Summary of Economic Projections

In conjunction with the Federal Open Market Committee (FOMC) meeting held on December 15–16, 2020, 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 2020 to 2023 and over the longer run. Each participant's projections were based on information available at the time of the meeting, together with her or his 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. "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.

Beginning with the December 2020 FOMC meeting, all Summary of Economic Projections charts and tables previously released with the minutes of a meeting will be released following the conclusion of an FOMC meeting. That is, the release of the distribution of participants' projections (Figures 3.A. through 3.E.), participants' assessments of uncertainty and risks associated with the projections (Figures 4.A. though 4.C. and Figure 5), and Table 2 and associated box, which describe projection error ranges, have been accelerated by three weeks. Two new exhibits, Figures 4.D. and 4.E., have been added to further enhance the information provided on uncertainty and risks by showing how FOMC participants' assessments of uncertainties and risks have evolved over time.

Table 1. Economic projections of Federal Reserve Board members and Federal Reserve Bank presidents, under their individual assumptions of projected appropriate monetary policy, December 2020

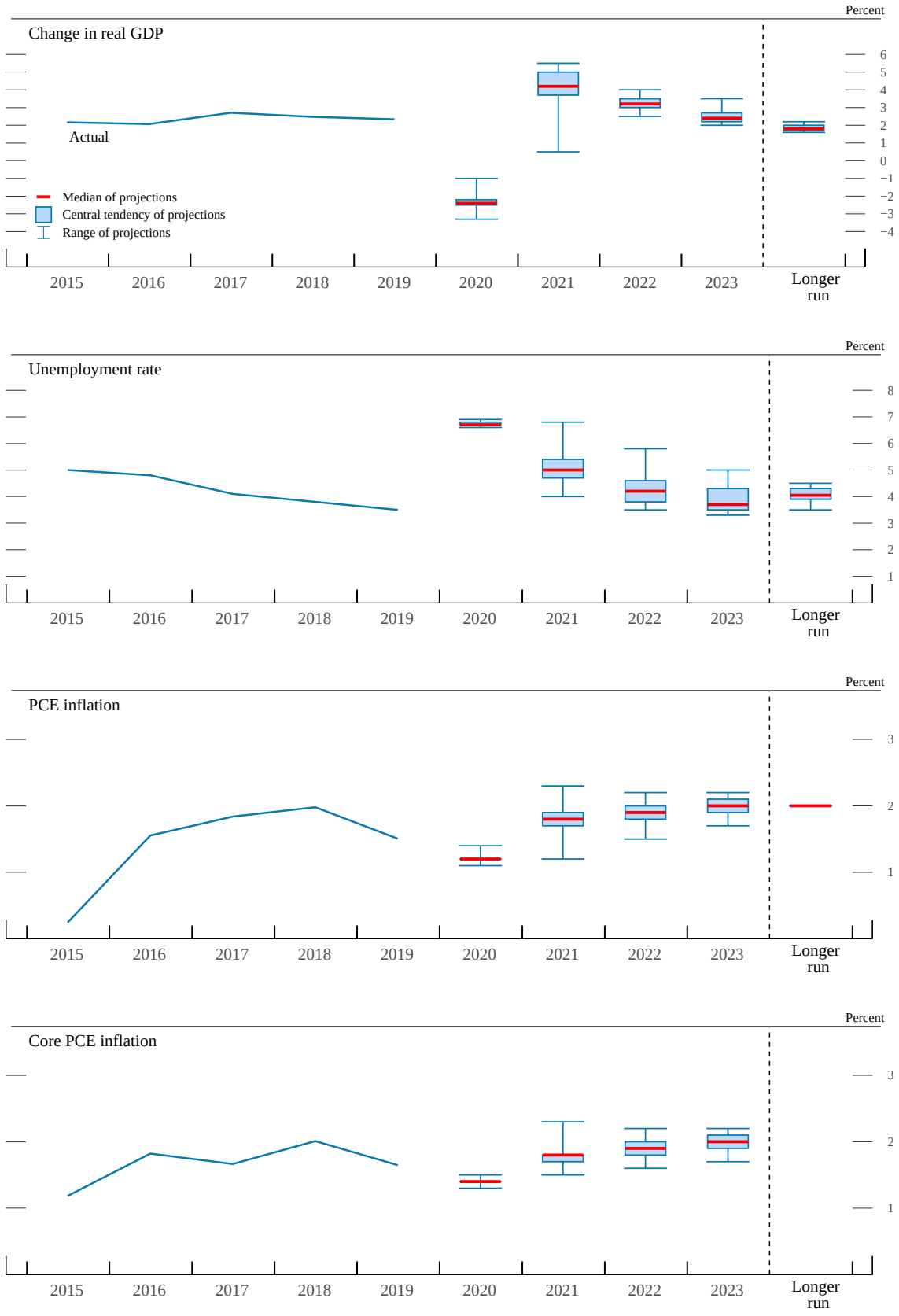
Percent

Variable	Median[1]					Central Tendency[2]					Range[3]				
	2020	2021	2022	2023	Longer run	2020	2021	2022	2023	Longer run	2020	2021	2022	2023	Longer run
Change in real GDP	-2.4	4.2	3.2	2.4	1.8	-2.5–-2.2	3.7–5.0	3.0–3.5	2.2–2.7	1.7–2.0	-3.3–-1.0	0.5–5.5	2.5–4.0	2.0–3.5	1.6–2.2
