Minutes of the Federal Open Market Committee
December 10–11, 2019

A joint meeting of the Federal Open Market Committee and the Board of Governors was held in the offices of the Board of Governors of the Federal Reserve System in Washington, D.C., on Tuesday, December 10, 2019, at 10:00 a.m. and continued on Wednesday, December 11, 2019, at 9:00 a.m.[1]

PRESENT:
Jerome H. Powell, Chair
John C. Williams, Vice Chair
Michelle W. Bowman
Lael Brainard
James Bullard
Richard H. Clarida
Charles L. Evans
Esther L. George
Randal K. Quarles
Eric Rosengren

Patrick Harker, Robert S. Kaplan, Neel Kashkari, Loretta J. Mester, and Michael Strine, Alternate Members of the Federal Open Market Committee

Thomas I. Barkin, Raphael W. Bostic, and Mary C. Daly, Presidents of the Federal Reserve Banks of Richmond, Atlanta, and San Francisco, respectively

James A. Clouse, Secretary
Matthew M. Luecke, Deputy Secretary
David W. Skidmore, Assistant Secretary
Michelle A. Smith, Assistant Secretary
Mark E. Van Der Weide, General Counsel
Michael Held, Deputy General Counsel
Steven B. Kamin, Economist
Thomas Laubach, Economist
Stacey Tevlin, Economist

Rochelle M. Edge, Eric M. Engen, Christopher J. Waller, William Wascher, Jonathan L. Willis, and Beth Anne Wilson, Associate Economists

Lorie K. Logan, Manager, System Open Market Account[2]

Ann E. Misback, Secretary, Office of the Secretary, Board of Governors

Eric Belsky,[3] Director, Division of Consumer and Community Affairs, Board of Governors; Matthew J. Eichner,[4] Director, Division of Reserve Bank Operations and Payment Systems, Board of Governors; Michael S. Gibson, Director, Division of Supervision and Regulation, Board of Governors; Andreas Lehnert, Director, Division of Financial Stability, Board of Governors

Trevor A. Reeve, Deputy Director, Division of Monetary Affairs, Board of Governors

Jon Faust, Senior Special Adviser to the Chair, Office of Board Members, Board of Governors

Joshua Gallin, Special Adviser to the Chair, Office of Board Members, Board of Governors

Brian M. Doyle, Wendy E. Dunn, Joseph W. Gruber, Ellen E. Meade, and Ivan Vidangos, Special Advisers to the Board, Office of Board Members, Board of Governors

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

Shaghil Ahmed, Senior Associate Director, Division of International Finance, Board of Governors; Diana Hancock, Senior Associate Director, Division of Research and Statistics, Board of Governors

Antulio N. Bomfim and Robert J. Tetlow, Senior Advisers, Division of Monetary Affairs, Board of Governors

[1] The Federal Open Market Committee is referenced as the "FOMC" and the "Committee" in these minutes.
[2] The Committee appointed Lorie K. Logan to serve as the manager of the System Open Market Account at the conclusion of the meeting.
[3] Attended through the discussion of the review of the monetary policy framework.
[4] Attended through the discussion of developments in financial markets and open market operations.

Eric C. Engstrom, Senior Adviser, Division of Research and Statistics, and Deputy Associate Director, Division of Monetary Affairs, Board of Governors

Elizabeth K. Kiser, Associate Director, Division of Research and Statistics, Board of Governors; Elizabeth Klee, Associate Director, Division of Financial Stability, Board of Governors; David López-Salido, Associate Director, Division of Monetary Affairs, Board of Governors

Glenn Follette, Patrick E. McCabe,[5] and John M. Roberts, Deputy Associate Directors, Division of Research and Statistics, Board of Governors; Matteo Iacoviello and Andrea Raffo,[6] Deputy Associate Directors, Division of International Finance, Board of Governors; Jeffrey D. Walker,[3] Deputy Associate Director, Division of Reserve Bank Operations and Payment Systems, Board of Governors

Etienne Gagnon, Assistant Director, Division of Monetary Affairs, Board of Governors; Paul Lengermann, Assistant Director, Division of Research and Statistics, Board of Governors

Penelope A. Beattie,[3] Section Chief, Office of the Secretary, Board of Governors; Seung J. Lee,[7] Section Chief, Division of International Finance, Board of Governors

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

Michele Cavallo and Kurt F. Lewis, Principal Economists, Division of Monetary Affairs, Board of Governors; Laura J. Feiveson,[3] Principal Economist, Division of Research and Statistics, Board of Governors

Nils Goernemann,[3] Senior Economist, Division of International Finance, Board of Governors

Donielle A. Winford, Information Management Analyst, Division of Monetary Affairs, Board of Governors

Becky C. Bareford, First Vice President, Federal Reserve Bank of Richmond

David Altig, Michael Dotsey, Jeffrey Fuhrer,[3] and Sylvain Leduc, Executive Vice Presidents, Federal Reserve Banks of Atlanta, Philadelphia, Boston, and San Francisco, respectively

Todd E. Clark, Marc Giannoni,[3] and Spencer Krane, Senior Vice Presidents, Federal Reserve Banks of Cleveland, Dallas, and Chicago, respectively

Jonathan P. McCarthy, Alexander L. Wolman, and Patricia Zobel, Vice Presidents, Federal Reserve Banks of New York, Richmond, and New York, respectively

Thomas D. Tallarini, Jr., Assistant Vice President, Federal Reserve Bank of Minneapolis

Karel Mertens,[3] Senior Economic Policy Advisor, Federal Reserve Bank of Dallas

Daniel Cooper, Senior Economist and Policy Advisor, Federal Reserve Bank of Boston

Scott Davis, Senior Research Economist and Advisor, Federal Reserve Bank of Dallas

Julie Hotchkiss,[3] Research Economist and Senior Advisor, Federal Reserve Bank of Atlanta

Review of Monetary Policy Strategy, Tools, and Communication Practices

Participants continued to discuss issues related to the ongoing review of the Federal Reserve's monetary policy strategy, tools, and communication practices. The staff summarized the feedback received through the *Fed Listens* initiative, a series of 14 public-facing events conducted around the country with a broad range of individuals and groups. These events engaged with the public directly on issues pertaining to the dual-mandate objectives of maximum employment and stable prices. Representatives from underserved communities who participated in the *Fed Listens* events generally saw the current strong labor market as providing significant benefits to their communities, most notably by creating

[5] Attended Tuesday's session only.

[6] Attended through the discussion of developments in financial markets and open market operations, and from the discussion of current monetary policy through the end of the meeting.

[7] Attended the discussion of economic developments and the outlook.

greater opportunities for individuals who have experienced difficulty finding jobs in the past. Nevertheless, these representatives noted that the benefits from current labor market conditions flowing to people in their communities were less than those implied by national statistics, and they expressed concerns that the recent gains might not be sustained in the event of an economic downturn. Business representatives reported experiencing challenges finding qualified workers and described several initiatives to attract and retain workers, including training programs and a willingness to employ individuals who are unlikely to have been considered in less favorable labor market conditions. Inflation developments elicited fewer comments at these events and were generally seen as posing less of a challenge than labor market conditions. Representatives of retirees mentioned difficulties associated with the rising costs of health care and prescription drugs, whereas those representing low- and middle-income communities pointed to the rising costs of basic necessities such as housing, utilities, and food. Business representatives emphasized the importance of low and stable inflation for planning and decisionmaking. Event participants were concerned about rising costs of living and generally perceived low inflation as desirable from that perspective. Event participants were asked about monetary policymakers' concerns regarding overall inflation running persistently below 2 percent; they noted that the Federal Reserve could better communicate its reasons for these concerns. When asked about the effects of changes in interest rates, representatives of underserved communities said that such changes had little effect on many members of their communities who have limited or no access to credit. Representatives of retirees conveyed a more negative view of low interest rates, given the greater reliance of wealthier retirees on interest income. Business representatives generally found the low interest rate environment beneficial.

The staff briefing also included an analysis of distributional considerations for monetary policy. Consistent with the feedback received at the *Fed Listens* events, the evidence reviewed by the staff showed that workers who are young, less educated, African American, or Hispanic tend to face a greater-than-average risk of losing their jobs during recessions. The staff used simulations from a specific macroeconomic model to explore how heterogeneity of households might affect the transmission of economic shocks and changes in monetary policy to the economy. The staff's simulations embedded the assumption that households have limited ability to borrow, which makes some households' consumption spending more sensitive to changes in income. As a result, in these simulations, downturns lead to larger contractions in aggregate demand than would be the case if all households could borrow to support their consumption spending in response to a loss in income. The amplification of recessionary shocks was especially large when the monetary policy response was constrained by the effective lower bound (ELB) on the policy interest rate. Overall, the analysis suggested that the costs of recessions, as well as the benefits of economic stabilization, might be larger than suggested by models that did not account for differences across households regarding their access to credit.

Participants agreed that the *Fed Listens* outreach efforts had informed their understanding of the goals and tradeoffs associated with monetary policy and had provided highly useful input into their deliberations. Several participants voiced their desire to continue the conversations initiated at the *Fed Listens* events. Participants also shared their appreciation of the feedback they receive on a regular basis from members of the public, including through the Federal Reserve System's extensive networks of contacts and community outreach efforts. A few participants emphasized that policymakers' engagement with the public helps build trust, fosters transparency, and reinforces the credibility of the Federal Reserve.

Participants generally saw the feedback from *Fed Listens* events as reinforcing the importance of sustaining the economic expansion so that the effects of a persistently strong job market reach more of those who, in the past, had experienced difficulty finding employment. Several participants mentioned that sustaining strong labor market conditions helps workers build skills and cement their attachment to the labor force in a manner that might reduce the scarring effects of future downturns and might increase the maximum sustainable level of employment over the longer run. A number of participants also emphasized that sustaining strong labor market conditions is helpful for meeting the Committee's symmetric 2 percent inflation goal.

Some participants spoke to some of the challenges associated with assessing the maximum level of employment. A few participants noted that aggregate statistics mask significant heterogeneity in labor market outcomes. A few others pointed to the continued absence of significant wage and price pressure—traditionally seen as a symptom of a tight labor market—even as the unemployment rate had moved below most estimates of its longer-run level. A few participants raised the possibility that the maximum sustainable level of employment had

increased as the expansion continued to draw workers who would otherwise not be in the labor force.

Regarding inflation, participants recognized that segments of the public generally do not regard the fact that aggregate inflation is running modestly below the Committee's 2 percent goal as a problem. A few participants noted that the public's view on this issue was understandable from the perspective of households and businesses going about their daily lives in an economy with low and stable inflation. That said, a couple of participants cautioned that inflation could emerge as a concern among members of the public if it became more volatile or ran at levels substantially away from the Committee's goal. Many participants also warned about the macroeconomic consequences of not achieving 2 percent on a sustained basis. In particular, if inflation ran persistently below the Committee's objective, longer-term inflation expectations could drift down, resulting in lower actual inflation. With lower inflation, nominal interest rates would be lower as well and therefore closer to the ELB. As a result, the scope for monetary policy to support the economy in a future downturn through interest rate cuts would be reduced, a situation that would likely worsen economic outcomes for households and businesses. In light of these considerations, participants generally agreed that they need to communicate more clearly to the public their rationale for, and commitment to, achieving 2 percent inflation on a sustained basis and of ensuring that longer-run inflation expectations are anchored at levels consistent with this objective. To ensure the effectiveness of these and other communications, several participants stressed that the Federal Reserve needs to adapt its communications to various audiences. A few participants emphasized that communications about the Committee's resolve to return inflation to 2 percent need to be backed with actions and results to ensure that the public sees these communications as credible.

With respect to the role of distributional considerations in the pursuit of the dual-mandate objectives, several participants noted that it was important for policymakers to be cognizant of how monetary policy affects different segments of the population. Most participants commented on the large costs that recessions and high unemployment impose on communities, notably on their most vulnerable constituents, and stressed the need for monetary policy to seek to avoid recessions in the first place or reduce their severity when they occur. A number of these participants emphasized that, while monetary policy actions can have different effects across groups, monetary policy actions that are driven by the pursuit of maximum employment and stable prices ultimately benefit all groups. Participants viewed the role of monetary policy as supporting a strong, stable economy that benefits all Americans. Various participants noted that monetary policy is a blunt instrument whose effects cannot be targeted to specific communities. Several participants remarked that while monetary policy actions can improve the conditions of vulnerable communities, notably by supporting a strong job market, these actions may not reduce inequality in wealth and income. For these and other reasons, many participants emphasized that policies other than monetary policy are appropriate to directly address inequality. In addition, a couple of participants cautioned that maintaining accommodative financial conditions could be counterproductive if doing so fueled financial imbalances and exacerbated the next economic downturn.

Participants agreed that their review of monetary policy strategy, tools, and communication practices would continue at future meetings and, as a result, that the Committee would not reaffirm its existing Statement on Longer-Run Goals and Monetary Policy Strategy at the January 2020 meeting. The Committee plans to revisit this statement closer to the conclusion of the review, likely around the middle of 2020.

Developments in Financial Markets and Open Market Operations

The System Open Market Account manager first reviewed developments in financial markets over the intermeeting period. Market prices appeared to respond mainly to signs of stabilization in the U.S. and global economies and to developments associated with trade policy. Market participants noted some risks to the outlook including Brexit and geopolitical factors.

