Minutes of the Federal Open Market Committee
September 16–17, 2014

A meeting of the Federal Open Market Committee was held in the offices of the Board of Governors of the Federal Reserve System in Washington, D.C., on Tuesday, September 16, 2014, at 11:00 a.m. and continued on Wednesday, September 17, 2014, at 9:00 a.m.

PRESENT:
Janet L. Yellen, Chair
William C. Dudley, Vice Chairman
Lael Brainard
Stanley Fischer
Richard W. Fisher
Narayana Kocherlakota
Loretta J. Mester
Charles I. Plosser
Jerome H. Powell
Daniel K. Tarullo

Christine Cumming, Charles L. Evans, Jeffrey M. Lacker, Dennis P. Lockhart, and John C. Williams, Alternate Members of the Federal Open Market Committee

James Bullard, Esther L. George, and Eric Rosengren, Presidents of the Federal Reserve Banks of St. Louis, Kansas City, and Boston, respectively

William B. English, Secretary and Economist
Matthew M. Luecke, Deputy Secretary
Michelle A. Smith, Assistant Secretary
Scott G. Alvarez, General Counsel
Steven B. Kamin, Economist
David W. Wilcox, Economist

James A. Clouse, Evan F. Koenig, Thomas Laubach, Michael P. Leahy, Mark E. Schweitzer, and William Wascher, Associate Economists

Simon Potter, Manager, System Open Market Account

Lorie K. Logan, Deputy Manager, System Open Market Account

Robert deV. Frierson,[1] Secretary of the Board, Office of the Secretary, Board of Governors

Michael S. Gibson,[2] Director, Division of Banking Supervision and Regulation, Board of Governors

Matthew J. Eichner,[1] Deputy Director, Division of Research and Statistics, Board of Governors; Stephen A. Meyer and William R. Nelson, Deputy Directors, Division of Monetary Affairs, Board of Governors; Mark E. Van Der Weide,[3] Deputy Director, Division of Banking Supervision and Regulation, Board of Governors

Andreas Lehnert, Deputy Director, Office of Financial Stability Policy and Research, Board of Governors

Andrew Figura, David Reifschneider, and Stacey Tevlin, Special Advisers to the Board, Office of Board Members, Board of Governors

Trevor A. Reeve, Special Adviser to the Chair, Office of Board Members, Board of Governors

Linda Robertson, Assistant to the Board, Office of Board Members, Board of Governors

Christopher J. Erceg, Senior Associate Director, Division of International Finance, Board of Governors

Michael T. Kiley[4] and Jeremy B. Rudd,[4] Senior Advisers, Division of Research and Statistics, Board of Governors; Joyce K. Zickler, Senior Adviser, Division of Monetary Affairs, Board of Governors

Eric M. Engen and Michael G. Palumbo, Associate Directors, Division of Research and Statistics, Board of Governors; Fabio M. Natalucci, Associate Director, Division of Monetary Affairs, Board of Governors

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[1] Attended the joint session of the Federal Open Market Committee and the Board of Governors.
[2] Attended Wednesday's session only.
[3] Attended Tuesday's session only.
[4] Attended the portion of the meeting following the joint session of the Federal Open Market Committee and the Board of Governors.

Marnie Gillis DeBoer, Deputy Associate Director, Division of Monetary Affairs, Board of Governors; Joshua Gallin, Deputy Associate Director, Division of Research and Statistics, Board of Governors

Edward Nelson, Assistant Director, Division of Monetary Affairs, Board of Governors

Patrick E. McCabe,[1] Adviser, Division of Research and Statistics, Board of Governors

Penelope A. Beattie,[1] Assistant to the Secretary, Office of the Secretary, Board of Governors

David H. Small, Project Manager, Division of Monetary Affairs, Board of Governors

Katie Ross,[1] Manager, Office of the Secretary, Board of Governors

Valerie Hinojosa, Records Project Manager, Division of Monetary Affairs, Board of Governors

Marie Gooding, First Vice President, Federal Reserve Bank of Atlanta

David Altig, Alberto G. Musalem, and Daniel G. Sullivan, Executive Vice Presidents, Federal Reserve Banks of Atlanta, New York, and Chicago, respectively

Troy Davig, Michael Dotsey, Geoffrey Tootell, Christopher J. Waller, and John A. Weinberg, Senior Vice Presidents, Federal Reserve Banks of Kansas City, Philadelphia, Boston, St. Louis, and Richmond, respectively

Sylvain Leduc, Jonathan P. McCarthy, and Douglas Tillett, Vice Presidents, Federal Reserve Banks of San Francisco, New York, and Chicago, respectively

Kei-Mu Yi, Special Policy Advisor to the President, Federal Reserve Bank of Minneapolis

[1] Attended the joint session of the Federal Open Market Committee and the Board of Governors.

Developments in Financial Markets and the Federal Reserve's Balance Sheet

In a joint session of the Federal Open Market Committee (FOMC) and the Board of Governors of the Federal Reserve System, the manager of the System Open Market Account (SOMA) reported on developments in domestic and foreign financial markets and reviewed the effects of recent foreign central bank policy actions on yields on the international portion of the SOMA portfolio. The deputy manager reported on the System open market operations conducted during the period since the Committee met on July 29–30, 2014, summarized plans for additional test operations of the Term Deposit Facility, and described the results from the fixed-rate overnight reverse repurchase agreement (ON RRP) operational exercise.

The deputy manager also outlined a proposal for changes to the ongoing ON RRP exercise to test possible design features that could allow an ON RRP facility to serve as an effective supplementary tool during policy normalization while also mitigating the potential for unintended effects in financial markets. Participants discussed the proposed changes in the ON RRP exercise, including raising the counterparty-specific limit from $10 billion to $30 billion, limiting the overall size of each operation to $300 billion, and introducing an auction process that would be used to determine the interest rate on such operations and allocate take-up if the sum of bids exceeded the overall limit. Testing these design features was generally seen as furthering the Committee's understanding of how an ON RRP facility might be structured to best balance its objectives of supporting monetary control and of limiting the Federal Reserve's role in financial intermediation as well as reducing potential financial stability risks the facility might pose during periods of stress. Participants also discussed other tests that could be incorporated in the exercise at a later date, including a daily time-varying cap along with the overall limit on the size of ON RRP operations, small variations in the offered rate on ON RRP operations, and moderate increases and decreases in the overall size limit. A number of participants expressed concern that these tests could be misunderstood as providing a signal of the Committee's intentions regarding the parameters of the ON RRP program that will be implemented when normalization begins; they wanted to emphasize that the tests are intended to provide additional information to guide the Committee's decisions. Participants agreed to consider potential additional revisions to the ON RRP exercise at future FOMC meetings. Following the discussion, the Committee unanimously approved the following resolution:

> "The Federal Open Market Committee (FOMC) authorizes the Federal Reserve Bank of New York to conduct a series of overnight

reverse repurchase operations involving U.S. government securities for the purpose of further assessing the appropriate structure of such operations in supporting the implementation of monetary policy during normalization. The reverse repurchase operations authorized by this resolution shall be (i) conducted at an offering rate that may vary from zero to five basis points, (ii) for an overnight term, or such longer term as is warranted to accommodate weekend, holiday, and similar trading conventions, (iii) subject to a per-counterparty limit of up to $30 billion per day, (iv) subject to an overall size limit of up to $300 billion per day, (v) awarded to all submitters (A) at the specified offering rate if the sum of the bids received is less than or equal to the overall size limit, or (B) at the stopout rate, determined by evaluating bids in ascending order by submitted rate up to the point at which the total quantity of bids equals the overall size limit, with all bids below this rate awarded in full at the stopout rate and all bids at the stopout rate awarded on a pro rata basis, if the sum of the counterparty offers received is greater than the overall size limit, and (vi) offered beginning with the operation conducted on September 22, 2014, with the resolution adopted at the January 28–29, 2014, FOMC meeting remaining in place until the conclusion of the operation conducted on September 19, 2014. The Chair must approve any change in the offering rate within the range specified in (i) and any changes to the per-counterparty and overall size limits subject to the limits specified in (iii) and (iv). The System Open Market Account manager will notify the FOMC in advance about any changes to the offering rate, per-counterparty limit, or overall size limit applied to operations. These operations shall be authorized through January 30, 2015."

By unanimous vote, the Committee ratified the Open Market Desk's domestic transactions over the intermeeting period. There were no intervention operations in foreign currencies for the System's account over the intermeeting period.

Monetary Policy Normalization

Meeting participants considered publication of a summary statement of their monetary policy normalization principles and plans based on the discussions at recent Committee meetings. Participants agreed that it was appropriate at this time to provide additional information regarding their approach to normalization. The proposed statement was seen as a concise summary of participants' views that would help the public understand the steps that the Committee plans to take when the time comes to begin the normalization process and that would convey the Committee's confidence in its plans. However, it was emphasized that the Committee would need to be flexible and pragmatic during normalization, adjusting the details of its approach, if necessary, in light of changing conditions. Regarding the specific points in the proposed statement, a couple of participants expressed their preference that the principles make greater allowance for sales of agency mortgage-backed securities (MBS) over the next few years in order to normalize the size and composition of the Federal Reserve's balance sheet more quickly and to limit distortions in the allocation of credit that they believed were associated with the Federal Reserve's holdings of agency MBS. In addition, a few participants noted that they would have preferred that the principles point to an earlier end to the reinvestment of repayments of principal on securities held in the SOMA portfolio. At the end of the discussion, all but one participant could support the publication of the following statement after the meeting:

Policy Normalization Principles and Plans

During its recent meetings, the Federal Open Market Committee (FOMC) discussed ways to normalize the stance of monetary policy and the Federal Reserve's securities holdings. The discussions were part of prudent planning and do not imply that normalization will necessarily begin soon. The Committee continues to judge that many of the normalization principles that it adopted in June 2011 remain applicable. However, in light of the changes in the System Open Market Account (SOMA) portfolio since 2011 and enhancements in the tools the Committee will have available to implement policy during normalization, the Committee has concluded that some aspects of the eventual normalization process will likely differ from those specified earlier. The Committee also has agreed that it is appropriate at this time to provide additional information regarding its normalization plans. All FOMC participants but one agreed on the following key elements of the approach they in-

tend to implement when it becomes appropriate to begin normalizing the stance of monetary policy:

- The Committee will determine the timing and pace of policy normalization—meaning steps to raise the federal funds rate and other short-term interest rates to more normal levels and to reduce the Federal Reserve's securities holdings—so as to promote its statutory mandate of maximum employment and price stability.
  - o When economic conditions and the economic outlook warrant a less accommodative monetary policy, the Committee will raise its target range for the federal funds rate.
  - o During normalization, the Federal Reserve intends to move the federal funds rate into the target range set by the FOMC primarily by adjusting the interest rate it pays on excess reserve balances.
  - o During normalization, the Federal Reserve intends to use an overnight reverse repurchase agreement facility and other supplementary tools as needed to help control the federal funds rate. The Committee will use an overnight reverse repurchase agreement facility only to the extent necessary and will phase it out when it is no longer needed to help control the federal funds rate.
- The Committee intends to reduce the Federal Reserve's securities holdings in a gradual and predictable manner primarily by ceasing to reinvest repayments of principal on securities held in the SOMA.
  - o The Committee expects to cease or commence phasing out reinvestments after it begins increasing the target range for the federal funds rate; the timing will depend on how economic and financial conditions and the economic outlook evolve.
  - o The Committee currently does not anticipate selling agency mortgage-backed securities as part of the normalization process, although limited sales might be warranted in the longer run to reduce or eliminate residual holdings. The timing and pace of any sales would be communicated to the public in advance.
- The Committee intends that the Federal Reserve will, in the longer run, hold no more securities than necessary to implement monetary policy efficiently and effectively, and that it will hold primarily Treasury securities, thereby minimizing the effect of Federal Reserve holdings on the allocation of credit across sectors of the economy.
- The Committee is prepared to adjust the details of its approach to policy normalization in light of economic and financial developments.

