For release on delivery
1:00 p.m. EST (12:00 p.m. CST)
March 3, 2017

From Adding Accommodation to Scaling It Back

Remarks by

Janet L. Yellen

Chair

Board of Governors of the Federal Reserve System

at

The Executives' Club of Chicago

Chicago Hilton
720 S. Michigan Avenue
Chicago, Illinois

March 3, 2017

I am pleased to join you today to discuss the U.S. economy and the Federal Reserve's monetary policy. I strongly believe that my colleagues and I should explain, as clearly as we can, both the reasons for our decisions and the fundamental principles that underlie our strategy.

Today I will review the conduct of monetary policy during the nearly 10 years since the onset of the financial crisis. Although the Federal Reserve's policy strategy for systematically pursuing its congressionally mandated goals of maximum employment and price stability has not changed during this period, the Federal Open Market Committee (FOMC) has made significant tactical adjustments along the way. I will spend most of my time today discussing the rationale for the adjustments the Committee has made since 2014, a year that I see as a turning point, when the FOMC began to transition from providing increasing amounts of accommodation to gradually scaling it back.

The process of scaling back accommodation has so far proceeded at a slower pace than most FOMC participants anticipated in 2014. Both unexpected economic developments and deeper reevaluations of structural trends affecting the U.S. and global economies prompted us to reassess our views on the outlook and associated risks and, consequently, the appropriate stance of monetary policy, both in the near term and the longer run. Looking ahead, we continue to expect the evolution of the economy to warrant further gradual increases in the target range for the federal funds rate. However, given how close we are to meeting our statutory goals, and in the absence of new developments that might materially worsen the economic outlook, the process of scaling back accommodation likely will not be as slow as it was in 2015 and 2016.

I should note that I will discuss the process of scaling back accommodation mostly from the perspective of our interest rate decisions, which my FOMC colleagues and I see as our primary tool for actively adjusting the stance of monetary policy when our actions are not constrained by the zero lower bound on short-term interest rates.[1]

Assessing the Degree of Monetary Policy Accommodation

In our monetary policy deliberations, the FOMC always faces two fundamental questions: First, how do we assess the *current* stance of monetary policy? Second, what are the strategic and tactical considerations that underpin our decisions about the *appropriate* stance of monetary policy going forward? These questions are difficult because the interactions between monetary policy and the economy are complex. Policy affects the economy through many different channels, and, in turn, many factors influence the appropriate course of policy.

Gauging the current stance of monetary policy requires arriving at a judgment of what would constitute a neutral policy stance at a given time. A useful concept in this regard is the neutral "real" federal funds rate, defined as the level of the federal funds rate that, when adjusted for inflation, is neither expansionary nor contractionary when the economy is operating near its potential. In effect, a "neutral" policy stance is one where monetary policy neither has its foot on the brake nor is pressing down on the accelerator. Although the concept of the neutral real federal funds rate is exceptionally useful in assessing policy, it is difficult in practical terms to know with precision where that rate

[1] When the federal funds rate was near zero and we felt the economy still needed more support, the FOMC acted, beginning in 2008, to purchase longer-term securities. Although we stopped increasing the size of our securities portfolio in 2014, we have been reinvesting principal payments from our securities holdings ever since. We have said that we expect to maintain this policy until normalization of the level of the federal funds rate is well under way. We have also said that, when it becomes appropriate to reduce the size of our balance sheet, we will do so primarily by letting maturing assets run off our balance sheet.

stands. As a result, and as I described in a recent speech, my colleagues and I consider a wide range of information when assessing that rate.[2] As I will discuss, our assessments of the neutral rate have significantly shifted down over the past few years.