September projection	-3.7	4.0	3.0	2.5	1.9	-4.0–-3.0	3.6–4.7	2.5–3.3	2.4–3.0	1.7–2.0	-5.5–1.0	0.0–5.5	2.0–4.5	2.0–4.0	1.6–2.2
Unemployment rate	6.7	5.0	4.2	3.7	4.1	6.7–6.8	4.7–5.4	3.8–4.6	3.5–4.3	3.9–4.3	6.6–6.9	4.0–6.8	3.5–5.8	3.3–5.0	3.5–4.5
September projection	7.6	5.5	4.6	4.0	4.1	7.0–8.0	5.0–6.2	4.0–5.0	3.5–4.4	3.9–4.3	6.5–8.0	4.0–8.0	3.5–7.5	3.5–6.0	3.5–4.7
PCE inflation	1.2	1.8	1.9	2.0	2.0	1.2	1.7–1.9	1.8–2.0	1.9–2.1	2.0	1.1–1.4	1.2–2.3	1.5–2.2	1.7–2.2	2.0
September projection	1.2	1.7	1.8	2.0	2.0	1.1–1.3	1.6–1.9	1.7–1.9	1.9–2.0	2.0	1.0–1.5	1.3–2.4	1.5–2.2	1.7–2.1	2.0
Core PCE inflation[4]	1.4	1.8	1.9	2.0		1.4	1.7–1.8	1.8–2.0	1.9–2.1		1.3–1.5	1.5–2.3	1.6–2.2	1.7–2.2	
September projection	1.5	1.7	1.8	2.0		1.3–1.5	1.6–1.8	1.7–1.9	1.9–2.0		1.2–1.6	1.5–2.4	1.6–2.2	1.7–2.1	
Memo: Projected appropriate policy path															
Federal funds rate	0.1	0.1	0.1	0.1	2.5	0.1	0.1	0.1	0.1–0.4	2.3–2.5	0.1	0.1	0.1–0.4	0.1–1.1	2.0–3.0
September projection	0.1	0.1	0.1	0.1	2.5	0.1	0.1	0.1	0.1–0.4	2.3–2.5	0.1	0.1	0.1–0.6	0.1–1.4	2.0–3.0

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 15–16, 2020. 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 15–16, 2020, meeting, and one participant did not submit such projections in conjunction with the December 15–16, 2020, meeting.

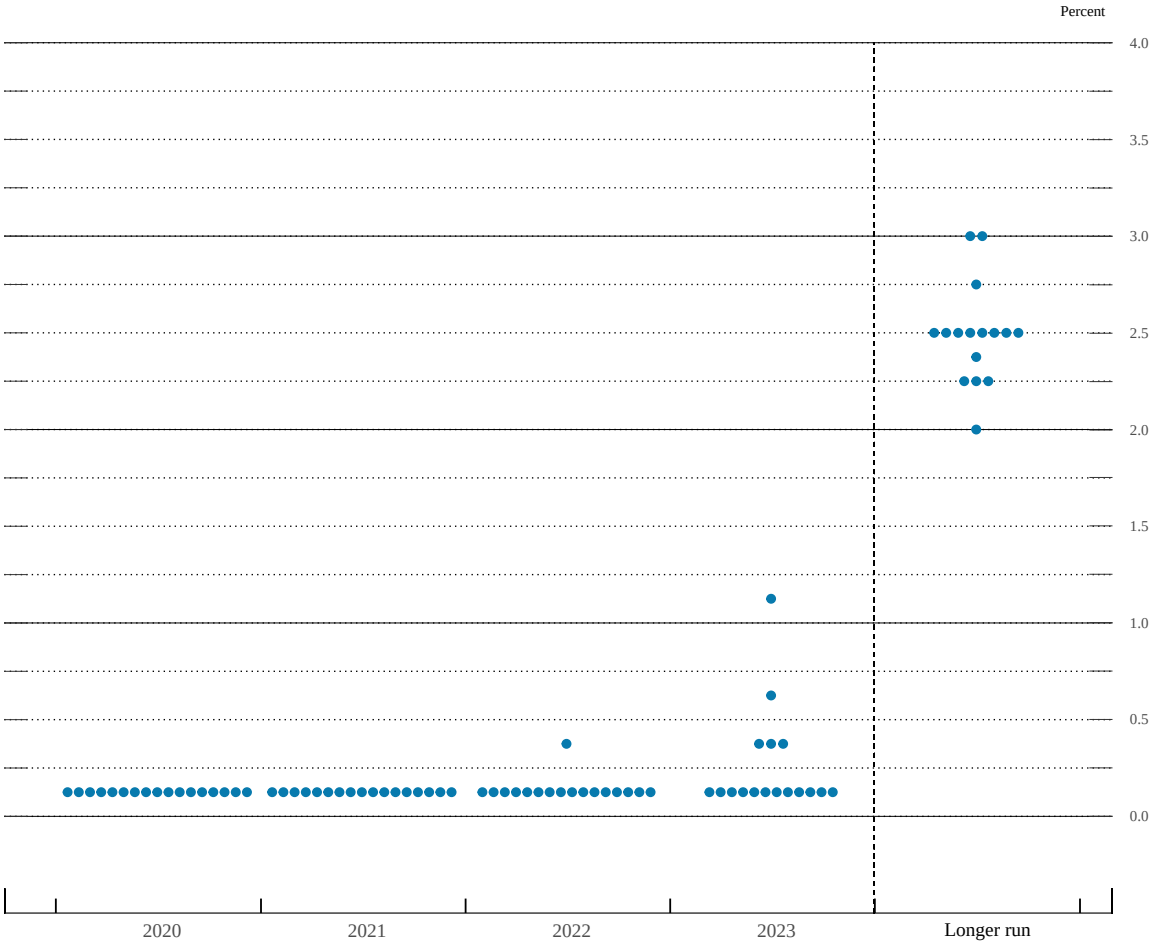
1. For each period, the median is the middle projection when the projections are arranged from lowest to highest. When the number of projections is even, the median is the average of the two middle projections.
2. The central tendency excludes the three highest and three lowest projections for each variable 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, 2020–23 and over the longer run