The Board meeting concluded at the end of the discussion of policy normalization principles and plans.

Staff Review of the Economic Situation

The information reviewed for the September 16–17 meeting suggested that economic activity was expanding at a moderate pace in the third quarter. Labor market conditions improved a little further, although the unemployment rate was essentially unchanged over the intermeeting period. Consumer price inflation was running below the FOMC's longer-run objective of 2 percent, but measures of longer-run inflation expectations remained stable.

Total nonfarm payroll employment increased in July and August but at a slower pace than in the first half of the year. The unemployment rate was 6.1 percent in August, the same as in June, and the labor force participation rate and the employment-to-population ratio also were unchanged since that time. Both the share of workers employed part time for economic reasons and the rate of long-duration unemployment declined a little over the past two months. Other recent indicators generally pointed to ongoing improvement in labor market conditions: Although some measures of household expectations of the labor market situation deteriorated somewhat, the rates of job openings and of gross private-sector hiring moved up, initial claims for unemployment insurance were essentially flat at a relatively low level, and some readings on firms' hiring plans improved.

On balance, industrial production edged up over July and August, and the rate of manufacturing capacity utilization was unchanged. Automakers' schedules indicated that the pace of motor vehicle assemblies would decline slightly in the fourth quarter, but broader indicators of manufacturing production, such as the readings

on new orders from the national and regional manufacturing surveys, were consistent with moderate increases in factory output in the near term.

Real personal consumption expenditures (PCE) appeared to be rising at a moderate pace in the third quarter.[5] The components of nominal retail sales data used by the Bureau of Economic Analysis (BEA) to construct its estimates of PCE increased at a solid rate in July and August, and sales of light motor vehicles surged in August after edging down in July. Recent information pertaining to key factors that influence consumer spending were positive: Real disposable incomes continued to increase in July, households' net worth likely edged up as equity prices and home values rose somewhat further, and consumer sentiment as measured by the Thomson Reuters/University of Michigan Surveys of Consumers improved in August and early September.

The pace of activity in the housing sector seemed to be picking up. Starts and permits of both new single-family homes and multifamily units were higher in July than their average levels in the second quarter. Sales of existing homes increased further in July, although new home sales declined.

Real private expenditures for business equipment and intellectual property products appeared to rise further going into the third quarter. Nominal shipments of nondefense capital goods excluding aircraft moved up in July. Moreover, new orders for these capital goods continued to be above the level of shipments, pointing to increases in shipments in subsequent months. In addition, other forward-looking indicators, such as surveys of business conditions, were consistent with moderate gains in business equipment spending in the near term. Nominal business expenditures for nonresidential construction also increased in July. Recent book-value data for inventories, along with readings on inventories from national and regional manufacturing surveys, did not point to significant inventory imbalances in most industries; in the energy sector, inventories were drawn down significantly early in the year and, despite substantial stockbuilding since then, remained low.

Total real government purchases seemed to be roughly flat in the third quarter. Federal government purchases probably declined a little, as defense spending was lower in July and August than in the second quarter. State and local government purchases appeared to be rising slowly as the payrolls of these governments expanded a bit further in July and August and their nominal construction expenditures increased in July.

The U.S. international trade deficit narrowed in both June and July. Exports were little changed in June, but they expanded robustly in July, with particular strength in industrial supplies and automotive products. Imports fell in June but then partly recovered in July, driven by swings in imports of oil and automotive products.

Total U.S. consumer price inflation, as measured by the PCE price index, was about 1½ percent over the 12 months ending in July. Over the 12 months ending in August, the consumer price index (CPI) rose about 1¾ percent. Consumer energy prices declined in both July and August, while consumer food prices rose. Core price inflation (which excludes food and energy prices) was essentially the same as total inflation for the PCE price measure and for the CPI over their most recent 12-month periods. Near-term inflation expectations from the Michigan survey moved down a bit in August and early September, while longer-term inflation expectations in the survey were little changed.

Measures of labor compensation increased a little faster than consumer prices. Compensation per hour in the business sector rose 2¾ percent over the year ending in the second quarter; with modest gains in labor productivity, unit labor costs advanced more slowly than compensation per hour. Over the same year-long period, the employment cost index rose only about 2 percent, and average hourly earnings increased at a similar rate over the 12 months ending in August.

Foreign economies continued to expand in the second quarter, but with significant differences across countries. Economic growth rebounded strongly from a weak first-quarter pace in Canada, China, and Mexico, supported by improvement in exports. In contrast, the Japanese economy contracted sharply following the consumption tax increase in April, economic activity stagnated in the euro area, and the Brazilian economy fell into recession. In the third quarter, household spending appeared to be normalizing in Japan, and production continued to rise in Mexico. However, indicators of economic activity in the euro area remained weak, and Chinese economic data for July and August suggested

[5] Recently released data for health-services consumption in the second quarter were notably stronger than the Bureau of Economic Analysis estimated when constructing its most recent PCE estimates for the second quarter.

some slowing in the third quarter. With inflation very low in the euro area, the European Central Bank reduced its policy interest rates at its September 4 meeting and announced plans to purchase private assets.

Staff Review of the Financial Situation

Data releases on domestic economic activity were reportedly interpreted by financial market participants as somewhat better than expected, on balance, notwithstanding the disappointing employment report for August. Federal Reserve communications, particularly the July FOMC minutes and the Chair's speech at the Jackson Hole economic policy symposium, were viewed as signaling slightly less policy accommodation than anticipated. Reflecting these and other developments, yields on nominal Treasury securities rose somewhat and equity prices edged up over the intermeeting period. On net, the conflicts in the Middle East and Ukraine and other geopolitical tensions had limited effects on domestic financial markets.

The federal funds rate path implied by financial market quotes was essentially unchanged over the intermeeting period. But the results from the Desk's September Survey of Primary Dealers indicated that the distribution of the likely date of liftoff across dealers shifted to somewhat earlier dates, and showed the second quarter of 2015 as the most likely date for liftoff. However, the dealers' expected levels of various employment and inflation indicators at the time of liftoff did not change materially from the previous survey.

The yield on 10-year nominal Treasury securities moved up about 15 basis points, on net, since the FOMC met in July, likely boosted in part by Federal Reserve communications. Measures of inflation compensation based on Treasury Inflation-Protected Securities edged down, reportedly reflecting the lower-than-expected CPI data in July and recent declines in oil prices.

Broad measures of domestic equity prices were up modestly over the intermeeting period, with some reports suggesting that investors were interpreting incoming economic data as implying that the economic recovery was strengthening.

Yields on corporate bonds and agency MBS rose about in line with those on comparable-maturity Treasury securities. High-yield bond mutual funds experienced sharp outflows early in the intermeeting period, and spreads on such bonds widened noticeably; however, these spreads returned to their initial levels over subsequent weeks, and high-yield bond funds attracted modest inflows. Measures of liquidity in the corporate bond market remained stable in the face of these substantial flows.

Conditions in short-term dollar funding markets were little changed. The Federal Reserve continued its testing of ON RRP operations over the intermeeting period. Take-up in ON RRP operations increased a little, on average, over the period relative to the previous intermeeting period.

Credit conditions for domestic businesses remained favorable. Corporate bond issuance slowed in July and August, reflecting a fairly typical summer lull as well as the elevated volatility in the high-yield bond market early in the intermeeting period, but issuance rebounded strongly in the first week of September. Commercial paper outstanding and commercial and industrial loans at banks expanded briskly. Credit conditions in the commercial real estate (CRE) sector continued to ease, and growth in CRE loans at banks stayed solid. The issuance of commercial mortgage-backed securities remained robust in July and August.

Issuance of institutional leveraged loans continued apace in July and August, traditionally a slow period in this market. The issuance of "new money" loans, which are typically earmarked for corporate leveraged-buyouts and mergers and acquisitions, was strong, and the pipeline of such loans was reported to be quite large heading into the fall. The issuance of collateralized loan obligations was still a major source of demand for leveraged loans.

Financing conditions for households remained mixed. Auto loans were widely available; standards and terms for credit card loans eased somewhat, though they were still tight; and access to residential mortgages continued to be limited for all but those with excellent credit histories.

Responding in part to disappointing economic data abroad, the U.S. dollar appreciated against most currencies over the intermeeting period, including large appreciations against the euro, the yen, and the pound sterling. Greater monetary accommodation in the euro area and expectations of a lower policy rate in the near term added to the downward pressure on the euro while uncertainty about the outcome of the forthcoming referendum on Scottish independence weighed on the value of the pound. In addition, near-term policy rate expectations moved down in the United Kingdom, reacting to both the release of the August *Inflation Report* and uncertainty induced by the referendum. Sovereign yields in the European economies generally declined, and yield

spreads of sovereign bonds from the euro-area periphery over German bunds narrowed considerably. Most foreign equity indexes ended the period modestly higher.

Staff Economic Outlook

In the economic forecast prepared by the staff for the September FOMC meeting, the projection for growth in real gross domestic product (GDP) in the second half of this year was revised down slightly from the one prepared for the previous meeting, primarily because of a somewhat weaker near-term outlook for consumer spending. The staff's medium-term forecast for real GDP was also revised down a little, reflecting a higher projected path for the foreign exchange value of the dollar along with slightly smaller projected gains for home prices. The staff still anticipated that the pace of real GDP growth in 2015 and 2016 would exceed the growth rate of potential output, supported by continued increases in consumer and business confidence, the further easing of the restraint on spending from changes in fiscal policy, additional improvements in credit availability, and a pickup in foreign economic growth. In 2017, real GDP growth was projected to begin slowing toward, but to remain above, the rate of potential output growth. The expansion in economic activity over the projection period was anticipated to steadily reduce resource slack, and the unemployment rate was expected to decline gradually and temporarily move slightly below the staff's estimate of its longer-run natural rate toward the end of the period.

The staff's near-term forecast for inflation was a little lower than the projection prepared for the previous FOMC meeting, reflecting recent readings on core consumer price inflation that were lower than anticipated and declines in oil prices that were faster than expected, but the forecast for inflation over the medium term was little changed. The staff continued to project inflation to be lower in the second half of this year than in the first half and to remain below the Committee's longer-run objective of 2 percent over the next few years. With longer-term inflation expectations assumed to remain stable, resource slack projected to diminish slowly, and changes in commodity and import prices expected to be subdued, inflation was projected to rise gradually and to reach the Committee's objective in the longer run.

Overall, the staff's economic projection for the September meeting was quite similar to the forecast presented at the June meeting, when the FOMC last prepared a Summary of Economic Projections (SEP). The staff's September projection showed a slightly higher path for the unemployment rate, a bit lower real GDP growth, and essentially no change to inflation compared with its June forecast.

The staff continued to view the uncertainty around its projections for real GDP growth, the unemployment rate, and inflation as similar to the average over the past 20 years. The risks to the forecast for real GDP growth were still seen as tilted a little to the downside, as neither monetary policy nor fiscal policy was viewed as well positioned to help the economy withstand adverse shocks. At the same time, the staff viewed the risks around its outlook for the unemployment rate and for inflation as roughly balanced.