In the Committee's most recent projections last December, most FOMC participants assessed the *longer-run* value of the neutral real federal funds rate to be in the vicinity of 1 percent.[3] This level is quite low by historical standards, reflecting, in part, slow productivity growth and an aging population not only in the United States, but also in many advanced economies. Moreover, the *current* value of the neutral real federal funds rate appears to be even lower than this longer-run value because of several additional headwinds to the U.S. economy in the aftermath of the financial crisis, such as subdued economic growth abroad and perhaps a lingering sense of caution on the part of households and businesses in the wake of the trauma of the Great Recession.

It is difficult to say just how low the current neutral rate is because assessments of the effect of post-recession headwinds on the current level of the neutral real rate are subject to a great deal of uncertainty. Some recent estimates of the current value of the neutral real federal funds rate stand close to zero percent.[4] With the actual value of the real federal funds rate currently near minus 1 percent, a near-zero estimate of the neutral real rate means that the stance of monetary policy remains moderately accommodative, an assessment that is consistent with the fact that employment has been growing at a pace--around 180,000 net new jobs per month--that is notably above the level estimated

---

[2] See Yellen (2017).

[3] This estimate of the neutral real federal funds rate is based on the difference between the medians of the longer-run projections for the federal funds rate and inflation submitted by individual FOMC participants for the December 2016 FOMC meeting. The most recent Summary of Economic Projections, an addendum to the minutes of that meeting, is available on the Board's website at https://www.federalreserve.gov/monetarypolicy/fomcminutes20161214ep.htm.

[4] See, for instance, Holston, Laubach, and Williams (2016).

to be consistent with the longer-run trend in labor force growth--between 75,000 and 125,000 per month.[5] As I will explain, this policy stance seems appropriate given that the underlying trend in inflation appears to be still running somewhat below 2 percent. But as that gap closes, with labor market conditions now in the vicinity of our maximum employment objective, the Committee considers it appropriate to move toward a neutral policy stance.

My colleagues and I generally anticipate that the neutral real federal funds rate will rise to its longer-run level over the next few years. This expectation partly underlies our view that gradual increases in the federal funds rate will likely be appropriate in the months and years ahead: Those increases would keep the economy from significantly overheating, thereby sustaining the expansion and maintaining price stability.

Post-Crisis Period: Same Strategy, New Tactics

I will now examine the strategic and tactical considerations that go into FOMC deliberations by discussing past monetary policy decisions in the context of our mandate from the Congress to pursue maximum employment and price stability.

The FOMC's monetary policy strategy is based on three basic principles. First, our monetary policy must be goal driven. We must take care to ensure that our decisions over time are consistent with our commitment to achieve the Federal Reserve's congressionally mandated goals of maximum employment and price stability, and that the public understands and has confidence in that commitment. Second, our monetary policy must be forward looking because our decisions tend to influence economic activity and

[5] The estimate of the actual value of the real federal funds rate (around minus 1 percent) is based on the difference between the current value of the effective federal funds rate (close to 0.66 percent) and the latest reading on inflation as measured by the 12-month change in the price index for personal consumption expenditures excluding energy and food items (1-3/4 percent).

inflation with a substantial lag. Among other things, this implies looking through short-term and transitory developments and focusing on the medium-term outlook--roughly two or three years out--when making policy decisions. Third, our monetary policy must be risk sensitive. Because the outlook is uncertain, we must assess appropriate policy with an eye toward the risk that our expectations about the economy turn out to be significantly wrong.

We have followed this basic strategy for decades and, in 2012, the FOMC formalized it in our "Statement on Longer-Run Goals and Monetary Policy Strategy."[6] The Committee has reaffirmed this commitment annually. But the challenges brought about by the financial crisis, and the very deep recession and painfully slow recovery that followed, compelled us to adjust our tactics for carrying out our policy strategy. In particular, once the Committee had cut the federal funds rate to near zero in late 2008, it became necessary to deploy new tools to supply the considerable monetary accommodation required by the extremely weak state of the job market and persistently low inflation.[7] Those tools--especially our large-scale securities purchases and increasingly explicit forward guidance pertaining to the likely future path of the federal funds rate--enabled the Federal Reserve to provide necessary additional support to the U.S. economy by pushing down longer-term interest rates and easing financial conditions more generally.