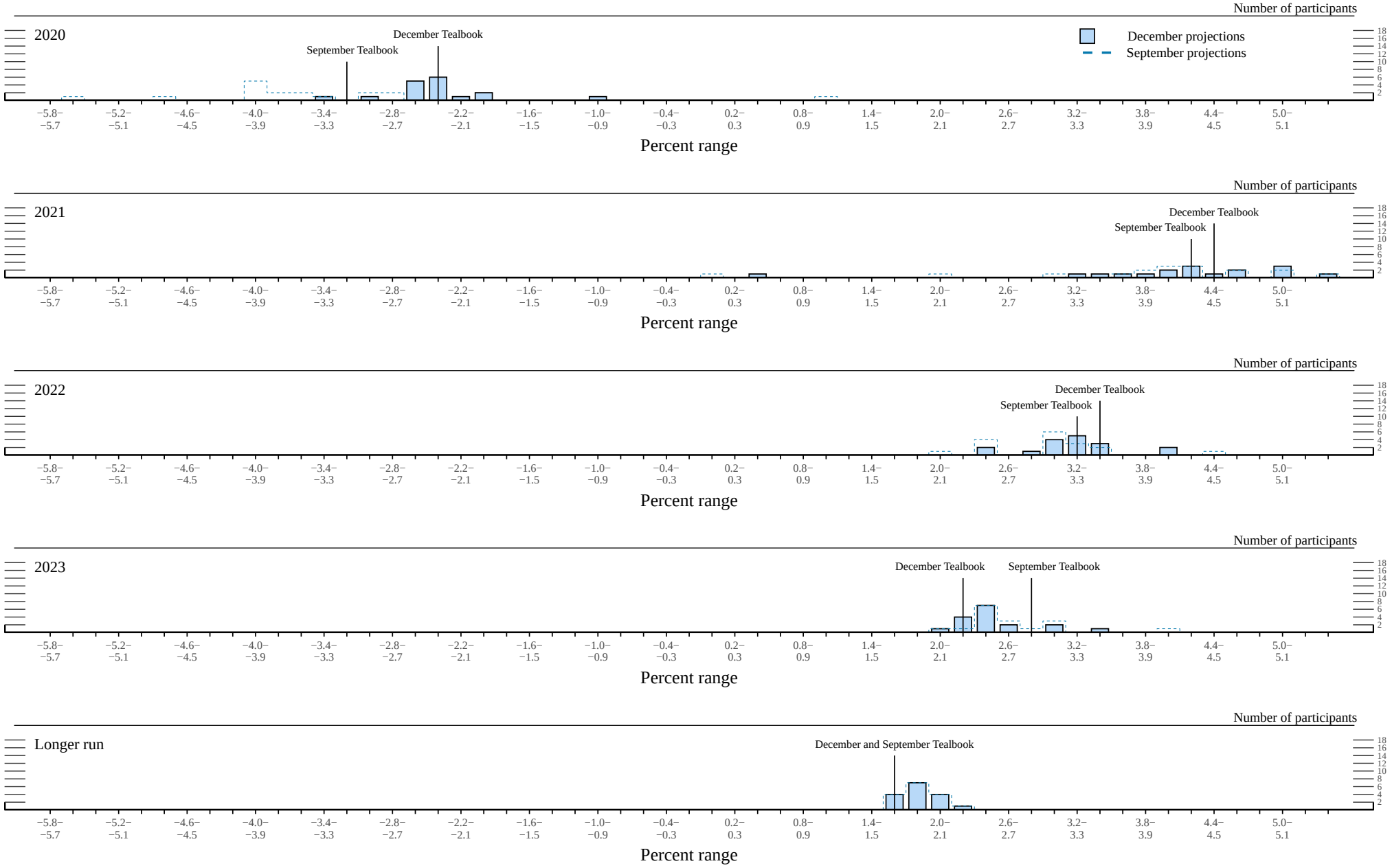
NOTE: Definitions of variables and other explanations are in the notes to table 1. The data for the actual values of the variables are annual.

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



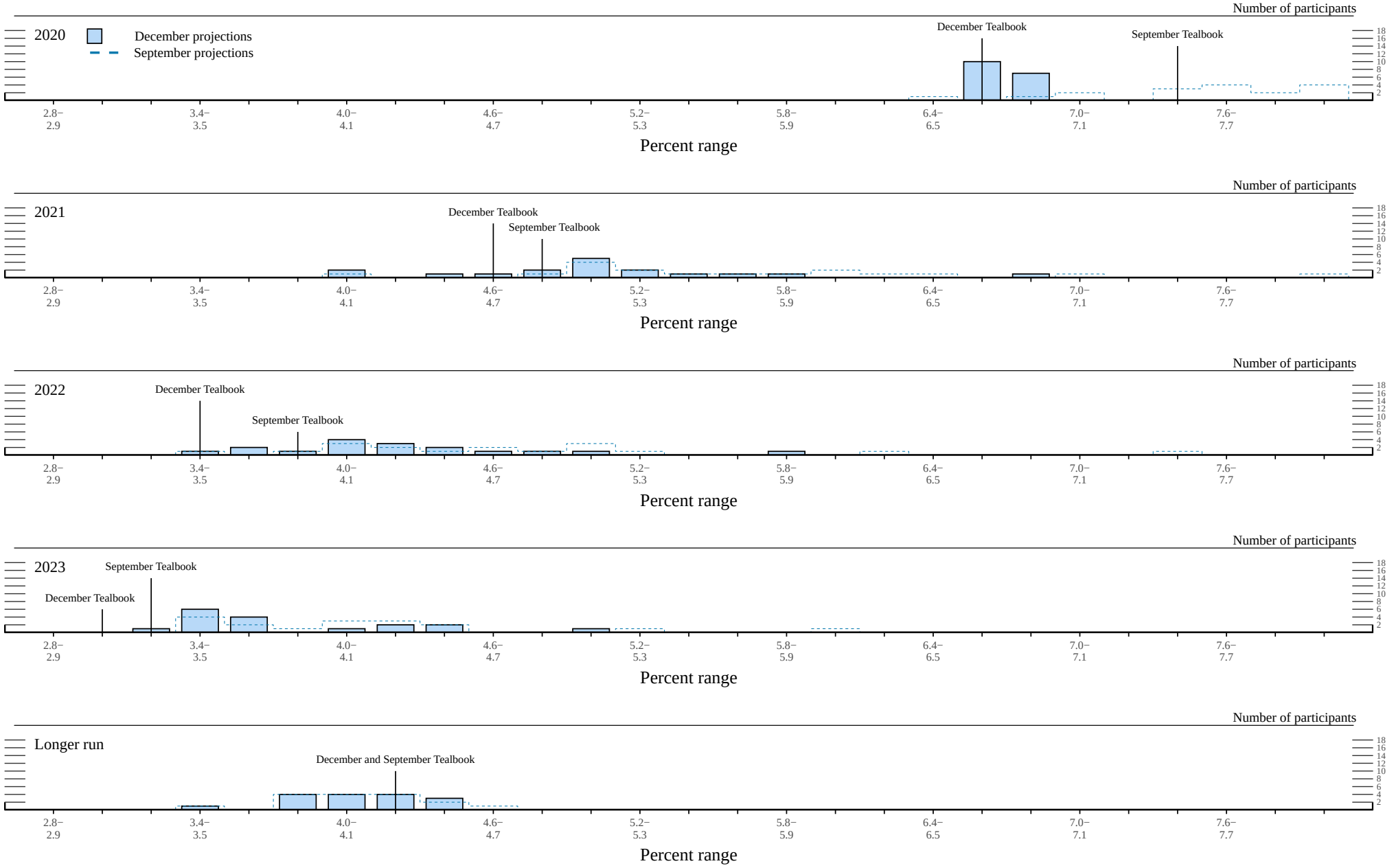
NOTE: Each shaded circle indicates the value (rounded to the nearest 1/8 percentage point) of an individual participant's judgment of the midpoint of the appropriate target range for the federal funds rate or the appropriate target level for the federal funds rate at the end of the specified calendar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