Participants' Views on Current Conditions and the Economic Outlook

In conjunction with this FOMC meeting, members of the Board of Governors and the Federal Reserve Bank presidents submitted their projections of real output growth, the unemployment rate, inflation, and the federal funds rate for each year from 2014 through 2017 and over the longer run, conditional on each participant's assessment of appropriate monetary policy. 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. These economic projections and policy assessments are described in the SEP, which is attached as an addendum to these minutes.

In their discussion of the economic situation and the outlook, meeting participants viewed the information received over the intermeeting period as suggesting that economic activity was expanding at a moderate rate. On balance, labor market conditions improved somewhat further; however, the unemployment rate was little changed, and most participants judged that there remained significant underutilization of labor resources. Participants generally expected that, over the medium term, real economic activity would increase at a pace sufficient to lead to a further gradual decline in the unemployment rate toward levels consistent with the Committee's objective of maximum employment. Inflation was running below the Committee's longer-run objective, but longer-term inflation expectations were stable. Participants anticipated that inflation would move toward the Committee's 2 percent goal in coming years, with several expressing concern that inflation might persist below the Committee's objective for quite some time. Most viewed the risks to the outlook for economic activity and the labor market as broadly balanced. However, a number of participants noted that economic growth over the medium term might be slower than they

expected if foreign economic growth came in weaker than anticipated, structural productivity continued to increase only slowly, or the recovery in residential construction continued to lag.

Household spending appeared to be rising moderately, with several participants noting that the recent positive reports on retail sales, motor vehicle purchases, and health-care spending had reduced their concern about weakness in the underlying pace of household spending. Among the favorable factors attending the outlook for consumer spending, participants cited continued gains in household wealth, improved household balance sheets, low delinquency rates, a high saving rate, or rising confidence in employment and income prospects. However, other participants said they heard mixed reports from business contacts regarding consumer spending or were uncertain about the prospects for stronger gains in real income necessary to sustain moderate growth in household spending.

The recovery in housing activity remained slow in all but a few areas of the country despite relatively low mortgage rates, rising house prices, and improvements in household wealth. Contacts in a couple of Districts reported that new construction was being held back by shortages of materials, of lots available for development, and of skilled workers or by the overhang of vacant homes not on the market. Households with relatively low credit scores continued to have difficulty obtaining mortgage loans. It was noted that this difficulty could be a factor restraining the demand for housing, particularly among younger households who have high levels of student loan debt or weak job prospects. A few participants pointed out the relative strength in construction of and demand for multifamily units, which possibly was due to a shift in demand among younger homebuyers away from single-family homes.

Information from business contacts in most parts of the country indicated improvements in business conditions, rising confidence about the economic outlook, and increasing willingness to undertake new investment projects. According to national and regional surveys, manufacturing activity was strong, and several participants had received reports of hiring and increased capital spending in that sector. Among the other industries cited as relatively strong in recent months were transportation, energy, and services. Several participants noted positive signs of further increases in investment spending going forward, including elevated levels of new orders and shipments of capital goods, strong interest in the technology sector, and the need to replace aging capital. A couple of participants added that nonresidential construction activity was rising in their Districts.

The improvement in business conditions was reflected in reports of increased demand for loans at banks in several Districts. Demand rose for loans to both households and businesses, and a couple of participants indicated that borrowers were expanding their use of existing credit lines as well as obtaining new commitments. Bankers in one District stated that, while they had eased the terms and conditions on loans in response to competition from other lenders, they had not taken on riskier loans. Some financial developments that could undermine financial stability over time were noted, including a deterioration in leveraged lending standards, stretched stock market valuations, and compressed risk spreads. However, one participant suggested that the leveraged loan market seemed to be moving into better balance, and that market participants appeared to be taking appropriate account of the changes in interest rates that might be associated with the eventual normalization of the stance of monetary policy. Moreover, a couple of participants, while stressing the importance of remaining vigilant about potential risks to financial stability, observed that conditions in financial markets at present did not suggest the types of financial stability considerations that would impede the achievement of the Committee's macroeconomic objectives.

Some participants noted that expectations for the path of the federal funds rate implied by market quotes appeared to remain below most of the projections of the federal funds rate provided by Committee participants in the SEP, which represent each individual participant's assessment of the appropriate path for the federal funds rate consistent with his or her economic outlook. However, it was pointed out that measures of financial market participants' expectations incorporate their judgments regarding not only the most likely outcomes, but also the possible downside tail risks that might be associated with especially low paths for the federal funds rate. For example, respondents to the recent Survey of Primary Dealers placed considerable odds on the federal funds rate returning to the zero lower bound during the two years following the initial increase in that rate. The probability that investors attach to such low interest rate scenarios could pull the expected path of the federal funds rate computed from market quotes below most Committee participants' assessments of appropriate policy as reported in the SEP.

The restraint on economic activity from fiscal policy was seen as diminishing, and a couple of participants pointed

out that, over the second half of the year, the remaining drag was likely to be small. Nonetheless, the cutbacks in both defense and nondefense federal outlays, as well as state governments' budget restraint, continued to weigh on jobs and income in some parts of the country. Fiscal policy overall was anticipated to be a neutral factor for economic growth over the next several years.

During participants' discussion of prospects for economic activity abroad, they commented on a number of uncertainties and risks attending the outlook. Over the intermeeting period, the foreign exchange value of the dollar had appreciated, particularly against the euro, the yen, and the pound sterling. Some participants expressed concern that the persistent shortfall of economic growth and inflation in the euro area could lead to a further appreciation of the dollar and have adverse effects on the U.S. external sector. Several participants added that slower economic growth in China or Japan or unanticipated events in the Middle East or Ukraine might pose a similar risk. At the same time, a couple of participants pointed out that the appreciation of the dollar might also tend to slow the gradual increase in inflation toward the FOMC's 2 percent goal.

Labor market conditions continued to improve over the intermeeting period. Although the unemployment rate was little changed, participants variously cited positive readings from other indicators, including a decline in longer-term unemployment, the low level of new claims for unemployment insurance, the rise in job openings, and survey reports of increased hiring plans and job availability. While the most recent estimate of nonfarm payroll employment showed a smaller monthly gain than earlier in the year, it followed six months in which increases had averaged more than 200,000. Some participants were reluctant to place much weight on one monthly report or noted that the first estimate for August has frequently been revised up in recent years. Participants generally agreed that the accumulated progress in labor market conditions since the Committee's current asset purchase program began in September 2012 had been substantial and expected that progress would be sustained. Nonetheless, they continued to express differing views on the extent of remaining slack in labor markets. Most agreed that underutilization of labor resources remained significant; these participants noted variously that the level of nonfarm payroll jobs had only recently returned to its pre-recession level, that the number of individuals working part time for economic reasons was still elevated relative to the level of unemployment, and that the labor force participation rate was still below assessments of its structural trend. In this regard, a couple of participants pointed out that the stability of the participation rate, on balance, over the past year suggested that some of the cyclical shortfall had diminished. Most agreed that the Committee's assessment of labor market slack should be grounded in its review of a range of labor market indicators, although a few saw the gap between the unemployment rate and their estimate of its longer-run normal level as a reliable indicator of slack.

Most measures of labor compensation showed no broad-based increase in wage inflation. However, businesses in several Districts continued to report upward pressure on wages in specific industries and occupations associated with labor shortages or difficult-to-fill jobs, while a couple of participants noted a more general rise in current or planned wage increases in their regions. Several participants commented that the relatively subdued rise in nominal labor compensation was still below longer-run trend rates of productivity growth and inflation and was a signal of slack remaining in the labor market. However, a couple of others suggested some caution in reading subdued wage inflation as an indicator of labor market underutilization. They pointed out that if nominal wages did not adjust downward when unemployment was high, pent-up wage deflation could help explain the modest increases in wages so far during the recovery, and wages could rise more rapidly going forward as the unemployment rate continues to decline.

Inflation had been running below the Committee's longer-run objective, and the readings on consumer prices over the intermeeting period were somewhat softer than during the preceding four months, in part because of declining energy prices. Most participants anticipated that inflation would move gradually back toward its objective over the medium term. However, participants differed somewhat in their assessments of how quickly inflation would move up. Some cited the stability of longer-run inflation expectations at a level consistent with the Committee's objective as an important factor in their forecasts that inflation would reach 2 percent in coming years. Participants' views on the responsiveness of inflation to the level and change in resource utilization varied, with a few seeing labor markets as sufficiently tight that wages and prices would soon begin to move up noticeably but with some others indicating that inflation was unlikely to approach 2 percent until the unemployment rate falls below its longer-run normal level. While most viewed the risk that inflation would run persistently below 2 percent as having diminished somewhat since earlier in the year, a couple noted the possibility that longer-term inflation expectations might be slightly lower than the Committee's 2 percent objective

or that domestic inflation might be held down by persistent disinflation among U.S. trading partners and further appreciation of the dollar.

In their discussion of the appropriate path for monetary policy over the medium term, meeting participants agreed that the timing of the first increase in the federal funds rate and the appropriate path of the policy rate thereafter would depend on incoming economic data and their implications for the outlook. That said, several participants thought that the current forward guidance regarding the federal funds rate suggested a longer period before liftoff, and perhaps also a more gradual increase in the federal funds rate thereafter, than they believed was likely to be appropriate given economic and financial conditions. In addition, the concern was raised that the reference to "considerable time" in the current forward guidance could be misunderstood as a commitment rather than as data dependent. However, it was noted that the current formulation of the Committee's forward guidance clearly indicated that the Committee's policy decisions were conditional on its ongoing assessment of realized and expected progress toward its objectives of maximum employment and 2 percent inflation, and that its assessment reflected its review of a broad array of economic indicators. It was emphasized that the current forward guidance for the federal funds rate was data dependent and did not indicate that the first increase in the target range for the federal funds rate would occur mechanically after some fixed calendar interval following the completion of the current asset purchase program. If employment and inflation converged more rapidly toward the Committee's goals than currently expected, the date of liftoff could be earlier, and subsequent increases in the federal funds rate target more rapid, than participants currently anticipated. Conversely, if employment and inflation returned toward the Committee's objectives more slowly than currently anticipated, the date of liftoff for the federal funds rate could be later, and future federal funds rate target increases could be more gradual. In addition, some participants saw the current forward guidance as appropriate in light of risk-management considerations, which suggested that it would be prudent to err on the side of patience while awaiting further evidence of sustained progress toward the Committee's goals. In their view, the costs of downside shocks to the economy would be larger than those of upside shocks because, in current circumstances, it would be less problematic to remove accommodation quickly, if doing so becomes necessary, than to add accommodation. A number of participants also noted that changes to the forward guidance might be misinterpreted as a signal of a fundamental shift in the stance of policy that could result in an unintended tightening of financial conditions.

Participants also discussed how the forward-guidance language might evolve once the Committee decides that the current formulation no longer appropriately conveys its intentions about the future stance of policy. Most participants indicated a preference for clarifying the dependence of the current forward guidance on economic data and the Committee's assessment of progress toward its objectives of maximum employment and 2 percent inflation. A clarification along these lines was seen as likely to improve the public's understanding of the Committee's reaction function while allowing the Committee to retain flexibility to respond appropriately to changes in the economic outlook. One participant favored using a numerical threshold based on the inflation outlook as a form of forward guidance. A few participants, however, noted the difficulties associated with expressing forward guidance in terms of numerical thresholds for some set of economic variables. Another participant indicated a preference for reducing reliance on explicit forward guidance in the statement and conveying instead guidance regarding the future stance of monetary policy through other mechanisms, including the SEP. It was noted that providing explicit forward guidance regarding the future path of the federal funds rate might become less important once a highly accommodative stance of policy is no longer appropriate and the process of policy normalization is well under way. It was generally agreed that when changes to the forward guidance become appropriate, they will likely present communication challenges, and that caution will be needed to avoid sending unintended signals about the Committee's policy outlook.

