher mortgage interest rates. Although these rates are still low by historical standards, they have moved up and are near their highest levels in seven years (figure 23). In addition, higher lumber prices and tight supplies of skilled labor and developed lots reportedly have been restraining home construction. While starts of both single-family and multifamily housing units rose in the fourth quarter, single-family starts have been little changed, on net, since then, whereas multifamily starts continued to climb earlier this year before flattening out (figure 24). Meanwhile, over the first five months of this year, new home sales have held at around the rate of late last year, but sales of existing homes have eased somewhat (figure 25). Despite the continued increases in house prices, the pace of construction has

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

22. Corporate bond yields, by securities rating

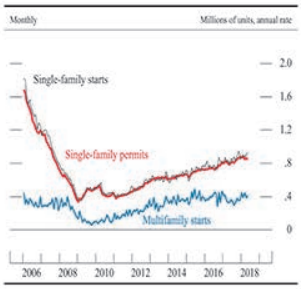


NOTE: The yields shown are yields on 10-year bonds.
SOURCE: ICE Bank of America Merrill Lynch Indices, used with permission.

23. Mortgage rates and housing affordability

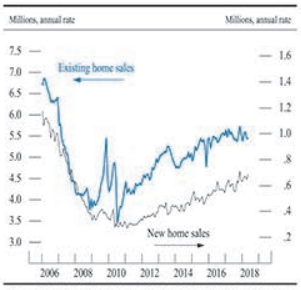
NOTE: The housing affordability index data are monthly through April 2018, and the mortgage rate data are weekly through July 5, 2018. At an index value of 100, a median-income family has exactly enough income to qualify for a median-priced home mortgage. Housing affordability is seasonally adjusted by Board staff.
SOURCE: For housing affordability index, National Association of Realtors; for mortgage rates, Freddie Mac Primary Mortgage Market Survey.

24. Private housing starts and permits



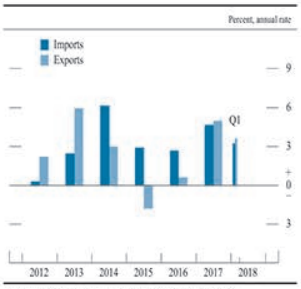
NOTE: The data extend through May 2018.
SOURCE: U.S. Census Bureau via Haver Analytics.

25. New and existing home sales



NOTE: Data are monthly and extend through May 2018. New home sales includes only single-family sales. Existing home sales includes single-family, condo, townhome, and co-op sales.
SOURCE: For new home sales, U.S. Census Bureau; for existing home sales, National Association of Realtors; all via Haver Analytics.

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



SOURCE: Bureau of Economic Analysis via Haver Analytics.

27. U.S. trade and current account balances

NOTE: GDP is gross domestic product.
SOURCE: Bureau of Economic Analysis via Haver Analytics.

not kept up with demand. As a result, the months' supply of inventories of homes for sale has remained at a relatively low level, and the aggregate vacancy rate stands at the lowest level since 2003.

Net exports had a neutral effect on GDP growth in the first quarter

After being a small drag on U.S. real GDP growth last year, net exports had a neutral effect on growth in the first quarter. Real U.S. exports increased about 3½ percent at an annual rate, as exports of automobiles and consumer goods remained robust. Real import growth slowed sharply following a surge late last year (figure 26). Nominal trade data through May suggest that export growth picked up in the second quarter, led by agricultural exports, while import growth was tepid. All told, the available data suggest that the nominal trade deficit likely narrowed relative to GDP in the second quarter (figure 27).

Fiscal policy became more expansionary this year . . .

Federal fiscal policy will likely provide a moderate boost to GDP growth this year. The individual and corporate tax cuts in the TCJA should lead to increased private consumption and investment, while the Bipartisan Budget Act of 2018 (BBA) enables increased federal spending on goods and services. As the effects of the BBA had yet to show through, federal government purchases posted only a modest gain in the first quarter (figure 28).

After narrowing significantly for several years, the federal unified deficit widened from about 2½ percent of GDP in fiscal year 2015 to 3½ percent in fiscal 2017, and it is on pace to move up further in fiscal 2018. Although expenditures as a share of GDP in 2017 were relatively stable at 21 percent, receipts moved lower to roughly 17 percent of GDP and have remained at about the same level so far this year (figure 29). The ratio of federal

debt held by the public to nominal GDP was 76½ percent at the end of fiscal 2017 and is quite elevated relative to historical norms (figure 30).

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

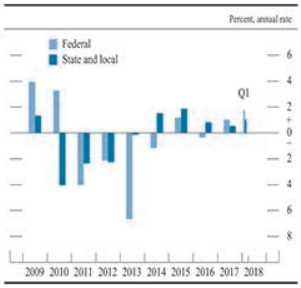
The fiscal position of most state and local governments remains stable, although there is a range of experiences across these governments and some states are still struggling. After several years of slow growth, revenue gains of state governments have strengthened notably as sales and income tax collections have picked up over the past few quarters. In addition, house price gains have continued to push up property tax revenues at the local level. But expenditures by state and local governments have been restrained. Employment growth in this sector has been moderate, while real outlays for construction by these governments have largely been moving sideways at a relatively low level.

Financial Developments

The expected path of the federal funds rate has moved up

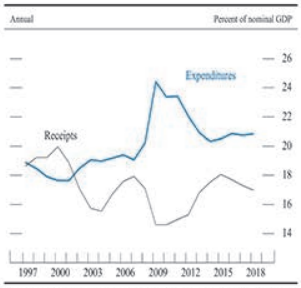
Market-based measures of the path of the federal funds rate continue to suggest that market participants expect further gradual increases in the federal funds rate. Relative to the end of last year, the expected policy rate path has moved up, boosted in part by investors' perception of a strengthening in the domestic economic outlook (figure 31). In particular, the policy path moved higher in response to incoming economic data so far this year, especially the employment reports, which were seen as supporting expectations for a solid pace of growth in domestic economic activity. In addition, investors reportedly interpreted FOMC communications in the first half of 2018 as signaling an upbeat economic outlook and as reinforcing expectations for further gradual removal of monetary policy accommodation.

28. Change in real government expenditures on consumption and investment



SOURCE: Bureau of Economic Analysis.

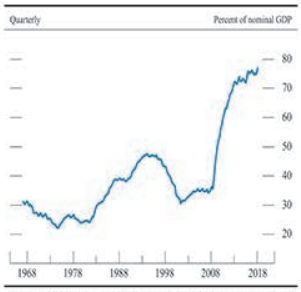
29. Federal receipts and expenditures



NOTE: Through 2017, receipts and expenditures are for fiscal years (October to September); gross domestic product (GDP) is for the four quarters ending in Q3. For 2018, receipts and expenditures are for the 12 months ending in May; GDP is the average of 2017:Q4 and 2018:Q1. Receipts and expenditures are on a unified-budget basis.

SOURCE: Office of Management and Budget via Haver Analytics.

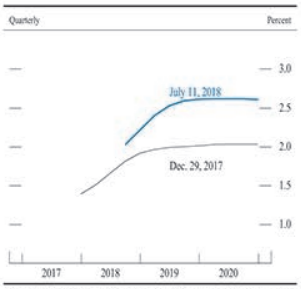
30. Federal government debt held by the public



NOTE: 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.

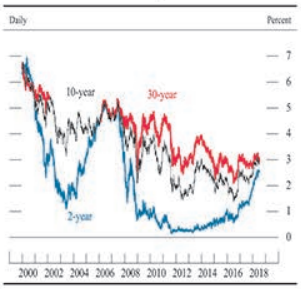
SOURCE: For GDP, Bureau of Economic Analysis via Haver Analytics; for federal debt, Federal Reserve Board, Statistical Release Z.1, "Financial Accounts of the United States."

31. Market-implied federal funds rate



NOTE: The federal funds rate path is implied by quotes on overnight index swaps—a derivative contract tied to the effective federal funds rate. The implied path as of July 11, 2018, is compared with that as of December 29, 2017. The path is estimated with a spline approach, assuming a term premium of 0 basis points. The paths extend through 2020:Q4.
SOURCE: Bloomberg; Federal Reserve Board staff estimates.

32. Yields on nominal Treasury securities



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

Survey-based measures of the expected path of the policy rate over the next few years have also increased modestly since the end of last year. 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 June FOMC meeting, the median of respondents' projections for the path of the federal funds rate shifted up about 25 basis points for 2018 and beyond, compared with the median of assessments last December.[13] Market-based measures of uncertainty about the policy rate approximately one to two years ahead increased slightly, on balance, from their levels at the end of last year.

The nominal Treasury yield curve has shifted up

The nominal Treasury yield curve has shifted up and flattened somewhat further during the first half of 2018 after flattening considerably in the second half of 2017. In particular, the yields on 2- and 10-year nominal Treasury securities increased about 70 basis points and 45 basis points, respectively, from their levels at the end of 2017 (figure 32). The increase in Treasury yields seems to largely reflect investors' greater optimism about the domestic growth outlook and firming expectations for further gradual removal of monetary policy accommodation. Expectations for increases in the supply of Treasury securities following the federal budget agreement in early February also appear to have contributed to the increase in Treasury yields, while increased concerns about trade policy both domestically and abroad, political developments in Europe, and the foreign economic outlook weighed on longer-dated Treasury yields. Yields on 30-year agency mortgage-backed securities (MBS)—an important determinant of mortgage interest

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.

rates—increased about 60 basis points over the first half of the year, a bit more than the rise in the 10-year nominal Treasury yield, but remain low by historical standards (figure 33). Yields on corporate debt securities—both investment grade and high yield—rose more than Treasury yields, leaving the spreads on corporate bond yields over comparable-maturity Treasury yields notably wider than at the beginning of the year.

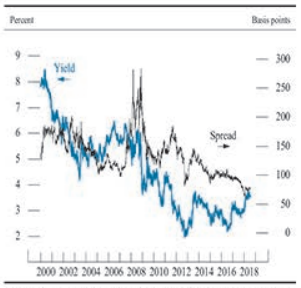
Broad equity indexes rose modestly amid some bouts of market volatility

After surging as much as 20 percent in 2017, broad stock market indexes rose modestly, on balance, so far this year amid some bouts of heightened volatility in financial markets (figure 34). The boost to equity prices from first-quarter earnings reports that generally beat analysts' expectations was reportedly offset by increased uncertainty about trade policy, rising interest rates, and concerns about political developments abroad. While stock prices for companies in the technology and consumer discretionary sectors rose notably, those of companies in the industrial and financial sectors declined modestly. After spiking considerably in early February, the implied volatility for the S&P 500 index—the VIX—declined and ended the period slightly above the low levels that prevailed in 2017. (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

On balance, indicators of Treasury market functioning remained broadly stable over the first half of 2018. A variety of liquidity metrics—including bid-ask spreads, bid sizes, and estimates of transaction costs—have displayed minimal signs of liquidity pressures overall, with the exception of a brief period of reduced liquidity in early February amid elevated financial market volatility. Liquidity conditions in the agency MBS market were

33. Yield and spread on agency mortgage-backed securities



NOTE: The data are daily. Yield shown is for the Fannie Mae 30-year current coupon, the coupon rate at which new mortgage-backed securities would be priced at par, or face, value. Spread shown is to the average of the 5- and 10-year nominal Treasury yields. The data extend through July 11, 2018.

SOURCE: Department of the Treasury; Barclays.

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.)

Developments Related to Financial Stability

The U.S. financial system remains substantially more resilient than during the decade before the financial crisis.[1] Valuations continue to be elevated for a range of assets. In the private nonfinancial sector, the ratio of total debt to gross domestic product (GDP) is about in line with an estimate of its trend, and vulnerabilities associated with debt remain moderate on balance. While borrowing among highly levered and lower-rated firms is elevated and a future weakening in economic activity could amplify some vulnerabilities in the corporate sector, the ratio of household debt to disposable income has remained stable in recent years. Vulnerabilities associated with leverage in the financial sector appear low, reflecting in part strong capital positions of banks. However, some measures of hedge fund leverage have increased. Vulnerabilities associated with maturity and liquidity transformation continue to be low compared with levels that generally prevailed before 2008.

Valuation pressures in various asset markets remain elevated by historical standards, although they have declined somewhat since the start of the year, as corporate bond prices have fallen and higher earnings have helped rationalize equity prices. Market movements were outsized in February, around the time of the previous *Monetary Policy Report*. Since then, volatility has receded, although it has ended up slightly above the low levels seen in 2017. Even with higher expected earnings due in part to changes in tax law, the forward equity price-to-earnings ratio for the S&P 500 remains in the upper end of its historical distribution (figure A). Treasury term premiums have increased modestly from the beginning of the year but remain low relative to historically observed values. Corporate bond yields and their spreads to yields on comparable-maturity Treasury securities have increased notably, but they continue to be low by historical standards. In particular, speculative-grade yields and spreads lie in the bottom fifth and bottom fourth of their respective historical distributions. In leveraged loan markets, issuance has been robust, spreads have reached their lowest levels since the financial crisis, and the presence of loan covenants has decreased further. In real estate

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

NOTE: The data depict the aggregate forward price-to-earnings ratio of S&P 500 firms. The historical median is based on data from 1985 to the present. Shaded bars indicate periods of recession as defined by the National Bureau of Economic Research. Data are based on 12-month-ahead expected earnings per share.