Figure 3.A. Distribution of participants' projections for the change in real GDP, 2020–23 and over the longer run



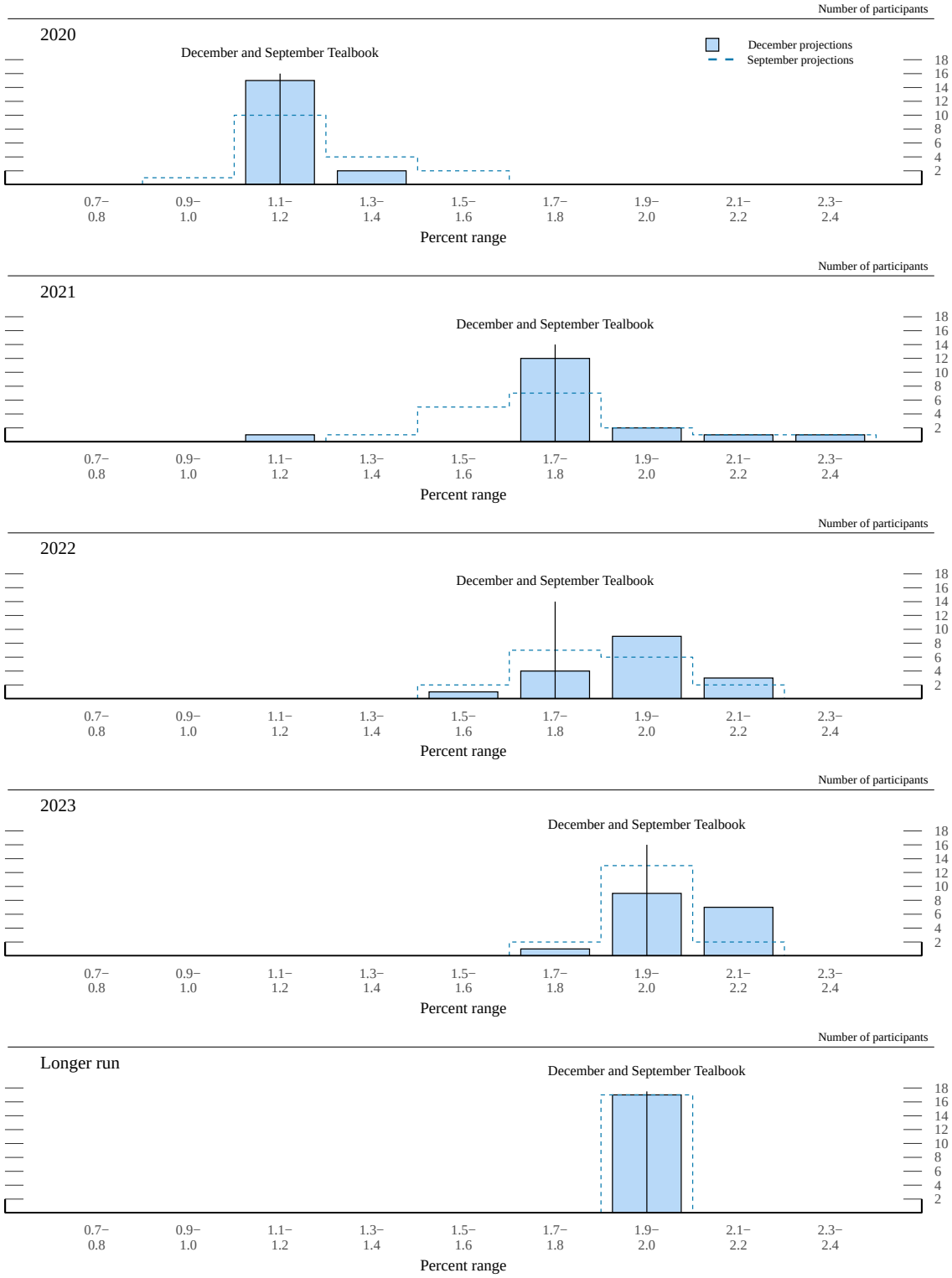
NOTE: Updated December Tealbook values are reported. Definitions of variables and other explanations are in the notes to table 1.