Committee Policy Action

In their discussion of monetary policy for the period ahead, members judged that information received since the FOMC met in July indicated that economic activity was expanding at a moderate pace. Household spending appeared to be rising moderately, and business fixed investment was advancing, while the recovery in the housing sector remained slow. Fiscal policy was restraining economic growth, although the extent of restraint was diminishing and would soon be quite small. Inflation was running below the Committee's longer-run objective, but longer-term inflation expectations were stable. The Committee expected that, with appropriate policy accommodation, economic activity would expand at a

moderate pace, with labor market indicators and inflation moving toward levels that the Committee judges consistent with its dual mandate.

With incoming information continuing to broadly support the Committee's expectation of ongoing improvement in labor market conditions and inflation moving back toward the Committee's 2 percent objective, members agreed that a further measured reduction in the pace of asset purchases was appropriate at this meeting. Accordingly, the Committee agreed that, beginning in October, it would add to its holdings of agency MBS at a pace of $5 billion per month rather than $10 billion per month, and it would add to its holdings of longer-term Treasury securities at a pace of $10 billion per month rather than $15 billion per month. The Committee judged that, if incoming information broadly supported its expectations that labor market indicator and inflation would continue to move toward mandate-consistent levels, it would end its current program of asset purchases at its October meeting.

Members discussed their assessments of progress toward the Committee's objectives of maximum employment and 2 percent inflation and considered possible enhancements to the statement that would more clearly communicate the Committee's view on such progress. Regarding the labor market, many members indicated that, although labor market conditions had generally continued to improve, there was still significant slack in labor markets. A few members, however, expressed reservations about continuing to characterize the extent of underutilization of labor resources as significant. In the end, members agreed to indicate that labor market conditions had improved somewhat further, but that the unemployment rate was little changed and a range of labor market indicators continued to suggest that there remained significant underutilization of labor resources. It was noted, however, that the characterization of labor market underutilization might have to be changed if progress in the labor market continued. Regarding inflation, members agreed that inflation had moved closer to the Committee's 2 percent objective during the first half of the year but, more recently, had fallen back somewhat. As a consequence, they updated the language in the statement to indicate that inflation had been running below the Committee's longer-run objective. However, with stable longer-term inflation expectations, the Committee continued to judge that the likelihood of inflation running persistently below 2 percent had diminished somewhat since early in the year.

After the discussion, all members but two voted to maintain the Committee's target range for the federal funds rate and to reiterate its forward guidance about the federal funds rate. The guidance continued to state that the Committee's decisions about how long to maintain the current target range for the federal funds rate would depend on its assessment of actual and expected progress toward its objectives of maximum employment and 2 percent inflation. The Committee again anticipated that it likely would be appropriate to maintain the current target range for the federal funds rate for a considerable time after the asset purchase program ends, especially if projected inflation continued to run below the Committee's 2 percent longer-run goal, and provided that longer-term inflation expectations remained well anchored. The forward guidance also reiterated the Committee's expectation that, even after employment and inflation are near mandate-consistent levels, economic conditions may, for some time, warrant keeping the target federal funds rate below levels the Committee views as normal in the longer run. Two members, however, dissented because, in their view, the statement language did not accurately reflect the progress made to date toward the Committee's goals of maximum employment and inflation of 2 percent, and they believed that ongoing progress will likely warrant an earlier increase in the federal funds rate than suggested by the forward guidance in the Committee's postmeeting statement.

At the conclusion of the discussion, the Committee voted to authorize and direct the Federal Reserve Bank of New York, until it was instructed otherwise, to execute transactions in the SOMA in accordance with the following domestic policy directive:

> "Consistent with its statutory mandate, the Federal Open Market Committee seeks monetary and financial conditions that will foster maximum employment and price stability. In particular, the Committee seeks conditions in reserve markets consistent with federal funds trading in a range from 0 to ¼ percent. The Committee directs the Desk to undertake open market operations as necessary to maintain such conditions. Beginning in October, the Desk is directed to purchase longer-term Treasury securities at a pace of about $10 billion per month and to purchase agency mortgage-backed securities at a pace of about $5 billion per month. The Committee also directs the Desk to engage in dollar roll and coupon swap transactions as necessary to facilitate settlement of the Federal Reserve's agency mortgage-backed

securities transactions. The Committee directs the Desk to maintain its policy of rolling over maturing Treasury securities into new issues and its policy of reinvesting principal payments on all agency debt and agency mortgage-backed securities in agency mortgage-backed securities. The System Open Market Account manager and the secretary will keep the Committee informed of ongoing developments regarding the System's balance sheet that could affect the attainment over time of the Committee's objectives of maximum employment and price stability."

The vote encompassed approval of the statement below to be released at 2:00 p.m.:

"Information received since the Federal Open Market Committee met in July suggests that economic activity is expanding at a moderate pace. On balance, labor market conditions improved somewhat further; however, the unemployment rate is little changed and a range of labor market indicators suggests that there remains significant underutilization of labor resources. Household spending appears to be rising moderately and business fixed investment is advancing, while the recovery in the housing sector remains slow. Fiscal policy is restraining economic growth, although the extent of restraint is diminishing. Inflation has been running below the Committee's longer-run objective. Longer-term inflation expectations have remained stable.

Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. The Committee expects that, with appropriate policy accommodation, economic activity will expand at a moderate pace, with labor market indicators and inflation moving toward levels the Committee judges consistent with its dual mandate. The Committee sees the risks to the outlook for economic activity and the labor market as nearly balanced and judges that the likelihood of inflation running persistently below 2 percent has diminished somewhat since early this year.

The Committee currently judges that there is sufficient underlying strength in the broader economy to support ongoing improvement in labor market conditions. In light of the cumulative progress toward maximum employment and the improvement in the outlook for labor market conditions since the inception of the current asset purchase program, the Committee decided to make a further measured reduction in the pace of its asset purchases. Beginning in October, the Committee will add to its holdings of agency mortgage-backed securities at a pace of $5 billion per month rather than $10 billion per month, and will add to its holdings of longer-term Treasury securities at a pace of $10 billion per month rather than $15 billion per month. The Committee is maintaining its existing policy of reinvesting principal payments from its holdings of agency debt and agency mortgage-backed securities in agency mortgage-backed securities and of rolling over maturing Treasury securities at auction. The Committee's sizable and still-increasing holdings of longer-term securities should maintain downward pressure on longer-term interest rates, support mortgage markets, and help to make broader financial conditions more accommodative, which in turn should promote a stronger economic recovery and help to ensure that inflation, over time, is at the rate most consistent with the Committee's dual mandate.

The Committee will closely monitor incoming information on economic and financial developments in coming months and will continue its purchases of Treasury and agency mortgage-backed securities, and employ its other policy tools as appropriate, until the outlook for the labor market has improved substantially in a context of price stability. If incoming information broadly supports the Committee's expectation of ongoing improvement in labor market conditions and inflation moving back toward its longer-run objective, the Committee will end its current program of asset purchases at its next meeting. However, asset purchases are not on a preset course, and the Committee's decisions about their pace will remain contingent on the Committee's outlook for

the labor market and inflation as well as its assessment of the likely efficacy and costs of such purchases.

To support continued progress toward maximum employment and price stability, the Committee today reaffirmed its view that a highly accommodative stance of monetary policy remains appropriate. In determining how long to maintain the current 0 to ¼ percent target range for the federal funds rate, the Committee will assess progress—both realized and expected—toward its objectives of maximum employment and 2 percent inflation. This assessment will take into account a wide range of information, including measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial developments. The Committee continues to anticipate, based on its assessment of these factors, that it likely will be appropriate to maintain the current target range for the federal funds rate for a considerable time after the asset purchase program ends, especially if projected inflation continues to run below the Committee's 2 percent longer-run goal, and provided that longer-term inflation expectations remain well anchored.

When the Committee decides to begin to remove policy accommodation, it will take a balanced approach consistent with its longer-run goals of maximum employment and inflation of 2 percent. The Committee currently anticipates that, even after employment and inflation are near mandate-consistent levels, economic conditions may, for some time, warrant keeping the target federal funds rate below levels the Committee views as normal in the longer run."

Voting for this action: Janet L. Yellen, William C. Dudley, Lael Brainard, Stanley Fischer, Narayana Kocherlakota, Loretta J. Mester, Jerome H. Powell, and Daniel K. Tarullo.

Voting against this action: Richard W. Fisher and Charles I. Plosser.

President Fisher dissented because he believed that the continued strengthening of the real economy, the improved outlook for labor utilization and for general price stability, and continued signs of financial market excess will likely warrant an earlier reduction in monetary accommodation than is suggested by the Committee's stated forward guidance.

Mr. Plosser dissented because he objected to the statement's guidance indicating that it likely will be appropriate to maintain the current target range for the federal funds rate for "a considerable time after the asset purchase program ends." In his view, the reference to calendar time should be replaced with language that indicates how monetary policy will respond to incoming data. Moreover, he judged that the statement did not acknowledge the substantial progress that had been made toward the Committee's economic goals and thus risks unnecessary and disruptive volatility in financial markets, and perhaps in the economy, if the Committee reduces accommodation sooner or more quickly than financial markets anticipate.

It was agreed that the next meeting of the Committee would be held on Tuesday–Wednesday, October 28–29, 2014. The meeting adjourned at 10:35 a.m. on September 17, 2014.

Notation Vote

By notation vote completed on August 19, 2014, the Committee unanimously approved the minutes of the Committee meeting held on July 29–30, 2014.

William B. English
Secretary

Summary of Economic Projections

In conjunction with the September 16–17, 2014, Federal Open Market Committee (FOMC) meeting, meeting participants submitted their projections of real output growth, the unemployment rate, inflation, and the federal funds rate for each year from 2014 through 2017 and in the longer run.[1] Each participant's projection was based on information available at the time of the meeting plus his or her assessment of appropriate monetary policy and assumptions about the 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. "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 Federal Reserve's objectives of maximum employment and stable prices.

Overall, FOMC participants expected that, under appropriate monetary policy, economic growth would be faster in the second half of 2014 and in 2015 than their estimates of the U.S. economy's longer-run normal growth rate. Participants then saw real growth moving back slowly toward its longer-run rate in 2016 and 2017. The unemployment rate was projected to continue to decline gradually over the forecast period, and to be at or below participants' individual judgments of its longer-run normal level by the end of 2017 (table 1 and figure 1). Almost all participants projected that inflation, as measured by the four-quarter change in the price index for personal consumption expenditures (PCE), would rise gradually over the next few years, reaching a level at or near the Committee's 2 percent objective in 2016 or 2017.

Participants judged that it would be appropriate to begin adjusting the current highly accommodative stance of policy over the projection period as labor market indicators and inflation move back toward values the Committee judges consistent with the attainment of its mandated objectives of maximum employment and stable prices. As shown in figure 2, all but a few participants anticipated that it would be appropriate to begin raising the

[1] As discussed in its Policy Normalization Principles and Plans, released on September 17, 2014, the Committee intends to target a range for the federal funds rate during normalization. Participants were asked to provide, in their contributions to the Summary of Economic Projections, either the midpoint of the target range for the federal funds rate for any period when a range was anticipated or the target level for the federal funds rate, as appropriate. In the lower panel of figure 2, these values have been rounded to the nearest ⅛ percentage point.