Much has been written and said already about the provision of additional accommodation between 2008 and 2014, when the FOMC completed its latest round of

[6] The Statement on Longer-Run Goals and Monetary Policy Strategy is available on the Board's website at https://www.federalreserve.gov/monetarypolicy/files/FOMC_LongerRunGoals.pdf.
[7] See Yellen (2016).

large-scale securities purchases, so I will turn now to our policy stance since 2014, when the FOMC's main focus started to shift from providing additional accommodation to scaling it back.[8]

2014: A Turning Point for Monetary Policy

By late 2013, the FOMC concluded that the economy had made sufficient progress, and the outlook was sufficiently favorable, that it should reduce the pace of its large-scale securities purchases. But we reiterated that these purchases would continue until the outlook for the labor market had improved substantially. The U.S. economy made notable progress toward the FOMC's statutory goals during 2014, with the unemployment rate dropping to close to 6 percent by mid-year--well below its Great-Recession peak of 10 percent--and other measures of labor market conditions also showing improvement: Payroll gains were solid; job openings had risen significantly; and the number of workers voluntarily quitting their jobs--a sign of confidence in the labor market--was rising back toward pre-crisis levels. We were also seeing progress on achieving our price stability goal: Total inflation as measured by changes in the headline personal consumption expenditures (PCE) price index reached about 1-3/4 percent by mid-2014 after hovering around 1 percent in the fall of 2013. Inflation seemed to be moving toward the FOMC's 2 percent objective, a level that the FOMC judges to be consistent with price stability because it is low enough that it does not need to figure prominently into people's and businesses' economic decisions but high enough to serve as a buffer against deflation and provide greater scope for monetary policy to address economic weakness.

[8] For a discussion of our monetary policy during the 2008-14 period, see, for instance, Engen, Laubach, and Reifschneider (2015).

The progress seen during 2014 indicated to the FOMC that it was no longer necessary to provide increasing amounts of support to the U.S. economy by continuing to add to the Federal Reserve's holdings of longer-term securities. Accordingly, the Committee continued to reduce the pace of asset purchases over the course of the year, ending its purchases in October. That step, however, did not mark an immediate shift toward tighter monetary policy because we also indicated then that we did not expect to raise interest rates for a considerable time after the end of our securities purchases. Moreover, as the Committee explained in a set of "normalization principles" issued that September, the intention was to maintain the overall size of the Federal Reserve's balance sheet at an elevated level until sometime after the FOMC had begun to raise its target for the federal funds rate.[9] We decided that maintaining a highly accommodative stance of monetary policy remained appropriate because, while the U.S. economy was stronger and closer to meeting our statutory goals, we saw significant room for improvement. In particular, the unemployment rate still stood above our assessment of its longer-run normal level--that is, the unemployment rate that we expect to prevail when the economy is operating at maximum employment--and inflation remained below the 2 percent objective.

Because my colleagues and I expected that labor market conditions would continue to improve and that inflation would move back to 2 percent over the medium

---

[9] The FOMC's Policy Normalization Principles and Plans are available on the Board's website at https://www.federalreserve.gov/newsevents/press/monetary/20140917c.htm.

Several studies support the notion that maintaining the size of the Federal Reserve's balance sheet at an elevated level is consistent with keeping a highly accommodative policy stance, particularly when short-term interest rates are close to zero, as it was the case in 2014--see, for instance, D'Amico and others (2012) and many of the references in Engen, Laubach, and Reifschneider (2015). Large Federal Reserve holdings of longer-term securities reduce the total amount of such securities available for purchase by the public, exerting upward pressure on their prices and, thus, depressing their yields and contributing to lower borrowing costs for American families and businesses.

term, we anticipated that the time was approaching when the economy would be strong enough that we should start to scale back our support. Indeed, the FOMC's June 2014 Summary of Economic Projections (SEP) reported that nearly all FOMC participants saw a higher federal funds rate as appropriate in the next calendar year. In contrast, only two participants in December 2013 thought that it would be appropriate to start raising that rate in the next calendar year.