Figure 3.B. Distribution of participants' projections for the unemployment rate, 2020–23 and over the longer run



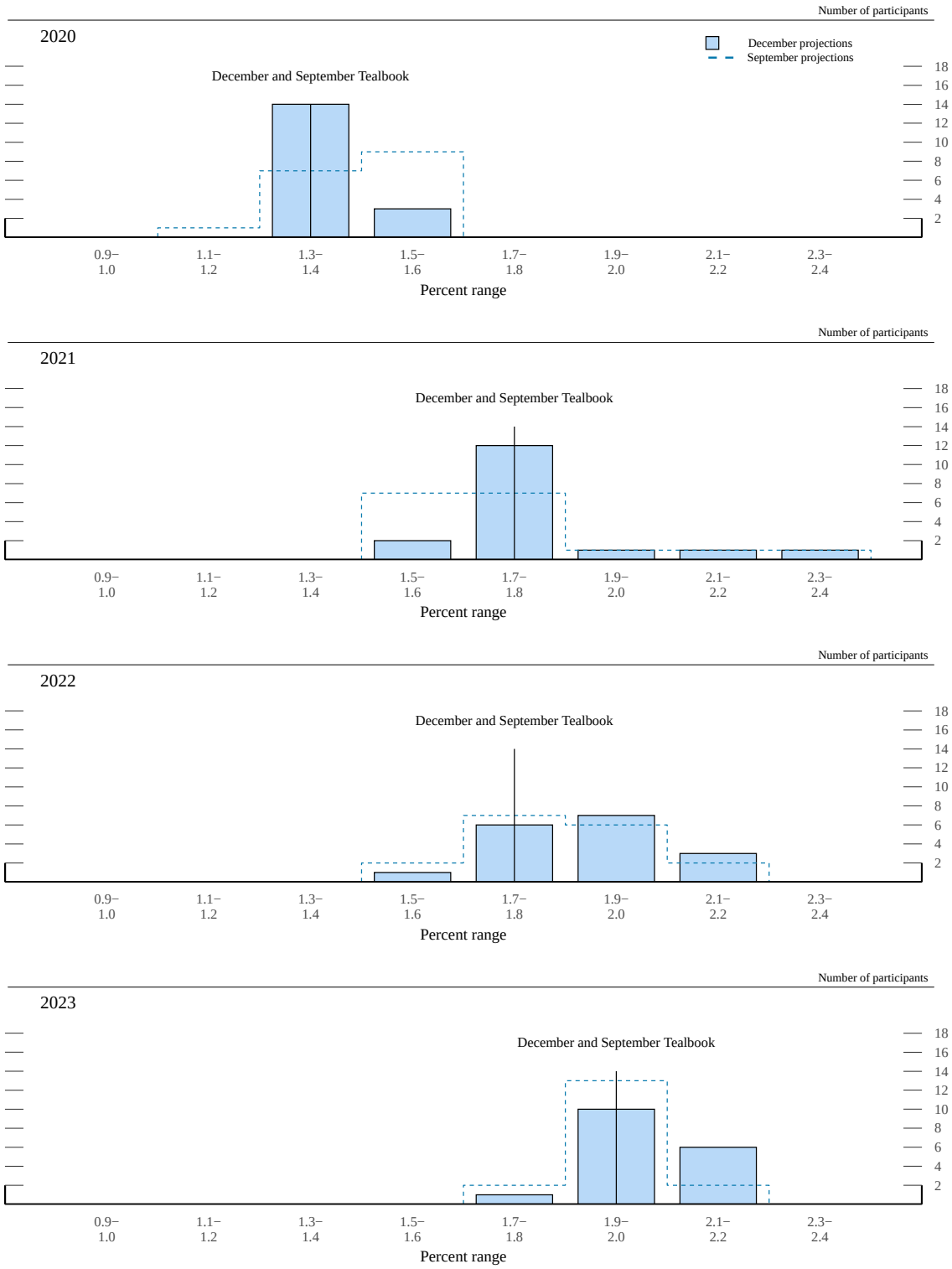
NOTE: Updated December Tealbook values are reported. Definitions of variables and other explanations are in the notes to table 1.

Figure 3.C. Distribution of participants' projections for PCE inflation, 2020–23 and over the longer run