Regarding expectations for U.S. monetary policy, the Open Market Trading Desk's surveys and market-based indicators pointed to a very high perceived likelihood of no change in the target range for the federal funds rate at this meeting. The expected path of the federal funds rate implied by the medians of survey respondents' modal forecasts remained essentially flat through 2020. Survey- and market-implied uncertainty about the near-term outlook for monetary policy declined, with market commentary attributing the decrease in part to the Committee's October communications. Survey respondents placed a higher probability on a reduction in the target range over 2020 than an increase.

The manager turned next to a review of money market developments since the October meeting, starting with an update on the implementation of the Committee's

strategy to ensure ample reserves. Reserve management purchases of Treasury bills continued at a pace of $60 billion per month, with propositions remaining strong and little discernible effect on market functioning. While these purchases accumulated, the Desk continued to conduct regular repurchase agreement (repo) operations in order to maintain reserves at or above the level that prevailed in early September. Repos outstanding from these Desk operations totaled roughly $215 billion per day, consisting of both overnight and term operations.

As reserve levels increased, the distribution of reserves across bank types became comparable with where it was in early September. The federal funds rate and other overnight money market rates fell modestly and were close to the interest on excess reserves (IOER) rate for most of the period. The intraday dispersion of rates was also lower than when reserves were at similar levels before September. In addition to helping keep reserves ample, repo operations likely have reduced pressures in money markets and the dispersion in money market rates.

With respect to conditions around year-end, the manager noted that forward measures of market pricing continued to indicate expectations of temporary upward pressures on some secured rates. Money market rates are often volatile around year-end, and Federal Reserve operations are not intended to eliminate all year-end pressures but rather to ensure that reserve supply remains ample and to mitigate the risk that such pressures could adversely affect the implementation of monetary policy. The Desk had already conducted three longer-term repo operations spanning year-end—for a total of $75 billion—and planned to announce an additional longer-term operation, as well as increase the amount of overnight repo offered around the year-end date. The manager reported that the Desk is closely monitoring reserves and money market conditions and that it is prepared to adjust plans as needed.

The manager discussed two operational considerations around policy implementation. The first involved the risk that future Treasury bill purchases could have a larger effect on liquidity in the Treasury bill market in light of expected seasonal declines in bill issuance and the Federal Reserve's growing ownership share of outstanding bills. If this risk were to materialize, the Federal Reserve could consider expanding the universe of securities purchased for reserve management purposes to include coupon-bearing Treasury securities with a short time to maturity. Purchases of these short-dated securities would not affect broader financial conditions or the stance of monetary policy. The manager also discussed expectations to gradually transition away from active repo operations next year as Treasury bill purchases supply a larger base of reserves. The calendar of repo operations starting in mid-January could reflect a gradual reduction in active repo operations. The manager indicated that some repos might be needed at least through April, when tax payments will sharply reduce reserve levels.

As reserves remain ample, the manager noted that it may become appropriate at some point to implement a technical adjustment to the IOER rate and the offered rate on overnight reverse repurchase (ON RRP) agreements. Should conditions warrant this adjustment, the IOER rate could move closer to the middle of the target range for the federal funds rate, and the ON RRP rate could be realigned with the bottom of the target range.

The manager also noted that the Federal Reserve Bank of New York communicated to its customers that the remuneration rate on the foreign repo pool will be revised to be generally equivalent to the overnight reverse repo rate. This action may reduce activity in the pool to some extent and increase the level of reserves.

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

Staff Review of the Economic Situation

The information available for the December 10–11 meeting indicated that labor market conditions remained strong and that real gross domestic product (GDP) was increasing at a moderate rate in the second half of 2019. Consumer price inflation, as measured by the 12-month percentage change in the price index for personal consumption expenditures (PCE), remained below 2 percent in October. Survey-based measures of longer-run inflation expectations were little changed.

Total nonfarm payroll employment surged in November, boosted in part by the return of auto workers who had previously been on strike in October. The average pace of job gains over the three months ending in November, which is unaffected by the strike, was stronger than earlier in 2019. However, the rate of increase in payrolls so far this year was slower than last year, even accounting for the anticipated effects of the Bureau of Labor Statistics' benchmark revision to payroll employment, which will be incorporated in the published data in February 2020. The unemployment rate ticked up in October but then moved back down to its 50-year low

of 3.5 percent in November; the labor force participation rate and the employment-to-population ratio held steady, on balance, over those two months. The unemployment rates for African Americans, Asians, Hispanics, and whites were little changed, on net, over the past two months; the unemployment rate for each group was below its level at the end of the previous economic expansion, though persistent differentials between these rates remained. The average share of workers employed part time for economic reasons in November stayed below its level in late 2007. Both the rate of private-sector job openings and the rate of quits edged down in September, but these readings were still at fairly elevated levels. The four-week moving average of initial claims for unemployment insurance benefits through late November remained near historically low levels. In general, recent measures of nominal wage growth continued to be moderate. Total labor compensation per hour in the business sector increased 3.7 percent over the four quarters ending in the third quarter. The employment cost index for private-sector workers rose 2.7 percent over the 12 months ending in September, while average hourly earnings for all employees increased 3.1 percent over the 12 months ending in November.

Total consumer prices, as measured by the PCE price index, increased 1.3 percent over the 12 months ending in October. Core PCE price inflation (which excludes changes in consumer food and energy prices) was 1.6 percent over that same 12-month period, while consumer food price inflation was lower than core inflation and consumer energy prices declined. The trimmed mean measure of 12-month PCE price inflation constructed by the Federal Reserve Bank of Dallas remained at 2 percent in October. The consumer price index (CPI) rose 2.1 percent over the 12 months ending in November, while core CPI inflation was 2.3 percent. Recent readings on survey-based measures of longer-run inflation expectations—including those from the University of Michigan Surveys of Consumers, the Survey of Professional Forecasters, the Survey of Consumer Expectations from the Federal Reserve Bank of New York, and the Desk's Survey of Primary Dealers and Survey of Market Participants—were little changed, on balance; the Michigan survey measure ticked back down in early December to the bottom of its recent range after ticking up in November.

Real PCE continued to expand in October following a strong gain in the third quarter. Sales of light motor vehicles rose markedly in November. Key factors that influence consumer spending—including the low unemployment rate, the upward trend in real disposable income, high levels of households' net worth, and generally low interest rates—were supportive of solid real PCE growth in the near term. The Michigan survey measure of consumer sentiment rose again in early December to an upbeat level and had more than recovered from its drop in August; the Conference Board survey measure of consumer confidence remained at a favorable level in November.

Real residential investment appeared to be increasing further after rising solidly in the third quarter. Both starts and building permit issuance for single-family homes increased in October, and starts of multifamily units also rose. Existing home sales continued to increase in October, although new home sales edged down following a solid gain in the third quarter. All told, the data on construction and sales continued to suggest that the decline in mortgage rates since late 2018 has been boosting housing activity.

Real nonresidential private fixed investment remained weak overall after declining in the second and third quarters. Nominal shipments and new orders of nondefense capital goods excluding aircraft increased solidly in October following a string of decreases, although many forward-looking indicators pointed to continued softness in business equipment spending. Most measures of business sentiment were still downbeat, analysts' expectations of firms' longer-term profit growth edged down further, and concerns about trade developments continued to weigh on firms' investment decisions. Nominal business expenditures for nonresidential structures outside of the drilling and mining sector continued to decline in October, and the total number of crude oil and natural gas rigs in operation—an indicator of business spending for structures in the drilling and mining sector—fell further through early December.

Industrial production decreased in October and remained notably lower than at the beginning of the year. Production in October continued to be held down by the strike at General Motors, although the end of the strike and automakers' schedules suggested that assemblies of light motor vehicles would rebound in November. Overall manufacturing production appeared likely to remain soft in coming months, reflecting generally weak readings on new orders from national and regional manufacturing surveys, declining domestic business investment, slow economic growth abroad, and a persistent drag from trade developments.

Total real government purchases were increasing slowly in the fourth quarter. Nominal defense spending in October pointed to only a modest rise in real federal government purchases. Real purchases by state and local governments looked to be moving roughly sideways; state and local payrolls expanded modestly, on net, over October and November, and nominal construction spending by these governments was about flat in October.

The nominal U.S. international trade deficit narrowed in October. Exports fell a little, with declines in all export categories except for services and industrial supplies. Imports fell much more, and the declines were broad based, with the largest contributions coming from imports of consumer goods and automotive products. Available trade data suggested that the contribution of net exports to real GDP growth, which was slightly negative in the third quarter, would turn somewhat positive in the fourth quarter.

Foreign economic growth slowed further in the third quarter amid continued weakness in the global manufacturing sector. Recent monthly indicators pointed to a stabilization in the pace of economic growth in China and several advanced foreign economies. However, other indicators suggested that social unrest weighed heavily on economic activity in several countries, most notably in Hong Kong, and that weakness persisted in parts of Latin America. Foreign inflation picked up somewhat as energy prices stabilized, although inflation remained relatively low in most foreign economies.

Staff Review of the Financial Situation

Investor sentiment fluctuated over the intermeeting period largely in response to ongoing trade negotiations between the United States and China. On net, equity prices increased moderately while corporate bond spreads narrowed slightly. Yields on nominal Treasury securities were little changed. Financing conditions for businesses and households remained supportive of spending and economic activity.

Federal Reserve communications over the intermeeting period were viewed as suggesting that additional near-term changes to the target range for the federal funds rate were less likely than had previously been expected. A straight read of the probability distribution for the federal funds rate implied by options prices suggested that investors assigned a high probability to the target range remaining unchanged at the December FOMC meeting. Forward rates implied by overnight index swap quotes declined slightly, on net, and implied about a 25 basis point decline in the federal funds rate by the end of 2020.

Nominal Treasury yields fluctuated over the intermeeting period but, on net, the Treasury curve was little changed. Measures of inflation compensation over the next 5 years and 5 to 10 years ahead based on Treasury Inflation-Protected Securities increased slightly from near multiyear low levels.

Broad stock price indexes increased moderately over the intermeeting period amid movements largely attributed to trade-related developments and stronger-than-expected U.S. employment reports. Option-implied volatility on the S&P 500 index increased modestly but remained near the low end of its historical distribution. On net, corporate credit spreads narrowed slightly.

Conditions in short-term funding markets were stable over the intermeeting period. Interest rates for overnight secured and unsecured loans fell in line with the 25 basis point decrease in the target range for the federal funds rate at the October FOMC meeting. Trading in money markets was orderly, with volumes in normal ranges and spreads narrower relative to the IOER rate. Pressures on rates at October month-end and November mid-month—both days with sizable settlements of Treasury auctions—were muted compared with other recent Treasury issuance days. The Desk's open market operations aimed at maintaining ample reserves proceeded smoothly.

As in U.S. markets, sentiment in foreign financial markets fluctuated in response to news on U.S.–China trade negotiations. Most foreign equity price indexes and long-term sovereign yields in Germany, the United Kingdom, and Japan increased modestly on net. The broad dollar index ended the period little changed. Political unrest in Hong Kong and Latin America garnered some financial market attention and led to a weakening of some Latin American currencies, notably the Chilean peso, but the imprint on broader financial markets was limited.

Financing conditions for nonfinancial businesses remained accommodative. Gross issuance of corporate bonds was robust, on average, in October and November. Gross issuance of institutional leveraged loans remained near recent monthly averages. Meanwhile, commercial and industrial loans held by banks contracted in October but increased modestly in November. The credit quality of nonfinancial corporations deteriorated slightly in recent months but remained solid overall. After particularly strong gross equity issuance in September, initial public offerings declined and seasoned offerings remained solid in October and November. Credit

conditions for both small businesses and municipalities stayed accommodative.

In the commercial real estate (CRE) sector, financing conditions also remained generally accommodative. Commercial mortgage-backed securities (CMBS) spreads widened slightly over the intermeeting period but remained near the low end of their post-crisis range. Agency and non-agency CMBS issuance increased in October to a post-crisis high. CRE loan growth at banks also increased in October relative to recent quarters.

Financing conditions in the residential mortgage market remained accommodative over the intermeeting period. Mortgage rates were little changed since the October FOMC meeting. Consistent with this year's decline in mortgage rates, home-purchase originations and refinancing originations both rose. Mortgage credit standards were little changed.

Financing conditions in consumer credit markets remained generally supportive of growth in consumer spending, although conditions continued to be tight for nonprime borrowers. Auto loans increased, consistent with significant declines in auto loan interest rates this year. Credit card debt grew at a solid pace, and interest rates on credit card debt began to fall. Consumer asset-backed securities issuance was strong through October as spreads stabilized at levels that were somewhat above their post-crisis averages.

Staff Economic Outlook

The projection for U.S. real GDP growth prepared by the staff for the December FOMC meeting was revised up a little for the second half of 2019 relative to the previous projection. This revision primarily reflected incoming data for household spending and business investment that were somewhat stronger than expected. Even with this upward revision, real GDP was forecast to rise more slowly in the second half of the year than in the first half, mostly because of continued soft business investment and slower increases in government spending. The forecast for real GDP growth over the medium term was also revised up a bit, on balance, primarily in response to a somewhat higher projected path for equity prices. Nevertheless, real GDP growth was still expected to slow modestly in the coming years, largely because of a fading boost from fiscal policy. Output was forecast to expand at a rate a little above the staff's estimate of its potential rate of growth in 2019 through 2021 and then to slow to a pace slightly below potential output growth in 2022. The unemployment rate was projected to be roughly flat at around its current level through 2022 and to remain below the staff's estimate of its longer-run natural rate.