Table 1. Economic projections of Federal Reserve Board members and Federal Reserve Bank presidents, September 2014

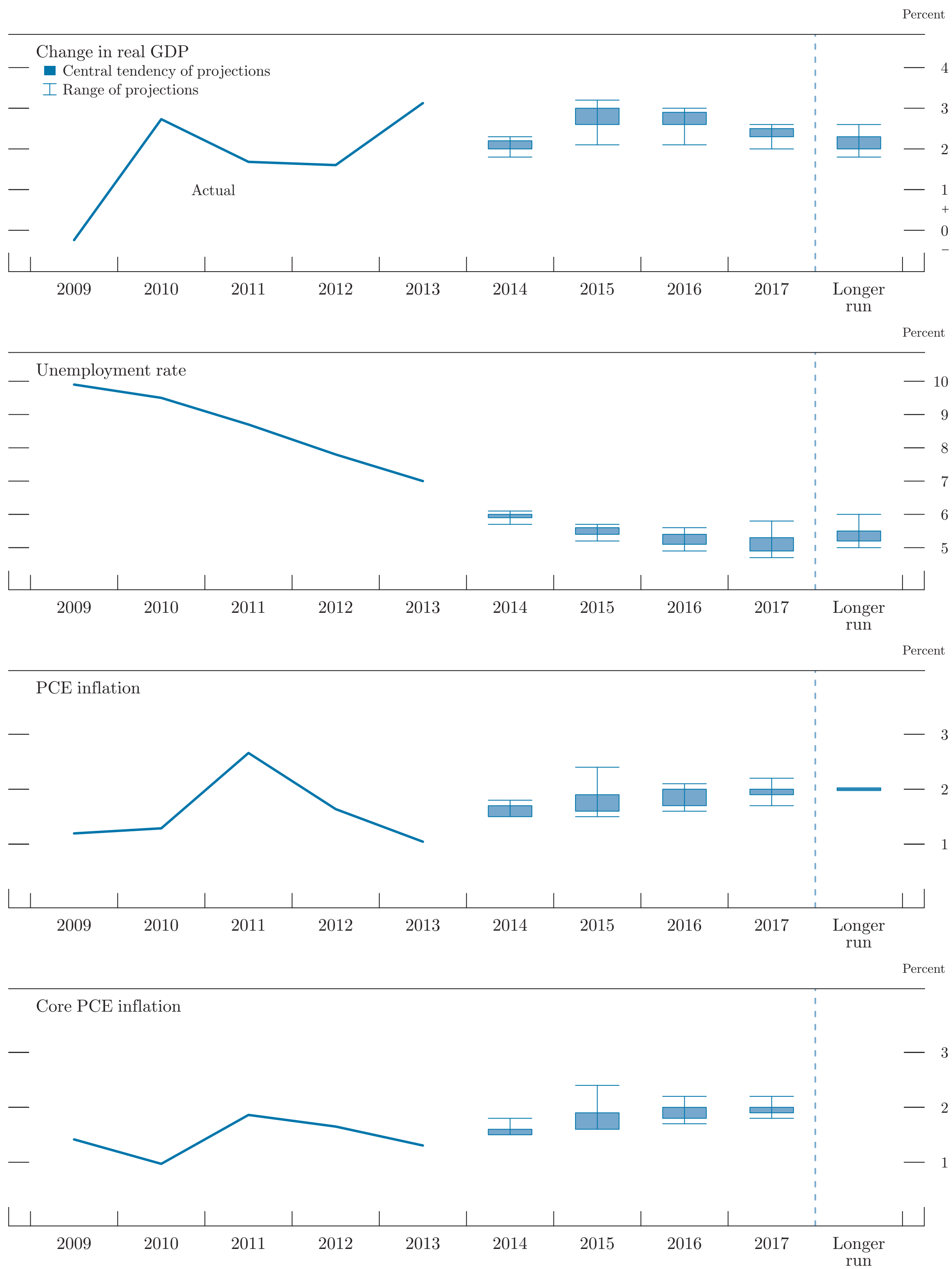
Percent

Variable	Central tendency[1]					Range[2]				
	2014	2015	2016	2017	Longer run	2014	2015	2016	2017	Longer run
Change in real GDP	2.0 to 2.2	2.6 to 3.0	2.6 to 2.9	2.3 to 2.5	2.0 to 2.3	1.8 to 2.3	2.1 to 3.2	2.1 to 3.0	2.0 to 2.6	1.8 to 2.6
June projection	2.1 to 2.3	3.0 to 3.2	2.5 to 3.0	n.a.	2.1 to 2.3	1.9 to 2.4	2.2 to 3.6	2.2 to 3.2	n.a.	1.8 to 2.5
Unemployment rate	5.9 to 6.0	5.4 to 5.6	5.1 to 5.4	4.9 to 5.3	5.2 to 5.5	5.7 to 6.1	5.2 to 5.7	4.9 to 5.6	4.7 to 5.8	5.0 to 6.0
June projection	6.0 to 6.1	5.4 to 5.7	5.1 to 5.5	n.a.	5.2 to 5.5	5.8 to 6.2	5.2 to 5.9	5.0 to 5.6	n.a.	5.0 to 6.0
PCE inflation	1.5 to 1.7	1.6 to 1.9	1.7 to 2.0	1.9 to 2.0	2.0	1.5 to 1.8	1.5 to 2.4	1.6 to 2.1	1.7 to 2.2	2.0
June projection	1.5 to 1.7	1.5 to 2.0	1.6 to 2.0	n.a.	2.0	1.4 to 2.0	1.4 to 2.4	1.5 to 2.0	n.a.	2.0
Core PCE inflation[3]	1.5 to 1.6	1.6 to 1.9	1.8 to 2.0	1.9 to 2.0		1.5 to 1.8	1.6 to 2.4	1.7 to 2.2	1.8 to 2.2	
June projection	1.5 to 1.6	1.6 to 2.0	1.7 to 2.0	n.a.		1.4 to 1.8	1.5 to 2.4	1.6 to 2.0	n.a.	

NOTE: Projections of change in real gross domestic product (GDP) and projections for both measures of inflation are 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 June projections were made in conjunction with the meeting of the Federal Open Market Committee on June 17–18, 2014.

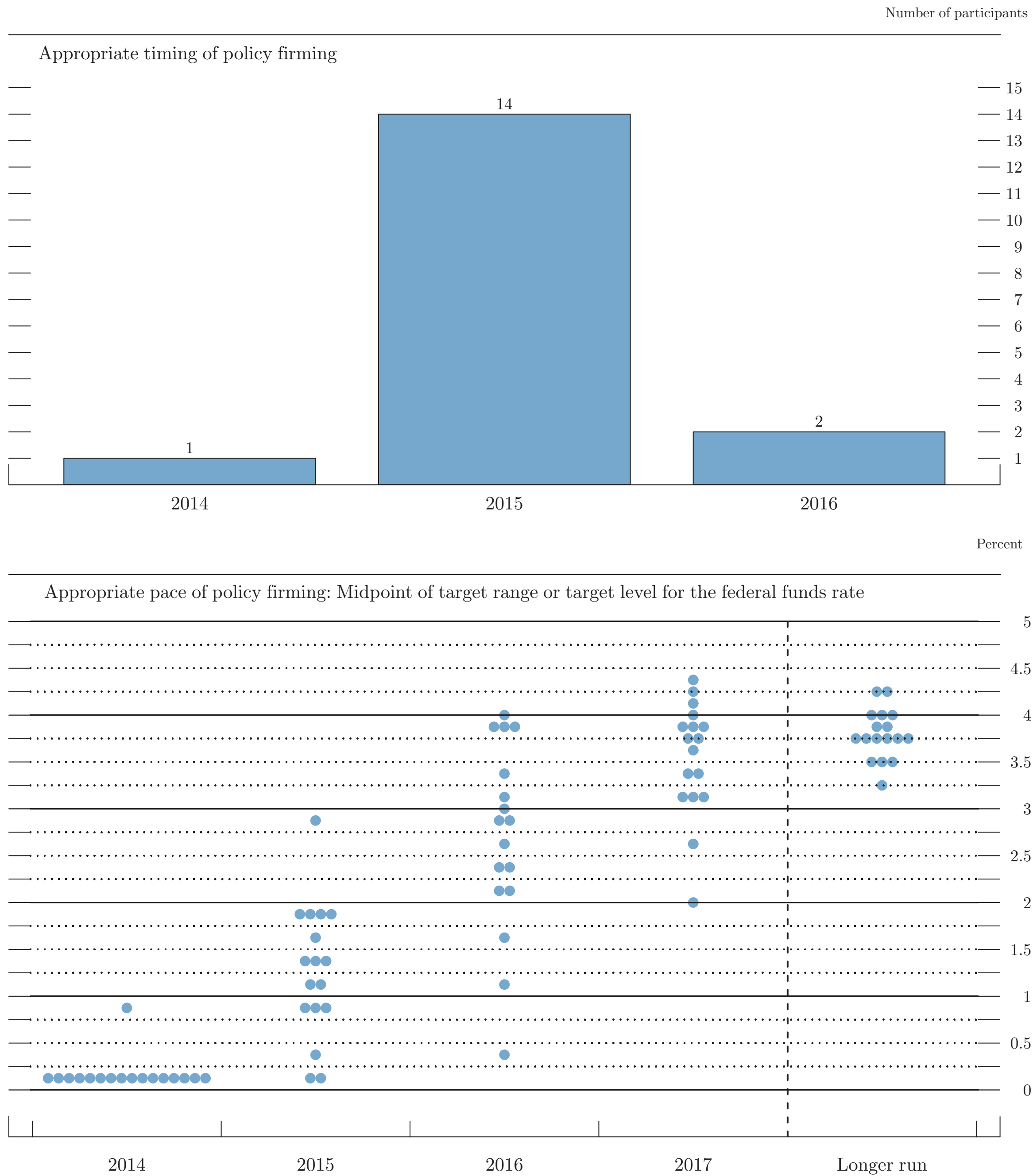
1. The central tendency excludes the three highest and three lowest projections for each variable in each year.
2. The range for a variable in a given year includes all participants' projections, from lowest to highest, for that variable in that year.
3. Longer-run projections for core PCE inflation are not collected.

Figure 1. Central tendencies and ranges of economic projections, 2014–17 and over the longer run



NOTE: Definitions of variables are in the general note to table 1. The data for the actual values of the variables are annual.

Figure 2. Overview of FOMC participants' assessments of appropriate monetary policy



Note: In the upper panel, the height of each bar denotes the number of FOMC participants who judge that, under appropriate monetary policy, the first increase in the target range for the federal funds rate from its current range of 0 to 1/4 percent will occur in the specified calendar year. In June 2014, the numbers of FOMC participants who judged that the first increase in the target federal funds rate would occur in 2014, 2015, and 2016 were, respectively, 1, 12, and 3. In the lower panel, 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.

target range for the federal funds rate in 2015, with most projecting that it will be appropriate to raise the target federal funds rate fairly gradually. Consistent with the improvement in the outlook for the labor market since the Committee began its current asset purchase program in September 2012, as well as participants' expectation of ongoing improvement in labor market conditions and inflation moving back toward their longer-run objective, all participants judged that it would be appropriate to complete the asset purchase program in October of this year.

Most participants saw the uncertainty associated with their outlooks for economic growth, the unemployment rate, and inflation as similar to that of the past 20 years, although a few judged it as somewhat higher. In addition, most participants considered the risks to the outlook for real gross domestic product (GDP) growth and the unemployment rate to be broadly balanced, and a substantial majority saw the risks to inflation as broadly balanced. However, a few participants, on net, saw the risks to their forecasts for economic growth or inflation as tilted to the downside.

