Minutes of the Federal Open Market Committee
March 19–20, 2013

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, March 19, 2013, at 10:00 a.m., and continued on Wednesday, March 20, 2013, at 9:00 a.m.

PRESENT:
Ben Bernanke, Chairman
William C. Dudley, Vice Chairman
James Bullard
Elizabeth Duke
Charles L. Evans
Esther L. George
Jerome H. Powell
Sarah Bloom Raskin
Eric Rosengren
Jeremy C. Stein
Daniel K. Tarullo
Janet L. Yellen

Christine Cumming, Richard W. Fisher, Narayana Kocherlakota, Sandra Pianalto, and Charles I. Plosser, Alternate Members of the Federal Open Market Committee

Jeffrey M. Lacker, Dennis P. Lockhart, and John C. Williams, Presidents of the Federal Reserve Banks of Richmond, Atlanta, and San Francisco, respectively

William B. English, Secretary and Economist
Deborah J. Danker, Deputy Secretary
Matthew M. Luecke, Assistant Secretary
David W. Skidmore, Assistant Secretary
Michelle A. Smith, Assistant Secretary
Scott G. Alvarez, General Counsel
Thomas C. Baxter, Deputy General Counsel
Steven B. Kamin, Economist
David W. Wilcox, Economist

Thomas A. Connors, Troy Davig, Michael P. Leahy, Stephen A. Meyer, David Reifschneider, Christopher J. Waller, and William Wascher, Associate Economists

Simon Potter, Manager, System Open Market Account

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

Nellie Liang, Director, Office of Financial Stability Policy and Research, Board of Governors

James A. Clouse and William Nelson, Deputy Directors, Division of Monetary Affairs, Board of Governors

Jon W. Faust, Special Adviser to the Board, Office of Board Members, Board of Governors

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

Seth B. Carpenter, Senior Associate Director, Division of Monetary Affairs, Board of Governors

Ellen M. Meade, Senior Adviser, Division of Monetary Affairs, Board of Governors

Eric M. Engen, Thomas Laubach, David E. Lebow, and Michael G. Palumbo, Associate Directors, Division of Research and Statistics, Board of Governors

William F. Bassett, Deputy Associate Director, Division of Monetary Affairs, Board of Governors

Stacey Tevlin, Assistant Director, Division of Research and Statistics, Board of Governors; Min Wei, Assistant Director, Division of Monetary Affairs, Board of Governors

Jeremy B. Rudd, Adviser, Division of Research and Statistics, Board of Governors

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

Gregory L. Stefani, First Vice President, Federal Reserve Bank of Cleveland

David Altig, Loretta J. Mester, Glenn D. Rudebusch, and Mark S. Sniderman, Executive Vice

Presidents, Federal Reserve Banks of Atlanta, Philadelphia, San Francisco, and Cleveland, respectively

Spencer Krane, Lorie K. Logan, Kevin Stiroh, and Kei-Mu Yi, Senior Vice Presidents, Federal Reserve Banks of Chicago, New York, New York, and Minneapolis, respectively

Evan F. Koenig, Jonathan P. McCarthy, Giovanni Olivei, and Julie Ann Remache,[1] Vice Presidents, Federal Reserve Banks of Dallas, New York, Boston, and New York, respectively

Robert L. Hetzel, Senior Economist, Federal Reserve Bank of Richmond

[1] Attended Tuesday's session only.

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

The Manager of the System Open Market Account reported on developments in domestic and foreign financial markets as well as the System open market operations during the period since the Federal Open Market Committee (FOMC) met on January 29–30, 2013. The Manager also reported on developments in foreign money markets and implications for the assets that the Federal Reserve holds in its foreign currency portfolio. 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.

Staff Review of the Economic Situation

The information reviewed at the March 19–20 meeting suggested that economic activity was expanding at a moderate rate in the first quarter of this year after the slowdown late last year. Private-sector employment increased at a fairly solid pace, on balance, and the unemployment rate, though still elevated, was slightly lower in February than in the fourth quarter of last year. Consumer price inflation, excluding some temporary fluctuations in energy prices, was subdued, while measures of longer-run inflation expectations remained stable.

Private nonfarm employment increased at a modest rate in January but expanded more briskly in February, while government employment continued to decrease. The unemployment rate was 7.7 percent in February, slightly less than its fourth-quarter average; the labor force participation rate was also a bit below its fourth-quarter average. The rate of long-duration unemployment and the share of workers employed part time for economic reasons were little changed, on net, and both measures remained high. Initial claims for unemployment insurance trended down somewhat over the intermeeting period. The rate of private-sector hiring, along with indicators of job openings and firms' hiring plans, were generally subdued and were consistent with continued moderate increases in employment in the coming months.

Manufacturing production increased strongly in February after declining in January, and the rate of manufacturing capacity utilization in February was a little higher than in the fourth quarter. The production of motor vehicles and parts rose considerably in February, and there were also widespread increases in factory output in other sectors. Automakers' schedules, however, indicated that the pace of motor vehicle assemblies in the coming months would be a bit below that in February. Broader indicators of manufacturing production, such as the diffusion indexes of new orders from the national and regional manufacturing surveys, were at levels that pointed to moderate increases in factory production in the near term.

Real personal consumption expenditures rose modestly in January. In February, nominal retail sales, excluding those at motor vehicle and parts outlets, increased at a strong rate, while light motor vehicle sales edged up. Some key factors that tend to influence household spending were mixed: Households' real disposable incomes declined in January, reflecting in part the increases in both payroll and income taxes that went into effect at the beginning of the year and the previous pulling forward of taxable income from 2013 into 2012; in contrast, household net worth likely rose in recent months as a result of higher equity values and home prices. Consumer sentiment in the Thomson Reuters/University of Michigan Surveys of Consumers rose somewhat in February, but it declined in early March and remained relatively downbeat.

Conditions in the housing sector improved further, but construction activity was still at a relatively low level and continued to be restrained by tight credit standards for mortgages. Both starts and permits of new single-family homes increased, on net, over January and February. Starts of multifamily units declined, on balance, but permits rose, consistent with additional gains in construction in coming months. Sales of both new and existing homes advanced in January, and home prices increased further.

Real business expenditures on equipment and software appeared to slow somewhat early this year after rising at a brisk rate in the fourth quarter. Nominal shipments for nondefense capital goods excluding aircraft decreased in January, but nominal orders increased to a level above that of shipments, pointing to higher shipments in the near term. Other forward-looking indicators, such as surveys of business conditions and capital spending plans, also suggested that outlays for business equipment would rise in the coming months. Nominal business spending for nonresidential construction declined in January. Business inventories in most industries appeared to be generally aligned with sales in recent months.

Real federal government purchases appeared to decrease further in January and February, as defense spending continued to contract on balance. Real state and local government purchases looked to have declined as nonfederal government payrolls decreased in January and February and nominal construction expenditures fell in January.

The U.S. international trade deficit narrowed in December but widened in January. Imports rose in January, largely reflecting a rebound in the value of oil imports, and exports decreased, driven by a decline in the value of exports of petroleum products. Exports of capital goods increased; the other major categories of exports remained about unchanged.

Indexes of overall U.S. consumer prices were little changed in January but the consumer price index moved up briskly in February, largely reflecting a sharp rise in gasoline prices. Consumer food prices were flat in January and only edged up in February. Consumer prices excluding food and energy increased moderately in January and February. Near-term inflation expectations from the Michigan survey were unchanged in February and early March; longer-term inflation expectations in the survey were also little changed and remained within the narrow range that they have occupied for some time.

Measures of labor compensation indicated that gains in nominal wages remained relatively slow, only slightly above the rate of price inflation. Compensation per hour in the nonfarm business sector rose modestly over 2012, and, with small increases in productivity, unit labor costs also advanced only modestly. Gains in the employment cost index were even slower than for the measure of compensation per hour last year. In January and February, increases in average hourly earnings for all employees continued to be subdued.

Economic growth weakened in a number of the advanced foreign economies in the fourth quarter of 2012. In the euro area, real gross domestic product (GDP) contracted for a fifth consecutive quarter. Recent data for European economies, including retail sales and purchasing managers indexes, suggest that the rate of economic contraction may have diminished since the beginning of the year. In emerging market economies (EMEs), an increase in exports contributed to a pickup in the pace of economic growth in the fourth quarter, including for China. More-recent indicators suggest that economic activity in China has slowed some. Inflation remained generally contained in both advanced foreign economies and EMEs.

Staff Review of the Financial Situation

Generally favorable U.S. economic data releases, along with communications from Federal Reserve policymakers regarding the outlook for the economy and monetary policy, appeared to contribute to improved sentiment in domestic financial markets over the intermeeting period despite some renewed concerns about economic and financial conditions in Europe.

The expected path for the federal funds rate implied by market quotes moved down over the intermeeting period, likely reflecting policymakers' communications that reinforced market expectations of continued monetary policy accommodation. Results from the Desk's survey of primary dealers conducted prior to the March meeting showed that dealers continued to view the third quarter of 2015 as the most likely time of the first increase in the target federal funds rate. In addition, the median dealer continued to see the first quarter of 2014 as the most probable time for the Federal Reserve's asset purchases to end, and most dealers anticipated that the pace of purchases would be adjusted down before ending.

Yields on nominal Treasury securities were modestly lower, on net, over the intermeeting period. In late February, these yields declined notably following the inconclusive election outcomes in Italy but mostly retraced this decline as economic data releases in subsequent weeks exceeded expectations. Measures of inflation compensation derived from nominal and inflation-protected Treasury securities edged down over the period.

Conditions in domestic and offshore dollar funding markets were generally little changed, on balance, during the intermeeting period. The outstanding amount of unsecured commercial paper (CP) issued by financial institutions with European parents increased slightly on net, and CP issued by institutions with U.S. parents remained stable.

In the March Senior Credit Officer Opinion Survey on Dealer Financing Terms, respondents reported that leveraged investors seemed to have become somewhat more willing to take positions in risky assets since December.