SOURCE: Staff estimates based on Thomson Reuters, IBES.

markets, commercial property valuations continue to be stretched. Capitalization rates (computed as the ratio of net operating income relative to property values) remain low, and, in recent quarters, their spreads to yields on 10-year Treasury securities have moved down considerably. Finally, valuation pressures in residential real estate markets increased modestly. Aggregate price-to-rent ratios, adjusted for an estimate of their long-run trend and the carrying cost of housing, are approaching the cycle peaks of the early 1980s and early 1990s but remain well below the levels observed on the eve of the financial crisis.

With households and businesses taken together, the ratio of total debt to GDP is about in line with estimates of its trend, although pockets of stress are evident. In the household sector, the net expansion of household debt has been in line with income growth and is concentrated among prime-rated borrowers. However, delinquency rates for some forms of consumer credit have moved up, suggesting rising strains among riskier borrowers even with unemployment very low. Banks are reportedly tightening standards on credit card and auto loans. In the nonfinancial business sector, leverage of corporate businesses remains high, as indicated by a positive sectoral credit-to-GDP gap. Net issuance of risky debt has risen in recent quarters, mainly driven by the growth in leveraged loans (figure B). While current

(continued)

1. An overview of the framework for assessing financial stability in the United States is provided in Lael Brainard (2018), "An Update on the Federal Reserve's Financial Stability Agenda," speech delivered at the Center for Global Economy and Business, Stern School of Business, New York University, New York, April 3, https://www.federalreserve.gov/newsevents/speech/brainard20180403a.htm.

B. Total net issuance of risky debt

NOTE: Data are 4-quarter moving averages and extend through 2018:Q2. Total net issuance of risky debt is the sum of the net issuance of speculative-grade and unrated bonds and leveraged loans.
SOURCE: Mergent Fixed Investment Securities Database, S&P Leveraged Commentary & Data.

corporate credit conditions are favorable overall, with low interest expenses and defaults, the elevated leverage in this sector could result in higher future default rates. In addition, weak protection from loan covenants could reduce early intervention by lenders and lower recovery rates for investors on default. Investors may also be exposed to significant repricing risks because bond yields and credit risk premiums are both low.

Vulnerabilities from financial-sector leverage continue to be relatively low. Core financial intermediaries, including large banks, insurance companies, and broker-dealers, appear well positioned to weather economic stress. Regulatory capital ratios for the global systemically important banks have remained well above the fully phased-in enhanced regulatory requirements and are close to historical highs. Capital levels at insurance companies and broker-dealers also remain relatively robust by historical standards. However, some indicators of hedge fund leverage in the equity market, such as the provision of total margin credit to equity investors, have risen to historically elevated levels, and in the past few quarters dealers have reportedly eased, on net, price terms to their hedge fund clients.

The results of supervisory stress tests released in June by the Federal Reserve Board confirm that the nation's largest banks are strongly capitalized and would be able to lend to households and businesses even during a severe global recession.[2] The hypothetical "severely adverse" scenario—the most stringent scenario yet used in the Board's stress tests, with the U.S. unemployment rate rising almost 6 percentage points to 10 percent—projects $578 billion in total losses for the 35 participating banks during the nine quarters tested. Since 2009, these firms have added about $800 billion in common equity capital. The Board also evaluates the capital planning processes of the participating banks, including the firms' planned capital actions, such as dividend payments and share buybacks.[3] The Board did not object to the capital plans of 34 firms. Although the recent U.S. tax legislation is expected to increase banks' post-tax earnings, and hence their ability to accrete capital, it did lead to one-time losses, decreasing banks' capital ratios at the end of 2017, the jumping-off point of the stress tests. In part because of these effects, evident in text figure 36, two firms were required to maintain their capital distributions at the levels they paid in recent years. Separately, one firm will be required to address the management and analysis of its counterparty exposure under stress. The Board objected to the capital plan of one bank because of qualitative concerns.

Vulnerabilities associated with liquidity and maturity transformation—that is, the financing of illiquid assets or long-maturity assets with short-maturity debt—continue to be low, owing in part to liquidity regulations for banks and money market reform. Large banks have strong liquidity positions, because their use of core deposits as a source of funding and their holdings of high-quality liquid assets remain near historical highs, while their use of short-term wholesale funding as a share of liabilities is near historical lows. Since the money market fund reforms implemented in October 2016, assets under management at prime funds, institutions that proved vulnerable to runs in the past, have remained far below pre-reform levels. In addition, the growth in alternative short-term investment vehicles, which may have some

(continued on next page)

2. See Board of Governors of the Federal Reserve System (2018), "Federal Reserve Board Releases Results of Supervisory Bank Stress Tests," press release, June 21, https://www.federalreserve.gov/newsevents/pressreleases/bcreg20180621a.htm.

3. See Board of Governors of the Federal Reserve System (2018), "Federal Reserve Releases Results of Comprehensive Capital Analysis and Review (CCAR)," press release, June 29, https://www.federalreserve.gov/newsevents/pressreleases/bcreg20160629a.htm.

Financial Stability *(continued)*

similar vulnerabilities, continues to be limited, as investors have shifted primarily from prime funds into government funds.

Risks from abroad are moderate overall. Advanced foreign economies (AFEs), many of which have significant financial and real linkages to the United States, continue to have notable or elevated valuations in some asset markets and, in a few countries, high levels of household debt relative to GDP. These factors have contributed to some AFEs announcing or implementing macroprudential actions, including increases in countercyclical capital buffers, over the past couple of years. More generally, AFE financial sectors continue their slow pace of deleveraging that started after the global financial and euro-area sovereign debt crises. In addition, low corporate debt spreads in the past few years have yet to translate into any marked increase in leverage in most of these countries' nonfinancial corporate sectors. Some major emerging market economies continue to harbor more pronounced vulnerabilities, reflecting some combination of the following: substantial corporate leverage, fiscal concerns, or excessive reliance on foreign funding. Globally, potential downside risks to international financial markets and financial stability include political uncertainty, an intensification of trade tensions, and challenges posed by rising interest rates.

The countercyclical capital buffer (CCyB) is a macroprudential tool the Federal Reserve Board can use to increase the resilience of the financial system by raising capital requirements on the largest banks. Activating the CCyB is appropriate when systemic vulnerabilities are meaningfully above normal.[4] The Board is closely monitoring the level and configuration of systemic vulnerabilities described earlier.

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

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, including the accompanying reduction in reinvestment of principal payments from the Federal Reserve's securities holdings. Credit conditions in municipal bond markets have remained stable since the turn of the year. Over that period, yield spreads on 20-year general obligation municipal bonds over comparable-maturity Treasury securities edged up a bit.

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 so far in 2018. Yields on a broad set of money market instruments moved higher in response to the FOMC's policy actions in March and June. Some money market rates rose during the first quarter more than what would normally occur with monetary tightening. For example, the spreads of certificates of deposit and term London interbank offered rates relative to overnight index swap (OIS) rates increased notably, reportedly reflecting increased issuance of Treasury bills and perhaps also the anticipated tax-induced repatriation of foreign earnings by U.S. corporations. The upward pressure on short-term funding rates, beyond that driven by expected monetary policy, eased in recent months, leading to a narrowing of spreads of some money market rates to OIS rates. However, the spreads remain wider than at the beginning of the year.

Bank credit continued to expand and bank profitability improved

Aggregate credit provided by commercial banks continued to increase through the first quarter of 2018 at a pace similar to the one seen in 2017. Its pace was slower than that of nominal GDP, thus leaving the ratio of total commercial bank credit to current-dollar

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

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

36. Profitability of bank holding companies

NOTE: The data are quarterly and are seasonally adjusted.
SOURCE: Federal Reserve Board, Form FR Y-9C, Consolidated Financial Statements for Bank Holding Companies.

37. Equity indexes for selected foreign economies

NOTE: The data are weekly averages of daily data and extend through July 11, 2018.
SOURCE: For euro area, DJ Euro Stoxx Index; for United Kingdom, FTSE 100 Stock Index; for emerging market economies, MSCI Emerging Markets Local Currency Index; all via Bloomberg.

GDP slightly lower than in the previous year (figure 35). Available data for the second quarter suggest that growth in banks' core loans continued to be moderate. Measures of bank profitability improved in the first quarter of 2018 after having experienced a temporary decline in the last quarter of 2017. Weaker fourth-quarter measures of bank profitability were partly driven by higher write-downs of deferred tax assets in response to the U.S. tax legislation (figure 36).

International Developments

Political developments and signs of moderating growth weighed on advanced foreign economy asset prices

Since February, political developments in Europe and moderation in economic growth outside of the United States weighed on some risky asset prices in advanced foreign economies (AFEs). Interest rates on sovereign bonds in several countries in the European periphery rose notably relative to core countries, and European bank shares came under pressure, as investors focused on the formation of the Italian government. Nonetheless, peripheral bond spreads remained well below their levels at the height of the euro-area crisis, and the moves partly retraced as a government was put in place. Broad stock price indexes were little changed on net (figure 37). In contrast to the United States, long-term sovereign yields and market-implied paths of policy rates in the core euro area as well as the United Kingdom declined somewhat, and rates were little changed in Japan (figure 38).

Heightened investor focus on vulnerabilities in emerging market economies led asset prices to come under pressure

Investor concerns about financial vulnerabilities in several emerging market economies (EMEs) intensified this spring against the backdrop of rising U.S. interest rates. Broad measures of EME sovereign

bond spreads over U.S. Treasury yields widened notably, and benchmark EME equity indexes declined, as investors scrutinized macroeconomic policy approaches in several countries. Turkey and Argentina, which faced persistently high inflation, expansionary fiscal policies, and large current account deficits, were among the worst performers. Trade policy developments between the United States and its trading partners also weighed on EME asset prices, especially on stock prices in China and some emerging Asian countries. EME mutual funds saw net outflows in May and June after generally solid inflows earlier in the year (figure 39). While movements in asset prices and capital flows were notable for a number of economies, broad indicators of financial stress in EMEs remained low relative to levels seen during other periods of stress in recent years.

The dollar appreciated

After depreciating during 2017, the broad exchange value of the U.S. dollar has appreciated moderately in recent months (figure 40). Factors contributing to the appreciation of the dollar likely include moderating growth in some foreign economies combined with continued output strength and ongoing policy tightening in the United States, downside risks stemming from political developments in Europe and several EMEs, and the recent developments in trade policy. Several currencies appeared particularly sensitive to trade policy developments, including the Canadian dollar and the Mexican peso, related to the North American Free Trade Agreement negotiations, as well as the Chinese renminbi, which fell notably against the dollar in June.

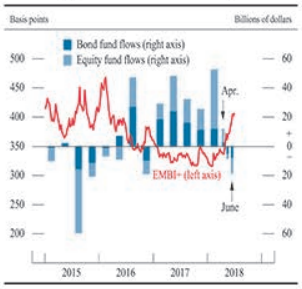
The pace of economic activity moderated in the AFEs

In the first quarter, real GDP growth decelerated in all major AFEs and turned negative in Japan, down from robust rates of activity in 2017 (figure 41). Part of this slowing is a result of temporary factors, though,

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

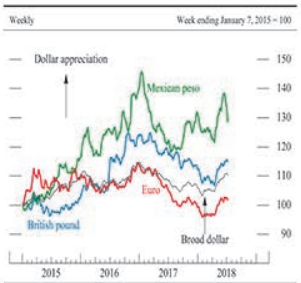
NOTE: The data are weekly averages of daily benchmark yields and extend through July 11, 2018.
SOURCE: Bloomberg.

39. Emerging market mutual fund flows and spreads



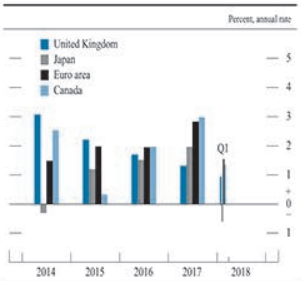
NOTE: The bond and equity fund flow data are quarterly sums of weekly data from January 1, 2015, to March 31, 2018, and monthly sums of weekly data from April 1, 2018, to June 30, 2018. The fund flows data exclude funds located in China. The J.P. Morgan Emerging Markets Bond Index Plus (EMBI+) data are weekly averages of daily data and extend through July 4, 2018.
SOURCE: For bond and equity fund flows, EPFR Global; for EMBI+, J.P. Morgan Emerging Markets Bond Index Plus via Bloomberg.

40. 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 July 11, 2018. As indicated by the arrow, increases in the data represent U.S. dollar appreciation, and decreases represent U.S. dollar depreciation.
SOURCE: Federal Reserve Board, Statistical Release H.10, "Foreign Exchange Rates."