The Outlook for Economic Activity

Participants generally projected that, conditional on their individual assumptions about appropriate monetary policy, economic growth would pick up from its low level in the first half of the year and run above their estimates of the longer-run normal rate of economic growth in the second half of 2014 and in 2015. Participants pointed to a number of factors that they expected would contribute to a pickup in economic growth in the second half of this year and next year, including rising household net worth, diminished restraint from fiscal policy, improving labor market conditions, and highly accommodative monetary policy. In general, participants then saw real growth moving gradually back toward, but remaining at or somewhat above, its longer-run rate in 2016 and 2017.

Many participants revised down their projections of real GDP growth somewhat in one or more years and particularly for 2015, compared with their projections in June. Participants pointed to a couple of factors leading them to mark down their projected paths for real GDP growth including the incorporation of weaker-than-expected data on consumer spending and perceptions of slower growth in potential GDP. The central tendencies of participants' projections for real GDP growth in their most recent projections were 2.0 to 2.2 percent in 2014, 2.6 to 3.0 percent in 2015, 2.6 to 2.9 percent in 2016, and 2.3 to 2.5 percent in 2017. The central tendency of the projections of real GDP growth over the longer run was 2.0 to 2.3 percent, essentially the same as in June.

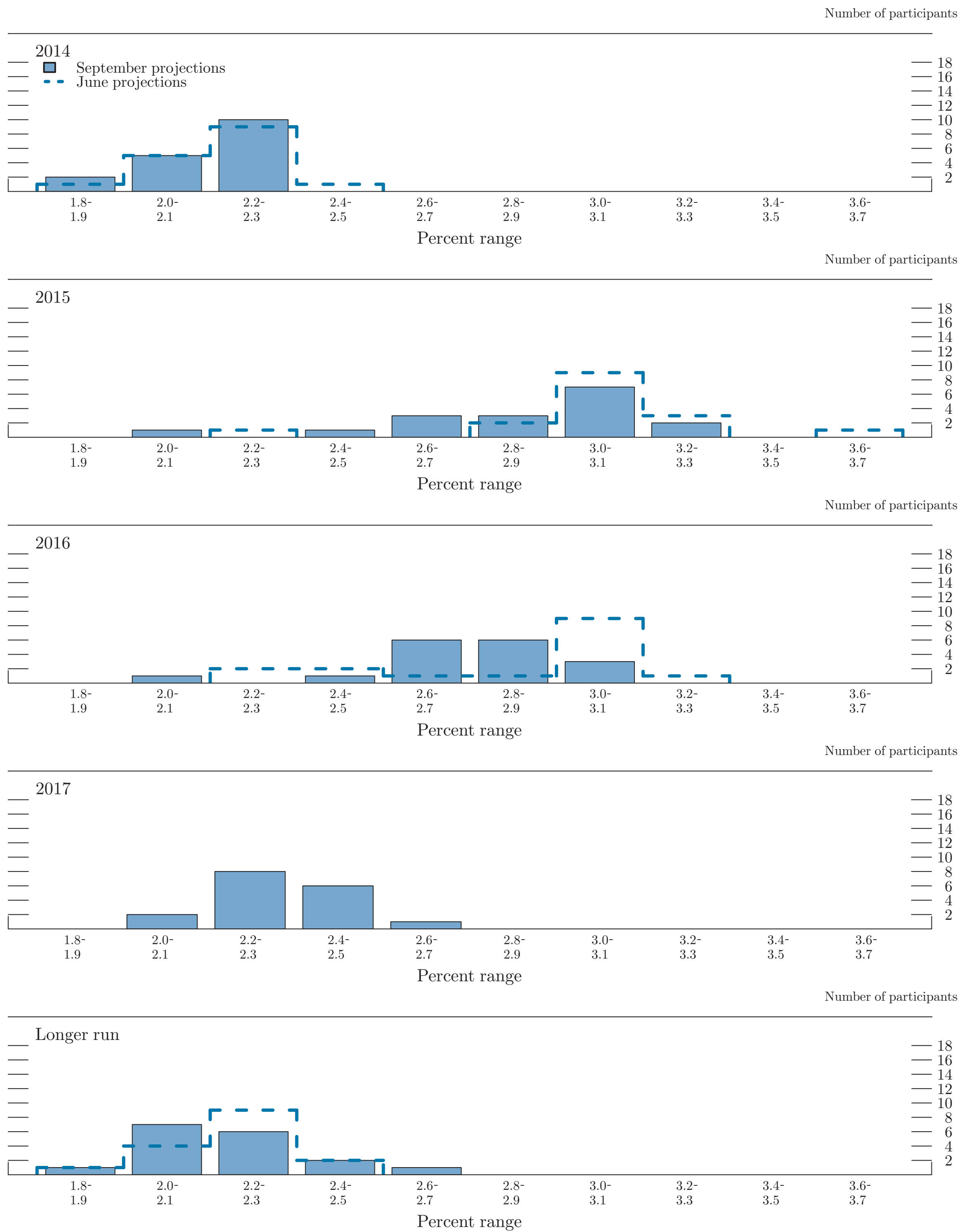
Participants anticipated that the unemployment rate would continue to decline gradually over the forecast period and, by the fourth quarter of 2017, would be close to or below their individual assessments of its longer-run normal level. The central tendencies of participants' forecasts for the unemployment rate in the fourth quarter of each year were 5.9 to 6.0 percent in 2014, 5.4 to 5.6 percent in 2015, 5.1 to 5.4 percent in 2016, and 4.9 to 5.3 percent in 2017. Participants' projected paths for the unemployment rate were slightly lower than in June, with many participants citing lower-than-expected incoming unemployment data. The central tendency of participants' estimates of the longer-run normal rate of unemployment that would prevail under appropriate monetary policy and in the absence of further shocks to the economy was unchanged at 5.2 to 5.5 percent.

Figures 3.A and 3.B show that participants held a range of views regarding the likely outcomes for real GDP growth and the unemployment rate through 2017. The diversity of views reflected their individual assessments of the rate at which the forces that have been restraining the pace of the economic recovery would abate, of the anticipated path for foreign economic activity, of the trajectory for growth in consumption as labor market slack diminishes, and of the appropriate path of monetary policy. Relative to June, the dispersions of participants' projections for real GDP growth and for the unemployment rate over the entire projection period were little changed.

The Outlook for Inflation

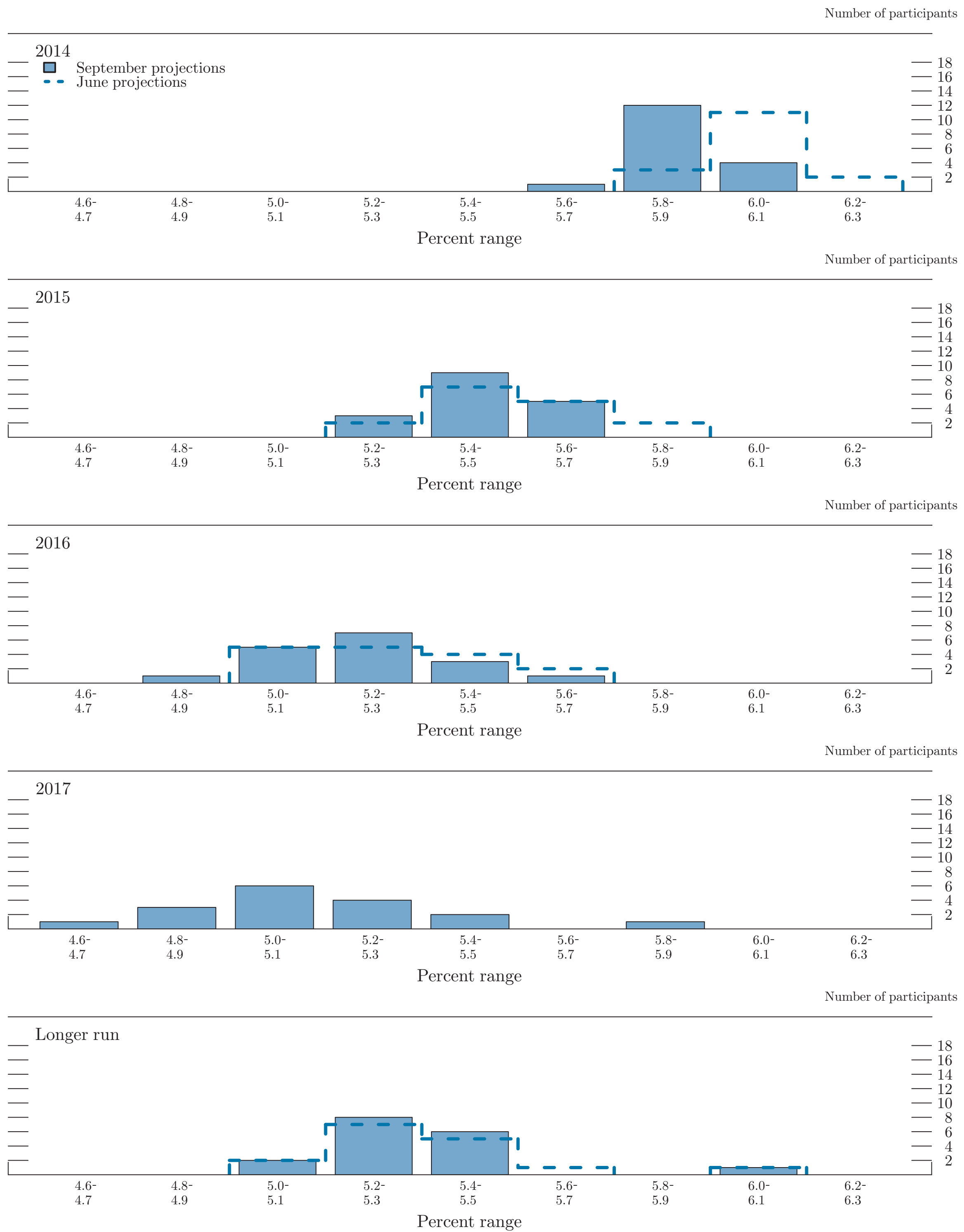
Compared with June, the central tendencies of participants' projections for inflation under the assumption of appropriate policy were largely unchanged for 2014 to 2016, and the trends anticipated over that period were generally expected to continue in 2017. Almost all participants projected that PCE inflation would rise gradually over the next few years to a level at or near the Committee's 2 percent objective. A few participants expected PCE inflation to rise somewhat above 2 percent at some point during the forecast period, while several others expected inflation to remain below 2 percent even at the end of 2017. The central tendencies for PCE inflation were 1.5 to 1.7 percent in 2014, 1.6 to 1.9 percent in 2015, 1.7 to 2.0 percent in 2016, and 1.9 to 2.0 percent in 2017. The central tendencies of the forecasts for core inflation were broadly similar to those for the headline measure. It was noted that a combination of factors—including stable inflation expectations, steadily diminishing resource slack, a pickup in wage growth, a gradual

Figure 3.A. Distribution of participants' projections for the change in real GDP, 2014–17 and over the longer run



NOTE: Definitions of variables are in the general note to table 1.

Figure 3.B. Distribution of participants' projections for the unemployment rate, 2014–17 and over the longer run



NOTE: Definitions of variables are in the general note to table 1.

decline in the foreign exchange value for the dollar, and still-accommodative monetary policy—was likely to contribute to a gradual rise of inflation back toward the Committee's longer-run objective of 2 percent.

Figures 3.C and 3.D provide information on the diversity of participants' views about the outlook for inflation. The ranges of participants' projections for inflation in 2014, 2015, and 2016 were little changed relative to June. The range in 2017 shows a very substantial concentration near the Committee's 2 percent longer-run objective by that time.