Uneven Progress in 2015 and into 2016

In 2015, the unemployment rate fell significantly faster than we generally had anticipated in 2014. However, a series of unanticipated global developments beginning in the second half of 2014--including a prolonged decline in oil prices, a sizable appreciation of the dollar, and financial market turbulence emanating from abroad--ended up having adverse implications for the *outlook* for inflation and economic activity in the United States, prompting the FOMC to remove monetary policy accommodation at a slower pace than we had anticipated in mid-2014.

U.S. gross domestic product (GDP) growth generally surprised to the downside in 2015, reflecting, in part, weak economic activity abroad, the earlier appreciation of the dollar, and the effect of falling oil prices on business fixed investment. This unanticipated slowing in the pace of the economic recovery caused us to worry about the sustainability of ongoing improvements in employment and, thus, of likely progress toward our maximum employment goal. Our worry was reinforced by our assessment that, with the federal funds rate still near zero, there would likely be only limited scope for us to respond by lowering short-term rates if the weakening in economic activity turned out to be persistent. In contrast, if the weakening proved transitory and the economy instead began to overheat, threatening to push inflation to an undesirably high level, the FOMC would have ample scope to respond through tighter monetary policy.

Inflation also was lower than expected, with headline PCE prices rising less than 1 percent over the course of 2015, instead of around 1-3/4 percent as we had anticipated in June 2014. Much of this shortfall reflected the effects of falling oil prices and the appreciation of the dollar. My colleagues and I typically look through the effects on inflation of fluctuations in oil prices and the dollar because these effects tend to be transitory. However, we became concerned in 2015 about the risk that part of the decline in inflation could prove to be longer lasting, especially given that inflation had already been running below our 2 percent objective for quite some time.[10] These various considerations, along with our reassessment of longer-run economic conditions--which I will discuss shortly--explain why the Committee ended up raising the target range for the federal funds rate only 1/4 percentage point in 2015, substantially less than the full percentage point increase suggested by the median projection of FOMC participants reported in June 2014.

2016 also brought some unexpected economic developments that led us to proceed cautiously. During the first half of the year, mixed readings on the job market, along with additional disappointing data on real GDP growth, suggested again that progress toward the achievement of our maximum employment goal could be slowing markedly. Meanwhile, inflation hovered just below 1 percent as dollar appreciation continued to exert downward pressure on import prices, and financial market turbulence emanating from abroad--associated with concerns about the Chinese economy and the

---

[10] These concerns were reinforced somewhat by a decline in market-based measures of inflation compensation.

Brexit referendum--posed new risks to U.S. economic activity and inflation. Moreover, even as payroll gains turned solid again in the second half of 2016, the unemployment rate remained relatively flat, suggesting that perhaps there was more room for improvement in the job market than we had previously thought. Those unanticipated developments were part of the reason why the Committee again opted to proceed more slowly in removing accommodation than had been anticipated at the start of the year. We ended up increasing the target range for the federal funds rate by only 1/4 percentage point over the course of 2016, rather than the full percentage point suggested by our December 2015 projections.

Reassessing Longer-Run Conditions

The slower-than-anticipated increase in our federal funds rate target in 2015 and 2016 reflected more than just the inflation, job market, and foreign developments I mentioned. During that period, the FOMC and most private forecasters generally lowered their assessments of the longer-run neutral level of the real federal funds rate. Indeed, at our October 2015 meeting, the FOMC had a comprehensive discussion of neutral real interest rates and was impressed by the breadth of evidence suggesting that those rates had declined both here and abroad, and that the decline had been going on for some time. In response to this growing evidence, the median assessment by FOMC participants of the longer-run level of the real federal funds rate fell from 1-3/4 percent in June 2014 to 1-1/2 percent in December 2015 and then to 1 percent in December 2016. These reassessments reflected, in part, the persistence of surprisingly sluggish productivity growth--both in the United States and abroad--and suggested that fewer federal funds rate increases would be necessary than previously thought to scale back accommodation.