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



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.

including unusually cold weather in Japan and the United Kingdom, labor strikes in the euro area, and disruptions in oil production in Canada. In most AFEs, economic indicators for the second quarter, including purchasing manager surveys and exports, are generally consistent with solid economic growth.

Despite tight labor markets, inflation pressures remain subdued in most AFEs . . .

Sustained increases in oil prices provided upward pressure on consumer price inflation across all AFEs in the first half of the year (figure 42). However, core inflation has generally remained muted in most AFEs, despite further improvement in labor market conditions. In Canada, in contrast, core inflation picked up amid solid wage growth, pushing the total inflation rate above the central bank target.

. . . prompting central banks to maintain highly accommodative monetary policies

With underlying inflation still subdued, the Bank of Japan and the European Central Bank (ECB) kept their policy rates at historically low levels, although the ECB indicated it would again reduce the pace of its asset purchases starting in October. The Bank of England and the Bank of Canada, which both began raising interest rates last year, signaled that further rate increases will be gradual, given a moderation in the pace of economic activity.

In emerging Asia, growth remained solid . . .

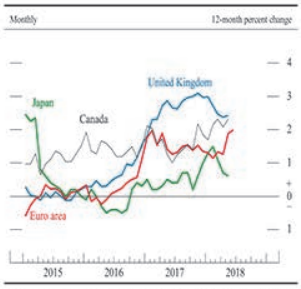
Economic growth in China remained solid in the first quarter of 2018, as a rebound in steel production and strong external demand bolstered a recovery in industrial activity and overall growth (figure 43). Indicators of investment and retail sales have slowed in recent months, however, suggesting that the authorities' effort to rein in credit may have softened domestic demand. Most other

emerging Asian economies registered strong growth in the first quarter of 2018, partly reflecting solid external demand.

. . . while growth in some Latin American economies was mixed

In Mexico, real GDP surged in the first quarter as economic activity rebounded from two major earthquakes and a hurricane last year. Following a brief recovery in the first half of 2017, Brazil's economy stalled in the fourth quarter and grew tepidly in the first quarter, and a truckers' strike paralyzed economic activity in late May.

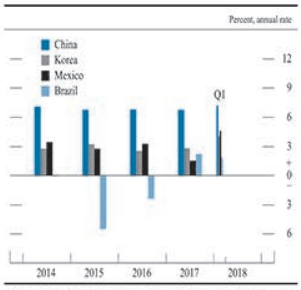
42. Consumer price inflation in selected advanced foreign economies



NOTE: The data for the euro area incorporate the flash estimate for June 2018. The data for Canada, Japan, and the United Kingdom extend through May 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.

43. 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.

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

Part 2
Monetary Policy

The Federal Open Market Committee continued to gradually increase the federal funds target range in the first half of the year . . .

Since December 2015, the Federal Open Market Committee (FOMC) has been gradually increasing its target range for the federal funds rate as the economy has continued to make progress toward the Committee's congressionally mandated objectives of maximum employment and price stability. In the first half of this year, the Committee continued this gradual process of scaling back monetary policy accommodation, increasing its target range for the federal funds rate ¼ percentage point at its meetings in both March and June. With these increases, the federal funds rate is currently in the range of 1¾ to 2 percent (figure 44).[14] The Committee's decisions reflected the continued strengthening of the labor market and the accumulating evidence that, after many years of running below the Committee's 2 percent longer-run objective, inflation had moved close to 2 percent.

. . . but monetary policy continues to support economic growth

Even after the gradual increases in the federal funds rate over the first half of the year, the Committee judges that the stance of monetary policy remains accommodative, thereby supporting strong labor market conditions and a sustained return to 2 percent inflation. In particular, the federal funds rate remains somewhat below most FOMC participants' estimates of its longer-run value.

The Committee expects that a gradual approach to increasing the target range for the federal funds rate will be consistent with a sustained expansion of economic activity, strong labor market conditions, and inflation near the Committee's symmetric 2 percent objective over the medium term. Consistent with this outlook, in the most recent Summary of Economic Projections (SEP), which was compiled at the time of the June FOMC meeting, the median of participants'

14. See Board of Governors of the Federal Reserve System (2018), "Federal Reserve Issues FOMC Statement," press release, March 21, https://www.federalreserve.gov/newsevents/pressreleases/monetary20180321a.htm; and Board of Governors of the Federal Reserve System (2018), "Federal Reserve Issues FOMC Statement," press release, June 13, https://www.federalreserve.gov/newsevents/pressreleases/monetary20180613a.htm.

44. 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.

assessments for the appropriate level of the target range for the federal funds rate at year-end rises gradually over the period from 2018 to 2020 and stands somewhat above the median projection for its longer-run level by the end of 2019 and through 2020.[15]

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, in determining the timing and size of future adjustments to the target range for the federal funds rate, it will assess realized and expected economic conditions relative to its maximum-employment objective and its symmetric 2 percent inflation objective. 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 evaluating the stance of monetary policy, policymakers routinely consult prescriptions from a variety of policy rules, which can serve as useful benchmarks. However, the use and interpretation of such prescriptions require, among other considerations, careful judgments about the choice and measurement of the inputs to these rules such as estimates of the neutral interest rate, which are highly uncertain (see the box "Complexities of Monetary Policy Rules").

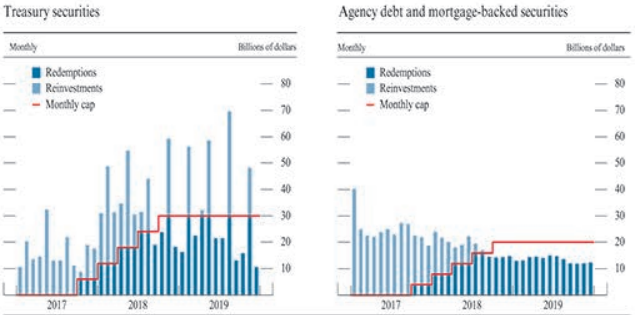
The FOMC has continued to implement its program to gradually reduce the Federal Reserve's balance sheet

The Committee has continued to implement the balance sheet normalization program described in the June 2017 Addendum to the Policy Normalization Principles and Plans.[16] This program is gradually and predictably reducing the Federal Reserve's securities holdings by decreasing the reinvestment of the principal payments it receives from securities held in the System Open Market Account. Since the initiation of the balance sheet normalization program in October of last year, such payments have been reinvested to the extent that they exceeded gradually rising caps (figure 45).

15. See the June SEP, which appeared as an addendum to the minutes of the June 12–13, 2018, meeting of the FOMC and is presented in Part 3 of this report.

16. The addendum, adopted on June 13, 2017, is available at https://www.federalreserve.gov/monetarypolicy/files/FOMC_PolicyNormalization.20170613.pdf.

45. Principal payments on SOMA securities



NOTE: Reinvestment and redemption amounts of agency mortgage-backed securities are projections starting in June 2018. The data extend through December 2019.
SOURCE: Federal Reserve Bank of New York; Federal Reserve Board staff calculations.

Complexities of Monetary Policy Rules

Overview

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 along with an estimate of resource slack in the economy. Policy rules can provide helpful guidance for policymakers. Indeed, since 2004, prescriptions from policy rules have been included in written materials that are routinely sent to the Federal Open Market Committee (FOMC). However, interpretation of the prescriptions of policy rules requires careful judgment about the measurement of the inputs to the rules and the implications of the many considerations that the rules do not take into account.

Policy rules can incorporate key principles of good monetary policy.[1] One key principle is that monetary policy should respond in a predictable way to changes in economic conditions. A second key principle is that monetary policy should be accommodative when inflation is below the desired level and employment is below its maximum sustainable level; conversely, monetary policy should be restrictive when the opposite holds. A third key principle is that, to stabilize inflation, the policy rate should be adjusted by more than one-for-one in response to persistent increases or decreases in inflation.

Economists have analyzed many monetary policy rules, including the well-known Taylor (1993) rule. Other rules include the "balanced approach" rule, the "adjusted Taylor (1993)" rule, the "price level" rule, and the "first difference" rule (figure A).[2] These policy rules reflect the three key principles of good monetary policy noted earlier. Each rule takes into account estimates of how far the economy is from achieving 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.[3] In addition, four of the five rules include the difference 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*).[4] The price-level rule thereby takes account of the deviation of inflation from

(continued on next page)

1. For discussion regarding principles for the conduct of monetary policy and monetary policy rules, 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.

2. 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 was introduced by Athanasios Orphanides (2003), "Historical Monetary Policy Analysis and the Taylor Rule," *Journal of Monetary Economics*, vol. 50 (July), pp. 983–1022. A comprehensive review of policy rules is in John B. Taylor and John C. Williams (2011), "Simple and Robust Rules for Monetary Policy," in Benjamin M. Friedman and Michael Woodford, eds., *Handbook of Monetary Economics*, vol. 3B (Amsterdam: North-Holland), pp. 829–59. The same volume of the *Handbook of Monetary Economics* also discusses approaches other than policy rules for deriving policy rate prescriptions.

3. The Taylor (1993) rule represented slack in resource utilization using an output gap (the difference between the current level of real gross domestic product (GDP) and what GDP would be if the economy was operating at maximum employment). The rules in figure A represent slack in resource utilization using the unemployment gap instead, because that gap better captures the FOMC's statutory goal to promote maximum employment. Movements in these alternative measures of resource utilization are highly correlated. For more information, see the note below figure A.

4. 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 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.

Monetary Policy Rules *(continued)*

A. Monetary policy rules

Taylor (1993) rule	$R_t^{T93} = r_t^{LR} + \pi_t + 0.5(\pi_t - \pi^{LR}) + (u_t^{LR} - u_t)$
Balanced-approach rule	$R_t^{BA} = r_t^{LR} + \pi_t + 0.5(\pi_t - \pi^{LR}) + 2(u_t^{LR} - u_t)$
Taylor (1993) rule, adjusted	$R_t^{T93adj} = maximum\ \{R_t^{T93} - Z_t, 0\}$
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^{T93}, R^{BA}, R^{T93adj}, R^{PL}, and R^{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 2 provides references for the policy rules.

the long-run objective in earlier periods as well as the current period. Thus, if inflation had been running persistently above 2 percent, the price-level rule would prescribe a higher level for the federal funds rate than rules that use the current inflation gap. Likewise, if inflation had been running persistently below 2 percent, the price-level rule would prescribe setting the policy rate lower than rules that use the current inflation gap.

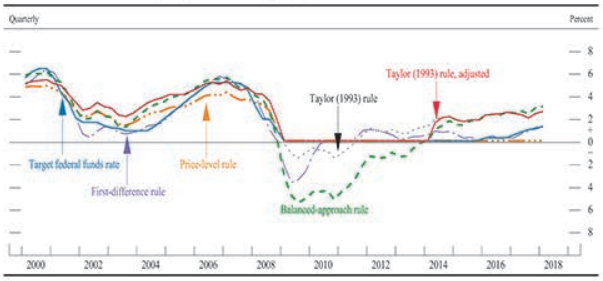
The adjusted Taylor (1993) rule recognizes that the federal funds rate cannot be reduced materially below zero, and that following the prescriptions of the standard Taylor (1993) rule after a recession during which interest rates have fallen to their lower bound may, for a time, not provide enough policy 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 particular 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 rule prescribes setting the federal funds rate well below zero, the price-level rule will, over time, provide accommodation to make up for the past inflation shortfall.

The U.S. economy is complex, and the monetary policy rules shown in figure A do not capture many elements that are relevant to the conduct of monetary policy. Moreover, as shown in figure B, different monetary policy rules often offer quite different prescriptions for the federal funds rate.[5] In practice, there is no unique criterion for favoring one rule over another. In recent years, almost all of the policy rules

(continued)

5. 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.

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.

SOURCE: Federal Reserve Bank of Philadelphia; Wolters Kluwer, Blue Chip Economic Indicators; Federal Reserve Board staff estimates.

shown have called for rising values of the federal funds rate, but the pace of tightening that the rules prescribe has varied widely.

Uncertainty about the neutral interest rate in the longer run

The Taylor (1993), balanced-approach, adjusted Taylor (1993), and price-level rules provide prescriptions for the *level* of the federal funds rate; all require an estimate of the neutral real interest rate in the longer run (r_t^{LR})—that is, the level of the real federal funds rate that is expected to be consistent, in the longer run, with maximum employment and stable inflation.[6] The neutral real interest rate in the longer run is determined by structural features of the economy and is not observable. In addition, its value may vary over time because of fluctuations in trend productivity growth, changing demographics, and other shifts in the structure of the economy. As a result, estimates of the neutral real interest rate in the longer run made today may differ substantially from estimates made later.