The staff's forecast for total PCE price inflation in 2019 was revised down a bit, as a downward revision to core PCE prices in response to recent data was partly offset by an upward revision to consumer energy prices. Beyond 2019, core inflation was expected to be above its pace this year, and this projection was revised up a touch because of the slightly tighter resource utilization in the current forecast. The projection for total inflation in 2020 was a little lower than for core inflation due to a projected decline in consumer energy prices. Over the remainder of the medium-term projection, total inflation was expected to be about the same as core inflation, although both inflation measures were forecast to continue to run a bit below 2 percent through 2022.

The staff continued to view the uncertainty around its projections for real GDP growth, the unemployment rate, and inflation as generally similar to the average of the past 20 years. The staff viewed the downside risks to economic activity as having eased a bit since the previous forecast but still judged that the risks to the forecast for real GDP growth were tilted to the downside, with a corresponding skew to the upside for the unemployment rate. Important factors influencing this assessment were that international trade tensions and foreign economic developments seemed more likely to move in directions that could have significant negative effects on the U.S. economy than to resolve more favorably than assumed. In addition, softness in business investment and manufacturing production so far this year were seen as pointing to the possibility of a more substantial slowing in economic growth than the staff projected. The risks to the inflation projection were also viewed as having a downward skew, in part because of the downside risks to the forecast for economic activity.

Participants' Views on Current Conditions and the Economic Outlook

In conjunction with this FOMC meeting, members of the Board of Governors and Federal Reserve Bank presidents submitted their projections of the most likely outcomes for real GDP growth, the unemployment rate, and inflation for each year from 2019 through 2022 and over the longer run, based on their individual assessments of the appropriate path for the federal funds rate. The longer-run projections represented 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 projections are described

in the Summary of Economic Projections (SEP), which is an addendum to these minutes.

Participants agreed that the labor market had remained strong over the intermeeting period and that economic activity had risen at a moderate rate. Job gains had been solid, on average, in recent months, and the unemployment rate had remained low. Although household spending had risen at a strong pace, business fixed investment and exports had remained weak. On a 12-month basis, overall inflation and inflation for items other than food and energy were running below 2 percent. Market-based measures of inflation compensation remained low; survey-based measures of longer-term inflation expectations were little changed.

Participants generally expected sustained expansion of economic activity, strong labor market conditions, and inflation near the Committee's symmetric 2 percent objective as the most likely outcomes. This outlook reflected, at least in part, the support provided by the current stance of monetary policy. Nevertheless, global developments, related to both persistent uncertainty regarding international trade and weakness in economic growth abroad, continued to pose some risks to the outlook, and inflation pressures remained muted.

In their discussion of the household sector, participants agreed that spending had increased at a strong pace. They generally expected that consumption spending would likely remain on a firm footing, supported by strong labor market conditions, rising incomes, and solid consumer confidence. In addition, residential investment had continued to pick up, reflecting, in part, the effects of lower mortgage rates. Many participants commented that business contacts in consumer-related industries reported strong demand or that contacts were optimistic about the holiday retail spending season. However, some participants observed that recent data on retail sales or motor vehicle spending had decelerated slightly.

With respect to the business sector, participants saw trade developments and concerns about the global economic growth outlook as the main factors contributing to weak business investment and exports. Participants generally expected these factors to continue to damp business investment and exports. They expressed similar concerns about activity in manufacturing industries. A few participants noted that the current weakness in capital expenditures could lead to a slower pace of productivity growth in future years. A few others observed that businesses were diversifying their supply chains or investing in technology to adapt to persistent uncertainty regarding international trade, which might mitigate the effects of such uncertainty on future business spending.

A number of participants commented on challenges facing the energy and agriculture sectors. A few participants remarked that activity in the energy sector was especially weak, reflecting low petroleum prices, low profitability, and tight financing conditions for energy-producing firms. Several participants noted that the agricultural sector also faced a number of difficulties, including those associated with trade developments, weak export demand, and challenging financial positions for many farmers. A couple of participants noted that farm subsidies from the federal government were offsetting a portion of the financial strain on farmers.

Participants judged that conditions in the labor market remained strong, with the unemployment rate at a 50-year low, job gains remaining solid, and some measures of labor force participation increasing further. The unemployment rate was likely to remain low going forward, and various participants remarked that there were some indications that further strengthening in overall labor market conditions was possible without creating undesirable pressures on resources. In particular, a number of participants noted that the labor force participation rate could rise further still. Moreover, measures of wage growth had generally remained moderate. However, a few participants commented that increases in the labor force would likely moderate as slack in the labor market diminished. In addition, a couple of participants remarked that the preliminary benchmark revision released in August by the Bureau of Labor Statistics had indicated that payroll employment gains would likely show less momentum coming into this year once those revisions are incorporated in published data early next year. A couple of other participants thought it was important to better understand the quality of jobs being created. Business contacts in many Districts indicated continued strong labor demand, with firms reporting difficulties in finding qualified workers or broadening their recruiting to include traditionally marginalized groups. A number of participants noted that wage pressures were evident for some industries in their Districts, and a couple of participants commented that firms were responding to those pressures in a variety of ways, including investing in technology that could serve as a substitute for labor.

In their discussion of inflation developments, participants noted that recent readings on overall and core PCE inflation, measured on a 12-month change basis, had continued to run below 2 percent. Survey-based

measures of longer-term inflation expectations were little changed, and market-based measures of inflation compensation remained low. A few participants commented on factors that may temporarily exert upward pressure on some measures of inflation in the coming months. Assessing all these factors, participants generally expected that inflation would return to the 2 percent objective as the economic expansion continued and resource utilization remained high. However, weakness abroad and subdued global inflation pressures were cited as sources of risk to this assessment. Participants who expressed less confidence that inflation would return promptly to the 2 percent objective commented that inflation had averaged less than 2 percent over the past several years even as resource utilization had increased or that global or technology-related factors were exerting downward pressure on inflation that could be difficult to overcome.

Participants also discussed risks regarding the outlook for economic activity. While many saw the risks as tilted somewhat to the downside, some risks were seen to have eased over recent months. In particular, there were some tentative signs that trade tensions with China were easing, and the probability of a no-deal Brexit was judged to have lessened further. In addition, there were indications that the prospects for global economic growth may be stabilizing. A number of participants observed that the domestic economy was showing resilience in the face of headwinds from global developments. Moreover, statistical models designed to gauge the probability of recession using financial market data, including those based on information from the Treasury yield curve, suggested that the likelihood of a recession occurring over the medium term had fallen noticeably in recent months. However, new uncertainties had emerged regarding trade policy with Argentina, Brazil, and France, and political tensions in Hong Kong persisted.

In their consideration of monetary policy at this meeting, participants judged that it would be appropriate to maintain the target range for the federal funds rate at 1½ to 1¾ percent to support sustained expansion of economic activity, strong labor market conditions, and inflation near the Committee's symmetric 2 percent objective. As reflected in their SEP projections, participants regarded the current stance of monetary policy as likely to remain appropriate for a time as long as incoming information about the economy remained broadly consistent with the economic outlook. Of course, if developments emerged that led to a material reassessment of the outlook, the stance of policy would need to adjust in a way that fostered the Committee's dual-mandate objectives.

A number of participants agreed that maintaining the current stance of monetary policy would give the Committee some time to assess the full effects on the economy of its policy decisions and communications over the course of this year along with other information bearing on the economic outlook. Participants also discussed how maintaining the current stance of policy for a time could be helpful for cushioning the economy from the global developments that have been weighing on economic activity and for returning inflation to the Committee's symmetric objective of 2 percent. Participants generally expressed concerns regarding inflation continuing to fall short of 2 percent. Although a number of participants noted that some of the factors currently holding down inflation were likely to prove transitory, various participants were concerned that indicators were suggesting that the level of longer-term inflation expectations was too low.

A few participants raised the concern that keeping interest rates low over a long period might encourage excessive risk-taking, which could exacerbate imbalances in the financial sector. These participants offered various perspectives on the relationship between financial stability and policies that keep interest rates persistently low. They remarked that such policies could be inconsistent with sustaining maximum employment, could make the next recession more severe than otherwise, or could strengthen the case for the active use of macroprudential tools to guard against emerging imbalances.

Various participants remarked on issues related to the implementation of monetary policy, highlighting topics for further discussion at future meetings. Among the topics mentioned were the potential role of a standing repo facility in an ample-reserves regime, the setting of administered rates, and the composition of the Federal Reserve's holdings of Treasury securities over the longer run.

Committee Policy Action

In their discussion of monetary policy for this meeting, members noted that information received since the FOMC met in October indicated that the labor market remained strong and that economic activity had been rising at a moderate rate. Job gains had been solid, on average, in recent months, and the unemployment rate had remained low. Although household spending had been rising at a strong pace, business fixed investment and exports remained weak. On a 12-month basis, overall inflation and inflation for items other than food and energy were running below 2 percent. Market-based measures of inflation compensation remained low;

survey-based measures of longer-term inflation expectations were little changed.

Members agreed to maintain the target range for the federal funds rate at 1½ to 1¾ percent. Members judged that the current stance of monetary policy is appropriate to support sustained expansion of economic activity, strong labor market conditions, and inflation near the Committee's symmetric 2 percent objective.

Members also agreed that, in determining the timing and size of future adjustments to the target range for the federal funds rate, the Committee would assess realized and expected economic conditions relative to its maximum employment objective and its symmetric 2 percent inflation objective. And they concurred that this assessment would take into account a wide range of information, including measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial and international developments.

With regard to the postmeeting statement, members agreed to state that they judged that "the current stance of monetary policy is appropriate" to support the achievement of the Committee's policy objectives. Members discussed their options regarding references to global developments and muted inflation pressures in the statement. In their judgment, these factors, cited in previous postmeeting statements as part of the rationale for adjusting the stance of policy, remained salient features of the outlook. Accordingly, they agreed to cite them in the sentence indicating that "the Committee will continue to monitor the implications of incoming information for the economic outlook." With the retention of these references to global developments and muted inflation pressures, members agreed that the text on uncertainties about the outlook could be removed. A few members suggested that the language stating that monetary policy would support inflation "near" 2 percent could be misinterpreted as suggesting that policymakers were comfortable with inflation running below that level; they preferred language that referred to returning inflation to the Committee's symmetric 2 percent objective. Other members thought that the reference to "near" 2 percent was intended to encompass modest deviations of inflation above and below 2 percent.

At the conclusion of the discussion, the Committee voted to authorize and direct the Federal Reserve Bank of New York, until instructed otherwise, to execute transactions in the SOMA in accordance with the following domestic policy directive, to be released at 2:00 p.m.:

"Effective December 12, 2019, the Federal Open Market Committee directs the Desk to undertake open market operations as necessary to maintain the federal funds rate in a target range of 1½ to 1¾ percent. In light of recent and expected increases in the Federal Reserve's non-reserve liabilities, the Committee directs the Desk to continue purchasing Treasury bills at least into the second quarter of 2020 to maintain over time ample reserve balances at or above the level that prevailed in early September 2019. The Committee also directs the Desk to continue conducting term and overnight repurchase agreement operations at least through January 2020 to ensure that the supply of reserves remains ample even during periods of sharp increases in non-reserve liabilities, and to mitigate the risk of money market pressures that could adversely affect policy implementation. In addition, the Committee directs the Desk to conduct overnight reverse repurchase operations (and reverse repurchase operations with maturities of more than one day when necessary to accommodate weekend, holiday, or similar trading conventions) at an offering rate of 1.45 percent, in amounts limited only by the value of Treasury securities held outright in the System Open Market Account that are available for such operations and by a per-counterparty limit of $30 billion per day.

The Committee directs the Desk to continue rolling over at auction all principal payments from the Federal Reserve's holdings of Treasury securities and to continue reinvesting all principal payments from the Federal Reserve's holdings of agency debt and agency mortgage-backed securities received during each calendar month. Principal payments from agency debt and agency mortgage-backed securities up to $20 billion per month will continue to be reinvested in Treasury securities to roughly match the maturity composition of Treasury securities outstanding; principal payments in excess of $20 billion per month will continue to be reinvested in agency mortgage-backed securities. Small deviations from these amounts for operational reasons are acceptable.

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

"Information received since the Federal Open Market Committee met in October indicates that the labor market remains strong and that economic activity has been rising at a moderate rate. Job gains have been solid, on average, in recent months, and the unemployment rate has remained low. Although household spending has been rising at a strong pace, business fixed investment and exports remain weak. On a 12-month basis, overall inflation and inflation for items other than food and energy are running below 2 percent. Market-based measures of inflation compensation remain low; survey-based measures of longer-term inflation expectations are little changed.

Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. The Committee decided to maintain the target range for the federal funds rate at 1½ to 1¾ percent. The Committee judges that the current stance of monetary policy is appropriate to support sustained expansion of economic activity, strong labor market conditions, and inflation near the Committee's symmetric 2 percent objective. The Committee will continue to monitor the implications of incoming information for the economic outlook, including global developments and muted inflation pressures, as it assesses the appropriate path of the target range for the federal funds rate.

In determining the timing and size of future adjustments to the target range for the federal funds rate, the Committee will assess realized and expected economic conditions relative to its maximum employment objective and its symmetric 2 percent inflation objective. This assessment will take into account a wide range of information, including measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial and international developments."

Voting for this action: Jerome H. Powell, John C. Williams, Michelle W. Bowman, Lael Brainard, James Bullard, Richard H. Clarida, Charles L. Evans, Esther L. George, Randal K. Quarles, and Eric S. Rosengren.