Market reaction to the results of the Dodd–-Frank Act annual stress tests and of the Comprehensive Capital Analysis and Review was limited. Overall, a broad index of U.S. bank equity prices rose, on net, over the intermeeting period, and credit default swap spreads for most large domestic banks edged down on balance.

Broad equity price indexes increased over the intermeeting period, bolstered by favorable incoming economic data. Option-implied volatility for the S&P 500 index over the near term rose slightly but remained low, at levels last seen in early 2007. Fourth-quarter earnings per share for S&P 500 firms were estimated to have increased modestly from the previous quarter.

Yields on investment- and speculative-grade corporate bonds rose a bit over the intermeeting period, leaving risk spreads a little wider. Corporate bond issuance by nonfinancial firms remained fairly robust in February; commercial and industrial (C&I) loans and nonfinancial CP also continued to expand. After picking up in January, gross public issuance of equity by nonfinancial firms remained strong in February, and issuance of collateralized loan obligations reached a post-financial-crisis high.

Conditions in the commercial real estate (CRE) sector improved somewhat. Commercial mortgage debt increased in the fourth quarter after having decreased in each quarter since the beginning of 2009, and commercial mortgage-backed security (CMBS) issuance continued to be robust over the intermeeting period. Nonetheless, delinquency rates on loans underlying existing CMBS remained near historically high levels in February, and CRE prices flattened out in the fourth quarter after several quarters of increases.

Both conforming home mortgage rates and yields on agency mortgage-backed securities (MBS) rose, on net, during the intermeeting period, and the spread between the primary mortgage rate and MBS yields narrowed a bit. Despite the increase in mortgage rates since the start of the year, mortgage refinancing originations declined only slightly.

Consumer credit sustained its moderate expansion in December and January. Nonrevolving credit continued to increase at a solid pace because of growth in student and auto loans, while revolving credit was roughly flat. Issuance of consumer asset-backed securities remained strong.

Driven largely by continued growth in C&I loans, total bank credit expanded in January and February at roughly its fourth-quarter pace. The February Survey of Terms of Business Lending indicated some easing in loan pricing.

The level of M2 was about unchanged, on net, over January and February. In contrast, the monetary base expanded briskly from January through mid-March, driven mainly by the increase in reserve balances resulting from the Federal Reserve's purchases of Treasury securities and agency MBS.

Financial market concerns regarding the euro area rose over the intermeeting period amid weaker-than-expected economic data releases and political uncertainties generated by the inconclusive election results in Italy. Adding to the concerns was the proposal in Cyprus to tax insured, along with uninsured, deposits as part of the country's effort to secure an aid package from the euro area and the International Monetary Fund. Ten-year sovereign yields in most peripheral euro-area countries rose relative to German bond yields, with spreads for Italian sovereign debt increasing noticeably; euro-area banking-sector share prices fell sharply. With economic data for the euro area, the United Kingdom, and Canada coming in weaker than anticipated, yields on bunds, gilts, and long-term Canadian government securities fell. In addition, market-based measures of expected overnight interest rates also declined in those countries, and the dollar appreciated against the euro, sterling, and the Canadian dollar. Expectations intensified that the Bank of Japan would pursue aggressive monetary easing after the new governor of the Bank of Japan was installed; over the intermeeting period, the yen depreciated further, 10-year Japanese government bond yields declined to near record lows, and the Nikkei stock price index rose substantially. Movements in the currencies of EMEs against the dollar were generally small. Although inflows into emerging market mutual funds continued, they slowed notably in recent weeks, and EME equity indexes were, on average, slightly lower. Some EME central banks cut interest rates, citing concerns about economic growth.

The staff also reported on potential risks to financial stability, including those associated with the current low interest rate environment. Some observers have suggested that a lengthy period of low long-term rates could encourage excessive risk-taking that could have adverse consequences for financial stability at some point in the future. The staff surveyed a wide range of asset markets and financial institutions for signs of excess valuations, leverage, or risk-taking that could pose systemic risks. Low interest rates likely have supported gains in asset prices and encouraged the flow of credit to households and businesses, but these changes to date do not appear to have been accompanied by significant financial imbalances. However, trends in a few specific markets bore watching, and the staff will continue to monitor for signs of developments that could pose risks to financial stability.

Staff Economic Outlook

In the economic forecast prepared by the staff for the March FOMC meeting, real GDP growth was revised down somewhat in the near term, largely reflecting the federal spending sequestration that went into effect on March 1 and the resulting drag from reduced government purchases. The staff's medium-term forecast for real GDP growth was little changed, on balance, as the effects of somewhat more fiscal policy restraint and a higher assumed path for the foreign exchange value of the dollar were essentially offset by a brighter outlook for domestic energy production and a higher projection for household wealth, which reflected upward revisions to the projected paths for both equity prices and home prices. On balance, with fiscal policy expected to be tighter in 2013 than in 2012, the staff expected that increases in real GDP this year would only modestly exceed the growth rate of potential output. Fiscal policy restraint on economic growth was assumed to ease over time, and real GDP was projected to accelerate gradually in 2014 and 2015, supported by increases in consumer and business sentiment, further improvements in credit availability and financial conditions, and accommodative monetary policy. The expansion in economic activity was anticipated to slowly reduce the slack in labor and product markets over the projection period, and progress in reducing the unemployment rate was expected to be gradual.

The staff's forecast for inflation was little changed from the projection prepared for the January FOMC meeting. With crude oil prices anticipated to trend down slowly from their current levels, long-run inflation expectations assumed to remain stable, and significant resource slack persisting over the forecast period, the staff continued to project that inflation would be subdued through 2015.

The staff viewed the uncertainty around its forecast for economic activity as similar to the average level over the past 20 years. However, the risks were viewed as skewed to the downside, reflecting in part the concerns about the situation in Europe and the possibility of a more severe tightening in U.S. fiscal policy than currently anticipated. The staff saw the uncertainty around its projection for inflation as about average, and it viewed the risks to the inflation outlook as roughly balanced.

Participants' Views on Current Conditions and Economic Outlook

In conjunction with this FOMC meeting, meeting participants—the 7 members of the Board of Governors and the presidents of the 12 Federal Reserve Banks, all of whom participate in the deliberations of the FOMC—submitted their assessments of real output growth, the unemployment rate, inflation, and the target federal funds rate for each year from 2013 through 2015 and over the longer run, under each participant's judgment of appropriate monetary policy. The longer-run projections represent each participant's assessment of the rate 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 Summary of Economic Projections, which is attached as an addendum to these minutes.

Meeting participants generally indicated that they viewed the economic data received during the intermeeting period as somewhat more positive than had been expected, but that fiscal policy appeared to have become more restrictive, leaving the outlook for the economy little changed on balance since the January meeting. Participants judged that the economy had returned to moderate growth following a pause late last year, and a few noted that the downside risks may have diminished. Conditions in labor markets had shown signs of improvement, although the unemployment rate remained elevated. Spending by households and businesses was continuing to expand, perhaps reflecting some increased optimism. Participants noted that the housing market, in particular, had firmed somewhat further. Accommodative monetary policy was likely providing important support to these developments.

In contrast, participants thought that fiscal policy was exerting significant near-term restraint on the economy. Participants generally anticipated that growth would proceed at a moderate pace and that the unemployment rate would decline gradually toward levels consistent with the Committee's mandate. Inflation had been running below the Committee's 2 percent objective for some time, and nearly all of the participants anticipated that it would run at or below 2 percent over the medium term.

In their discussion of the household sector, most participants noted that the data on spending were somewhat encouraging, particularly with regard to spending on automobiles, other consumer durables, and housing. Several participants stated that the moderate acceleration in spending might in part reflect pent-up demand following years of deleveraging and was importantly supported by the stance of monetary policy, which has reduced the cost of financing purchases and improved credit availability to some degree. A couple of participants noted that the increase in the payroll tax appeared to have not yet had a material effect on household spending; however, another suggested that the payroll tax increase, along with higher gasoline prices, may be one reason why spending by lower-income households appeared to be depressed, as those changes disproportionately cut into the disposable income of those households. A couple of other participants thought that overall consumer spending was likely still held back, at least in part, by ongoing concerns about future income and employment prospects. Both fiscal restraint and the high level of student debt were mentioned as risks to aggregate household spending over the forecast period.

Participants generally saw conditions in the housing market as having improved further over the intermeeting period. Rising house prices were strengthening household balance sheets by raising wealth and by increasing the ability of some homeowners to refinance their mortgages at lower rates. Such a dynamic was seen as potentially leading to a virtuous cycle that could help support household spending and financial market conditions over time. Reports from homebuilders in many parts of the country were encouraging. One participant pointed to ongoing changes in a range of factors—including demographics, credit conditions, business models, and consumer preferences—that were likely shifting both supply and demand in the housing sector and concluded that the outlook for the sector was quite uncertain and potentially subject to rapid changes.

Many participants reported that their business contacts were seeing some further improvement in the economic outlook. Firms reported increased planning for capital expenditures, supported by low interest rates and substantial cash holdings. Investment spending on productivity-enhancing technology was strong, as was pipeline construction in the energy sector. A few participants indicated that their contacts saw the level of uncertainty about the economic outlook as having declined recently, a development that could lead to increased investment expenditures.

Most participants remarked on the federal spending sequester and its potential effects on the economy; they judged that recent tax and spending changes were already restraining aggregate demand or would do so over the course of the year. A couple of participants, however, suggested that they had cut their estimates of the effect of recent federal austerity measures or had never considered the effects to be substantial.

Recent readings on private employment and the unemployment rate indicated some improvement in labor market conditions. Nonetheless, participants generally saw the unemployment rate as still elevated and were not yet confident that the recent progress toward the Committee's employment objective would be sustained. The need to use a range of indicators to gauge labor market conditions was noted. One participant highlighted that hiring rates and quit rates remained somewhat low. Another participant discussed evidence that the labor market may have become less dynamic over time, with the result that recent payroll gains might be more meaningful than would first appear. Inference about the labor force participation rate was complicated by its long-run downward trend. One participant cited research indicating that long-term unemployment, which is currently especially high, could lead to persistently lower income and wealth for those affected, even after they found jobs. More broadly, firms reportedly remained cautious about hiring, which some participants attributed in part to restrictive fiscal policy combined with growing regulatory burden. This caution appeared to have resulted in jobs remaining vacant for substantially longer than would normally be the case, given the unemployment rate.