Academic studies have estimated the longer-run value of the neutral real interest rate using statistical techniques to capture the variations among inflation, interest rates, real gross domestic product, unemployment, and other data series. The range of estimates is wide but suggests that the neutral real rate has declined since the turn of the century (figure C).[7] There is substantial statistical uncertainty surrounding each estimate of the longer-run value of the neutral real rate, as evidenced by the width of the 95 percent

(continued on next page)

6. The first-difference rule shown in figure A does not require an estimate of the neutral real interest rate in the longer run. However, this rule has its own shortcomings. For example, research suggests that this sort of rule will result in greater volatility in employment and inflation relative to what would be obtained under the Taylor (1993) and balanced-approach rules unless the estimates of the neutral real federal funds rate in the longer run and the rate of unemployment in the longer run that are included in those rules are sufficiently far from their true values.

7. The range of estimates is computed using published values or values computed using the methodology from the following studies: Marco Del Negro, Domenico Giannone, Marc P. Giannoni, and Andrea Tambalotti (2017), "Safety, Liquidity, and the Natural Rate of Interest," *Brookings Papers on Economic Activity*, Spring, pp. 235–94, https://www.brookings.edu/wp-content/uploads/2017/08/delnegrotextsp17bpea.pdf; Kathryn Holston, Thomas Laubach, and John C. Williams (2017), "Measuring the Natural Rate of Interest: International Trends and Determinants," *Journal of International Economics*, supp. 1, vol. 108 (May), pp. S59–75; Benjamin K. Johannsen and Elmar Mertens (2016), "The Expected Real Interest Rate in the Long Run: Time Series Evidence with the Effective Lower Bound," FEDS Notes (Washington: Board of Governors

Monetary Policy Rules *(continued)*

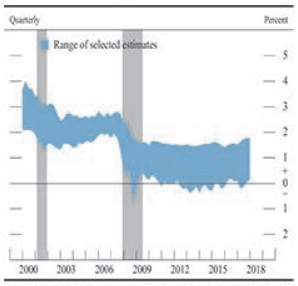
uncertainty bands for the estimated values in the first quarter of 2018 (figure D).

The longer-run normal level of the federal funds rate under appropriate monetary policy—equal to the sum of the neutral real interest rate in the longer run and the FOMC's 2 percent inflation objective—is one benchmark for evaluating the current stance of monetary policy. Uncertainty about the longer-run value of the neutral real interest rate leads to uncertainty about how far the current federal funds rate is from its longer-run normal level. For the Taylor (1993), balanced-approach, adjusted Taylor (1993), and price-level rules, different estimates of the neutral real interest rate in the longer run translate one-for-one to differences in the prescribed setting of the federal funds rate. As a result, the substantial statistical uncertainty accompanying estimates of the neutral rate in the longer run implies substantial uncertainty surrounding the prescriptions of each policy rule. Following the prescriptions of a policy rule with an incorrect value of the neutral rate could lead to poor economic outcomes.

If the longer-run value of the neutral real interest rate is currently at the low end of the range of estimates, then monetary policy is more likely to be constrained by the lower bound on nominal interest rates in the future. Historically, the FOMC has cut the federal funds rate by 5 percentage points, on average, during downturns in the economy. Cutting the federal funds rate by this much in response to a future economic downturn may not be feasible if the neutral federal funds rate is as low as most of the estimates suggest.

(continued)

C. Range of selected estimates for the neutral real federal funds rate in the longer run



NOTE: The shaded bars indicate periods of business recession as defined by the National Bureau of Economic Research.

SOURCE: Federal Reserve Board staff calculations, along with references listed in box note 7.

of the Federal Reserve System, February 9), https://www.federalreserve.gov/econresdata/notes/feds-notes/2016/the-expected-real-interest-rate-in-the-long-run-time-series-evidence-with-the-effective-lower-bound-20160209.html; Michael T. Kiley (2015), "What Can the Data Tell Us about the Equilibrium Real Interest Rate?" Finance and Economics Discussion Series 2015-77 (Washington: Board of Governors of the Federal Reserve System, September), http://dx.doi.org/10.17016/FEDS.2015.077; Thomas Laubach and John C. Williams (2015), "Measuring the Natural Rate of Interest Redux," Hutchins Center Working Paper 15 (Washington: Brookings Institution, November), https://www.brookings.edu/wp-content/uploads/2016/07/WP15-Laubach-Williams-natural-interest-rate-redux.pdf; Kurt F. Lewis and Francisco Vazquez-Grande (2017), "Measuring the Natural Rate of Interest: Alternative Specifications," Finance and Economics Discussion Series 2017-059 (Washington: Board of Governors of the Federal Reserve System, June), https://doi.org/10.17016/FEDS.2017.059; Thomas A. Lubik and Christian Matthes (2015), "Calculating the Natural Rate of Interest: A Comparison of Two Alternative Approaches," Economic Brief 15-10 (Richmond, Va.: Federal Reserve Bank of Richmond, October), https://www.richmondfed.org/-/media/richmondfedorg/publications/research/economic_brief/2015/pdf/eb_15-10.pdf.

D. Point estimates and uncertainty bands for neutral real rate in the longer run as of 2018:Q1

Study	Point estimate	95 percent uncertainty band
Del Negro and others (2017)	1.3	(.7, 2.1)
Holston and others (2017)	.6	(-2.5, 3.7)
Johannsen and Mertens (2016)	.7	(-1.3, 2.5)
Kiley (2015)	.4	(-.6, 1.6)
Laubach and Williams (2015)	.1	(-5.4, 5.6)
Lewis and Vazquez-Grande (2017)	1.8	(.5, 3.1)
Lubik and Matthes (2015)	1.0	(-2.3, 4.5)

SOURCE: Federal Reserve Board staff calculations, along with references listed in box note 7.

As a result, it may not be feasible to provide the levels of accommodation prescribed by many policy rules, potentially leading to elevated unemployment and inflation averaging below the Committee's 2 percent objective.[8] Rules that try to offset the cumulative shortfall of accommodation posed by the lower bound on nominal interest rates, such as the adjusted Taylor (1993) rule, or make up the cumulative shortfall in the level of prices, such as the price-level rule, are intended to mitigate the effects of the lower bound on the economy by providing more accommodation than prescribed by rules that do not have these makeup features.[9]

In the years following the financial crisis, with the federal funds rate close to zero, the FOMC recognized that it would have limited scope to respond to an unexpected weakening in the economy by lowering short-term interest rates. This risk has, in recent years, provided a sound rationale for following a more gradual path of rate increases than that prescribed by some policy rules. In these circumstances, increasing the policy rate quickly in order to have room to cut rates during an economic downturn could be counterproductive because it might make a downturn more likely to happen.

8. For further discussion of these issues, see Michael T. Kiley and John M. Roberts (2017), "Monetary Policy in a Low Interest Rate World," *Brookings Papers on Economic Activity*, Spring, pp. 317–72, https://www.brookings.edu/wp-content/uploads/2017/08/kileytextsp17bpea.pdf.

9. Economists have found that a "makeup" policy can be the best response in theory when the policy interest rate is constrained at zero. See Ben S. Bernanke (2017), "Monetary Policy in a New Era," paper presented at "Rethinking Macroeconomic Policy," a conference held at the Peterson Institute for International Economics, Washington, October 12–13, https://piie.com/system/files/documents/bernanke20171012paper.pdf; and Michael Woodford (1999), "Commentary: How Should Monetary Policy Be Conducted in an Era of Price Stability?" in *New Challenges for Monetary Policy*, proceedings of a symposium sponsored by the Federal Reserve Bank of Kansas City (Kansas City, Mo.: Federal Reserve Bank of Kansas City) pp. 277–316, https://www.kansascityfed.org/publications/research/escp/symposiums/escp-1999.

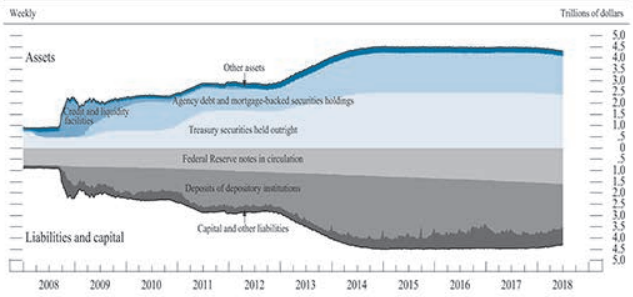
In the first quarter, the Open Market Desk at the Federal Reserve Bank of New York, as directed by the Committee, reinvested principal payments from the Federal Reserve's holdings of Treasury securities maturing during each calendar month in excess of $12 billion. The Desk also reinvested in agency mortgage-backed securities (MBS) the amount of principal payments from the Federal Reserve's holdings of agency debt and agency MBS received during each calendar month in excess of $8 billion. Over the second quarter, payments of principal from maturing Treasury securities and from the Federal Reserve's holdings of agency debt and agency MBS were reinvested to the extent that they exceeded $18 billion and $12 billion, respectively. At its meeting in June, the FOMC increased the cap for Treasury securities to $24 billion and the cap for agency debt and agency MBS to $16 billion, both effective in July. The Committee has indicated that the caps for Treasury securities and for agency securities will increase to $30 billion and $20 billion per month, respectively, in October. These terminal caps will remain in place until the Committee judges that the Federal Reserve is holding no more securities than necessary to implement monetary policy efficiently and effectively.

The implementation of the program has proceeded smoothly without causing disruptive price movements in Treasury and MBS markets. As the caps have increased gradually and predictably, the Federal Reserve's total assets have started to decrease, from about $4.4 trillion last October to about $4.3 trillion at present, with holdings of Treasury securities at approximately $2.4 trillion and holdings of agency and agency MBS at approximately $1.7 trillion (figure 46).

The Federal Reserve's implementation of monetary policy has continued smoothly

To implement the FOMC's decisions to raise the target range for the federal funds rate in March and June of 2018, the Federal Reserve increased the rate of interest on excess reserves (IOER) along with the interest rate offered on overnight reverse repurchase agreements (ON RRPs). Specifically, the Federal Reserve increased the IOER rate to 1¾ percent and the ON RRP offering rate to 1½ percent in March. In June, the Federal Reserve increased the IOER rate to 1.95 percent—5 basis points below the top of the target range—and the ON RRP offering rate to 1¾ percent. In addition, the Board of Governors approved

46. 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 July 4, 2018.

SOURCE: Federal Reserve Board, Statistical Release H.4.1, "Factors Affecting Reserve Balances."

a ¼ percentage point increase in the discount rate (the primary credit rate) in both March and June. 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 March and June. Usage of the ON RRP facility has declined, on net, since the turn of the year, reflecting relatively attractive yields on alternative investments.

The effective federal funds rate moved up toward the IOER rate in the months before the June FOMC meeting and, therefore, was trading near the top of the target range. At its June meeting, the Committee made a small technical adjustment in its approach to implementing monetary policy by setting the IOER rate modestly below the top of the target range for the federal funds rate. This adjustment resulted in the effective federal funds rate running closer to the middle of the target range since mid-June. In an environment of large reserve balances, the IOER rate has been an essential policy tool for keeping the federal funds rate within the target range set by the FOMC (see the box "Interest on Reserves and Its Importance for Monetary Policy").

Interest on Reserves and Its Importance for Monetary Policy

The financial crisis that began in 2007 triggered the deepest recession in the United States since the Great Depression. In response, the Federal Open Market Committee (FOMC) cut its target for the federal funds rate to nearly zero by late 2008. Other short-term interest rates declined roughly in line with the federal funds rate. Additional monetary stimulus was necessary to address the significant economic downturn and the associated downward pressure on inflation. The FOMC undertook other monetary policy actions to put downward pressure on longer-term interest rates, including large-scale purchases of longer-term Treasury securities and agency-guaranteed mortgage-backed securities.

These policy actions made financial conditions more accommodative and helped spur an economic recovery that has become a long-lasting economic expansion. The unemployment rate has declined from 10 percent to less than 4 percent over the course of the recovery and expansion, and inflation has been low and fairly stable. The FOMC's actions were critical to fostering progress toward maximum employment and stable prices—the statutory goals for the conduct of monetary policy established by the Congress.

The Federal Reserve's large-scale asset purchases had the side effect of generating a sizable increase in the supply of reserve balances, which are the balances that banks maintain in their accounts at the Federal Reserve.[1] From the onset of the financial crisis in August 2007 until October 2014, when the FOMC ended the last of its asset purchase programs, the supply of reserve balances rose from about $15 billion to about $2½ trillion.[2] Reserve balances rose well above the level necessary to meet reserve requirements, thus swelling the quantity of excess reserves held by the banking system.

As the economic expansion continued and unemployment declined—and with labor market conditions projected to continue improving—the FOMC decided that it would scale back policy support by increasing the level of short-term interest rates and by reducing the Federal Reserve's securities holdings. To that end, the Committee began gradually raising its target range for the federal funds rate in December 2015. Later, in October 2017, it began gradually reducing holdings of Treasury and agency securities; this gradual reduction results in a decline in the supply of reserve balances. The FOMC judged that removing monetary policy stimulus through this mix of first raising the federal funds rate and then beginning to shrink the balance sheet would best contribute to achieving and maintaining maximum employment and price stability without causing dislocations in financial markets or institutions that could put the economic expansion at risk.