Voting against this action: None.

Consistent with the Committee's decision to leave the target range for the federal funds rate unchanged, the Board of Governors voted unanimously to leave the interest rates on required and excess reserve balances unchanged at 1.55 percent and voted unanimously to approve establishment of the primary credit rate at the existing level of 2.25 percent, effective December 12, 2019.

Organizational Matters

By unanimous vote, Lorie K. Logan was selected to serve at the pleasure of the Committee as manager, System Open Market Account, on the understanding that her selection was subject to being satisfactory to the Federal Reserve Bank of New York.

Secretary's note: Advice subsequently was received that the selection of Ms. Logan as manager was satisfactory to the Federal Reserve Bank of New York.

It was agreed that the next meeting of the Committee would be held on Tuesday–Wednesday, January 28–29, 2020. The meeting adjourned at 10:00 a.m. on December 11, 2019.

Notation Vote

By notation vote completed on November 19, 2019, the Committee unanimously approved the minutes of the Committee meeting held on October 29–30, 2019.

James A. Clouse
Secretary

Summary of Economic Projections

In conjunction with the Federal Open Market Committee (FOMC) meeting held on December 10–11, 2019, meeting participants submitted their projections of the most likely outcomes for real gross domestic product (GDP) growth, the unemployment rate, and inflation for each year from 2019 to 2022 and over the longer run. Each participant's projections were based on information available at the time of the meeting, together with his or her assessment of appropriate monetary policy—including a path for the federal funds rate and its longer-run value—and assumptions about other factors likely to affect economic outcomes. The longer-run projections represent each participant's assessment of the value to which each variable would be expected to converge, over time, under appropriate monetary policy and in the absence of further shocks to the economy.[1] "Appropriate monetary policy" is defined as the future path of policy that each participant deems most likely to foster outcomes for economic activity and inflation that best satisfy his or her individual interpretation of the statutory mandate to promote maximum employment and price stability.

Almost all participants expected that, under appropriate monetary policy, growth of real GDP in 2020 would run at or slightly above 1.9 percent, the median of current estimates of its longer-run rate. The median of the projections for the growth rate of real GDP edges down each year over the projection horizon and, for 2022, is modestly below the median of the current estimates of its longer-run rate. The median of the current projections for the unemployment rate was lower than that in the September Summary of Economic Projections (SEP) for each year of the projection period, and some participants reduced their estimates of the longer-run normal rate of unemployment, resulting in a slight decline in the median estimate. The medians of the projections for both total and core inflation, as measured by the four-quarter percent change in the price index for personal consumption expenditures (PCE), increase significantly from 2019 to 2020 and more modestly in 2021 to reach 2 percent that year. Almost all participants expected that inflation would be at or slightly above the Committee's 2 percent objective in 2021 and 2022. A couple more participants, relative to the September SEP, projected inflation to exceed 2 percent at some point during the projection period. The medians of the projections for both total and core inflation were unchanged for 2020 through 2022, compared with the September SEP. Table 1 and figure 1 provide summary statistics for the projections.

As shown in figure 2, a substantial majority of participants indicated that their expectations regarding the evolution of the economy, relative to the Committee's objectives of maximum employment and 2 percent inflation, would likely warrant keeping the federal funds at its current level through the end of 2020. Compared with the September SEP submissions, the median projection for the federal funds rate was 25 basis points lower in each year over the projection period and retained its modest upward tilt in 2021 and 2022. The median of participants' assessments of the appropriate level for the federal funds rate in 2022 was slightly below the median of estimates of its longer-run level; the median estimate of the longer-run level was unchanged from its value in the September SEP.

Most participants regarded the uncertainties around their projections as broadly similar to the average over the past 20 years. The majority of participants continued to assess the risks to their outlooks for real GDP growth as weighted to the downside and for the unemployment rate as weighted to the upside. However, compared with the September submissions, several participants shifted their assessments of the balance of risks around these projections to being broadly balanced. Most participants judged the risks to their inflation outlook as broadly balanced, though one-third of participants viewed the risks to their inflation projections as weighted to the downside; no participant assessed the risks to his or her inflation outlook as weighted to the upside. The uncertainties and risks around participants' projections for headline and core inflation were little changed from the September SEP.

The Outlook for Real GDP Growth and Unemployment

As shown in table 1, the medians of participants' projections for real GDP growth in 2019 and 2020, conditional on their individual assessments of appropriate monetary policy, were 2.2 percent and 2.0 percent, respectively, a touch above the median estimate of the longer-run

[1] One participant did not submit longer-run projections for real GDP growth, the unemployment rate, or the federal funds rate.

Table 1. Economic projections of Federal Reserve Board members and Federal Reserve Bank presidents, under their individual assumptions of projected appropriate monetary policy, December 2019

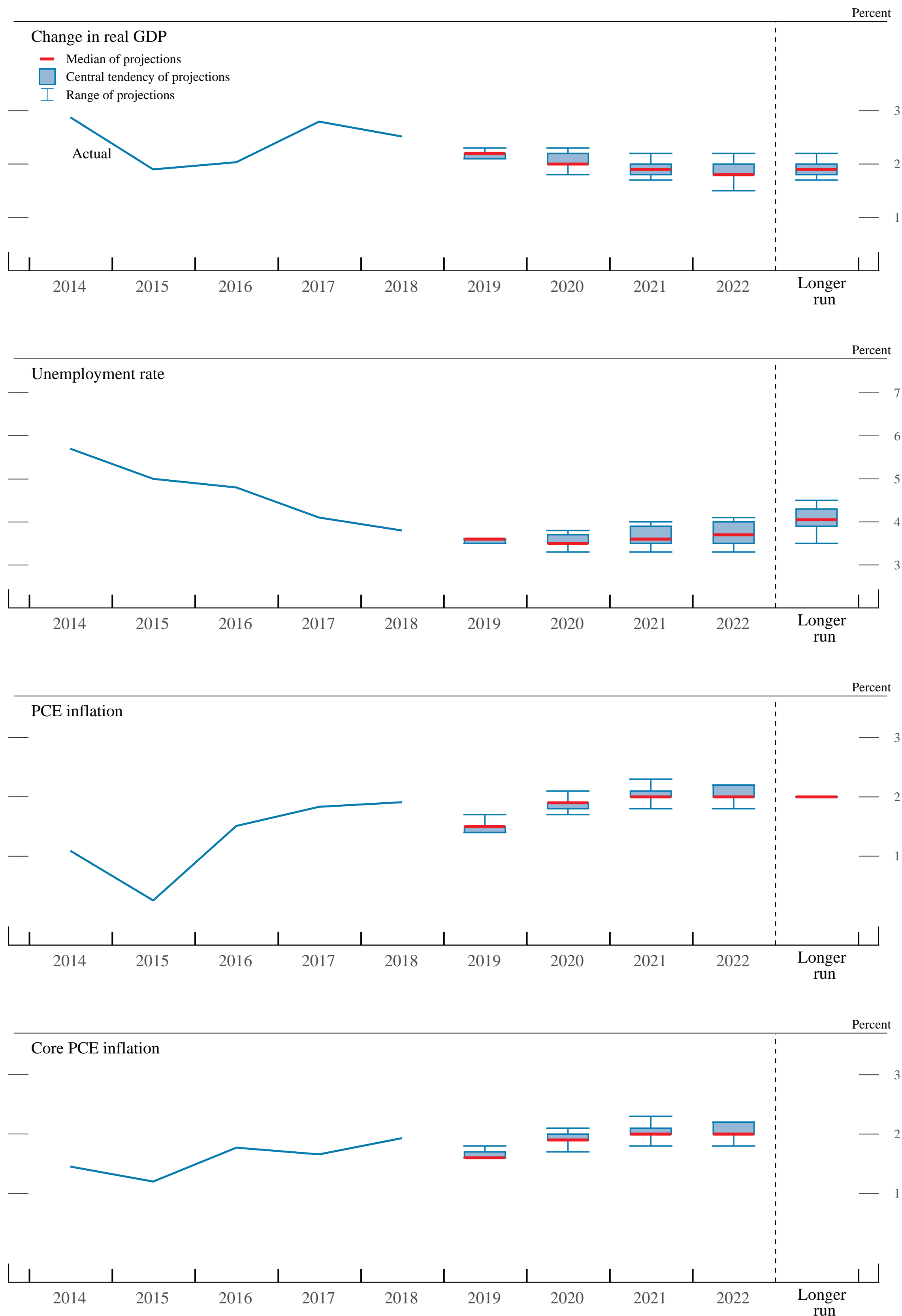
Percent

Variable	Median[1]					Central Tendency[2]					Range[3]				
	2019	2020	2021	2022	Longer run	2019	2020	2021	2022	Longer run	2019	2020	2021	2022	Longer run
Change in real GDP	2.2	2.0	1.9	1.8	1.9	2.1–2.2	2.0–2.2	1.8–2.0	1.8–2.0	1.8–2.0	2.1–2.3	1.8–2.3	1.7–2.2	1.5–2.2	1.7–2.2
September projection	2.2	2.0	1.9	1.8	1.9	2.1–2.3	1.8–2.1	1.8–2.0	1.7–2.0	1.8–2.0	2.1–2.4	1.7–2.3	1.7–2.1	1.6–2.1	1.7–2.1
Unemployment rate	3.6	3.5	3.6	3.7	4.1	3.5–3.6	3.5–3.7	3.5–3.9	3.5–4.0	3.9–4.3	3.5–3.6	3.3–3.8	3.3–4.0	3.3–4.1	3.5–4.5
September projection	3.7	3.7	3.8	3.9	4.2	3.6–3.7	3.6–3.8	3.6–3.9	3.7–4.0	4.0–4.3	3.5–3.8	3.3–4.0	3.3–4.1	3.3–4.2	3.6–4.5
PCE inflation	1.5	1.9	2.0	2.0	2.0	1.4–1.5	1.8–1.9	2.0–2.1	2.0–2.2	2.0	1.4–1.7	1.7–2.1	1.8–2.3	1.8–2.2	2.0
September projection	1.5	1.9	2.0	2.0	2.0	1.5–1.6	1.8–2.0	2.0	2.0–2.2	2.0	1.4–1.7	1.7–2.1	1.8–2.3	1.8–2.2	2.0
Core PCE inflation[4]	1.6	1.9	2.0	2.0		1.6–1.7	1.9–2.0	2.0–2.1	2.0–2.2		1.6–1.8	1.7–2.1	1.8–2.3	1.8–2.2	
September projection	1.8	1.9	2.0	2.0		1.7–1.8	1.9–2.0	2.0	2.0–2.2		1.6–1.8	1.7–2.1	1.8–2.3	1.8–2.2	
Memo: Projected appropriate policy path															
Federal funds rate	1.6	1.6	1.9	2.1	2.5	1.6	1.6–1.9	1.6–2.1	1.9–2.6	2.4–2.8	1.6	1.6–1.9	1.6–2.4	1.6–2.9	2.0–3.3
September projection	1.9	1.9	2.1	2.4	2.5	1.6–2.1	1.6–2.1	1.6–2.4	1.9–2.6	2.5–2.8	1.6–2.1	1.6–2.4	1.6–2.6	1.6–2.9	2.0–3.3

NOTE: Projections of change in real gross domestic product (GDP) and projections for both measures of inflation are percent changes from the fourth quarter of the previous year to the fourth quarter of the year indicated. PCE inflation and core PCE inflation are the percentage rates of change in, respectively, the price index for personal consumption expenditures (PCE) and the price index for PCE excluding food and energy. Projections for the unemployment rate are for the average civilian unemployment rate in the fourth quarter of the year indicated. Each participant's projections are based on his or her assessment of appropriate monetary policy. Longer-run projections represent each participant's assessment of the rate to which each variable would be expected to converge under appropriate monetary policy and in the absence of further shocks to the economy. The projections for the federal funds rate are the value of the midpoint of the projected appropriate target range for the federal funds rate or the projected appropriate target level for the federal funds rate at the end of the specified calendar year or over the longer run. The September projections were made in conjunction with the meeting of the Federal Open Market Committee on September 17-18, 2019. One participant did not submit longer-run projections for the change in real GDP, the unemployment rate, or the federal funds rate in conjunction with the September 17-18, 2019, meeting, and one participant did not submit such projections in conjunction with the December 10-11, 2019, meeting.