Recent price developments were consistent with subdued inflation pressures and inflation remaining at or below the Committee's 2 percent objective over the medium run. Participants saw little near-term inflationary pressure, with a few noting that the appreciation of the dollar was holding down import costs or that the recent increases in gasoline prices did not appear to have passed through more broadly to prices of other goods. Pointing to inflation that had been running below their objective for some time, some participants saw downside risks to inflation, especially if economic activity did not pick up as projected. But a few participants noted that the risk remained that inflationary pressures could rise as the expansion continued, especially if monetary policy remained highly accommodative for too long.

Participants discussed their assessments of risks to financial stability, particularly in light of the Committee's highly accommodative stance of monetary policy. Many participants noted that in the current low-interest rate environment, investors in some financial markets were taking on additional risk—either credit risk or interest rate risk—in an effort to boost returns. As a result, vigilance on the part of policymakers and regulators was warranted, especially in light of episodic strains in European markets. A couple of participants noted that U.S. banks had expanded their capital positions and were generally in sound financial condition. Meeting participants generally agreed that there was an ongoing need to evaluate the possible interactions between monetary policy decisions and financial stability, with some noting that adverse shocks to financial stability can affect progress toward the Committee's dual mandate.

Review of Efficacy and Costs of Asset Purchases

The staff provided presentations covering the efficacy of the Federal Reserve's asset purchases, the effects of the purchases on security market functioning, the ways in which asset purchases might amplify or reduce risks to financial stability, and the fiscal implications of purchases. In their discussion of this topic, meeting participants generally judged the macroeconomic benefits of the current purchase program to outweigh the likely costs and risks, but they agreed that an ongoing assessment of the benefits and costs was necessary. Pointing to academic and Federal Reserve staff research, most participants saw asset purchases as having a meaningful effect in easing financial conditions and so supporting economic growth. Some expressed the view that these effects had likely been stronger during the Federal Reserve's initial large-scale asset purchases because that program also helped support market functioning during the financial crisis. Other participants, however, saw little evidence that the efficacy of asset purchases had declined over time, and a couple of these suggested that the effectiveness of purchases might even have increased more recently, as the easing of credit constraints allowed more borrowers to take advantage of lower interest rates. One participant emphasized the role of recent asset purchases in keeping inflation from declining further below the Committee's longer-run goal. A few participants felt that MBS purchases provided more support to the economy than purchases of longer-term Treasury securities because they stimulated the housing sector directly; however, a few preferred to focus any purchases in the Treasury market to avoid allocating credit to a specific sector of the economy. It was noted that, in addition to the standard channels through which monetary policy affects the economy, asset purchases could help signal the Committee's commitment to accommodative monetary policy, thereby making the forward guidance about the federal funds rate more effective. However, a few participants were not convinced of the benefits of asset purchases, stating that the effects on financial markets appeared to be short lived or that they saw little evidence of a significant macroeconomic effect. One participant suggested that the signaling effect of asset purchases may have been reduced by the adoption of threshold-based forward guidance. In general, reflecting the limited experience with large-scale asset purchases, participants recognized that estimates of the economic effects were necessarily imprecise and covered a wide range.

Participants generally agreed that asset purchases also have potential costs and risks. In particular, participants pointed to possible risks to the stability of the financial system, the functioning of particular financial markets, the smooth withdrawal of monetary accommodation when it eventually becomes appropriate, and the Federal Reserve's net income. Their views on the practical importance of these risks varied, as did their prescriptions for mitigating them. Asset purchases were seen by some as having a potential to contribute to imbalances in financial markets and asset prices, which could undermine financial stability over time. Moreover, to the extent that asset purchases push down longer-term interest rates, they potentially expose financial markets to a rapid rise in those rates in the future, which could impose significant losses on some investors and intermediaries. Several participants suggested that enhanced supervision could serve to limit, at least to some extent, the increased risk-taking associated with a lengthy period of low long-term interest rates, and that effective policy communication or balance sheet management by the Committee could reduce the probability of excessively rapid increases in longer-term rates. It was also noted that the accommodative stance of policy could be supporting financial stability by returning the economy to a stable footing sooner than would otherwise be the case and perhaps by allowing borrowers to secure longer-term financing and thereby reduce funding risks; by contrast, curtailing asset purchases could slow the recovery and so extend the period of very low interest rates. Nevertheless, a number of participants remained concerned about the potential for financial stability risks to build. One consequence of asset purchases has been the increase in the Federal Reserve's net income and its remittances to the Treasury, but those values were projected to decline, perhaps even to zero for a time, as the Committee eventually withdraws policy accommodation. Some participants were concerned that a substantial decline in remittances might lead to an adverse public reaction or potentially undermine Federal Reserve credibility or effectiveness. The possibility of such outcomes was seen as necessitating clear communications about the outlook for Federal Reserve net income. Several participants stated that such risks should not inhibit the Committee from pursuing its mandated objectives for inflation and employment. In any case, it was indicated that the fiscal benefits of a stronger economy would be much greater than any short-term fluctuations in remittances, and moreover, a couple of participants noted that cumulative remittances to the Treasury would likely be higher than would have been the case without any asset purchases. Some participants also were concerned that additional asset purchases could complicate the eventual firming of policy—for example, by impairing the Committee's control over the federal funds rate. A few participants raised the possibility of an undesirable rise in inflation. However, others expressed confidence in the Committee's exit tools and its resolve to keep inflation near its longer-run goal. Another exit-related concern was a possible adverse effect on market functioning from MBS sales during the normalization of the Federal Reserve's balance sheet. Although the Committee's asset purchases have had little apparent effect on securities market functioning to date, some participants felt that future asset sales could prove more challenging. In this regard, several participants noted that a decision by the Committee to hold its MBS to maturity instead of selling them would essentially eliminate this risk. A decision not to sell MBS, or to sell MBS only very slowly, would also mitigate some of the financial stability risks that could be associated with such sales as well as damp the decline in remittances to the Treasury at that time. Such a decision was also seen by some as a potential source of additional near-term policy accommodation. Overall, most meeting participants thought the risks and costs of additional asset purchases remained manageable, but also that continued close attention to these issues was warranted. A few participants noted that curtailing the purchase program was the most direct way to mitigate the costs and risks.

In light of their discussion of the benefits and costs of asset purchases, participants discussed their views on the appropriate course for the current asset purchase program. A few participants noted that they already viewed the costs as likely outweighing the benefits and so would like to bring the program to a close relatively soon. A few others saw the risks as increasing fairly quickly with the size of the Federal Reserve's balance sheet and judged that the pace of purchases would likely need to be reduced before long. Many participants, including some of those who were focused on the increasing risks, expressed the view that continued solid improvement in the outlook for the labor market could prompt the Committee to slow the pace of purchases beginning at some point over the next several meetings, while a few participants suggested that economic conditions would likely justify continuing the program at its current pace at least until late in the year. A range of views was expressed regarding the economic and labor market conditions that would call for an adjustment in the pace of purchases. Many participants emphasized that any decision to reduce the pace of purchases should reflect both an improvement in their overall outlook for labor market conditions, as implied by a wide range of available indicators, and their confidence in the sustainability of that improvement. A couple of these participants noted that if progress toward the Committee's economic goals were not maintained, the pace of purchases might appropriately be increased. A number of participants suggested that the Committee could change the mix of its policy tools if necessary to increase or maintain overall accommodation, including potentially adjusting its forward guidance or its balance sheet policies.

Committee Policy Action

Committee members saw the information received over the intermeeting period as suggesting that moderate economic growth had resumed following a pause late last year. Labor market conditions had shown signs of improvement, but the unemployment rate remained elevated. Household spending and business fixed investment had advanced, and the housing sector had strengthened further, but fiscal policy had become somewhat more restrictive. The Committee expected that, with appropriate monetary policy accommodation, economic growth would proceed at a moderate pace and result in a gradual decline in the unemployment rate toward levels that the Committee judges consistent with its dual mandate. Members generally continued to anticipate that, with longer-term inflation expectations stable and slack in resource utilization remaining, inflation over the medium term would likely run at or below the Committee's 2 percent objective.

In their discussion of monetary policy for the period ahead, members saw the economic outlook as little changed since the previous meeting, and, consequently, all but one member judged that a highly accommodative stance of monetary policy was warranted in order to foster a stronger economic recovery in a context of price stability. The Committee agreed that it would be appropriate to continue purchases of MBS at a pace of $40 billion per month and purchases of longer-term Treasury securities at a pace of $45 billion per month, as well as to maintain the Committee's reinvestment policies. The Committee also retained its forward guidance about the federal funds rate, including the thresholds on the unemployment and inflation rates. One member dissented from the Committee's policy decision, expressing concern that the continued high level of monetary accommodation increased the risks of future economic and financial imbalances and, over time, could cause an increase in inflation expectations.

Members stressed that any changes to the purchase program should be conditional on continuing assessments both of labor market and inflation developments and of the efficacy and costs of asset purchases. In light of the current review of benefits and costs, one member judged that the pace of purchases should ideally be slowed immediately. A few members felt that the risks and costs of purchases, along with the improved outlook since last fall, would likely make a reduction in the pace of purchases appropriate around midyear, with purchases ending later this year. Several others thought that if the outlook for labor market conditions improved as anticipated, it would probably be appropriate to slow purchases later in the year and to stop them by year-end. Two members indicated that purchases might well continue at the current pace at least through the end of the year. It was also noted that were the outlook to deteriorate, the pace of purchases could be increased. In light of this discussion, the Committee included language in the statement to be released following the meeting in part to make explicit that the size, pace, and composition of its asset purchases were conditional not only on the likely efficacy and costs of those purchases, but also on the extent of progress toward the Committee's economic objectives.