Interest on reserves—the payment of interest on balances held by banks in their accounts at the Federal Reserve—has been an essential policy tool that has permitted the FOMC to achieve a gradual increase in the federal funds rate in combination with a gradual reduction in the Fed's securities holdings and in the supply of reserve balances.[3] Interest on reserves is a monetary policy tool used by all of the world's major central banks.

Interest on reserves is the principal tool the FOMC uses to anchor the federal funds rate in the target range. The federal funds rate, in turn, establishes an important benchmark for the borrowing and lending decisions in the banking sector (figure A). When the Federal Reserve increases the target range for the federal funds rate and the interest rate it pays on reserve balances, banks bid up the rates in short-term funding markets to levels consistent with those increases; rates in other short-term funding markets—such as commercial paper rates, Treasury bill rates, and rates on repurchase

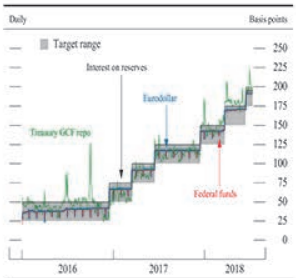
(continued)

1. All depository institutions (commercial banks, savings banks, thrift institutions, credit unions, and most U.S. branches and agencies of foreign banks) that maintain reserve balances are eligible to earn interest on those balances. We refer to these institutions as "banks."

2. For a detailed discussion of how the changes in Federal Reserve securities holdings affect the Federal Reserve's balance sheet and sectors of the U.S. economy, see Jane Ihrig, Lawrence Mize, and Gretchen C. Weinbach (2017), "How Does the Fed Adjust Its Securities Holdings and Who Is Affected?" Finance and Economics Discussion Series 2017-099 (Washington: Board of Governors of the Federal Reserve System, September), https://www.federalreserve.gov/econres/feds/files/2017099pap.pdf.

3. The Financial Services Regulatory Relief Act of 2006 authorized the Federal Reserve Banks to pay interest on balances held by or on behalf of depository institutions at Federal Reserve Banks, subject to regulations of the Board of Governors, effective October 1, 2011. The effective date of this authority was changed to October 1, 2008, by the Emergency Economic Stabilization Act of 2008. The Congress authorized the payment of interest on reserves to help minimize the incentives for costly reserve avoidance schemes and to provide the Federal Reserve with a policy tool that could be useful for monetary policy implementation more broadly.

A. Overnight money market rates



B. Term money market rates

NOTE: The upper bound of the target range is the interest on reserves rate until June 13, 2018, after which it is 5 basis points higher. The federal funds and Eurodollar rates closely track one another over the period shown. GCF is General Collateral Finance.

SOURCE: For Treasury GCF repo, DTCC Solutions LLC, an affiliate of The Depository Trust & Clearing Corporation; for federal funds, Federal Reserve Bank of New York; for Eurodollar, Bloomberg; for interest on reserves and target range, Federal Reserve Board.

NOTE: The upper bound of the target range is the interest on reserves rate until June 13, 2018, after which it is 5 basis points higher.

SOURCE: For U.S. Treasury bill, Department of the Treasury; for AA financial commercial paper, interest on reserves, and target range, Federal Reserve Board.

agreements—all tend to move higher as well (figure B). This increase in the general level of short-term rates, together with the expected future path of short-term rates, then influences the level of other financial asset prices and overall financial conditions in the economy. Thus, changing the interest rate on reserves has proven to be an effective tool for transmitting changes in the FOMC's target range for the federal funds rate to other interest rates in the economy.

The rate of interest the Federal Reserve pays on banks' reserve balances is far lower than the rate that banks can earn on alternative safe assets, including most U.S. government or agency securities, municipal securities, and loans to businesses and consumers.[4] Indeed, the bank prime rate—the base rate that banks use for loans to many of their customers—is currently around 300 basis points above the level of interest on reserves. Banks continue to find lending attractive, and bank lending has been expanding at a solid pace since 2012. Households have begun to see interest rates on retail deposits rising as well. Moreover, the configuration of interest rates implies that the return the Federal Reserve earns on its holdings of securities is higher than the interest it pays on reserve balances. Each year, the Federal Reserve remits its earnings—that is, its income net of expenses—to the Treasury Department; in 2017, remittances totaled more than $80 billion.

Had the Federal Reserve not been able to pay interest on reserve balances at the same time that excess reserves in the banking system were large, it would not have been able to gradually raise the federal funds rate and other short-term interest rates while reserve balances were abundant; the FOMC would have had to take a different approach to scaling back monetary policy accommodation. This approach likely would have involved a rapid and sizable reduction in the Federal Reserve's securities holdings in order to put sufficient upward pressure on interest rates.

(continued on next page)

4. The Congress's authorization allows the Federal Reserve to pay interest on deposits maintained by depository institutions at a rate not to exceed the "general level of short-term interest rates." The Federal Reserve Board's Regulation D defines short-term interest rates for the purposes of this authority as "rates on obligations with maturities of no more than one year, such as the primary credit rate and rates on term federal funds, term repurchase agreements, commercial paper, term Eurodollar deposits, and other similar instruments." The rate of interest on reserves has been well within a range of short-term interest rates as defined in Board regulations. For current rates on a number of short-term money market instruments, see Board of Governors of the Federal Reserve System, Statistical Release H.15, "Selected Interest Rates," www.federalreserve.gov/releases/h15/current.

Interest on Reserves *(continued)*

Getting the pace of asset sales just right for achieving the Federal Reserve's objectives would have been extremely challenging. Such an approach to removing accommodation would have run the risk of disrupting financial markets, with adverse effects on the economy.

Indeed, as observed during the early summer of 2013, market reactions to changes in the outlook for the Federal Reserve's holdings of long-term securities can have outsized effects in bond markets. At that time, FOMC communications that pointed to the eventual cessation of asset purchases seemed to alarm investors and reportedly contributed to a rise in longer-term rates of 150 basis points over just a few months. That rise in rates quickly pushed up the cost of mortgage credit and rates on other forms of borrowing for households and businesses.

Thus, Federal Reserve policymakers judged that the best strategy for adjusting the stance of monetary policy would be gradual increases in the target range for the federal funds rate, supplemented later on by gradual reductions in the Federal Reserve's securities holdings. The ongoing, gradual reduction in the Federal Reserve's securities holdings that the FOMC set in motion in 2017 will bring the level of reserve balances down substantially over the next few years. The size of reserves that banks eventually want to hold will reflect balances held to meet reserve requirements and payments needs as well as balances held to address regulatory and structural changes in the banking system since the financial crisis.[5] Although the level of reserve balances that banks will eventually want to hold is not yet known, that level is likely to be much lower than it is today, though appreciably higher than it was before the crisis.[6] In addition, the amount of U.S. currency—Federal Reserve notes—that people in the United States and elsewhere want to hold has increased substantially since the crisis. If banks want to hold more reserve balances and the public wants to hold more U.S. currency than before the crisis, the Federal Reserve will need to supply the reserves and currency, so the Federal Reserve's securities holdings also will have to be larger than before the financial crisis.[7]

Interest on reserves will remain an important policy tool for keeping the federal funds rate within the target range set by the FOMC and thus managing the level of short-term interest rates, even as the ongoing reduction in the Federal Reserve's securities holdings generates a gradual decline in the amount of reserve balances on which the Federal Reserve pays interest. In June 2018, the Federal Reserve made a small technical adjustment to de-link the rate of interest on reserves from the top of the Committee's target range for the federal funds rate. At the June 2018 FOMC meeting, the Committee increased the federal funds target range by 25 basis points, while the rate of interest on reserve balances was increased by 20 basis points. This change is intended to ensure that the federal funds rate continues to trade well within the Committee's target range. The spread between the effective federal funds rate and the rate of interest on reserves could continue to narrow over time as the Federal Reserve's securities holdings and the supply of reserve balances gradually decline.

5. For a discussion of the changes in the banking system since the financial crisis and their potential effects on the demand for reserve balances, see Randal K. Quarles (2018), "Liquidity Regulation and the Size of the Fed's Balance Sheet," speech delivered at "Currencies, Capital, and Central Bank Balances: A Policy Conference," Hoover Institution, Stanford University, Stanford, Calif., May 4, https://www.federalreserve.gov/newsevents/speech/quarles20180504a.htm.

6. Uncertainty about the eventual level of reserve balances is another reason that the FOMC has been reducing the Federal Reserve's holdings of securities, and the supply of reserve balances, gradually.

7. Currency grows roughly in line with nominal gross domestic product. In December 2008, currency in circulation was around $850 billion, compared with $1.6 trillion at the end of June 2018.

Part 3
Summary of Economic Projections

The following material appeared as an addendum to the minutes of the June 12–13, 2018, meeting of the Federal Open Market Committee.

In conjunction with the Federal Open Market Committee (FOMC) meeting held on June 12–13, 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 2020 and over the longer run.[17] 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.[18] "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, in 2018, real GDP would expand at a pace exceeding their individual estimates of the longer-run growth rate of real GDP. Participants generally saw real GDP growth moderating somewhat in each of the following two years but remaining above their estimates of the longer-run rate.

All participants who submitted longer-run projections expected that, throughout the projection period, the unemployment rate would run below their estimates of its longer-run level. All participants projected that inflation, as measured by the four-quarter percentage change in the price index for personal consumption expenditures (PCE), would run at or slightly above the Committee's 2 percent objective by the end of 2018 and remain roughly flat through 2020. Compared with the Summary of Economic Projections (SEP) from March, most participants slightly marked up their projections of real GDP growth in 2018 and somewhat lowered their projections for the unemployment rate from 2018 through 2020; participants indicated that these revisions reflected, in large part, strength in incoming data. A large majority of participants made slight upward adjustments to their projections of inflation in 2018. 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 further gradual increases in the federal funds rate. The central tendencies of participants' projections of the federal funds rate for both 2018 and 2019 were roughly unchanged, but the medians for both years were 25 basis points higher relative to March. Nearly all participants who submitted longer-run projections expected that, during part of the projection period, evolving economic conditions would make it appropriate for the federal funds rate to move somewhat above their estimates of its longer-run level.

17. Three members of the Board of Governors were in office at the time of the June 2018 meeting.

18. 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, June 2018

Percent

Variable	Median[1]				Central tendency[2]				Range[3]			
	2018	2019	2020	Longer run	2018	2019	2020	Longer run	2018	2019	2020	Longer run
Change in real GDP	2.8	2.4	2.0	1.8	2.7-3.0	2.2-2.6	1.8-2.0	1.8-2.0	2.5-3.0	2.1-2.7	1.5-2.2	1.7-2.1
March projection	2.7	2.4	2.0	1.8	2.6-3.0	2.2-2.6	1.8-2.1	1.8-2.0	2.5-3.0	2.0-2.8	1.5-2.3	1.7-2.2
Unemployment rate	3.6	3.5	3.5	4.5	3.6-3.7	3.4-3.5	3.4-3.7	4.3-4.6	3.5-3.8	3.3-3.8	3.3-4.0	4.1-4.7
March projection	3.8	3.6	3.6	4.5	3.6-3.8	3.4-3.7	3.5-3.8	4.3-4.7	3.6-4.0	3.3-4.2	3.3-4.4	4.2-4.8
PCE inflation	2.1	2.1	2.1	2.0	2.0-2.1	2.0-2.2	2.1-2.2	2.0	2.0-2.2	1.9-2.3	2.0-2.3	2.0
March projection	1.9	2.0	2.1	2.0	1.8-2.0	2.0-2.2	2.1-2.2	2.0	1.8-2.1	1.9-2.3	2.0-2.3	2.0
Core PCE inflation[4]	2.0	2.1	2.1		1.9-2.0	2.0-2.2	2.1-2.2		1.9-2.1	2.0-2.3	2.0-2.3	
March projection	1.9	2.1	2.1		1.8-2.0	2.0-2.2	2.1-2.2		1.8-2.1	1.9-2.3	2.0-2.3	
Memo: Projected appropriate policy path												
Federal funds rate	2.4	3.1	3.4	2.9	2.1-2.4	2.9-3.4	3.1-3.6	2.8-3.0	1.9-2.6	1.9-3.6	1.9-4.1	2.3-3.5
March projection	2.1	2.9	3.4	2.9	2.1-2.4	2.8-3.4	3.1-3.6	2.8-3.0	1.6-2.6	1.6-3.9	1.6-4.9	2.3-3.5

NOTE: Projections of change in real gross domestic product (GDP) and projections for both measures of inflation are percent changes from the fourth quarter of the previous year to the fourth quarter of the year indicated. PCE inflation and core PCE inflation are the percentage rates of change in, respectively, the price index for personal consumption expenditures (PCE) and the price index for PCE excluding food and energy. Projections for the unemployment rate are for the average civilian unemployment rate in the fourth quarter of the year indicated. Each participant's projections are based on his or her assessment of appropriate monetary policy. Longer-run projections represent each participant's assessment of the rate to which each variable would be expected to converge under appropriate monetary policy and in the absence of further shocks to the economy. The projections for the federal funds rate are the value of the midpoint of the projected appropriate target range for the federal funds rate or the projected appropriate target level for the federal funds rate at the end of the specified calendar year or over the longer run. The March projections were made in conjunction with the meeting of the Federal Open Market Committee on March 20-21, 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 March 20-21, 2018, meeting, and one participant did not submit such projections in conjunction with the June 12-13, 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.