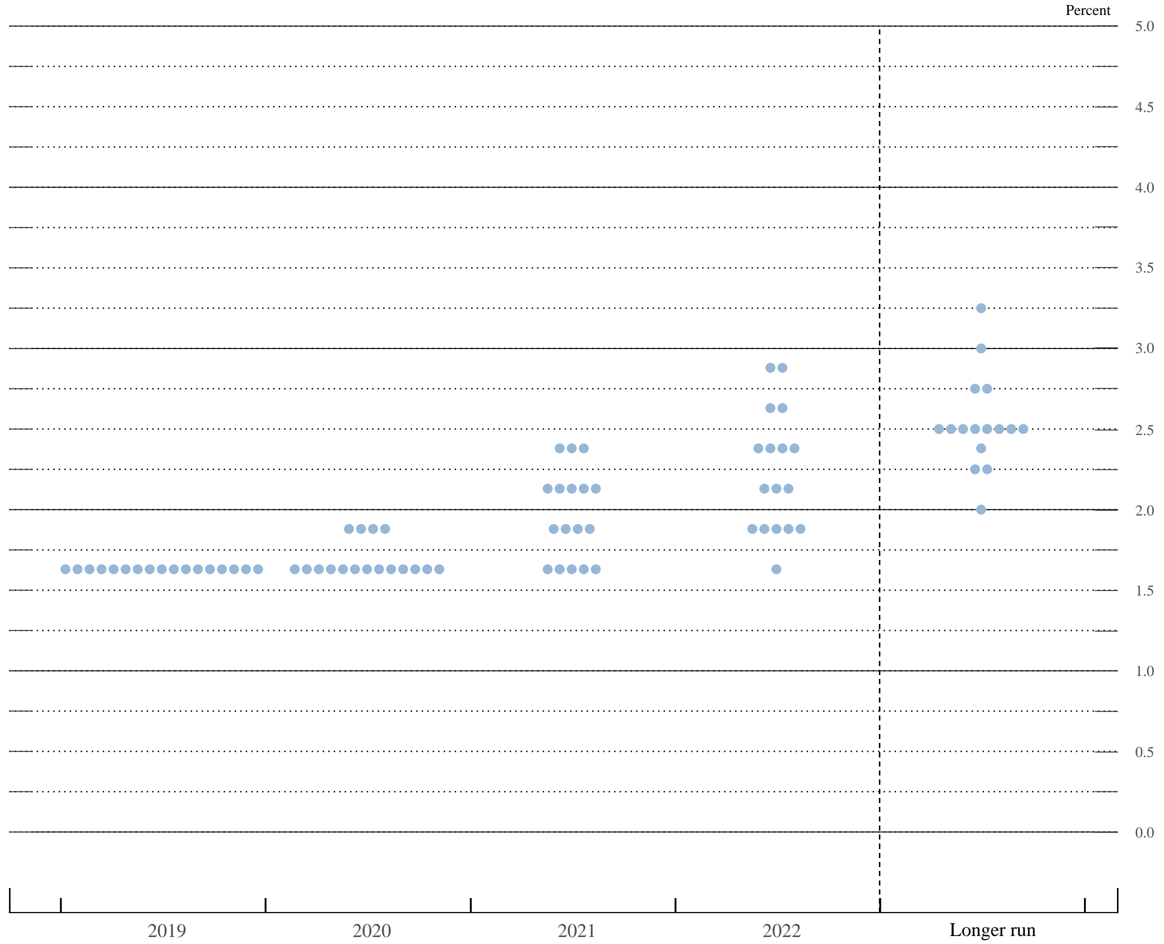
1. For each period, the median is the middle projection when the projections are arranged from lowest to highest. When the number of projections is even, the median is the average of the two middle projections.
2. The central tendency excludes the three highest and three lowest projections for each variable in each year.
3. The range for a variable in a given year includes all participants' projections, from lowest to highest, for that variable in that year.
4. Longer-run projections for core PCE inflation are not collected.

Figure 1. Medians, central tendencies, and ranges of economic projections, 2019-22 and over the longer run



NOTE: Definitions of variables and other explanations are in the notes to table 1. The data for the actual values of the variables are annual.

Figure 2. FOMC participants' assessments of appropriate monetary policy: Midpoint of target range or target level for the federal funds rate



NOTE: Each shaded circle indicates the value (rounded to the nearest 1/8 percentage point) of an individual participant's judgment of the midpoint of the appropriate target range for the federal funds rate or the appropriate target level for the federal funds rate at the end of the specified calendar year or over the longer run. One participant did not submit longer-run projections for the federal funds rate.

growth rate of 1.9 percent. The median of the projections for the growth rate of real GDP declines slowly over the projection horizon and, in 2022, is modestly below the median of the current estimates of its longer-run rate. The medians of the projections for real GDP growth in all four years of the projection period, as well as in the longer run, were unchanged from the September SEP.

A majority of participants marked down their projections of the unemployment rate in each year of the projection period, and some participants lowered their estimates of the longer-run normal rate of unemployment. As a result, the medians of the projections for the unemployment rate in the fourth quarter of 2020 through 2022 were 3.5 percent, 3.6 percent, and 3.7 percent, respectively, each 0.2 percentage point lower than in the September projections. The median estimate of the longer-run normal rate of unemployment was 4.1 percent, 0.1 percentage point lower than in September.

Figures 3.A and 3.B show the distributions of participants' projections for real GDP growth and the unemployment rate, respectively, from 2019 to 2022 and in the longer run. The distribution of individual projections for real GDP growth for 2020 tilted slightly higher, as many participants upgraded their projections a bit relative to those in the September SEP, although the median projection was unchanged. The distributions of individual projections of real GDP growth in 2021 and 2022 and in the longer run were little changed overall. The distributions of individual projections for the unemployment rate from 2020 to 2022 and in the longer run shifted lower relative to those in September.

The Outlook for Inflation

As shown in table 1, the median projection for core PCE price inflation was 1.6 percent for 2019, a modest decrease from the September projections. The medians of the projections for both total and core PCE price inflation were each 1.9 percent in 2020 and 2.0 percent in both 2021 and 2022—all unchanged from September. Figures 3.C and 3.D show the distributions of participants' views about their outlooks for inflation. Although the medians of the projections for total and core PCE price inflation from 2020 through 2022 were unchanged from the September SEP, a couple more participants projected inflation to be slightly above the Committee's 2 percent objective in 2022.

Appropriate Monetary Policy

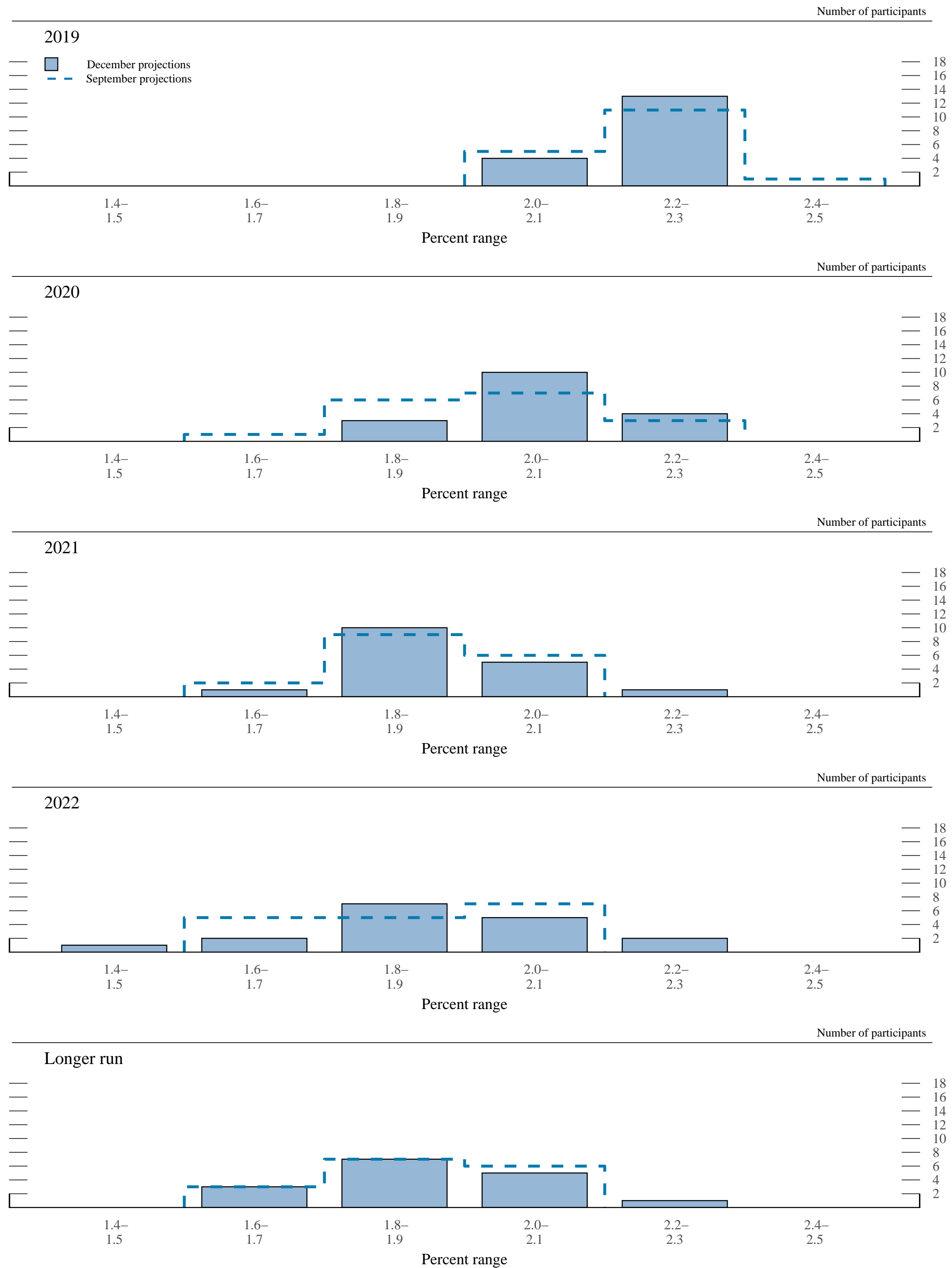
Figure 3.E shows the distributions of participants' judgments regarding the appropriate target—or midpoint of the target range—for the federal funds rate at the end of each year from 2019 to 2022 and over the longer run. A substantial majority of participants projected a federal funds rate of 1.63 percent for the end of 2020. Four participants assessed that the most likely appropriate rate at year-end for 2020 would be 1.88 percent. For subsequent years, the medians of the projections were 1.88 percent at the end of 2021 and 2.13 percent at the end of 2022. The distribution of participants' estimates of the longer-run level of the federal funds rate was little changed, and the median estimate was unchanged from September at 2.50 percent.

Compared with the projections prepared for the September SEP, a number of participants marked down their assessments of the appropriate level of the federal funds rate at the end of 2020, reflecting in part the reduction in the target range at the October meeting and causing both the range and central tendency of projections for 2020 to narrow considerably. Some participants lowered their projections for the appropriate level in 2021 and 2022. The median projection for the federal funds rate was 25 basis points lower in each year in the projection period. Realized inflation running persistently below target and risks associated with trade policy and foreign economic growth were cited as key factors informing participants' judgments about the appropriate path for the federal funds rate.

Uncertainty and Risks

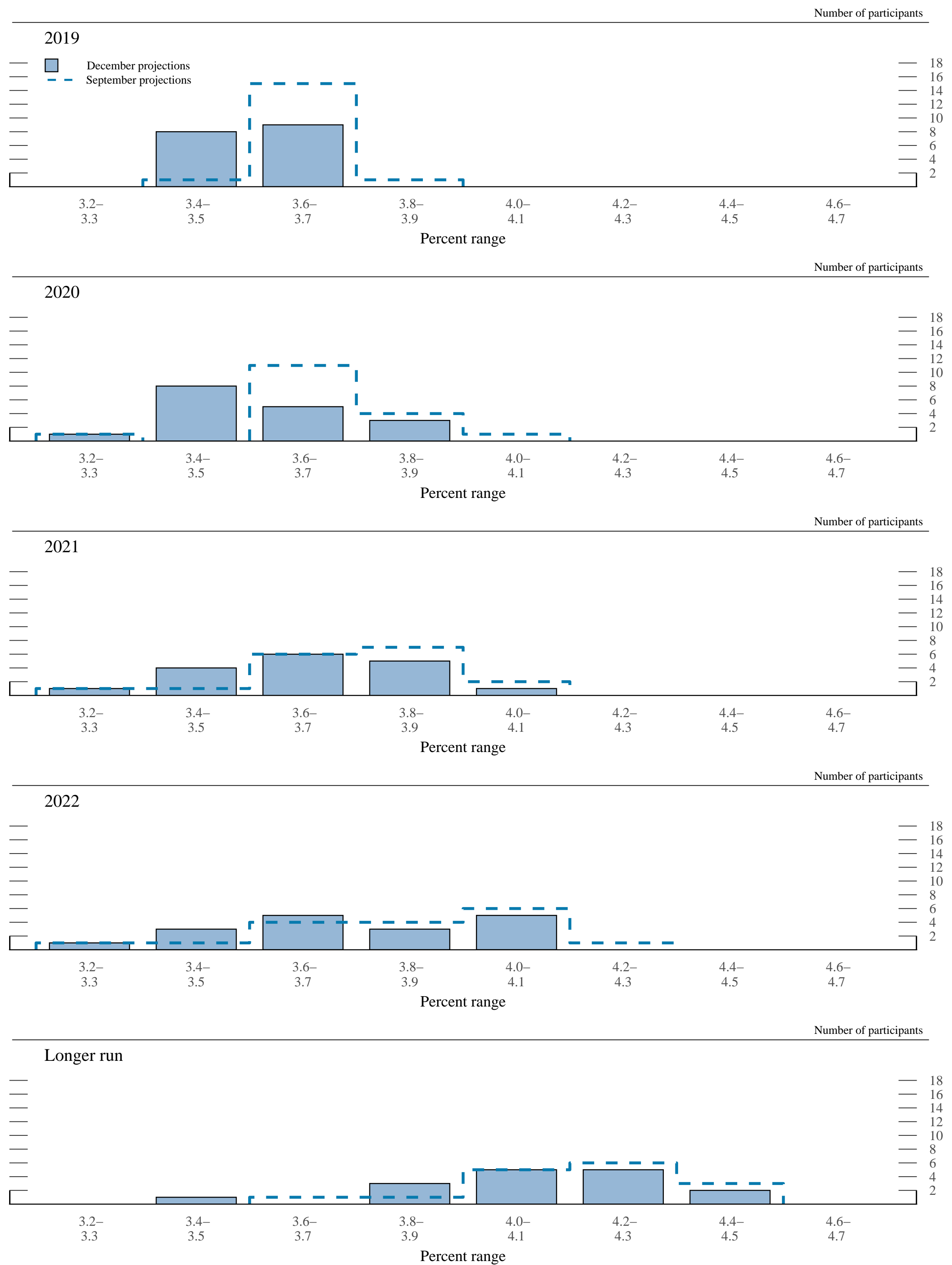
In assessing the appropriate path of the federal funds rate, FOMC participants take account of the range of possible economic outcomes, the likelihood of those outcomes, and the potential benefits and costs should they occur. As a reference, table 2 provides measures of forecast uncertainty—based on the forecast errors of various private and government forecasts over the past 20 years—for real GDP growth, the unemployment rate, and total PCE price inflation. Those measures are represented graphically in the "fan charts" shown in the top panels of figures 4.A, 4.B, and 4.C. The fan charts display the SEP medians for the three variables surrounded by symmetric confidence intervals derived from the forecast errors reported in table 2. If the degree of uncertainty attending these projections is similar to the typical magnitude of past forecast errors and the risks around the projections are broadly balanced, then future outcomes of these variables would have about a 70 percent probability of being within these confidence intervals. For all three variables, this measure of uncertainty is substantial and generally increases as the forecast horizon lengthens.