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 System Account 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. The Desk is directed to continue purchasing longer-term Treasury securities at a pace of about $45 billion per month and to continue purchasing agency mortgage-backed securities at a pace of about $40 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 January suggests a return to moderate economic growth following a pause late last year. Labor market conditions have shown signs of improvement in recent months but the unemployment rate remains elevated. Household spending and business fixed invest-

ment advanced, and the housing sector has strengthened further, but fiscal policy has become somewhat more restrictive. Inflation has been running somewhat below the Committee's longer-run objective, apart from temporary variations that largely reflect fluctuations in energy prices. 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 growth will proceed at a moderate pace and the unemployment rate will gradually decline toward levels the Committee judges consistent with its dual mandate. The Committee continues to see downside risks to the economic outlook. The Committee also anticipates that inflation over the medium term likely will run at or below its 2 percent objective.

To support a stronger economic recovery and to help ensure that inflation, over time, is at the rate most consistent with its dual mandate, the Committee decided to continue purchasing additional agency mortgage-backed securities at a pace of $40 billion per month and longer-term Treasury securities at a pace of $45 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. Taken together, these actions should maintain downward pressure on longer-term interest rates, support mortgage markets, and help to make broader financial conditions more accommodative.

The Committee will closely monitor incoming information on economic and financial developments in coming months. The Committee 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. In determining the size, pace, and composition of its asset purchases, the Committee will continue to take appropriate account of the likely efficacy and costs of such purchases as well as the extent of progress toward its economic objectives.

To support continued progress toward maximum employment and price stability, the Committee expects that a highly accommodative stance of monetary policy will remain appropriate for a considerable time after the asset purchase program ends and the economic recovery strengthens. In particular, the Committee decided to keep the target range for the federal funds rate at 0 to ¼ percent and currently anticipates that this exceptionally low range for the federal funds rate will be appropriate at least as long as the unemployment rate remains above 6½ percent, inflation between one and two years ahead is projected to be no more than a half percentage point above the Committee's 2 percent longer-run goal, and longer-term inflation expectations continue to be well anchored. In determining how long to maintain a highly accommodative stance of monetary policy, the Committee will also consider other information, including additional measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial developments. 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."

Voting for this action: Ben Bernanke, William C. Dudley, James Bullard, Elizabeth Duke, Charles L. Evans, Jerome H. Powell, Sarah Bloom Raskin, Eric Rosengren, Jeremy C. Stein, Daniel K. Tarullo, and Janet L. Yellen.

Voting against this action: Esther L. George.

Ms. George dissented because she continued to view monetary policy as too accommodative and therefore as posing risks to the achievement of the Committee's economic objectives in the long run. In particular, the current stance of policy could lead to financial imbalances, a mispricing of risk, and, over time, higher long-term inflation expectations. In her view, the Committee's asset purchases were providing relatively small benefits, and, given the risks that they posed as well as the improvement in the outlook for the labor market, she thought they should be wound down.

It was agreed that the next meeting of the Committee would be held on Tuesday–Wednesday, April 30–May 1, 2013. The meeting adjourned at 11:30 a.m. on March 20, 2013.

Notation Vote
By notation vote completed on February 19, 2013, the Committee unanimously approved the minutes of the FOMC meeting held on January 29–30, 2013.

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William B. English
Secretary

Summary of Economic Projections

In conjunction with the March 19–20, 2013, Federal Open Market Committee (FOMC) meeting, meeting participants—the 7 members of the Board of Governors and the 12 presidents of the Federal Reserve Banks, all of whom participate in the deliberations of the FOMC—submitted their assessments of real output growth, the unemployment rate, inflation, and the target federal funds rate for each year from 2013 through 2015 and over the longer run. Each participant's assessment was based on information available at the time of the meeting plus his or her judgment of appropriate monetary policy and assumptions about the factors likely to affect economic outcomes. The longer-run projections represent each participant's judgment 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, the assessments submitted in March indicated that FOMC participants projected that, under appropriate monetary policy, the pace of economic recovery would gradually pick up over the 2013–15 period and inflation would remain subdued (table 1 and figure 1). Participants anticipated that the growth rate of real gross domestic product (GDP) would increase somewhat over the forecast period to a pace that generally exceeded their estimates of the longer-run sustainable rate of growth. Participants expected the unemployment rate to decline gradually through 2015. Nearly all participants projected that inflation, as measured by the annual change in the price index for personal consumption expenditures (PCE), would remain somewhat below the longer-run goal in 2013 and then rise toward 2 percent over the forecast period.

As shown in figure 2, most participants judged that highly accommodative monetary policy was likely to be warranted over the next few years to support stable prices and continued progress toward maximum employment. In particular, 14 participants thought that it would be appropriate for the first increase in the target federal funds rate to occur during 2015 or later. Most participants also judged that it would be appropriate to continue purchasing agency mortgage-backed securities (MBS) and longer-term Treasury securities into the second half of 2013.

Many participants continued to judge the uncertainty associated with the outlook for real activity and the unemployment rate to be unusually high compared with the norm of the past 20 years. In contrast to December, however, more participants viewed the risks to those outlooks as broadly balanced than saw the risks

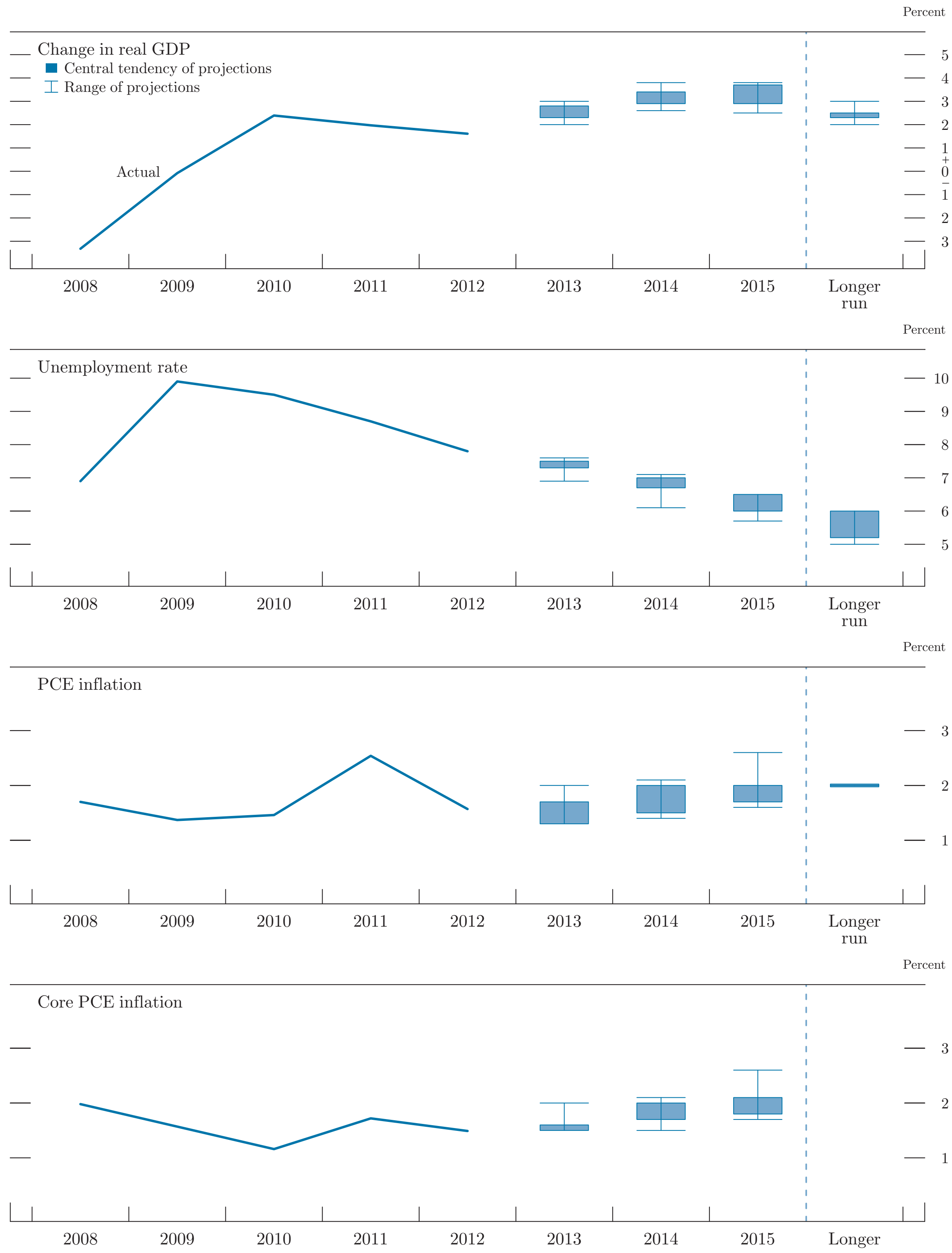
Table 1. Economic projections of Federal Reserve Board members and Federal Reserve Bank presidents, March 2013
Percent

Variable	Central tendency[1]				Range[2]			
	2013	2014	2015	Longer run	2013	2014	2015	Longer run
Change in real GDP	2.3 to 2.8	2.9 to 3.4	2.9 to 3.7	2.3 to 2.5	2.0 to 3.0	2.6 to 3.8	2.5 to 3.8	2.0 to 3.0
December projection	2.3 to 3.0	3.0 to 3.5	3.0 to 3.7	2.3 to 2.5	2.0 to 3.2	2.8 to 4.0	2.5 to 4.2	2.2 to 3.0
Unemployment rate	7.3 to 7.5	6.7 to 7.0	6.0 to 6.5	5.2 to 6.0	6.9 to 7.6	6.1 to 7.1	5.7 to 6.5	5.0 to 6.0
December projection	7.4 to 7.7	6.8 to 7.3	6.0 to 6.6	5.2 to 6.0	6.9 to 7.8	6.1 to 7.4	5.7 to 6.8	5.0 to 6.0
PCE inflation	1.3 to 1.7	1.5 to 2.0	1.7 to 2.0	2.0	1.3 to 2.0	1.4 to 2.1	1.6 to 2.6	2.0
December projection	1.3 to 2.0	1.5 to 2.0	1.7 to 2.0	2.0	1.3 to 2.0	1.4 to 2.2	1.5 to 2.2	2.0
Core PCE inflation[3]	1.5 to 1.6	1.7 to 2.0	1.8 to 2.1		1.5 to 2.0	1.5 to 2.1	1.7 to 2.6	
December projection	1.6 to 1.9	1.6 to 2.0	1.8 to 2.0		1.5 to 2.0	1.5 to 2.0	1.7 to 2.2	

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 December projections were made in conjunction with the meeting of the Federal Open Market Committee on December 11–12, 2012.