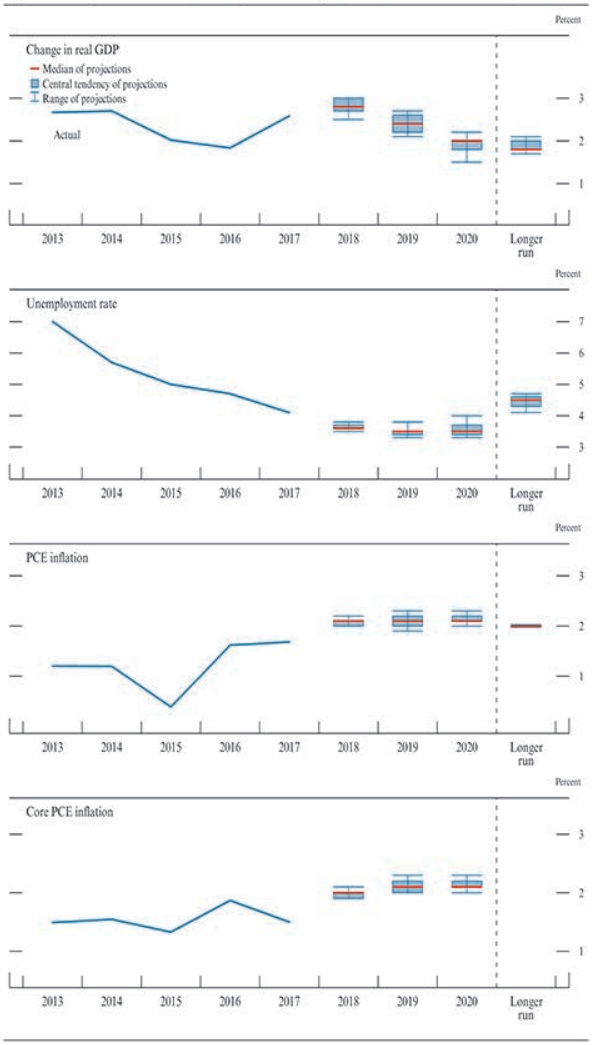
In general, participants continued to view the uncertainty attached to their economic projections as broadly similar to the average of the past 20 years. As in March, most participants judged the risks around their projections for real GDP growth, the unemployment rate, and inflation to be broadly balanced.

The Outlook for Economic Activity

The median of participants' projections for the growth rate of real GDP, conditional on their individual assessments of appropriate monetary policy, was 2.8 percent for this year and 2.4 percent for next year. The median was 2.0 percent for 2020, a touch above the median projection of longer-run growth. Most participants continued to cite fiscal policy as a driver of strong economic activity over the next couple of years. Many participants also mentioned accommodative monetary policy and financial conditions, strength in the global outlook, continued momentum in the labor market, or positive readings on business and consumer sentiment as important factors shaping the economic outlook. Compared with the March SEP, the median of participants' projections for the rate of real GDP growth was 0.1 percentage point higher for this year and unchanged for the next two years.

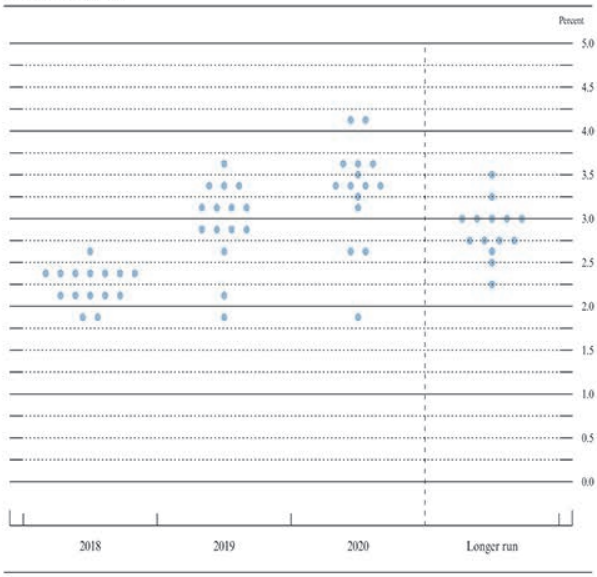
Almost all participants expected the unemployment rate to decline somewhat further over the projection period. The median of participants' projections for the unemployment rate was 3.6 percent for the final quarter of this year and 3.5 percent for the final quarters of 2019 and 2020. The median of participants' estimates of the longer-run unemployment rate was unchanged at 4.5 percent.

Figure 1. Medians, central tendencies, and ranges of economic projections, 2018–20 and over the longer run



NOTE: Definitions of variables and other explanations are in the notes to table 1. The data for the actual values of the variables are annual.

Figure 2. FOMC participants' assessments of appropriate monetary policy: Midpoint of target range or target level for the federal funds rate



NOTE: Each shaded circle indicates the value (rounded to the nearest 1/8 percentage point) of an individual participant's judgment of the midpoint of the appropriate target range for the federal funds rate or the appropriate target level for the federal funds rate at the end of the specified calendar year or over the longer run. One participant did not submit longer-run projections for the federal funds rate.

Figures 3.A and 3.B show the distributions of participants' projections for real GDP growth and the unemployment rate from 2018 to 2020 and over the longer run. The distribution of individual projections for real GDP growth this year shifted up noticeably from that in the March SEP. By contrast, the distributions of projected real GDP growth in 2019 and 2020 and over the longer run were little changed. The distributions of individual projections for the unemployment rate in 2018 to 2020 shifted down relative to the distributions in March, while the downward shift in the distribution of longer-run projections was very modest.

The Outlook for Inflation

The medians of participants' projections for total and core PCE price inflation in 2018 were 2.1 percent and 2.0 percent, respectively, and the median for each measure was 2.1 percent in 2019 and 2020. Compared with the March SEP, the medians of participants' projections for total PCE price inflation for this year and next were revised up slightly. Some participants pointed to incoming data on energy prices as a reason for their upward revisions. The median of participants' forecasts for core PCE price inflation was up a touch for this year and unchanged for subsequent years.

Figures 3.C and 3.D provide information on the distributions of participants' views about the outlook for inflation. The distributions of both total and core PCE price inflation for 2018 shifted to the right relative to the distributions in March. The distributions of projected inflation in 2019, 2020, and over the longer run were roughly unchanged. Participants generally expected each measure to be at or slightly above 2 percent in 2019 and 2020.

Appropriate Monetary Policy

Figure 3.E provides the distribution of participants' judgments regarding the appropriate target—or midpoint of the target range—for the federal funds rate at the end of each year from 2018 to 2020 and over the longer run. The distributions of projected policy rates through 2020 shifted modestly higher, consistent with the revisions to participants' projections of real GDP growth, the unemployment rate, and inflation. As in their March projections, a large majority of participants anticipated that evolving economic conditions would likely warrant the equivalent of a total of either three or four increases of 25 basis points in the target range for the federal funds rate over 2018. There was a slight reduction in the dispersion of participants' views, with no participant regarding the appropriate target at the end of the year to be below 1.88 percent. For each subsequent year, the dispersion of participants' year-end projections was somewhat smaller than that in the March SEP.

The medians of participants' projections of the federal funds rate rose gradually to 2.4 percent at the end of this year, 3.1 percent at the end of 2019, and 3.4 percent at the end of 2020. The median of participants' longer-run estimates, at 2.9 percent, was unchanged relative to the March SEP.

In discussing their projections, many participants continued to express the view that the appropriate trajectory of the federal funds rate over the next few years would likely involve gradual increases. This view was predicated on several factors, including a judgment that a gradual path of policy firming likely would appropriately balance the risks associated with, among other considerations, the possibilities that U.S. fiscal policy could have larger or more persistent positive effects on real activity and that shifts in trade policy or developments abroad could weigh on the expansion. As always, the appropriate path of the federal funds rate would depend on evolving economic conditions and their implications for participants' economic outlooks and assessments of risks.

Uncertainty and Risks

In assessing the path for the federal funds rate that, in their view, is likely to be appropriate, FOMC participants take account of the range of possible economic outcomes, the likelihood of those outcomes, and the potential benefits and costs should they occur. As a reference, table 2 provides 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

Table 2. Average historical projection error ranges

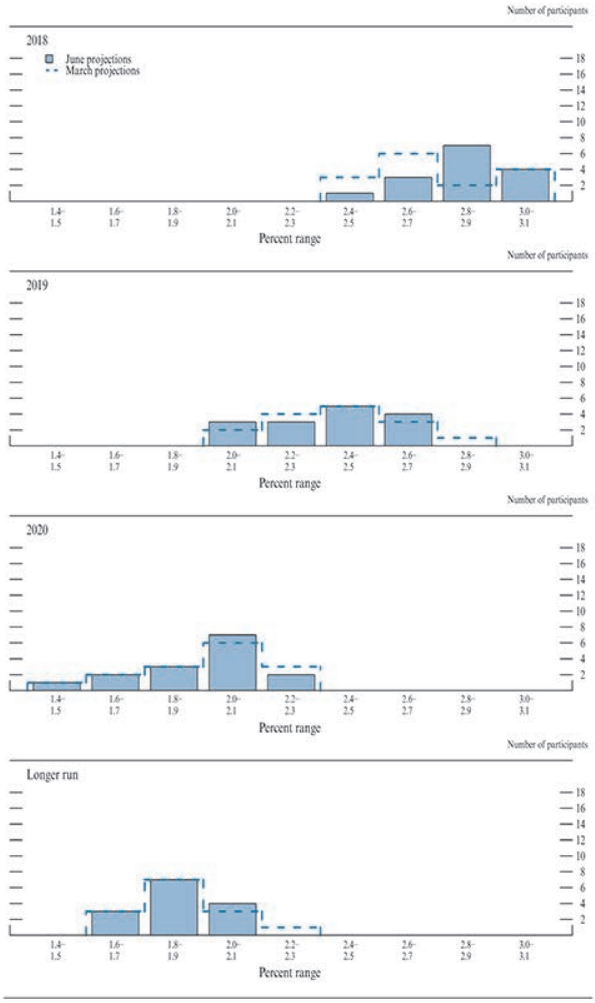
Percentage points

Variable	2018	2019	2020
Change in real GDP[1]	±1.3	±2.0	±2.1
Unemployment rate[1]	±0.4	±1.2	±1.8
Total consumer prices[2]	±0.7	±1.0	±1.0
Short-term interest rates[3]	±0.7	±2.0	±2.2

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 summer by various private and government forecasters. As described in the box "Forecast Uncertainty," under certain assumptions, there is about a 70 percent probability that actual outcomes for real GDP, unemployment, consumer prices, and the federal funds rate will be in ranges implied by the average size of projection errors made in the past. For more information, see David Reifschneider and Peter Tulip (2017), "Gauging the Uncertainty of the Economic Outlook Using Historical Forecasting Errors: The Federal Reserve's Approach," Finance and Economics Discussion Series 2017-020 (Washington: Board of Governors of the Federal Reserve System, February), www.federalreserve.gov/econresdata/feds/2017/files/2017020pap.pdf.

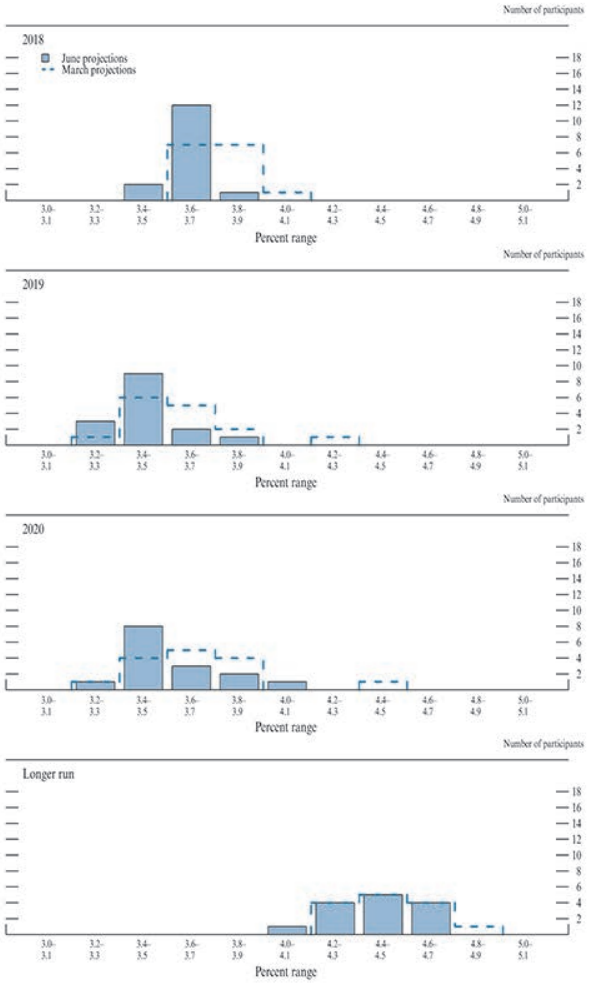
1. Definitions of variables are in the general note to table 1.
2. Measure is the overall consumer price index, the price measure that has been most widely used in government and private economic forecasts. Projections are percent changes on a fourth quarter to fourth quarter basis.
3. For Federal Reserve staff forecasts, measure is the federal funds rate. For other forecasts, measure is the rate on 3-month Treasury bills. Projection errors are calculated using average levels, in percent, in the fourth quarter.