Figure 3.A. Distribution of participants' projections for the change in real GDP, 2019-22 and over the longer run



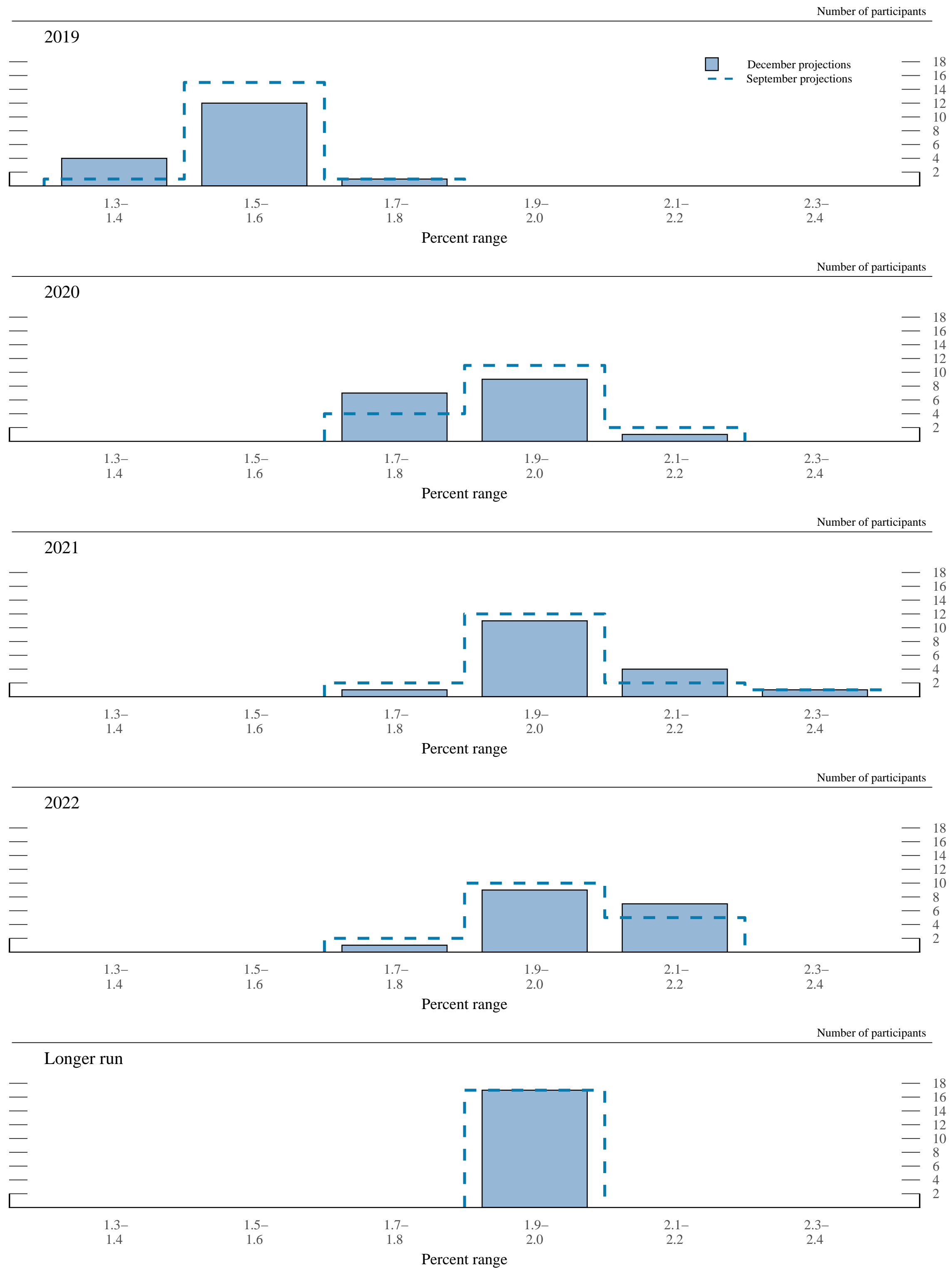
NOTE: Definitions of variables and other explanations are in the notes to table 1.

Figure 3.B. Distribution of participants' projections for the unemployment rate, 2019-22 and over the longer run



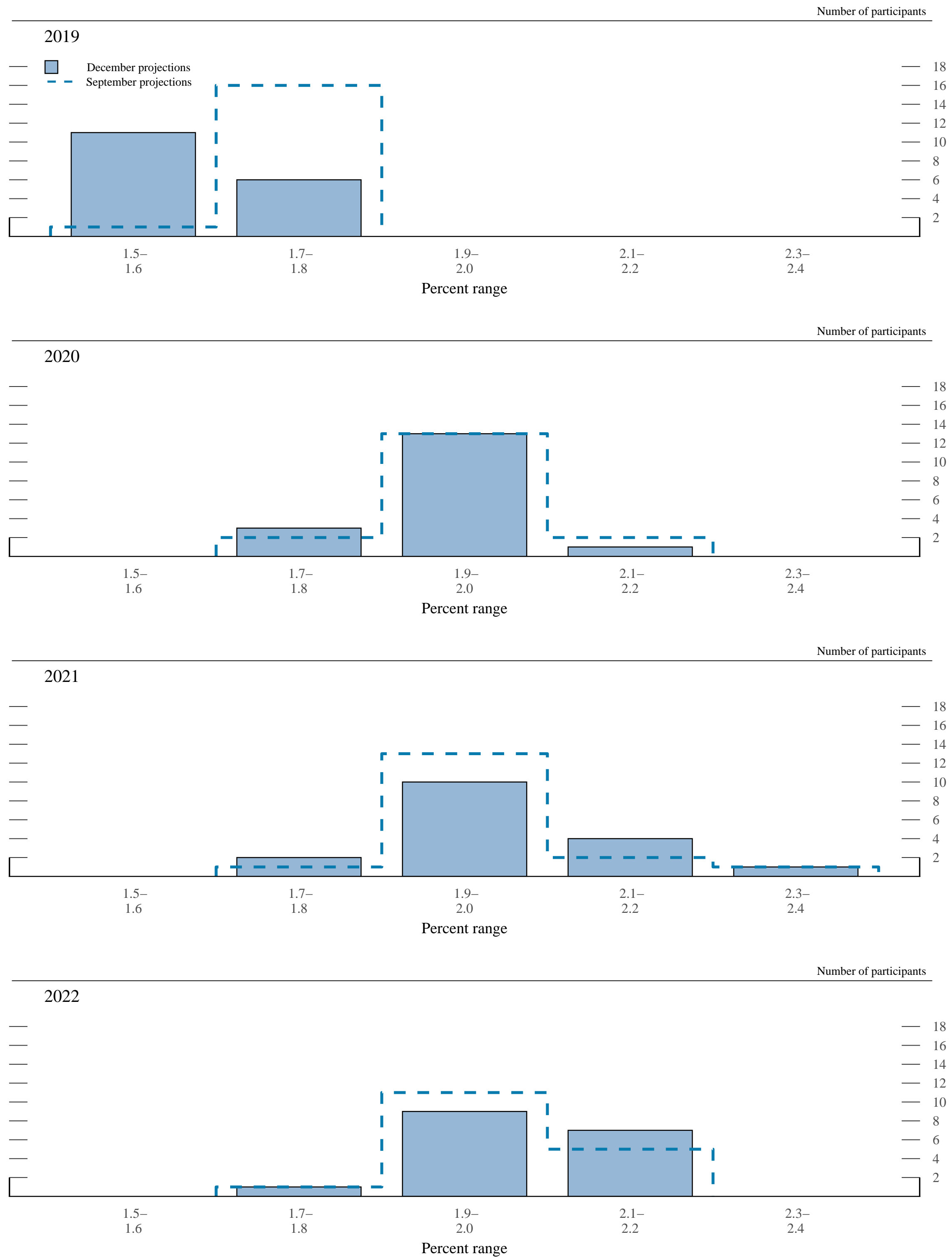
Note: Definitions of variables and other explanations are in the notes to table 1.

Figure 3.C. Distribution of participants' projections for PCE inflation, 2019-22 and over the longer run



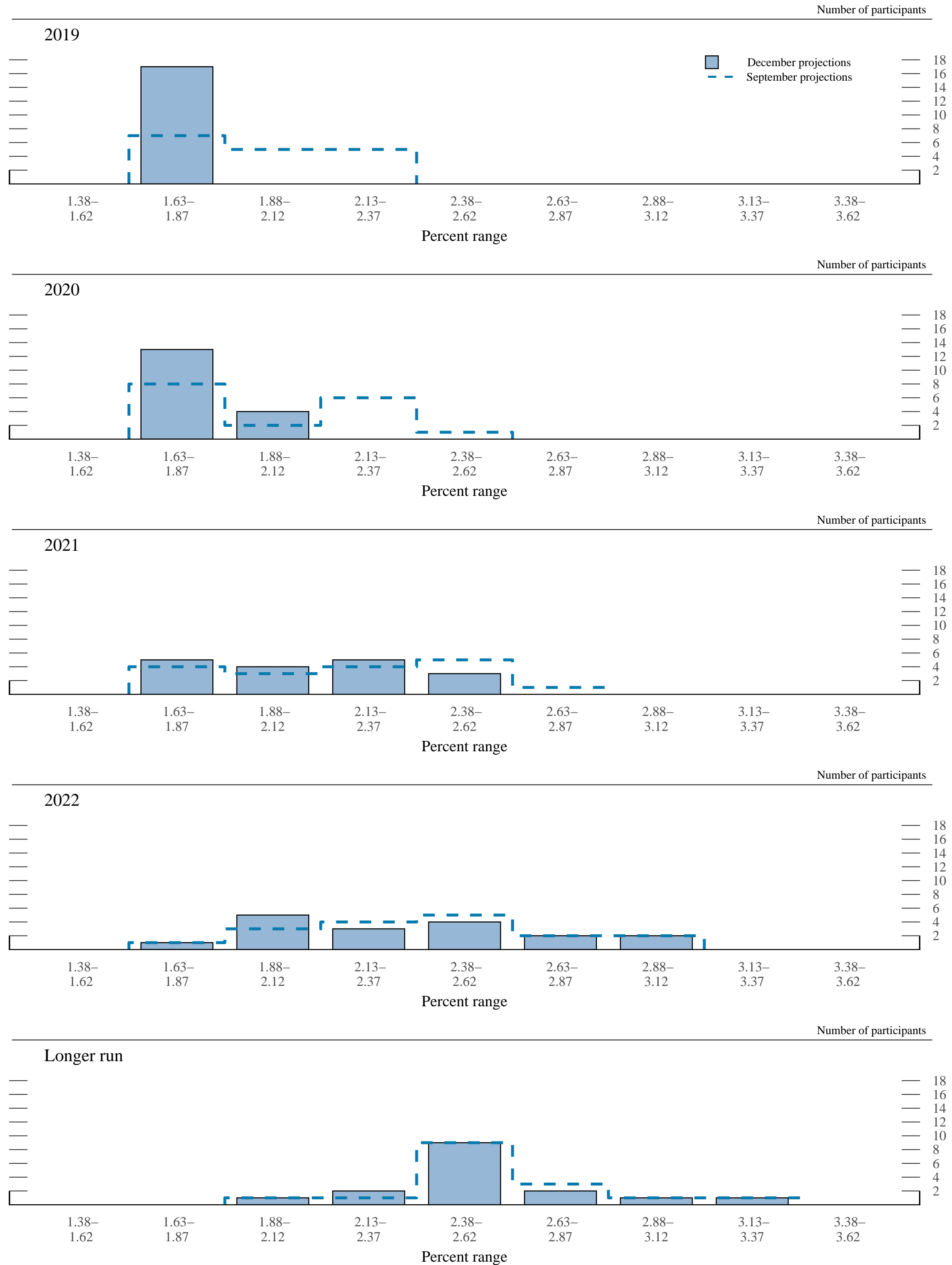
NOTE: Definitions of variables and other explanations are in the notes to table 1.