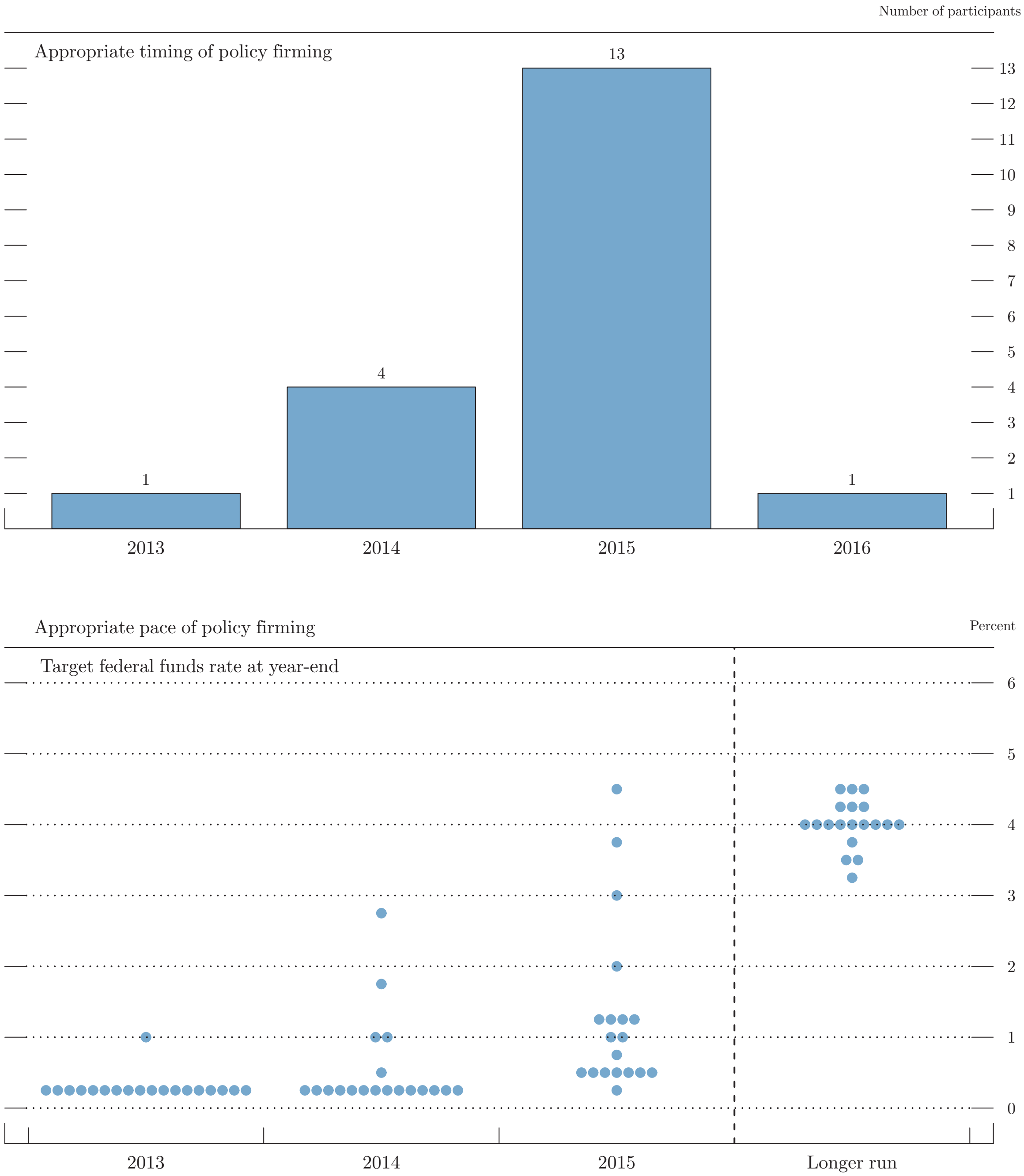
1. The central tendency excludes the three highest and three lowest projections for each variable in each year.
2. The range for a variable in a given year includes all participants' projections, from lowest to highest, for that variable in that year.
3. Longer-run projections for core PCE inflation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

Figure 1. Central tendencies and ranges of economic projections, 2013–15 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 federal funds rate from its current range of 0 to 1/4 percent will occur in the specified calendar year. In December 2012, the numbers of FOMC participants who judged that the first increase in the target federal funds rate would occur in 2013, 2014, 2015, and 2016 were, respectively, 2, 3, 13, and 1. In the lower panel, each shaded circle indicates the value (rounded to the nearest 1/4 percentage point) of an individual participant's judgment of the appropriate level of the target federal funds rate at the end of the specified calendar year or over the longer run.

as skewed toward adverse outcomes. A majority of participants indicated that the uncertainty surrounding their projections for PCE inflation was broadly similar to historical norms, and nearly all considered the risks to inflation to be either broadly balanced or weighted to the downside.

The Outlook for Economic Activity

Participants projected that, conditional on their individual assumptions about appropriate monetary policy, the economy would grow at a somewhat faster pace in 2013 than it had in 2012. They also generally judged that growth would strengthen further in 2014 and 2015, in most cases to a rate above what participants saw as the longer-run rate of output growth. Most participants noted that the high degree of monetary policy accommodation assumed in their projections would help promote the economic recovery over the forecast period and expected that continued improvement in the housing sector would add more broadly to private demand; however, they also judged that increased fiscal restraint in the United States would hold back the pace of economic expansion, especially in 2013, and pointed to the situation in Europe as an ongoing downside risk.

The central tendency of participants' projections for the change in real GDP was 2.3 to 2.8 percent for 2013, 2.9 to 3.4 percent for 2014, and 2.9 to 3.7 percent for 2015; these projections were little changed, to slightly below, the ones in December. When participants compared their own March forecast with the one they made in December, many mentioned that stronger-than-anticipated incoming data on private economic activity had nearly offset the effects of greater-than-expected fiscal restraint likely to be put in place this year. The central tendency for the longer-run rate of increase of real GDP was 2.3 to 2.5 percent, unchanged from December.

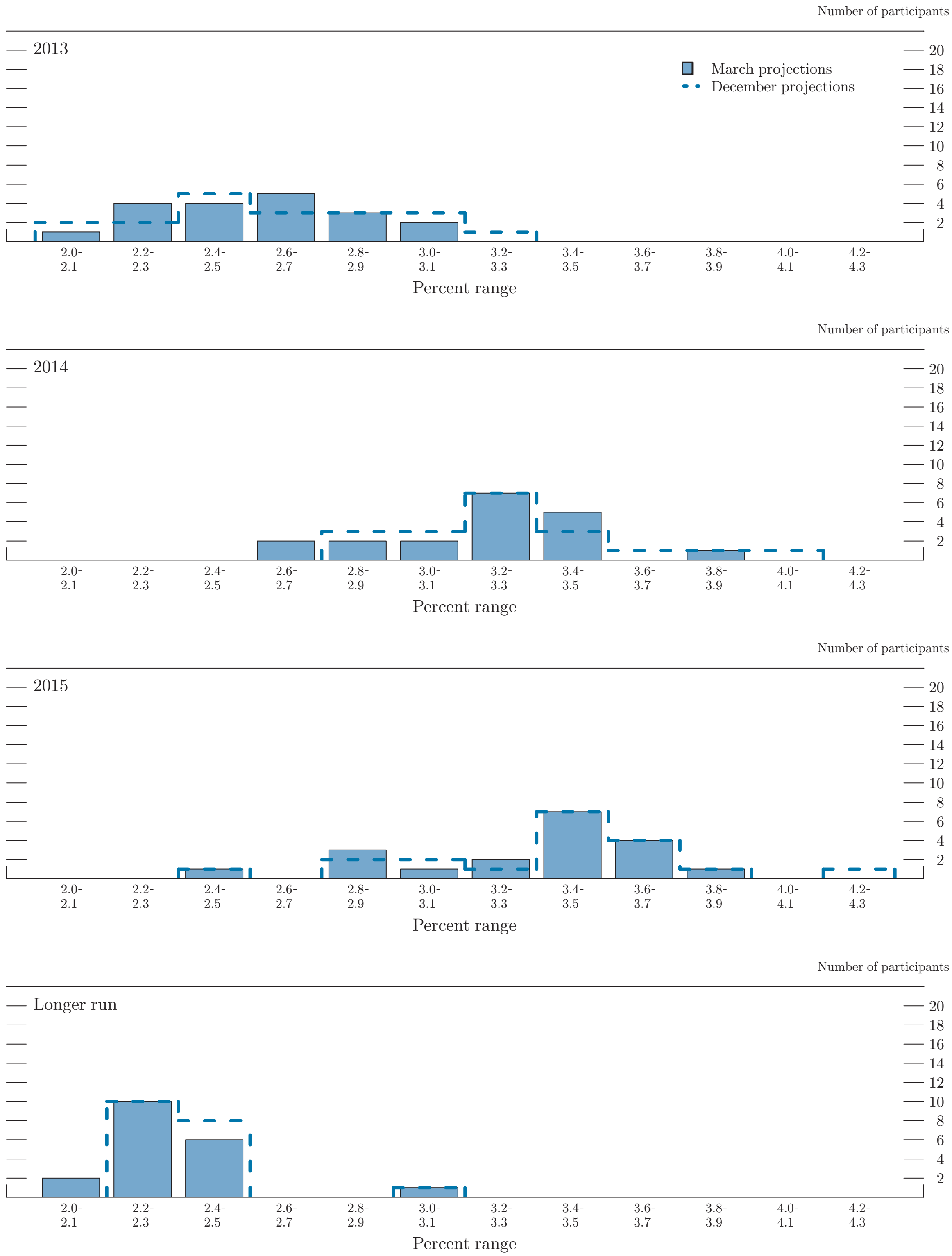
Participants anticipated a gradual decline in the unemployment rate over the forecast period; even so, they generally thought that the unemployment rate at the end of 2015 would remain well above their individual estimates of its longer-run normal level. The central tendencies of participants' forecasts for the unemployment rate were 7.3 to 7.5 percent at the end of 2013 and 6.7 to 7.0 percent at the end of 2014. These projections are slightly lower than in December, with a few participants attributing their revisions to the more favorable data from the labor market or small changes in their estimated rate of potential output growth. However, the central tendency of the forecasts for the end of 2015, at 6.0 to 6.5 percent, changed little. 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 5.2 to 6.0 percent, the same as in December. Most participants projected that the unemployment rate would converge to their estimates of its longer-run normal rate in five or six years, while some judged that less time would be needed.