Figure 3.A. Distribution of participants' projections for the change in real GDP, 2018–20 and over the longer run



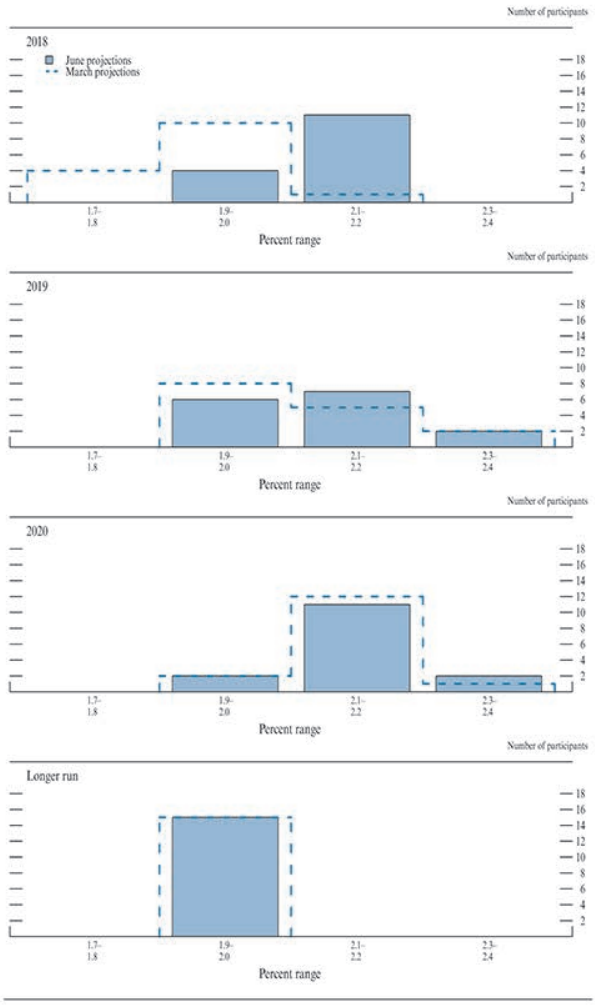
NOTE: Definitions of variables and other explanations are in the notes to table 1.

Figure 3.B. Distribution of participants' projections for the unemployment rate, 2018–20 and over the longer run



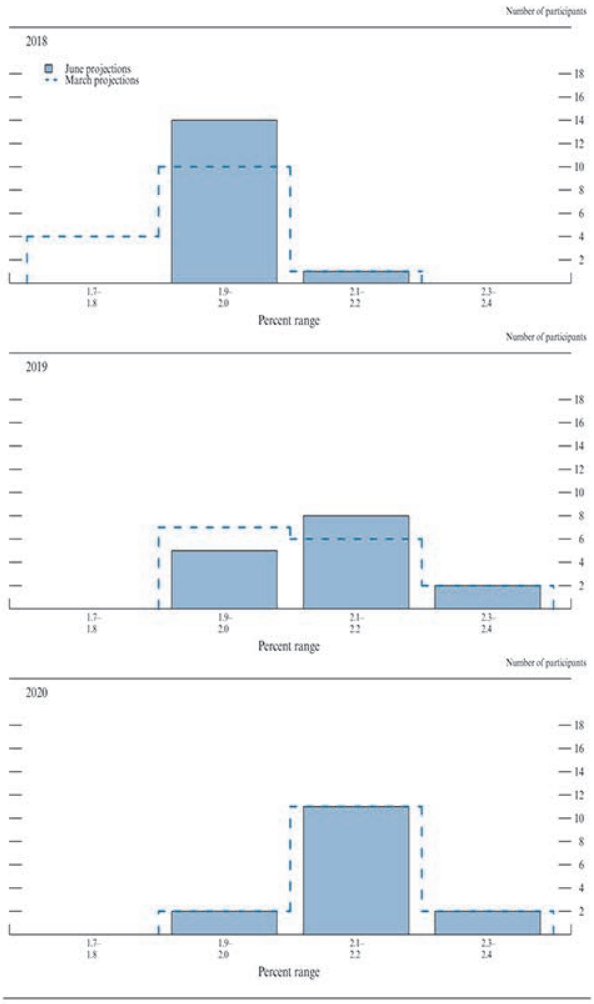
NOTE: Definitions of variables and other explanations are in the notes to table 1.

Figure 3.C. Distribution of participants' projections for PCE inflation, 2018–20 and over the longer run



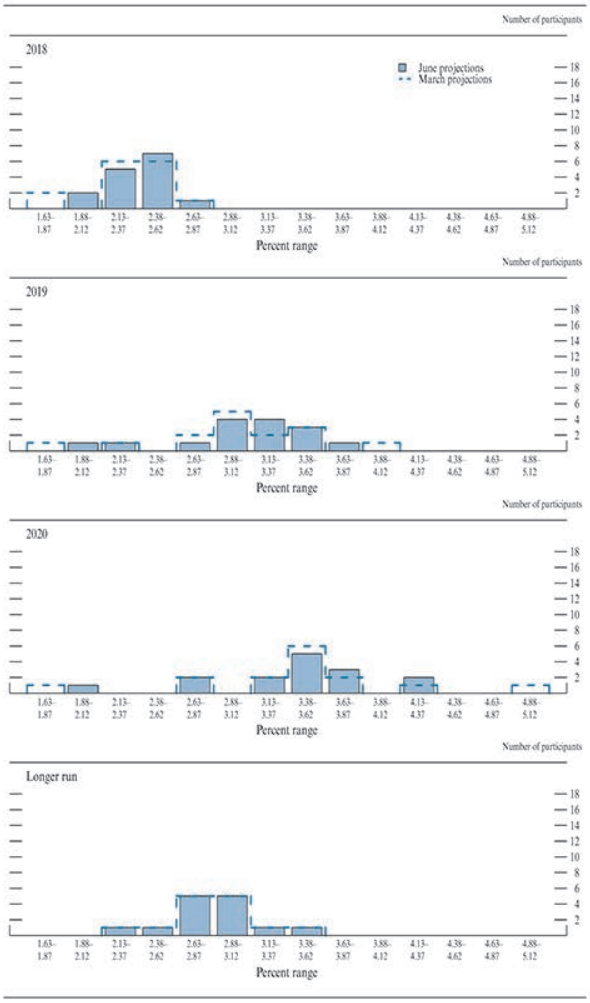
NOTE: Definitions of variables and other explanations are in the notes to table 1.

Figure 3.D. Distribution of participants' projections for core PCE inflation, 2018–20



NOTE: Definitions of variables and other explanations are in the notes to table 1.

Figure 3.E. Distribution of participants' judgments of the midpoint of the appropriate target range for the federal funds rate or the appropriate target level for the federal funds rate, 2018–20 and over the longer run



NOTE: Definitions of variables and other explanations are in the notes to table 1.

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 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. Nearly all participants viewed the degree of uncertainty attached to their economic projections for real GDP growth, the unemployment rate, and inflation as broadly similar to the average of the past 20 years, a view that was essentially unchanged from March.[19]

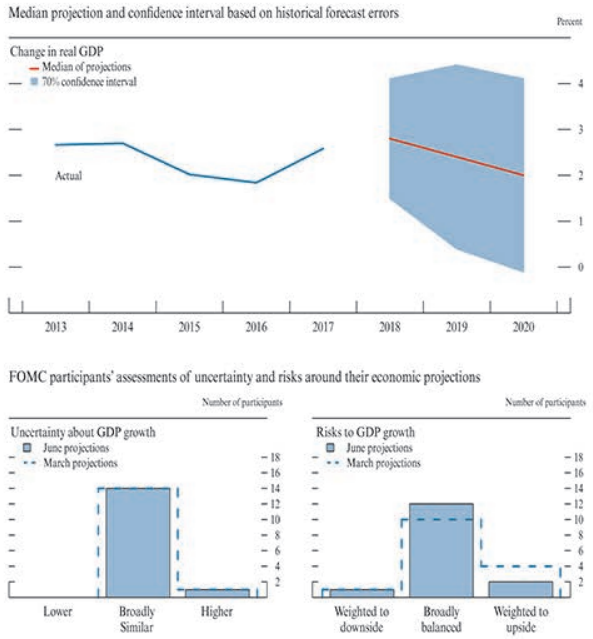
Because the fan charts are constructed to be symmetric around the median projections, they do not reflect any asymmetries in the balance of risks that participants may see in their economic projections. Participants' assessments of the balance of risks to their economic projections are shown in the bottom-right panels of figures 4.A, 4.B, and 4.C. Most participants judged the risks to their projections of real GDP growth, the unemployment rate, total inflation, and core inflation as broadly balanced—in other words, as broadly consistent with a symmetric fan chart. Compared with March, even more participants saw the risks to their projections as broadly balanced. Specifically, for GDP growth, only one participant viewed the risks as tilted to the downside, and the number of participants who viewed the risks as tilted to the upside dropped from four to two. For the unemployment rate, the number of participants who saw the risks as tilted toward low readings dropped from four to two. For inflation, all but one participant judged the risks to either total or core PCE price inflation as broadly balanced.

In discussing the uncertainty and risks surrounding their projections, several participants continued to point to fiscal developments as a source of upside risk, many participants cited developments related to trade policy as posing downside risks to their growth forecasts, and a few participants also pointed to political developments in Europe or the global outlook more generally as downside-risk factors. A few participants noted that the appreciation of the dollar posed downside risks to the inflation outlook. A few participants also noted the risk of inflation moving higher than anticipated as the unemployment rate falls.

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. Figure 5 provides a graphical representation of this uncertainty, plotting the median SEP projection for the federal funds rate surrounded by confidence intervals derived from the results presented in table 2. As with the macroeconomic variables, forecast uncertainty surrounding the appropriate path of the federal funds rate is substantial and increases for longer horizons.

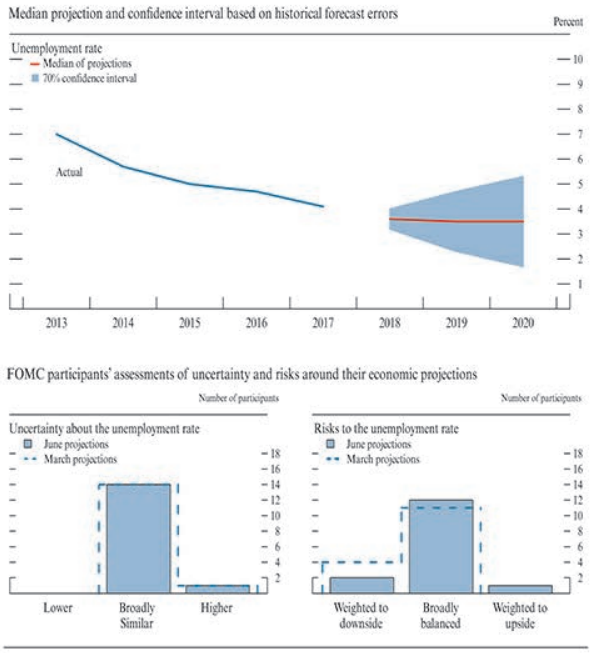
19. At the end of this summary, the box "Forecast Uncertainty" discusses the sources and interpretation of uncertainty surrounding the economic forecasts and explains the approach used to assess the uncertainty and risks attending the participants' projections.