Appropriate Monetary Policy

Participants judged that it would be appropriate to begin reducing policy accommodation over the projection period as labor market indicators and inflation move back toward values the Committee judges consistent with the attainment of its mandated objectives of maximum employment and price stability. As shown in figure 2, all but a few participants anticipated that it would be appropriate to begin raising the target range for the federal funds rate in 2015, and most projected that the appropriate level of the federal funds rate would remain below its longer-run normal level through 2016. Most participants expected the appropriate level of the federal funds rate would be approaching, or would already have reached, their individual view of its longer-run normal level by the end of 2017.

All participants projected that the unemployment rate would be below 5.75 percent at the end of the year in which they judged the initial increase in the target range for the federal funds rate would be warranted, and all but one anticipated that inflation would be at or below the Committee's 2 percent goal at that time. Most participants projected that the unemployment rate would be above their estimates of its longer-run normal level at the end of the year in which they saw the target range for the federal funds rate increasing from its effective lower bound, although all but one thought that, by the end of 2016, the unemployment rate would be at or below their individual judgments of its longer-run normal rate.

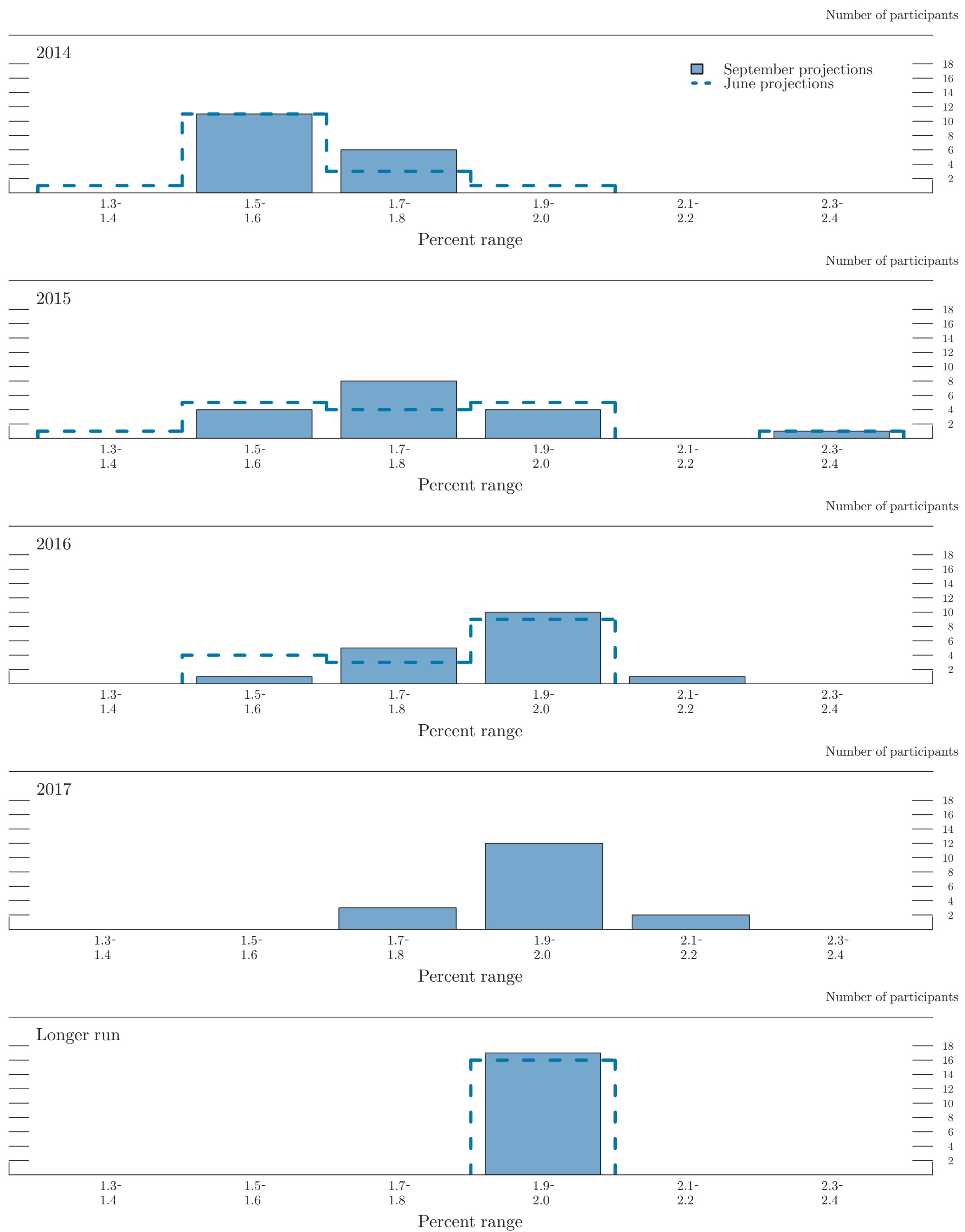
Figure 3.E provides the distribution of participants' judgments regarding the appropriate level of the target federal funds rate at the end of each calendar year from 2014 to 2017 and over the longer run. As noted earlier, nearly all participants judged that economic conditions would warrant maintaining the current exceptionally low level of the federal funds rate into 2015. Relative to their projections in June, the median values of the federal funds rate at the end of 2015 and 2016 increased 26 basis points and 38 basis points to 1.38 percent and 2.88 percent, respectively, while the mean values rose 10 basis points and 16 basis points to 1.28 percent and 2.69 percent, respectively. The dispersion of projections for the appropriate level of the federal funds rate was little changed in 2015 and 2016. Most participants judged that it would be appropriate to set the federal funds rate at or near its longer-run normal level in 2017, though some projected that the federal funds rate would still need to be set appreciably below its longer-run normal level, and one anticipated that it would be appropriate to target a level noticeably above its longer-run normal level. Participants provided a number of reasons why they thought it would be appropriate for the federal funds rate to remain below its longer-run normal level for some time after inflation and unemployment were near mandate-consistent levels. These reasons included an assessment that headwinds holding back the recovery will continue to exert restraint on economic activity at that time and that the risks to the economic outlook are asymmetric as a result of the constraints on monetary policy caused by the effective lower bound on the federal funds rate.

As in June, estimates of the longer-run level of the federal funds rate ranged from 3.25 to about 4.25 percent. All participants judged that inflation in the longer run would be equal to the Committee's inflation objective of 2 percent, implying that their individual judgments regarding the appropriate longer-run level of the real federal funds rate in the absence of further shocks to the economy ranged from 1.25 to about 2.25 percent.

Participants also described their views regarding the appropriate path of the Federal Reserve's balance sheet. Conditional on their respective economic outlooks, all participants judged that it likely would be appropriate to conclude asset purchases in October of this year. A few participants thought that it would be appropriate to begin reducing the size of the balance sheet relatively soon, with a couple of them judging that the Committee should reduce or cease the reinvestment of principal payments on securities held in the Federal Reserve's portfolio.

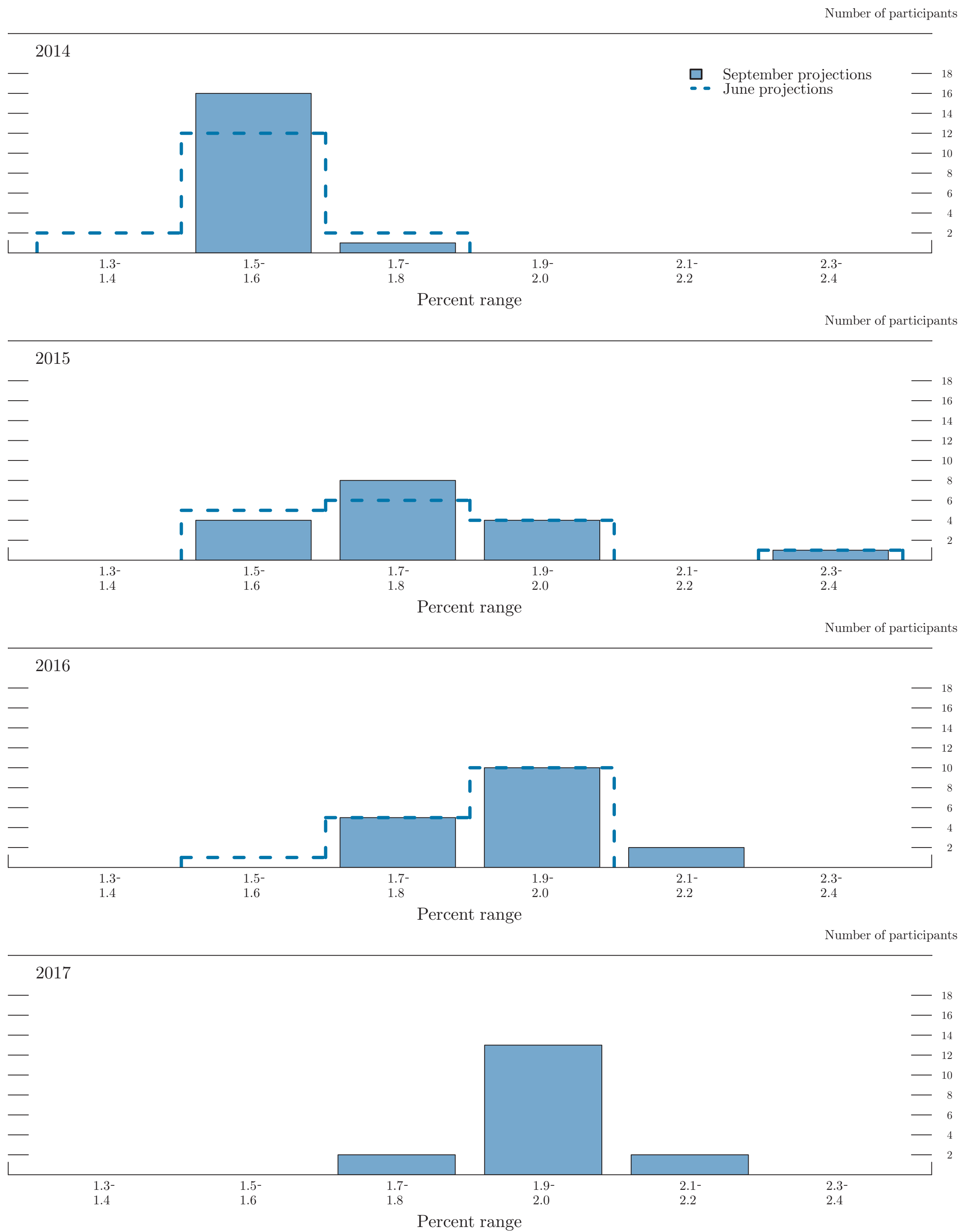
Participants' views of the appropriate path for monetary policy were informed by their judgments about the state of the economy, including the values of the unemployment rate and other labor market indicators that would be consistent with maximum employment, the extent to which the economy was currently falling short of maximum employment, the prospects for inflation to return to the Committee's longer-term objective of 2 percent,

Figure 3.C. Distribution of participants' projections for PCE inflation, 2014–17 and over the longer run