As shown in figures 3.A and 3.B, participants' views regarding the likely outcomes for real GDP growth and the unemployment rate over the next three years and over the longer run remained diverse, reflecting their individual assessments of appropriate monetary policy and its economic effects, the likely rate of improvement in the housing sector and domestic spending more generally, the domestic implications of foreign economic developments, the extent of structural dislocations to the labor market and the economy's productive potential, and a number of other factors. The dispersion of participants' projections of real GDP growth was little changed relative to December, with a small reduction in the upper end of the distribution in all three years of the forecast period and a slight overall downward shift in 2014. The distributions of the unemployment rate projections in each year narrowed a few tenths, reflecting decreases in the high ends of the ranges. The dispersion of estimates for the longer-run rate of output growth stayed fairly narrow, with all but four within the central tendency of 2.3 to 2.5 percent; two participants, however, dropped their estimates to below 2.2 percent. The range of participants' estimates of the longer-run rate of unemployment, at 5.0 to 6.0 percent, was unchanged relative to December.

The Outlook for Inflation

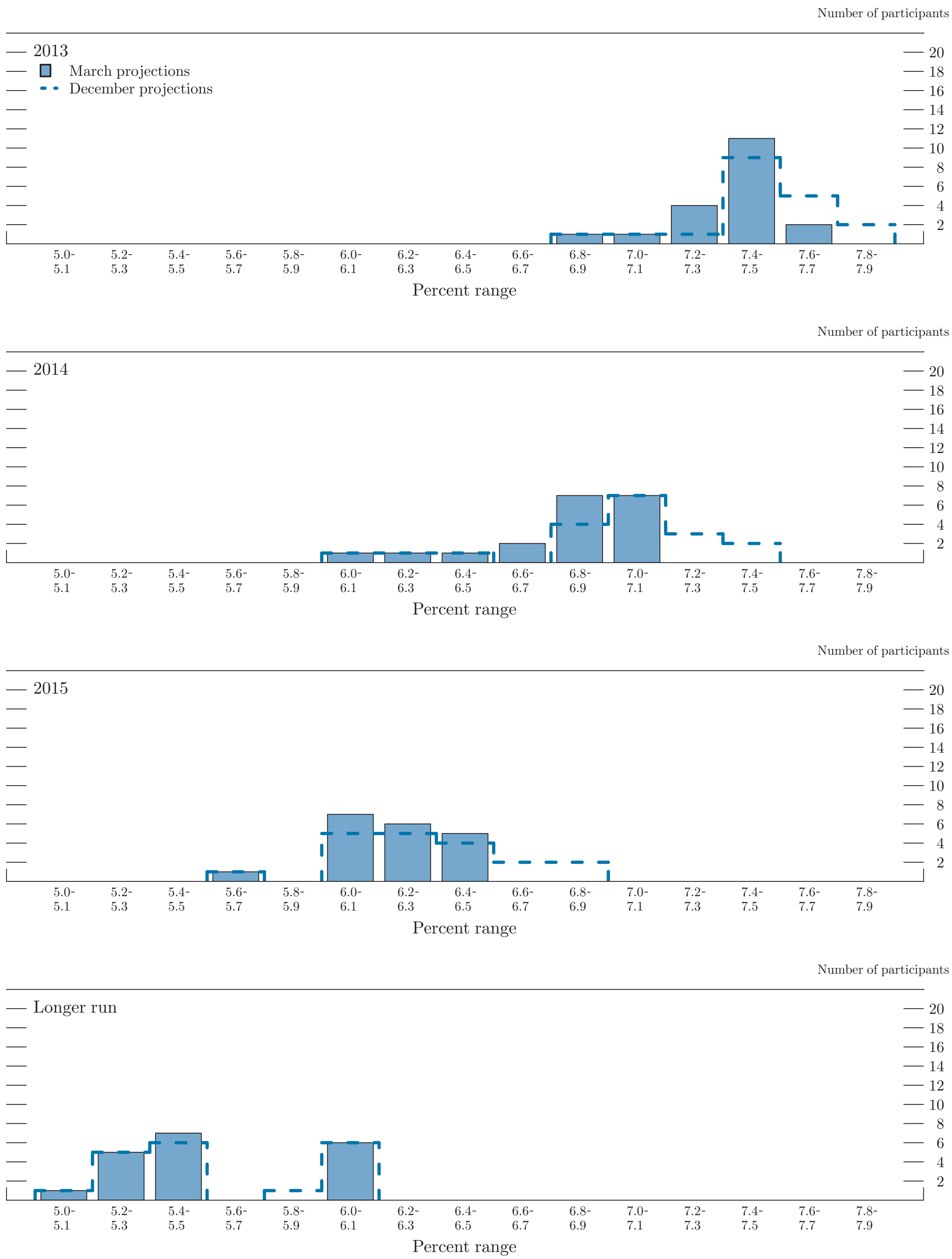
Participants' broad outlook for inflation under appropriate monetary policy suggested that both headline and core inflation would remain subdued over the 2013–15 period, with nearly all participants judging that inflation would be equal to or below the FOMC's longer-run objective of 2 percent in each year. Specifically, the central tendency of participants' projections for overall inflation in 2013, as measured by the growth in the PCE price index, narrowed to 1.3 to 1.7 percent, while the central tendencies for 2014 and 2015 were unchanged at 1.5 to 2.0 percent and 1.7 to 2.0 percent, respectively. The central tendency of the forecasts for core inflation in 2013 also narrowed, to 1.5 to 1.6 percent, but, unlike overall inflation, edged up slightly in 2014 and 2015; nevertheless, the central tendencies remained near or below 2 percent in both years. In

Figure 3.A. Distribution of participants' projections for the change in real GDP, 2013–15 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, 2013–15 and over the longer run



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

discussing factors likely to keep inflation near the Committee's inflation objective of 2 percent, several participants cited the role of stable inflation expectations and existing resource slack that was expected to diminish only gradually.

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 overall inflation in 2013 and 2014 were almost unchanged compared with the corresponding distributions for December. The ranges for core inflation were also little changed, but, in 2013, many of the projections shifted toward the lower end of the range. The distributions for core and overall inflation in 2015 remained concentrated near the Committee's longer-run objective, and all participants continued to project that overall inflation would converge to the 2 percent goal over the longer run.

Appropriate Monetary Policy

As indicated in figure 2, most participants judged that exceptionally low levels of the federal funds rate would remain appropriate for a couple more years. In particular, 13 participants thought that the first increase in the target federal funds rate would not be warranted until sometime in 2015, and one judged that policy firming would likely not be appropriate until 2016 (upper panel). Five participants judged that an earlier increase in the federal funds rate, in 2013 or 2014, would be most consistent with the Committee's statutory mandate.

All of the participants who judged that raising the federal funds rate target would first be appropriate in 2015 also projected that the unemployment rate would first decline below 6½ percent during that year and that inflation would remain near or below 2 percent. In addition, those participants, as well as the participant who saw liftoff in 2016 as appropriate, also projected that a sizable gap between the unemployment rate and the longer-run normal level of the unemployment rate would persist until 2015 or later. The majority of the five participants who judged that policy firming should begin in 2013 or 2014 indicated that the Committee would need to act relatively soon in order to keep inflation near the FOMC's longer-run objective of 2 percent and to prevent a rise in inflation expectations.