Figure 4.A. Uncertainty and risks in projections of GDP growth



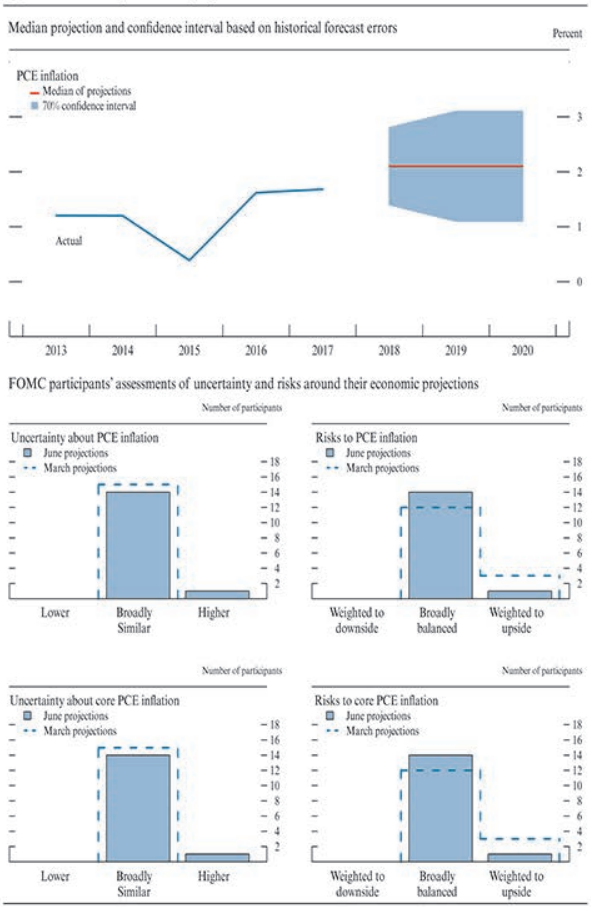
NOTE: The blue and red lines in the top panel show actual values and median projected values, respectively, of the percent change in real gross domestic product (GDP) from the fourth quarter of the previous year to the fourth quarter of the year indicated. The confidence interval around the median projected 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."

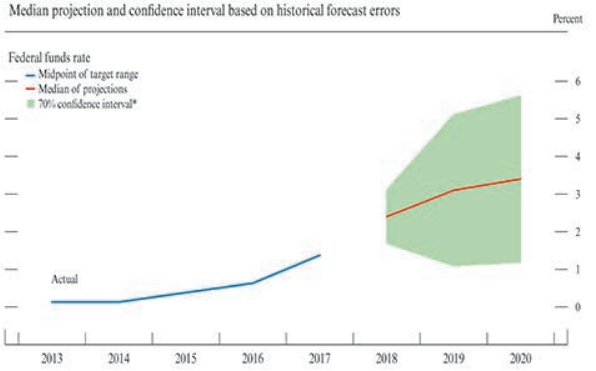
Figure 4.C. Uncertainty and risks in projections of PCE inflation



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 1.7 to 4.3 percent in the current year, 1.0 to 5.0 percent in the second year, and 0.9 to 5.1 percent in the third year. The corresponding 70 percent confidence intervals for overall inflation would be 1.3 to 2.7 percent in the current year and 1.0 to 3.0 percent in the second and third 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 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
BBA	Bipartisan Budget Act of 2018
BLS	Bureau of Labor Statistics
C&I	commercial and industrial
Desk	Open Market Desk at the Federal Reserve Bank of New York
DPI	disposable personal income
ECB	European Central Bank
EME	emerging market economy
FOMC	Federal Open Market Committee; also, the Committee
GDP	gross domestic product
IOER	interest on excess reserves
JOLTS	Job Openings and Labor Turnover Survey
LFPR	labor force participation rate
MBS	mortgage-backed securities
Michigan survey	University of Michigan Surveys of Consumers
OIS	overnight index swap
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
S&P	Standard & Poor's
TCJA	Tax Cuts and Jobs Act
TIPS	Treasury Inflation-Protected Securities
VIX	implied volatility for the S&P 500 index

ARTICLE SUBMITTED BY SENATOR BROWN

The New York Times

Paychecks Lag as Profits Soar, and Prices Erode Wage Gains

By Patricia Cohen

July 13, 2018

Corporate profits have rarely swept up a bigger share of the nation's wealth, and workers have rarely shared a smaller one.

The lopsided split is especially pronounced given how low the official unemployment rate has sunk. Throughout the recession and much of its aftermath, when many Americans were grateful to receive a paycheck instead of a pink slip, jobs and raises were in short supply. Now, complaints of labor shortages are as common as tweets. For the first time in a long while, workers have some leverage to push for more.

Yet many are far from making up all the lost ground. Hourly earnings have moved forward at a crawl, with higher prices giving workers less buying power than they had last summer. Last-minute scheduling, no-poaching and noncompete clauses, and the use of independent contractors are popular tactics that put workers at a disadvantage. Threats to move operations overseas, where labor is cheaper, continue to loom.

And in the background, the nation's central bankers stand poised to raise interest rates and deliberately rein in growth if wages climb too rapidly.

Workers, understandably, are asking whether they are getting a raw deal.

"Sure, you can get a job slinging hamburgers somewhere or working in a warehouse," said Christina Jones, 53, of Mobile, Ala. Ms. Jones spent eight months searching for a job with living wages and benefits, after being laid off from a paper company where she had worked for nearly 13 years. Dozens of interviews later, she landed work last month at a concrete crushing company as an accounts payable clerk for $14 an hour — two-thirds her previous salary.

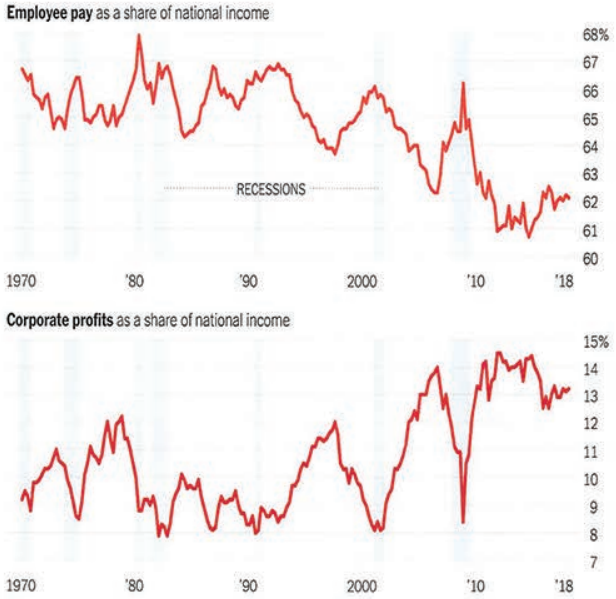
"You hear, 'Oh, the unemployment rate is as low as it's ever been,'" Ms. Jones said, but "it was discouraging."

Businesses have been more successful at regaining losses from the downturn. Since the recession ended in 2009, corporate profits have grown at an annualized rate of 6.5 percent. Several sectors have done much better. On Friday, for example, banks like JPMorgan Chase and Citigroup reported outsize double-digit earnings in the second quarter.

Yearly wage growth has yet to hit 3 percent. And when it does, the Federal Reserve — which has a mandate to keep inflation under control even as it is supposed to maximize employment — can be expected to tap the brakes.

Labor's Declining Share

Workers' paychecks account for much less of the nation's total income since the last recession, and the profits of businesses account for more.



Source: Bureau of Economic Statistics | By The New York Times

As Fed policymakers have explained, allowing the economy to run too hot "could lead eventually to a significant economic downturn." And persistent wage increases, unlike growing profit margins, are considered a signal that the heat is on.

The bank's primary method of cooling the economy is to dampen spending and investing by raising interest rates and making it more expensive to borrow money — an antidote that could hurt profits in some sectors as well as trim payrolls. The thinking goes like this: Better to inflict some pain now, in the form of higher joblessness and sluggish wage growth, than to allow more pain later.

After keeping benchmark interest rates at near-zero levels during the recession, the Fed has been gradually nudging them up. So far this year, it has raised rates twice.

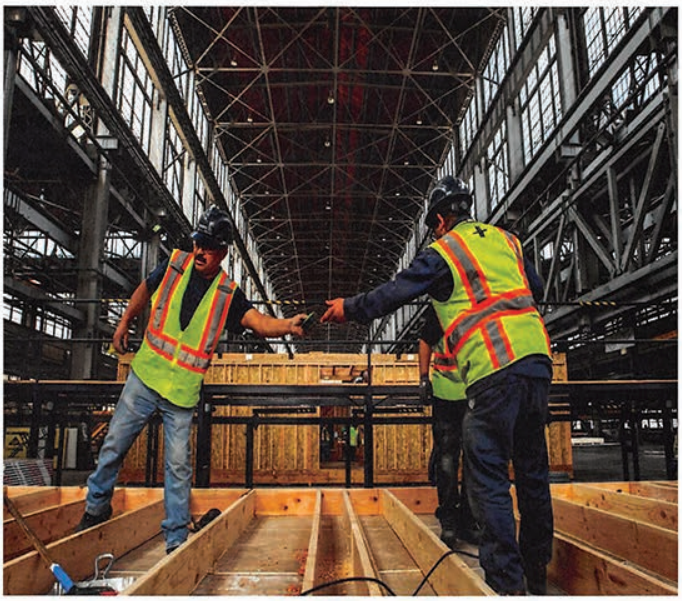
With tariffs piling up and potentially pushing prices higher, odds are that the Fed will push through two more increases before 2018 ends. The Labor Department reported this week that one inflation measure, the Consumer Price Index, had increased 2.9 percent in 12 months — the highest level in six years.

Discomfort with a tight labor market and growing worker bargaining power is to some degree baked into the Fed's makeup. Pressure to raise wages during expansions will inevitably be seen as precursors to insidious inflationary pressure.

The conventional wisdom that higher wages inevitably lead to higher prices, however, is flimsy, some economists argue.

"It theoretically makes sense," Michael R. Strain, an economist at the conservative American Enterprise Institute, said of the link between wage increases and inflation, "but empirically, it's increasingly difficult to find a real strong link."

A study by the Federal Reserve Bank of Cleveland, for example, concluded that "the connections among wages, prices, and economic activity are more akin to a tangled web than a straight line," and that "the ability of wages to help predict future inflation is limited."



A tight labor market should give workers some leverage to push for higher wages, but hourly earnings have moved forward at a crawl. Christie Hemm Klok for The New York Times

Regardless, there is plenty of evidence that workers have yet to receive their fair share of this most recent expansion — or even the previous one.

Since the century's start, labor's share of the nation's income has sunk to the lowest levels in decades.

In 2000, when the jobless rate last fell below 4 percent, corporations pulled in 8.3 percent of the nation's total income in the form of profits; wages and salaries across the entire work force accounted for roughly 66 percent.

Now, the jobless rate is again fluttering below 4 percent. But corporate profits account for 13.2 percent of the nation's income. Workers' compensation has fallen to 62 percent.

If workers' share had not shrunk, they would have had an additional $532 billion, or about $3,400 each, said Jared Bernstein, an economic adviser to former Vice President Joseph R. Biden Jr. And at this point in the recovery, shifting some of those corporate profits to workers would have no effect on inflation, he noted.

In the tug of war between workers and investors, Americans living on a paycheck have seldom been left with a shorter end of the rope.

Fredy Amador has spent years working for various temporary help agencies, packing boxes of baby clothes, quality-checking packages of popcorn and doing other work at warehouses across the Chicago area. Despite what he says are frequent promises of permanent work, he has never been able to escape temp status.

Recently, his situation got worse. He used to receive holidays and paid vacations, he said, but the agency that offered them lost its contract to another firm that did not. "They want to avoid all the benefits," said Mr. Amador.

Mr. Amador, 34, said he earns $12 an hour, far less than the $20 an hour or more earned by permanent employees doing similar work. For extra money, he drives for the ride-hailing service Lyft on the weekends. "Even if you have really good skills, you have to start as a temp," said Mr. Amador, who moved to the United States from Honduras 12 years ago. "They never give you an opportunity to move on."

Economists have offered various explanations for why workers are not doing better: the steady weakening of labor unions, the ability of American companies to find cheaper labor abroad or automate further, piddling productivity growth and the rise of superstar companies that are extremely efficient with a relatively small labor force.

The recent tax overhaul has further pumped up corporate earnings. Promises that lower tax bills for businesses would translate into higher wages have yet to materialize. Higher gas and medical care costs have eaten away at whatever gains most workers have made.

Nor are those extra profits going into business expansion. Since the first of the year, American companies including Apple, Wells Fargo and McDonald's have announced nearly $680 billion in buybacks of their own stock, according to the research firm TrimTabs. In essence, they are directing a majority of the windfall to investors and chief executives, who tend to have large stock-based compensation packages.

Profits are also financing foreign mergers and acquisitions. "A lot of U.S. businesses are looking abroad to see what they can buy," said Jason Gerlis, managing director of TMF Group U.S.A., a global consulting firm, "because it's easier to finance or capitalize offshore."

The reason is a change in the tax law that limited interest deductibility on domestic investments, but not on those abroad. International deals in the first half of 2018 nearly doubled compared with the same period last year.

The United States may be leading other big industrialized countries in economic growth, but its labor force does not fare well in comparison. American workers' share of their country's total output fell much sharper and faster than the average reported by the Organization for Economic Cooperation and Development. The United States also had a larger proportion of low-wage workers than nearly every other member.

When the economy was struggling, employers became accustomed to inboxes flooded with résumés and snaking lines of eager applicants. Many may have forgotten, or never learned how, to compete for workers.

When it comes to complaints of a labor shortage, as Neel Kashkari, president of the Minneapolis Fed, has said: "If you're not raising wages, then it just sounds like whining."

Follow Patricia Cohen on Twitter: @PatcohenNYT.

Ben Casselman contributed reporting.

A version of this article appears in print on July 14, 2018, on Page A1 of the New York edition with the headline: Profits Swell, But Laborers See No Relief