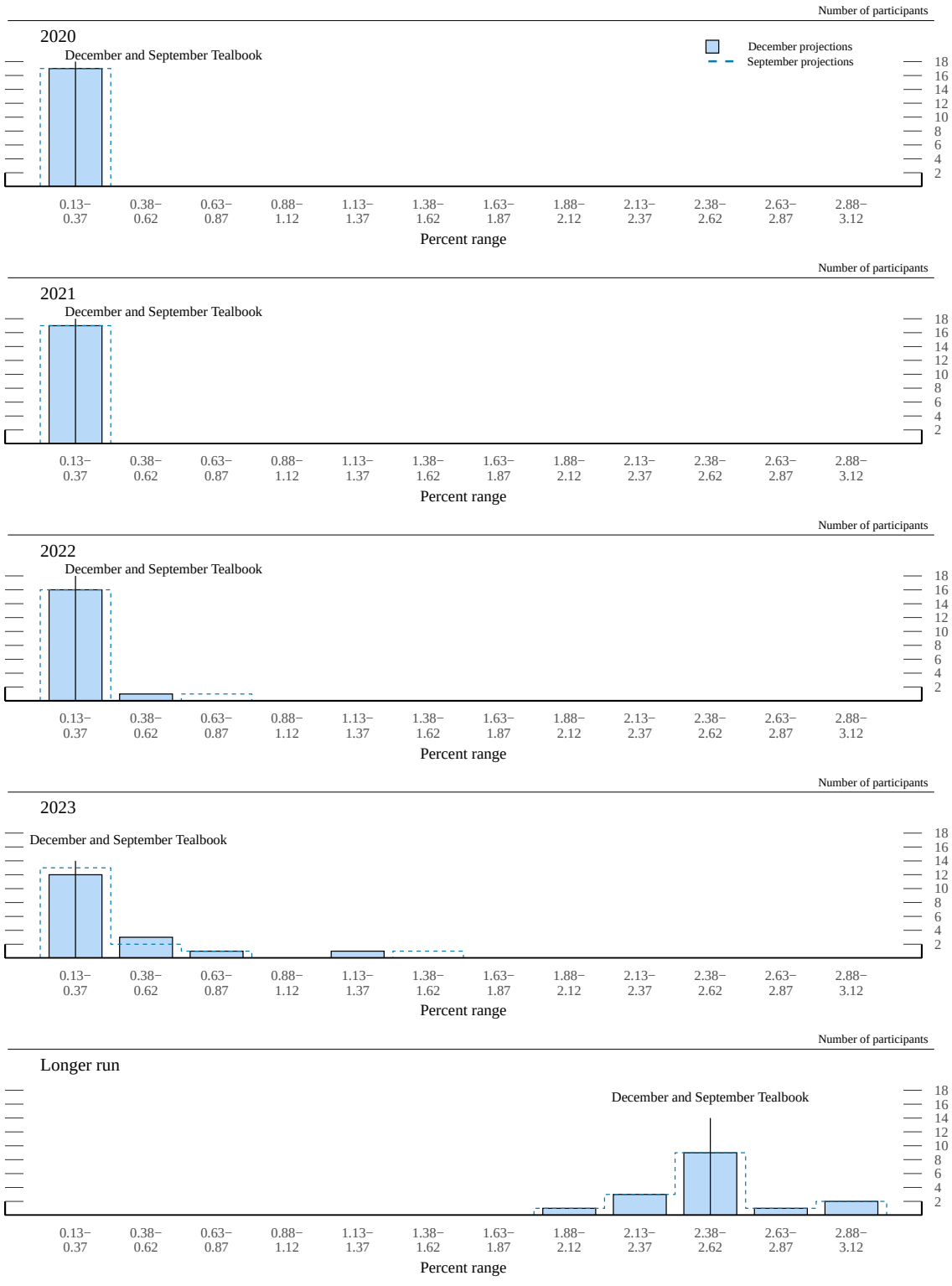
NOTE: Updated December Tealbook values are reported. Definitions of variables and other explanations are in the notes to table 1.

Figure 3.D. Distribution of participants' projections for core PCE inflation, 2020–23



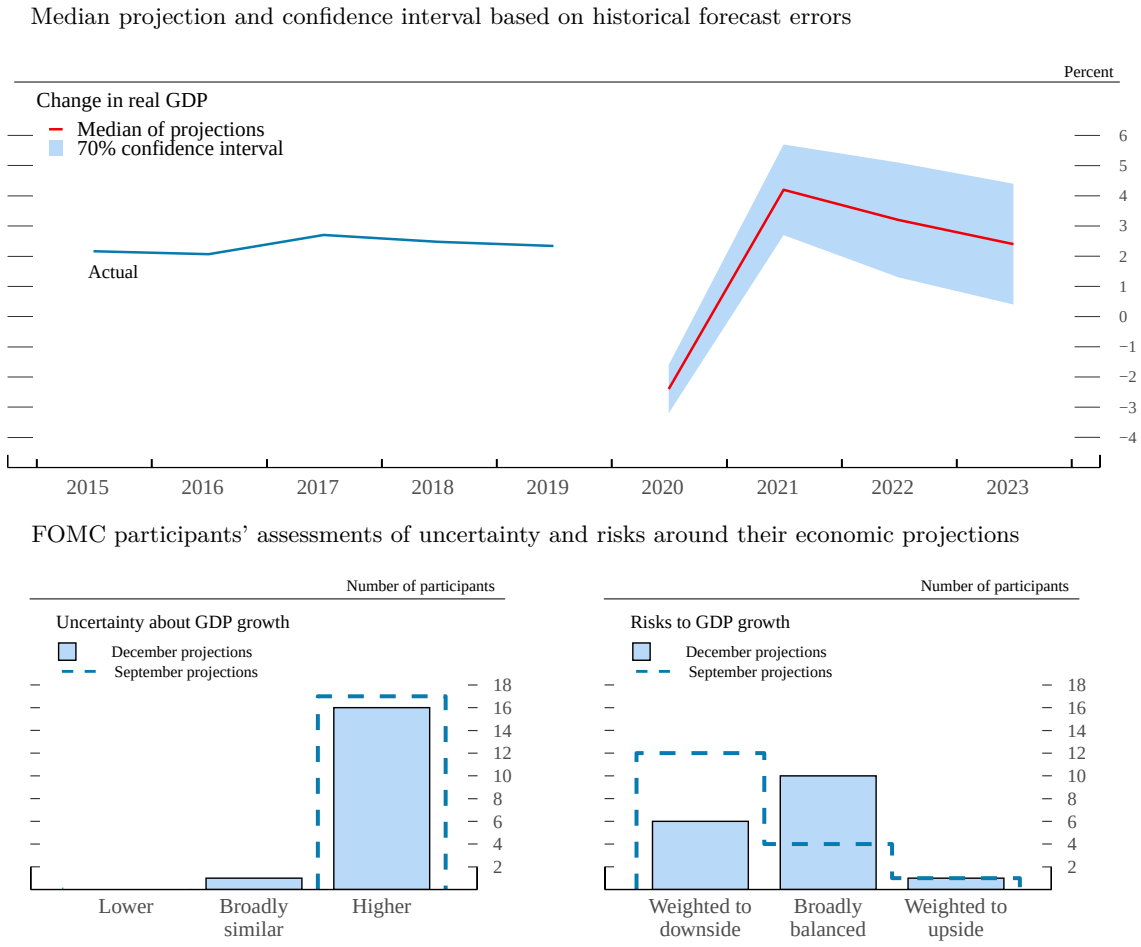
NOTE: Updated December Tealbook values are reported. Definitions of variables and other explanations are in the notes to table 1.