Figure 3.D. Distribution of participants' projections for core PCE inflation, 2019-22



Note: Definitions of variables and other explanations are in the notes to table 1.

Figure 3.E. Distribution of participants' judgments of the midpoint of the appropriate target range for the federal funds rate or the appropriate target level for the federal funds rate, 2019-22 and over the longer run



NOTE: Definitions of variables and other explanations are in the notes to table 1.

Table 2. Average historical projection error ranges
Percentage points

Variable	2019	2020	2021	2022
Change in real GDP[1]	±0.8	±1.6	±2.0	±2.0
Unemployment rate[1]	±0.1	±0.8	±1.5	±1.9
Total consumer prices[2]	±0.2	±0.9	±1.0	±0.9
Short-term interest rates[3]	±0.1	±1.4	±2.0	±2.4

NOTE: Error ranges shown are measured as plus or minus the root mean squared error of projections for 1999 through 2018 that were released in the winter by various private and government forecasters. As described in the box "Forecast Uncertainty," under certain assumptions, there is about a 70 percent probability that actual outcomes for real GDP, unemployment, consumer prices, and the federal funds rate will be in ranges implied by the average size of projection errors made in the past. For more information, see David Reifschneider and Peter Tulip (2017), "Gauging the Uncertainty of the Economic Outlook Using Historical Forecasting Errors: The Federal Reserve's Approach," Finance and Economics Discussion Series 2017-020 (Washington: Board of Governors of the Federal Reserve System, February), https://dx.doi.org/10.17016/FEDS.2017.020.

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

2. Measure is the overall consumer price index, the price measure that has been most widely used in government and private economic forecasts. Projections are percent changes on a fourth quarter to fourth quarter basis.

3. For Federal Reserve staff forecasts, measure is the federal funds rate. For other forecasts, measure is the rate on 3-month Treasury bills. Projection errors are calculated using average levels, in percent, in the fourth quarter.

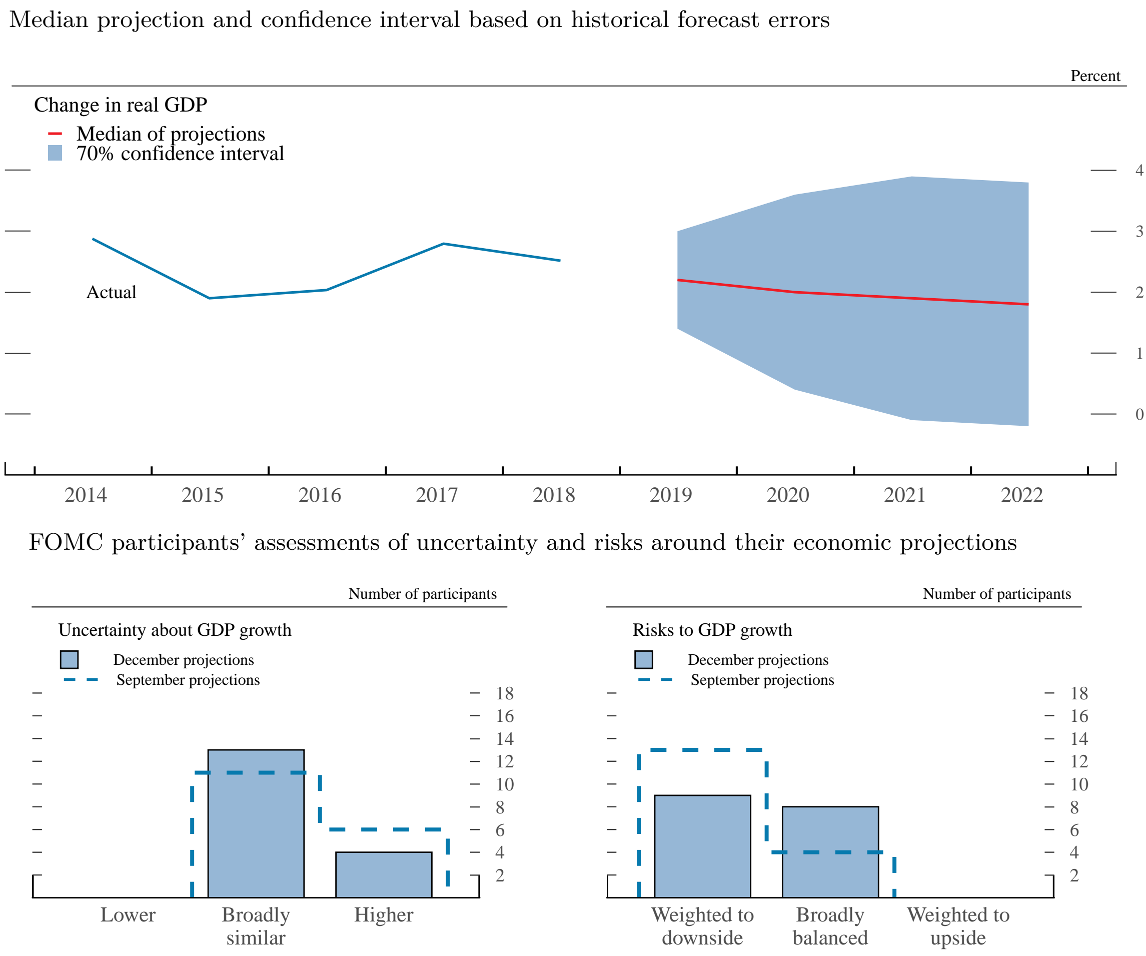
Participants' assessments of the level of uncertainty surrounding their individual economic projections are shown in the bottom-left panels of figures 4.A, 4.B, and 4.C. A substantial majority of participants viewed the uncertainty surrounding each of the four economic variables as being broadly similar to the average over the past 20 years.

Because the fan charts are constructed to be symmetric around the median projections, they do not reflect any asymmetries in the balance of risks that participants may see in their economic projections. Participants' assessments of the balance of risks to their current economic projections are shown in the bottom-right panels of figures 4.A, 4.B, and 4.C. Relative to the September SEP, more participants saw the risks to the outlook for real GDP growth and the unemployment rate as broadly balanced, although a small majority continued to view the risks to their outlooks for real GDP growth as weighted to the downside and for the unemployment rate as weighted to the upside. Most participants continued to judge the risks to their inflation outlook as broadly balanced, while some participants viewed the risks to their inflation outlook as weighted to the downside. No participant assessed the risks to his or her inflation outlook as weighted to the upside.

In discussing the uncertainty and risks surrounding their economic projections, some participants mentioned trade developments and concerns about foreign economic growth as sources of uncertainty or downside risk to the U.S. economic growth outlook. In contrast, the underlying strength of both consumer spending and the labor market was cited as balancing the risks around the growth outlook. In addition, most of the participants who shifted their balance of risks for output growth to "broadly balanced" cited more accommodative monetary policy as a contributing factor. For the inflation outlook, the possibility that inflation expectations could be drifting below levels consistent with the FOMC's 2 percent inflation objective was viewed as a downside risk. A couple of participants mentioned higher tariffs as a source of upside risk to their inflation outlook.

Participants' assessments of the appropriate future path of the federal funds rate are also subject to considerable uncertainty. Because the Committee adjusts the federal funds rate in response to actual and prospective developments over time in key economic variables—such as real GDP growth, the unemployment rate, and inflation—uncertainty surrounding the projected path for the federal funds rate importantly reflects the uncertainties about the paths for these economic variables, along with other factors. Figure 5 provides a graphic representation of this uncertainty, plotting the SEP median for the federal funds rate surrounded by symmetric confidence intervals derived from the results presented in table 2. As with the macroeconomic variables, the forecast uncertainty surrounding the appropriate path of the federal funds rate is substantial and increases for longer horizons.

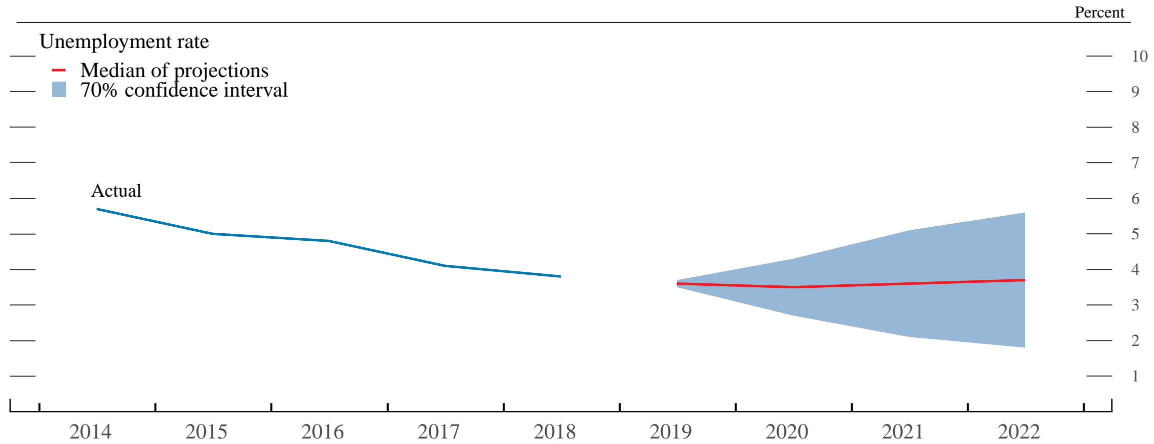
Figure 4.A. Uncertainty and risks in projections of GDP growth



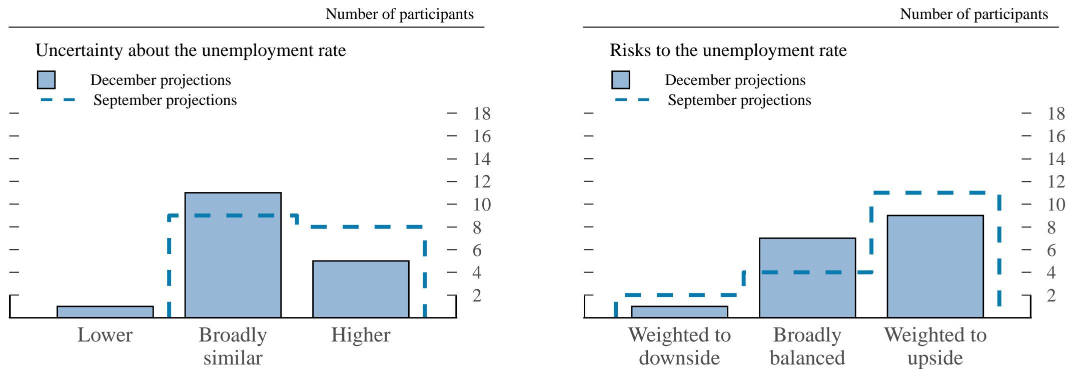
Note: The blue and red lines in the top panel show actual values and median projected values, respectively, of the percent change in real gross domestic product (GDP) from the fourth quarter of the previous year to the fourth quarter of the year indicated. The confidence interval around the median projected values is assumed to be symmetric and is based on root mean squared errors of various private and government forecasts made over the previous 20 years; more information about these data is available in table 2. Because current conditions may differ from those that prevailed, on average, over the previous 20 years, the width and shape of the confidence interval estimated on the basis of the historical forecast errors may not reflect FOMC participants' current assessments of the uncertainty and risks around their projections; these current assessments are summarized in the lower panels. Generally speaking, participants who judge the uncertainty about their projections as "broadly similar" to the average levels of the past 20 years would view the width of the confidence interval shown in the historical fan chart as largely consistent with their assessments of the uncertainty about their projections. Likewise, participants who judge the risks to their projections as "broadly balanced" would view the confidence interval around their projections as approximately symmetric. For definitions of uncertainty and risks in economic projections, see the box "Forecast Uncertainty."