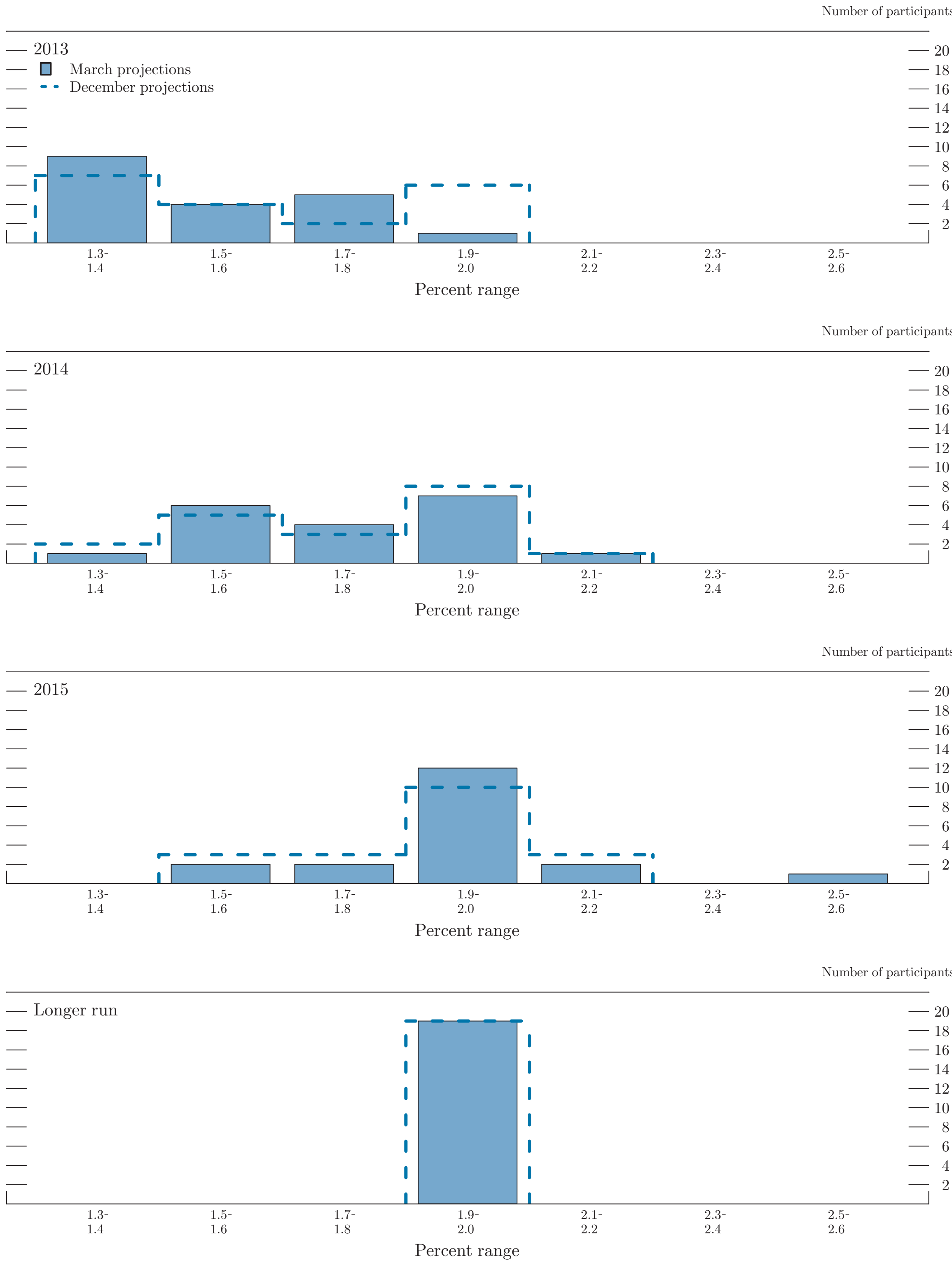
Figure 3.E provides the distribution of participants' judgments regarding the appropriate level of the target federal funds rate at the end of each calendar year from 2013 to 2015 and over the longer run. As previously noted, most participants judged that economic conditions would warrant maintaining the current low level of the federal funds rate until 2015. Among the five participants who saw the federal funds rate leaving the effective lower bound earlier, their projections for the federal funds rate at the end of 2014 range from ½ to 2¾ percent. Views on the appropriate level of the federal funds rate at the end of 2015 varied, with 15 participants seeing the appropriate level of the federal funds rate as 1¼ percent or lower and the others seeing the appropriate level as 2 percent or higher. On balance, participants' projections for the appropriate federal funds rate at the end of 2015 shifted down a bit from those in their December forecasts.

Nearly all participants saw the appropriate target for the federal funds rate at the end of 2015 as still well below their assessment of its expected longer-run value. Estimates of the longer-run target federal funds rate ranged from 3¼ to 4½ percent, reflecting the Committee's inflation objective of 2 percent and participants' individual judgments about the longer-run level of the real federal funds rate.

Participants also described their views regarding the appropriate path of the Federal Reserve's balance sheet. All but a few participants thought that, given the current economic outlook, it would be appropriate for the Committee to continue purchasing MBS and longer-term Treasury securities at about the current pace at least through midyear. A number of these participants anticipated that the pace would be tapered down around midyear. A few others thought that it would be appropriate for the Committee to purchase securities at the current pace through the third quarter of 2013 before beginning to adjust the pace and a few saw the current rate of purchases continuing at least through the end of 2013, with two participants specifying that some purchases would likely extend into 2014. Several participants emphasized that the asset purchase program was effective in supporting the economic expansion, that the benefits continued to exceed the costs, and that additional purchases would be necessary to achieve a substantial improvement in the outlook for the labor market. In contrast, a couple of participants indicated that the Committee could best foster its dual objectives and limit the potential costs of the program by beginning to taper its purchases before midyear or by ending purchases altogether.

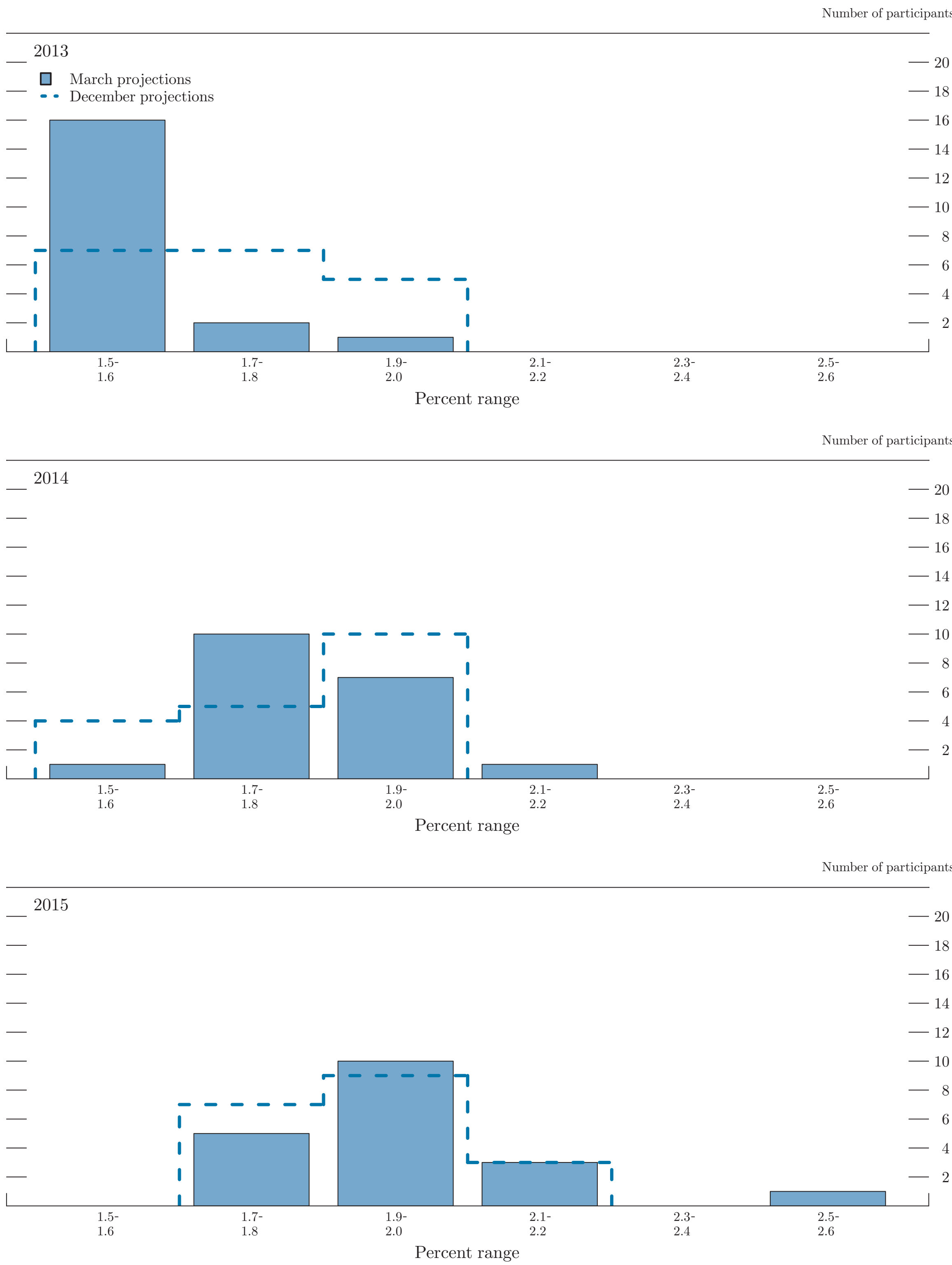
Key factors informing participants' views of the economic outlook and the appropriate setting for monetary policy included their judgments regarding labor market conditions that would be consistent with maximum employment, the extent to which employment

Figure 3.C. Distribution of participants' projections for PCE inflation, 2013–15 and over the longer run