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, 2020–23 and over the longer run



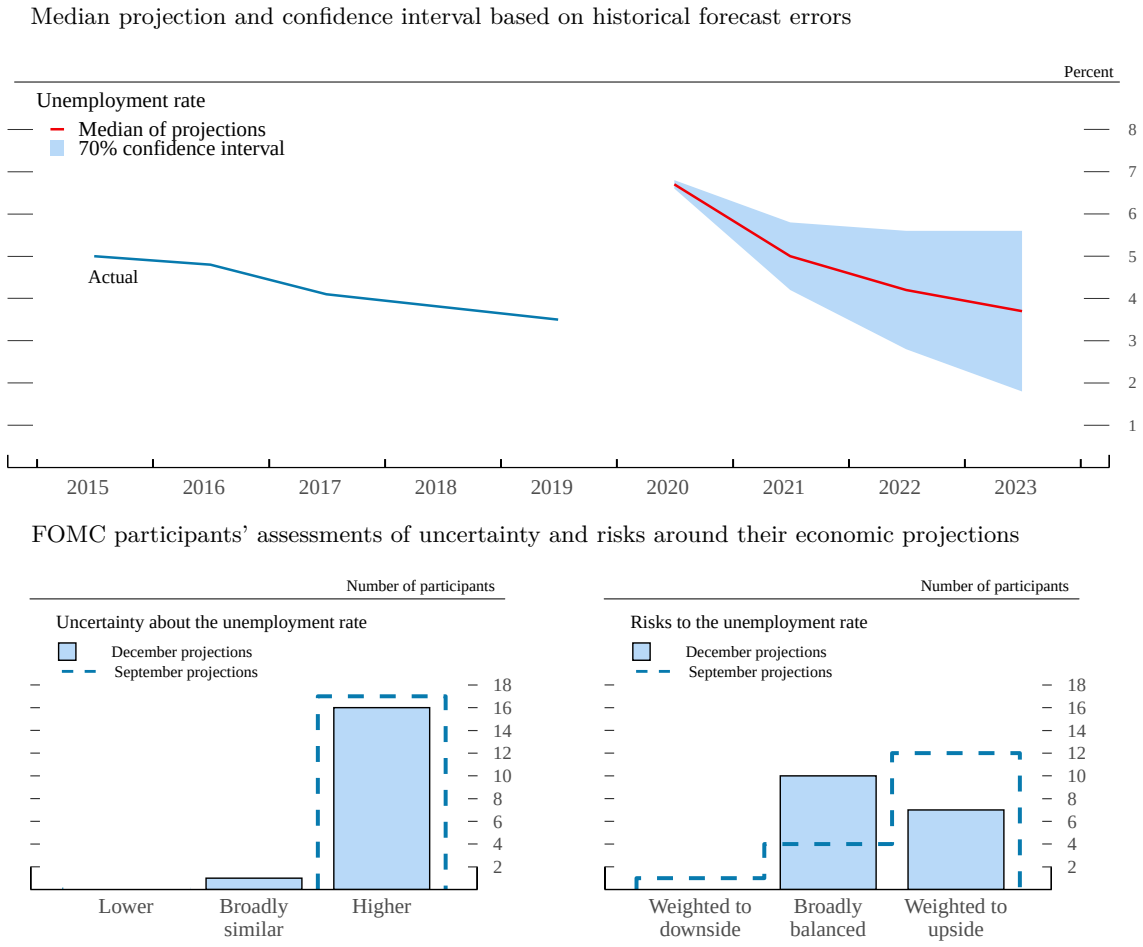
NOTE: Updated December Tealbook values are reported. Definitions of variables and other explanations are in the notes to table 1.

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



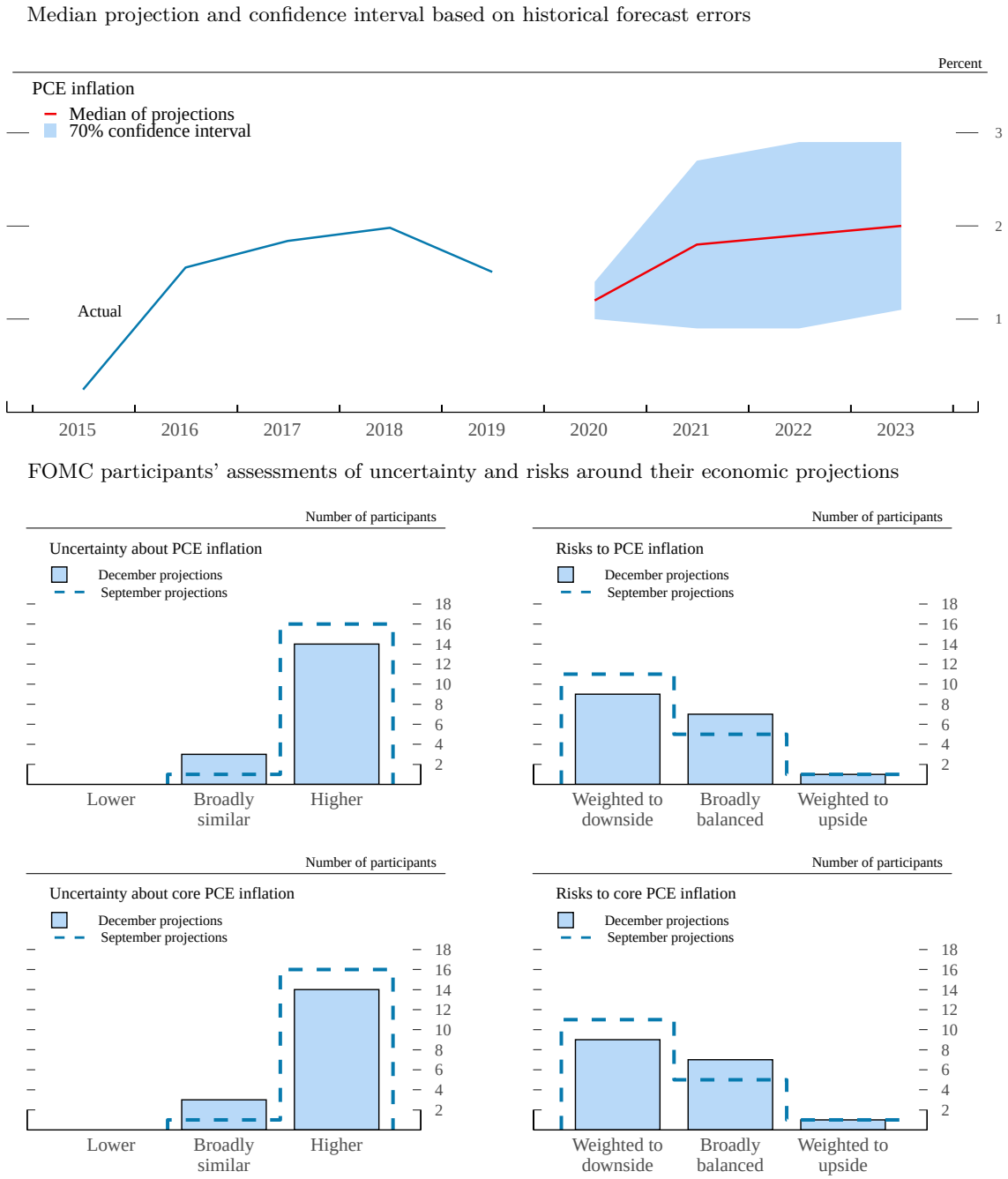
NOTE: The blue and red lines in the top panel show actual values and median projected values, respectively, of the percent change in real gross domestic product (GDP) from the fourth quarter of the previous year to the fourth quarter of the year indicated. The confidence interval around the median projected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