Partly in response to persistently slow wage growth, FOMC participants and private forecasters have in recent years lowered their estimates of the normal longer-run rate of unemployment. The median projection of FOMC participants of the longer-run level of the unemployment rate fell from about 5-1/4 percent in June 2014 to approximately 4-3/4 percent in December 2016. Other things being equal, a lower longer-run level of the unemployment rate suggests that the economy has greater scope to create jobs without generating too much inflation.[11] Thus, the downward revisions to FOMC participants' views on the unemployment rate over the longer run contributed to our assessment that monetary policy could stay accommodative longer than we had anticipated in 2014.

Further Progress since Mid-2016

The U.S. economy has exhibited remarkable resilience in the face of adverse shocks in recent years, and economic developments since mid-2016 have reinforced the Committee's confidence that the economy is on track to achieve our statutory goals. Job gains have remained quite solid, and the unemployment rate, at 4.8 percent in January, is now in line with the median of FOMC participants' estimates of its longer-run normal level. On the whole, the prospects for further moderate economic growth look encouraging, particularly as risks emanating from abroad appear to have receded

[11] The assessment that there was perhaps more room for improvement in the labor market than previously thought was reinforced by data showing that the labor force participation rate remained relatively stable in 2016, rather than declining as many had expected.

somewhat. The Committee currently assesses that the risks to the outlook are roughly balanced.

Moreover, after remaining disappointingly low through mid-2016, inflation moved up during the second half of 2016, mainly because of the diminishing effects of the earlier declines in energy prices and import prices. More recently, higher energy prices appear to have temporarily boosted inflation, with the total PCE price index rising nearly 2 percent in the 12 months ending in January. Core PCE inflation--which excludes volatile energy and food prices and, therefore, tends to be a better indicator of future inflation--has been running near 1-3/4 percent. Market-based measures of inflation compensation have moved up, on net, in recent months, although they remain low.

With the job market strengthening and inflation rising toward our target, the median assessment of FOMC participants as of last December was that a cumulative 3/4 percentage point increase in the target range for the federal funds rate would likely be appropriate over the course of this year. In light of current economic conditions, such an increase would be consistent with the Committee's expectation that it will raise the target range for the federal funds rate at a gradual pace and would bring the real federal funds rate close to some estimates of its current neutral level. However, partly because my colleagues and I expect the neutral real federal funds rate to rise somewhat over the longer run, we projected additional gradual rate hikes in 2018 and 2019.

Our individual projections for the appropriate path for the federal funds rate reflect economic forecasts that generally envision that economic activity will expand at a moderate pace in coming years, labor market conditions will strengthen somewhat further, and inflation will be at or near 2 percent over the medium term. In short, we currently judge that it will be appropriate to gradually increase the federal funds rate if the economic data continue to come in about as we expect. Indeed, at our meeting later this month, the Committee will evaluate whether employment and inflation are continuing to evolve in line with our expectations, in which case a further adjustment of the federal funds rate would likely be appropriate.

Nonetheless, as we have said many times--and as my discussion today demonstrates--monetary policy cannot be and is not on a preset course. As in 2015 and 2016, the Committee stands ready to adjust its assessment of the appropriate path for monetary policy if unanticipated developments materially change the economic outlook.

Monetary Policy Is Not a Panacea

The U.S. economy has shown great improvement and is close to meeting our congressionally mandated goals of maximum employment and price stability, but we of course recognize that important challenges remain. For instance, as we noted in our latest *Monetary Policy Report* to the Congress, the ongoing expansion has been the slowest since World War II, with real GDP growth averaging only about 2 percent per year.[12] This subdued pace reflects, in part, slower growth in the labor force in recent years--compared with much of the post-World War II period--and disappointing productivity growth both in the United States and abroad.