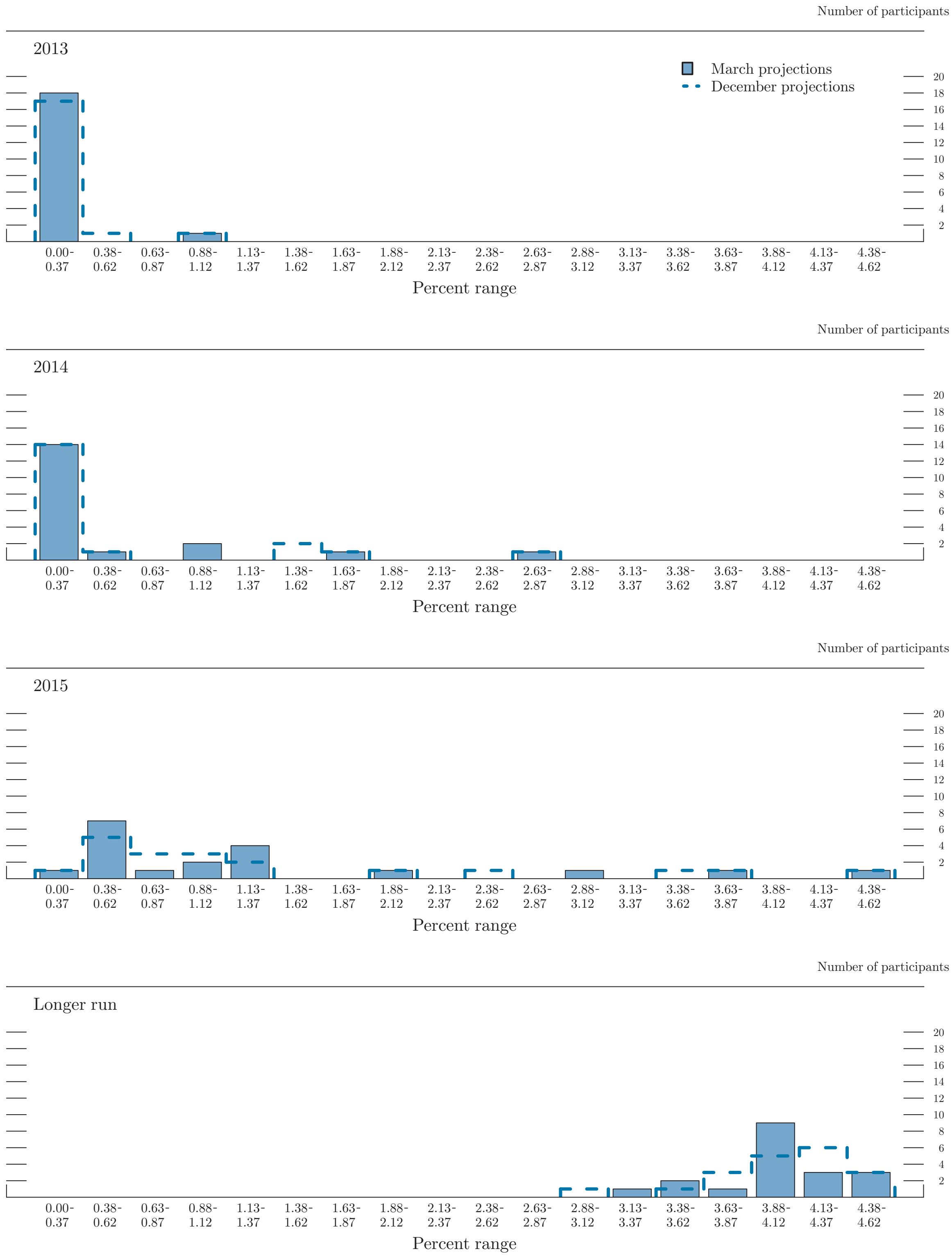
Note: Definitions of variables are in the general note to table 1.

Figure 3.D. Distribution of participants' projections for core PCE inflation, 2013–15



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

Figure 3.E. Distribution of participants' projections for the target federal funds rate, 2013–15 and over the longer run



Note: The target federal funds rate is measured as the level of the target rate at the end of the calendar year or in the longer run.

currently deviated from maximum employment, the extent to which projected inflation over the medium term deviated from the Committee's longer-term objective of 2 percent, and participants' projections of the likely time horizon necessary to return employment and inflation to mandate-consistent levels. Participants generally discussed their forecasts for the time of the first increase in the federal funds rate in the context of the thresholds adopted by the Committee in December 2012. A couple of participants noted that their assessments of the appropriate path for the federal funds rate took into account the likelihood that the neutral level of the federal funds rate was currently somewhat below its historical norm. It was also noted that, because the appropriate stance of monetary policy is conditional on the path of real activity and inflation over time, assessments of the appropriate future path of the federal funds rate and the balance sheet could change if economic conditions were to evolve in an unexpected manner.

Uncertainty and Risks

A majority of the participants continued to judge that the levels of uncertainty about their projections for real GDP growth and unemployment remained higher than was the norm during the previous 20 years; however, the number of participants with this view was noticeably smaller than in December (figure 4).[1] The main factor cited as contributing to the elevated uncertainty about economic outcomes was the challenge associated with forecasting the path of the U.S. economic recovery following a financial crisis and recession that differed markedly from recent historical experience. Several participants also noted the difficulties involved in predicting fiscal policy in the United States and the potential for European developments to threaten U.S. financial stability, though a few participants noted a decline in the likely severity of those risks as a reason for changing their assessments of uncertainty from "higher" to "broadly similar" to the norm.

A majority of participants, somewhat more than in December, reported that they saw the risks to their forecasts of real GDP growth and unemployment as broadly balanced, with the remainder generally indicating that they saw the risks to their forecasts for real GDP growth as weighted to the downside and for unemployment as weighted to the upside. Some participants who changed their assessment to "broadly balanced" indicated that, while U.S. fiscal policy had become more restrictive this year, the future path of that policy had become less uncertain than it was in December.

Table 2. Average historical projection error ranges
Percentage points

Variable	2013	2014	2015
Change in real GDP[1]	±1.3	±1.7	±1.8
Unemployment rate[1]	±0.6	±1.2	±1.7
Total consumer prices[2]	±0.9	±1.0	±1.1

NOTE: Error ranges shown are measured as plus or minus the root mean squared error of projections for 1993 through 2012 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. Further information is in 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).

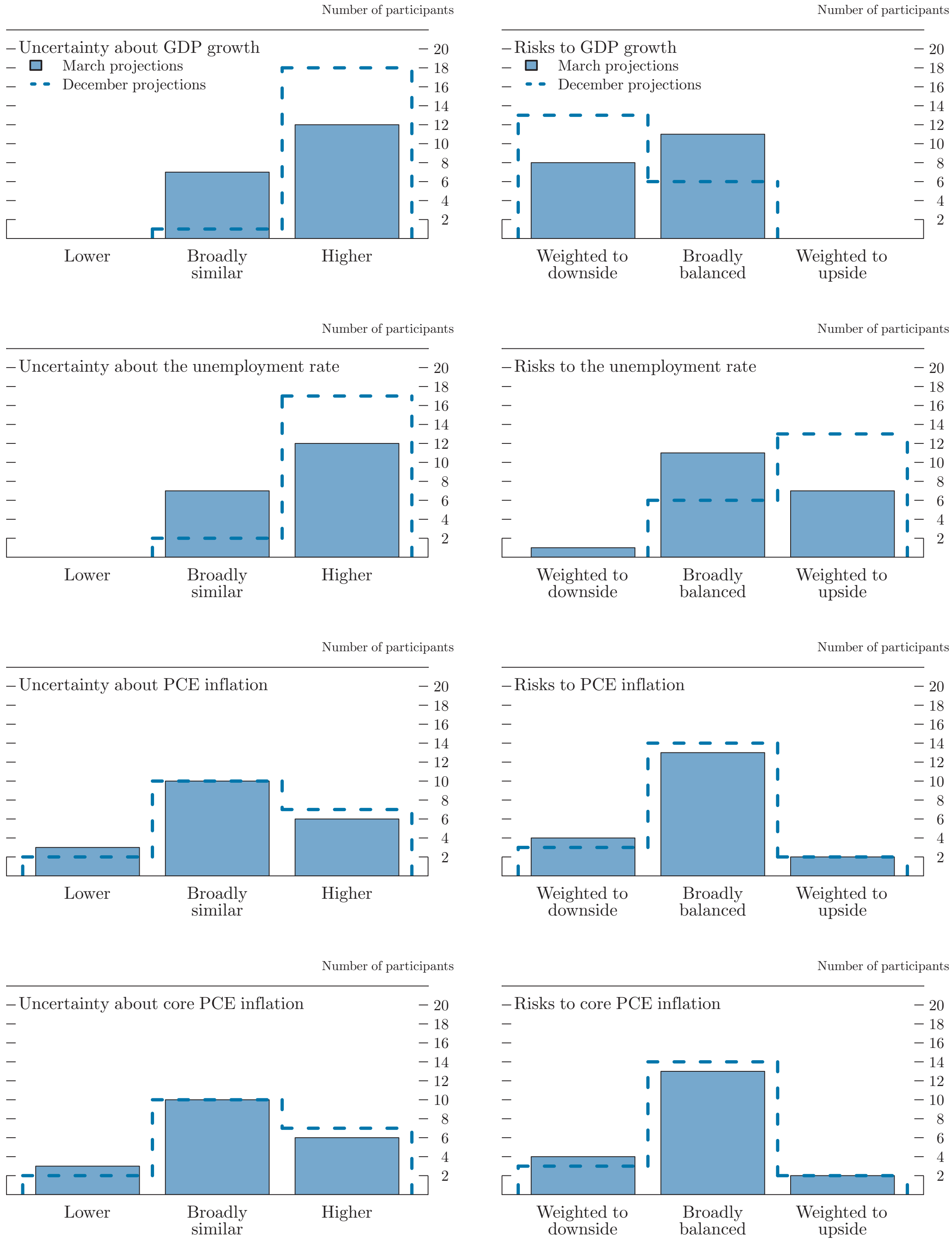
1. Definitions of variables are in the general note to table 1.

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.

Participants reported little change in their assessments of the level of uncertainty and the balance of risks around their forecasts for overall PCE inflation and core inflation. Thirteen participants judged the levels of uncertainty associated with their forecasts for those inflation measures to be broadly similar to, or lower than, historical norms; the same number assessed the risks to those projections to be broadly balanced. Several participants highlighted the likely role played by the Committee's adoption of a 2 percent inflation goal or its commitment to maintaining accommodative monetary policy as contributing to the recent stability of longer-term inflation expectations. Four participants saw the risks to their inflation forecast as tilted to the downside, reflecting, for example, risks of disinflation that could arise from adverse shocks to the economy that policy would have limited scope to offset in the current environment. Conversely, a couple of the participants saw the risks to inflation as weighted to the upside in light of the current highly accommodative stance of monetary policy and their concerns about the Committee's ability to shift to a less accommodative policy stance when it becomes appropriate to do so.

[1] 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 1993 through 2012. 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, 1.3 to 4.7 percent in the second year, and 1.2 to 4.8 percent in the third year. The corresponding 70 percent confidence intervals for overall inflation would be 1.1 to 2.9 percent in the current year, 1.0 to 3.0 percent in the second year, and 0.9 to 3.1 percent in the third 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.