Figure 4.B. Uncertainty and risks in projections of the unemployment rate

Median projection and confidence interval based on historical forecast errors



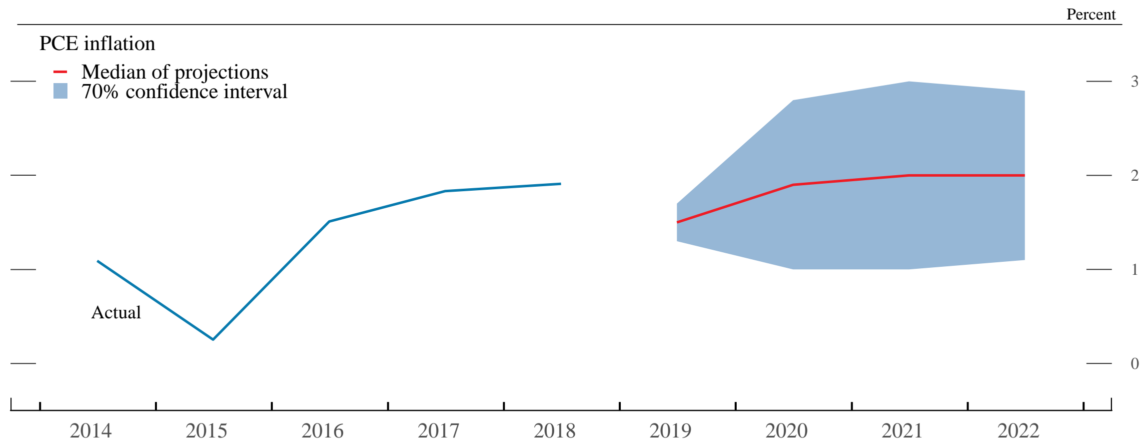
FOMC participants' assessments of uncertainty and risks around their economic projections



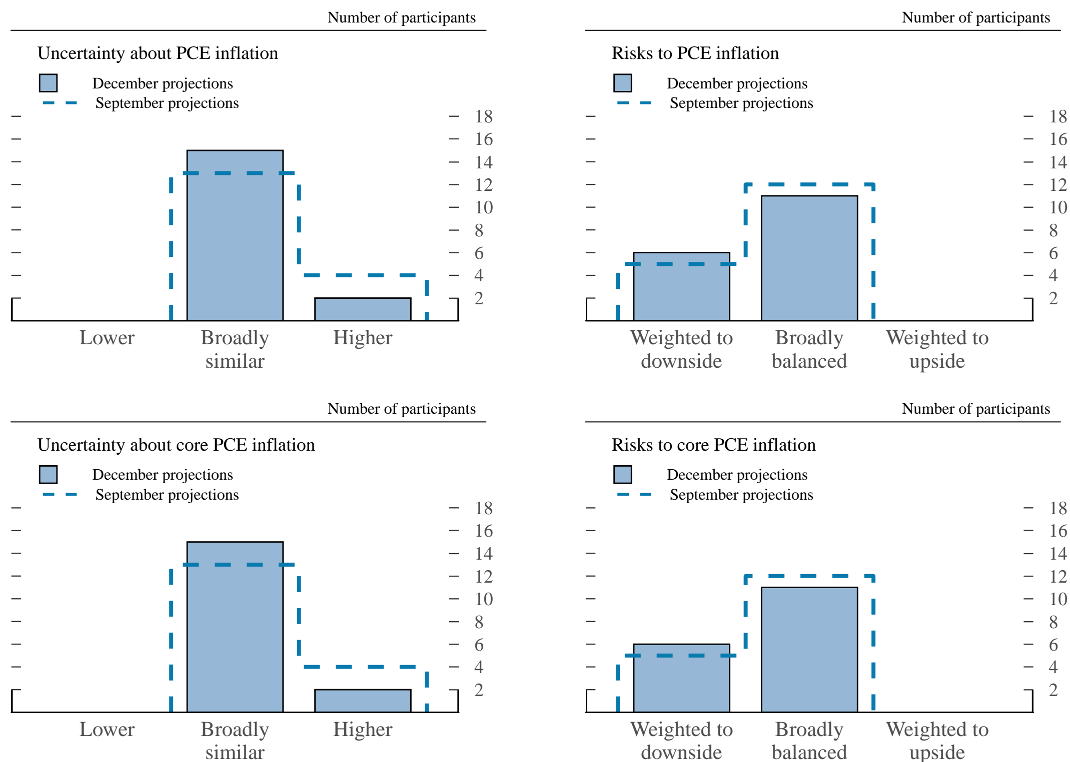
Note: The blue and red lines in the top panel show actual values and median projected values, respectively, of the average civilian unemployment rate in the fourth quarter of the year indicated. The confidence interval around the median projected values is assumed to be symmetric and is based on root mean squared errors of various private and government forecasts made over the previous 20 years; more information about these data is available in table 2. Because current conditions may differ from those that prevailed, on average, over the previous 20 years, the width and shape of the confidence interval estimated on the basis of the historical forecast errors may not reflect FOMC participants' current assessments of the uncertainty and risks around their projections; these current assessments are summarized in the lower panels. Generally speaking, participants who judge the uncertainty about their projections as "broadly similar" to the average levels of the past 20 years would view the width of the confidence interval shown in the historical fan chart as largely consistent with their assessments of the uncertainty about their projections. Likewise, participants who judge the risks to their projections as "broadly balanced" would view the confidence interval around their projections as approximately symmetric. For definitions of uncertainty and risks in economic projections, see the box "Forecast Uncertainty."

Figure 4.C. Uncertainty and risks in projections of PCE inflation

Median projection and confidence interval based on historical forecast errors

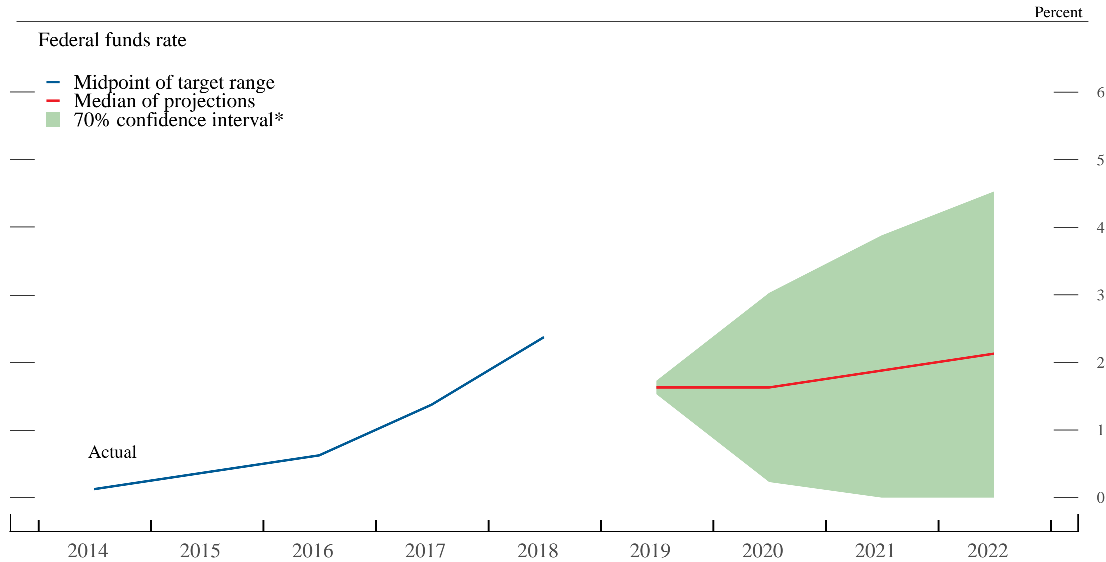


FOMC participants' assessments of uncertainty and risks around their economic projections



NOTE: The blue and red lines in the top panel show actual values and median projected values, respectively, of the percent change in the price index for personal consumption expenditures (PCE) from the fourth quarter of the previous year to the fourth quarter of the year indicated. The confidence interval around the median projected values is assumed to be symmetric and is based on root mean squared errors of various private and government forecasts made over the previous 20 years; more information about these data is available in table 2. Because current conditions may differ from those that prevailed, on average, over the previous 20 years, the width and shape of the confidence interval estimated on the basis of the historical forecast errors may not reflect FOMC participants' current assessments of the uncertainty and risks around their projections; these current assessments are summarized in the lower panels. Generally speaking, participants who judge the uncertainty about their projections as "broadly similar" to the average levels of the past 20 years would view the width of the confidence interval shown in the historical fan chart as largely consistent with their assessments of the uncertainty about their projections. Likewise, participants who judge the risks to their projections as "broadly balanced" would view the confidence interval around their projections as approximately symmetric. For definitions of uncertainty and risks in economic projections, see the box "Forecast Uncertainty."

Figure 5. Uncertainty and risks in projections of the federal funds rate



Note: The blue and red lines are based on actual values and median projected values, respectively, of the Committee's target for the federal funds rate at the end of the year indicated. The actual values are the midpoint of the target range; the median projected values are based on either the midpoint of the target range or the target level. The confidence interval around the median projected values is based on root mean squared errors of various private and government forecasts made over the previous 20 years. The confidence interval is not strictly consistent with the projections for the federal funds rate, primarily because these projections are not forecasts of the likeliest outcomes for the federal funds rate, but rather projections of participants' individual assessments of appropriate monetary policy. Still, historical forecast errors provide a broad sense of the uncertainty around the future path of the federal funds rate generated by the uncertainty about the macroeconomic variables as well as additional adjustments to monetary policy that may be appropriate to onset the effects of shocks to the economy.

The confidence interval is assumed to be symmetric except when it is truncated at zero - the bottom of the lowest target range for the federal funds rate that has been adopted in the past by the Committee. This truncation would not be intended to indicate the likelihood of the use of negative interest rates to provide additional monetary policy accommodation if doing so was judged appropriate. In such situations, the Committee could also employ other tools, including forward guidance and large-scale asset purchases, to provide additional accommodation. Because current conditions may differ from those that prevailed, on average, over the previous 20 years, the width and shape of the confidence interval estimated on the basis of the historical forecast errors may not reflect FOMC participants' current assessments of the uncertainty and risks around their projections.

* The confidence interval is derived from forecasts of the average level of short-term interest rates in the fourth quarter of the year indicated; more information about these data is available in table 2. The shaded area encompasses less than a 70 percent confidence interval if the confidence interval has been truncated at zero.

Forecast Uncertainty

The economic projections provided by the members of the Board of Governors and the presidents of the Federal Reserve Banks inform discussions of monetary policy among policymakers and can aid public understanding of the basis for policy actions. Considerable uncertainty attends these projections, however. The economic and statistical models and relationships used to help produce economic forecasts are necessarily imperfect descriptions of the real world, and the future path of the economy can be affected by myriad unforeseen developments and events. Thus, in setting the stance of monetary policy, participants consider not only what appears to be the most likely economic outcome as embodied in their projections, but also the range of alternative possibilities, the likelihood of their occurring, and the potential costs to the economy should they occur.

Table 2 summarizes the average historical accuracy of a range of forecasts, including those reported in past *Monetary Policy Report*s and those prepared by the Federal Reserve Board's staff in advance of meetings of the Federal Open Market Committee (FOMC). The projection error ranges shown in the table illustrate the considerable uncertainty associated with economic forecasts. For example, suppose a participant projects that real gross domestic product (GDP) and total consumer prices will rise steadily at annual rates of, respectively, 3 percent and 2 percent. If the uncertainty attending those projections is similar to that experienced in the past and the risks around the projections are broadly balanced, the numbers reported in table 2 would imply a probability of about 70 percent that actual GDP would expand within a range of 2.2 to 3.8 percent in the current year, 1.4 to 4.6 percent in the second year, and 1.0 to 5.0 percent in the third and fourth years. The corresponding 70 percent confidence intervals for overall inflation would be 1.8 to 2.2 percent in the current year, 1.1 to 2.9 percent in the second year, 1.0 to 3.0 percent in the third year, and 1.1 to 2.9 percent in the fourth year. Figures 4.A through 4.C illustrate these confidence bounds in "fan charts" that are symmetric and centered on the medians of FOMC participants' projections for GDP growth, the unemployment rate, and inflation. However, in some instances, the risks around the projections may not be symmetric. In particular, the unemployment rate cannot be negative; furthermore, the risks around a particular projection might be tilted to either the upside or the downside, in which case the corresponding fan chart would be asymmetrically positioned around the median projection.

Because current conditions may differ from those that prevailed, on average, over history, participants provide judgments as to whether the uncertainty attached to their projections of each economic variable is greater than, smaller than, or broadly similar to typical levels of forecast uncertainty seen in the past 20 years, as presented in table 2 and reflected in the widths of the confidence intervals shown in the top panels of figures 4.A through 4.C. Participants' current assessments of the uncertainty surrounding their projections are summarized in the bottom-left panels of those figures. Participants also provide judgments as to whether the risks to their projections are weighted to the upside, are weighted to the downside, or are broadly balanced. That is, while the symmetric historical fan charts shown in the top panels of figures 4.A through 4.C imply that the risks to participants' projections are balanced, participants may judge that there is a greater risk that a given variable will be above rather than below their projections. These judgments are summarized in the lower-right panels of figures 4.A through 4.C.

As with real activity and inflation, the outlook for the future path of the federal funds rate is subject to considerable uncertainty. This uncertainty arises primarily because each participant's assessment of the appropriate stance of monetary policy depends importantly on the evolution of real activity and inflation over time. If economic conditions evolve in an unexpected manner, then assessments of the appropriate setting of the federal funds rate would change from that point forward. The final line in table 2 shows the error ranges for forecasts of short-term interest rates. They suggest that the historical confidence intervals associated with projections of the federal funds rate are quite wide. It should be noted, however, that these confidence intervals are not strictly consistent with the projections for the federal funds rate, as these projections are not forecasts of the most likely quarterly outcomes but rather are projections of participants' individual assessments of appropriate monetary policy and are on an end-of-year basis. However, the forecast errors should provide a sense of the uncertainty around the future path of the federal funds rate generated by the uncertainty about the macroeconomic variables as well as additional adjustments to monetary policy that would be appropriate to offset the effects of shocks to the economy.

If at some point in the future the confidence interval around the federal funds rate were to extend below zero, it would be truncated at zero for purposes of the fan chart shown in figure 5; zero is the bottom of the lowest target range for the federal funds rate that has been adopted by the Committee in the past. This approach to the construction of the federal funds rate fan chart would be merely a convention; it would not have any implications for possible future policy decisions regarding the use of negative interest rates to provide additional monetary policy accommodation if doing so were appropriate. In such situations, the Committee could also employ other tools, including forward guidance and asset purchases, to provide additional accommodation.

While figures 4.A through 4.C provide information on the uncertainty around the economic projections, figure 1 provides information on the range of views across FOMC participants. A comparison of figure 1 with figures 4.A through 4.C shows that the dispersion of the projections across participants is much smaller than the average forecast errors over the past 20 years.