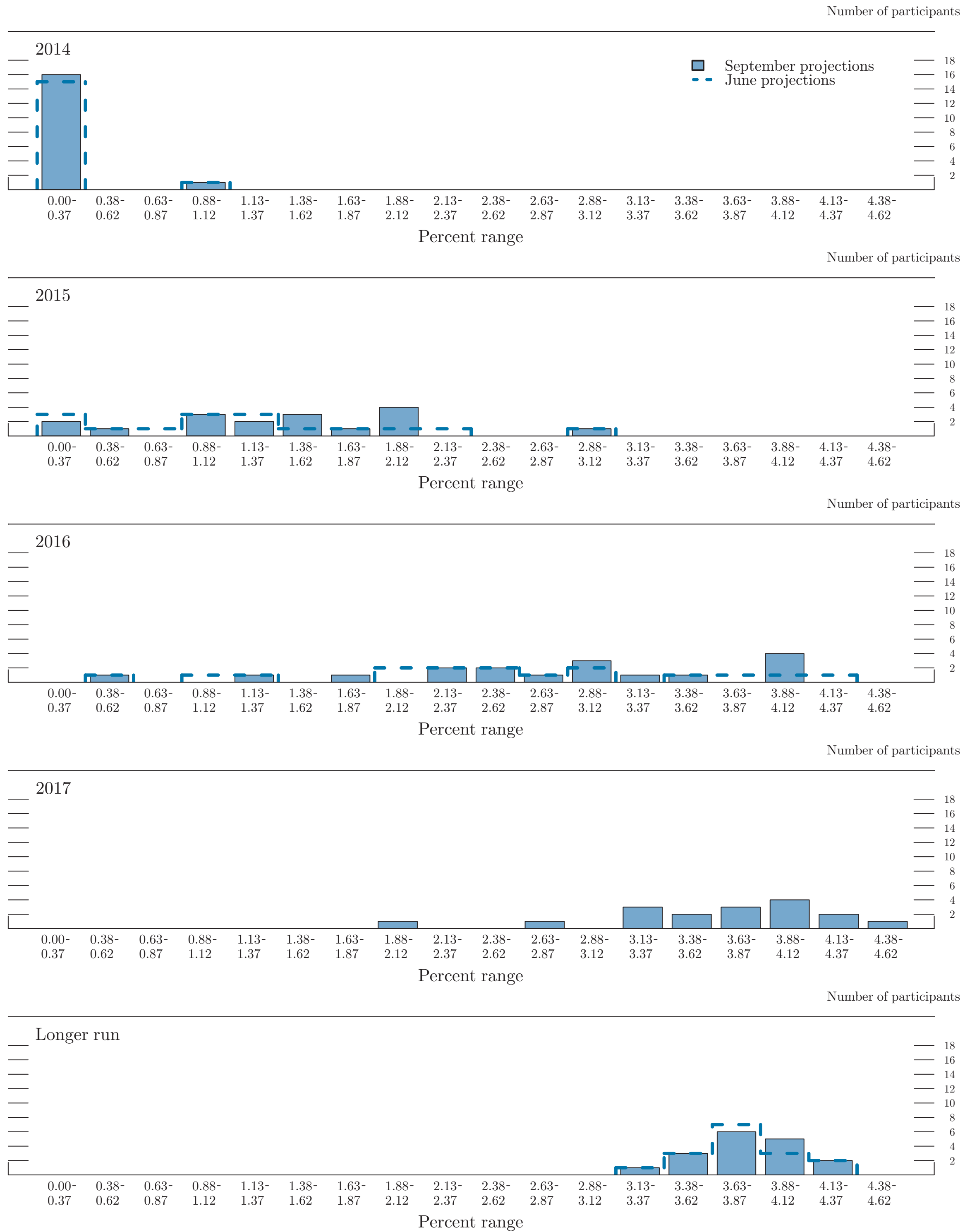
NOTE: Definitions of variables are in the general note to table 1.

Figure 3.D. Distribution of participants' projections for core PCE inflation, 2014–17



Note: Definitions of variables are in the general note 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, 2014-17 and over the longer run



NOTE: The midpoints of the target ranges for the federal funds rate and the target levels for the federal funds rate are measured at the end of the specified calendar year or over the longer run.

the desire to minimize potential disruption in financial markets, and the balance of risks around the outlook. Many participants also mentioned the prescriptions of various monetary policy rules as factors they considered in judging the appropriate path for the federal funds rate.

Uncertainty and Risks

A significant majority of participants continued to judge the levels of uncertainty about their projections for real GDP growth and the unemployment rate as broadly similar to the norms during the previous 20 years (figure 4).[2] Most participants continued to judge the risks to their outlooks for real GDP growth and the unemployment rate to be broadly balanced. A few participants viewed the risks to real GDP growth as weighted to the downside; one viewed the risks as weighted to the upside. Those participants who viewed risks as weighted to the downside cited, for example, concern about the limited ability of monetary policy at the effective lower bound to respond to further negative shocks to the economy. As in June, nearly all participants judged the risks to the outlook for the unemployment rate to be broadly balanced.

Participants generally saw the level of uncertainty and the balance of risks around their forecasts for overall PCE inflation and core inflation as little changed from June. Most participants continued to judge the levels of uncertainty associated with their forecasts for the two inflation measures to be broadly similar to historical norms, and most continued to see the risks to those projections as broadly balanced. Several participants, however, viewed the risks to their inflation forecasts as tilted to the downside, reflecting, for example, the possibility that the recent low levels of inflation could prove more persistent than anticipated; the possibility that the upward pull on prices from inflation expectations might be weaker than assumed; the current lack of inflationary pressures domestically or from abroad; and the judgment that, in current circumstances, it would be difficult for the Committee to respond effectively to low-inflation outcomes. Conversely, one participant saw upside risks to inflation, citing uncertainty about the timing and efficacy of the Committee's withdrawal of monetary policy accommodation.

Table 2. Average historical projection error ranges
Percentage points

Variable	2014	2015	2016	2017
Change in real GDP[1]	±1.3	±1.9	±2.1	±2.2
Unemployment rate[1]	±0.3	±1.0	±1.6	±1.9
Total consumer prices[2]	±0.8	±1.0	±1.1	±1.0

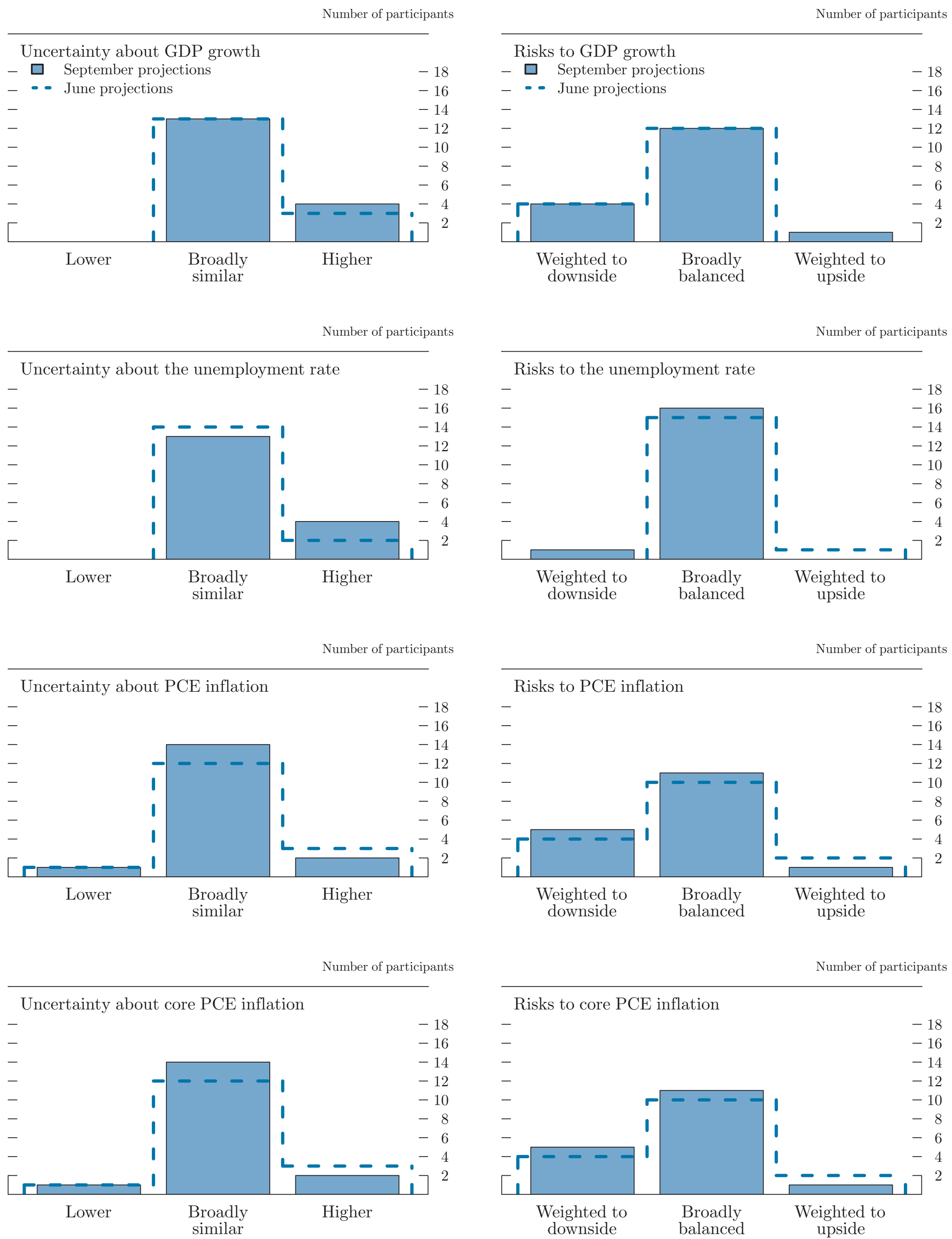
NOTE: Error ranges shown are measured as plus or minus the root mean squared error of projections for 1994 through 2013 that were released in the spring by various private and government forecasters. As described in the box "Forecast Uncertainty," under certain assumptions, there is about a 70 percent probability that actual outcomes for real GDP, unemployment, and consumer prices 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 (2007), "Gauging the Uncertainty of the Economic Outlook from Historical Forecasting Errors," Finance and Economics Discussion Series 2007-60 (Washington: Board of Governors of the Federal Reserve System, November), available at www.federalreserve.gov/ pubs/feds/2007/200760/200760abs.html; and Board of Governors of the Federal Reserve System, Division of Research and Statistics (2014), "Updated Historical Forecast Errors," memorandum, April 9, www.federalreserve.gov/foia/files/20140409-historical-forecast-errors.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. Projection is percent change, fourth quarter of the previous year to the fourth quarter of the year indicated.

[2] Table 2 provides estimates of the forecast uncertainty for the change in real GDP, the unemployment rate, and total consumer price inflation over the period from 1994 through 2013. At the end of this summary, the box "Forecast Uncertainty" discusses the sources and interpretation of uncertainty in the economic forecasts and explains the approach used to assess the uncertainty and risks attending the participants' projections.

Figure 4. Uncertainty and risks in economic projections



NOTE: For definitions of uncertainty and risks in economic projections, see the box "Forecast Uncertainty." Definitions of variables are in the general note to table 1.

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. 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, 1.1 to 4.9 percent in the second year, 0.9 to 5.1 percent in the third year, and 0.8 to 5.2 percent in the fourth year. The corresponding 70 percent confidence intervals for overall inflation would be 1.2 to 2.8 percent in the current year, 1.0 to 3.0 percent in the second year, 0.9 to 3.1 percent in the third year, and 1.0 to 3.0 percent in the fourth year.

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 variable is greater than, smaller than, or broadly similar to typical levels of forecast uncertainty in the past, as shown in table 2. 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, participants judge whether each variable is more likely to be above or below their projections of the most likely outcome. These judgments about the uncertainty and the risks attending each participant's projections are distinct from the diversity of participants' views about the most likely outcomes. Forecast uncertainty is concerned with the risks associated with a particular projection rather than with divergences across a number of different projections.

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.