Our report also noted that, despite a notable pickup in 2015, real incomes for the median family were still a bit lower than they were prior to the Great Recession, and the gains during this economic recovery have been skewed toward the top of the income distribution, as has been the case for quite some time. Families at the 10th percentile of

[12] See Board of Governors (2017).

the income distribution earned about 4 percent less in 2015 than they did in 2007, whereas families at the 90th percentile earned about 4 percent more. In addition, the economic circumstances of blacks and Hispanics, while improved since the depths of the recession, remain worse, on average, that those of whites or Asians.

These unwelcome developments unfortunately reflect structural challenges that lie substantially beyond the reach of monetary policy. Monetary policy cannot, for instance, generate technological breakthroughs or affect demographic factors that would boost real GDP growth over the longer run or address the root causes of income inequality. And monetary policy cannot improve the productivity of American workers. Fiscal and regulatory policies--which are of course the responsibility of the Administration and the Congress--are best suited to address such adverse structural trends.

Conclusion

To conclude, we at the Federal Reserve must remain squarely focused on our congressionally mandated goals. The economy has essentially met the employment portion of our mandate and inflation is moving closer to our 2 percent objective. This outcome suggests that our goal-focused, outlook-dependent approach to scaling back accommodation over the past couple of years has served the U.S. economy well.

This same approach will continue to drive our policy decisions in the months and years ahead. With that in mind, our policy aims to support continued growth of the American economy in pursuit of our congressionally mandated objectives. We do that, as I have noted, with an eye always on the risks. To that end, we realize that waiting too long to scale back some of our support could potentially require us to raise rates rapidly sometime down the road, which in turn could risk disrupting financial markets and pushing the economy into recession. Having said that, I currently see no evidence that the Federal Reserve has fallen behind the curve, and I therefore continue to have confidence in our judgment that a gradual removal of accommodation is likely to be appropriate. However, as I have noted, unless unanticipated developments adversely affect the economic outlook, the process of scaling back accommodation likely will not be as slow as it was during the past couple of years.

References

Board of Governors of the Federal Reserve System (2017). *Monetary Policy Report.* Washington: Board of Governors, February, https://www.federalreserve.gov/monetarypolicy/files/20170214_mprfullreport.pdf.

D'Amico, Stefania, William English, David Lopez-Salido, and Edward Nelson (2012). "The Federal Reserve's Large-Scale Asset Purchase Programmes: Rationale and Effects," *Economic Journal*, vol. 122 (November), pp. F415-46.

Engen, Eric M., Thomas Laubach, and David Reifschneider (2015). "The Macroeconomic Effects of the Federal Reserve's Unconventional Monetary Policies," Finance and Economics Discussion Series 2015-005. Washington: Board of Governors of the Federal Reserve System, February, http://dx.doi.org/10.17016/FEDS.2015.005.

Holston, Kathryn, Thomas Laubach, and John C. Williams (2016). "Measuring the Natural Rate of Interest: International Trends and Determinants," Finance and Economics Discussion Series 2016-073. Washington: Board of Governors of the Federal Reserve System, September, http://dx.doi.org/10.17016/FEDS.2016.073.

Yellen, Janet (2016). "The Federal Reserve's Monetary Policy Toolkit: Past, Present, and Future," speech delivered at "Designing Resilient Monetary Policy Frameworks for the Future," a symposium sponsored by the Federal Reserve Bank of Kansas City, held in Jackson Hole, Wyo., August 26, https://www.federalreserve.gov/newsevents/speech/yellen20160826a.htm.

-------- (2017). "The Economic Outlook and the Conduct of Monetary Policy," speech delivered at the Stanford Institute for Economic Policy Research, Stanford University, Stanford, Calif., January 19, https://www.federalreserve.gov/newsevents/speech/yellen20170119a.htm.