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



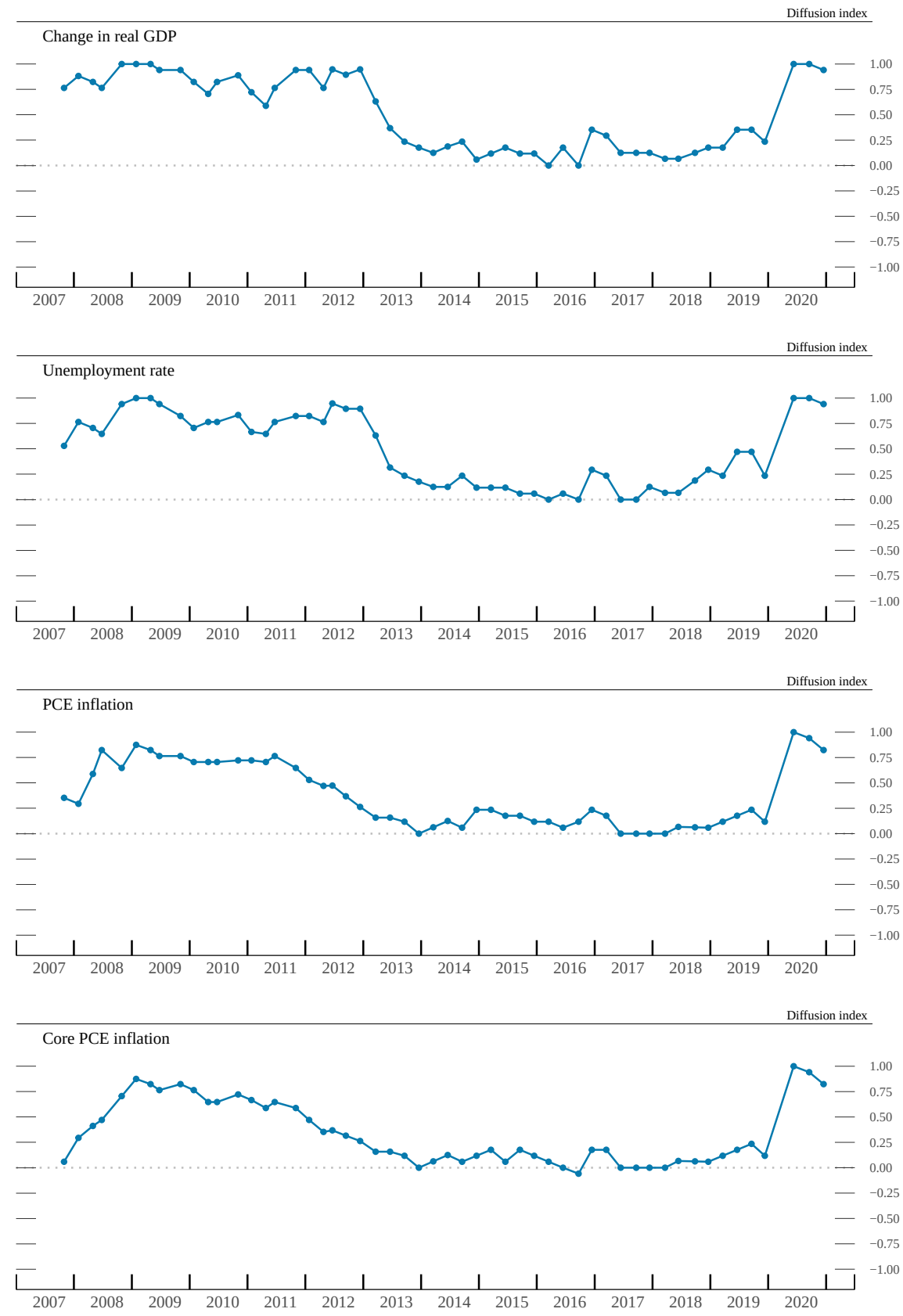
NOTE: The blue and red lines in the top panel show actual values and median projected values, respectively, of the average civilian unemployment rate in the fourth quarter of the year indicated. The confidence interval around the median projected values is assumed to be symmetric and is based on root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

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



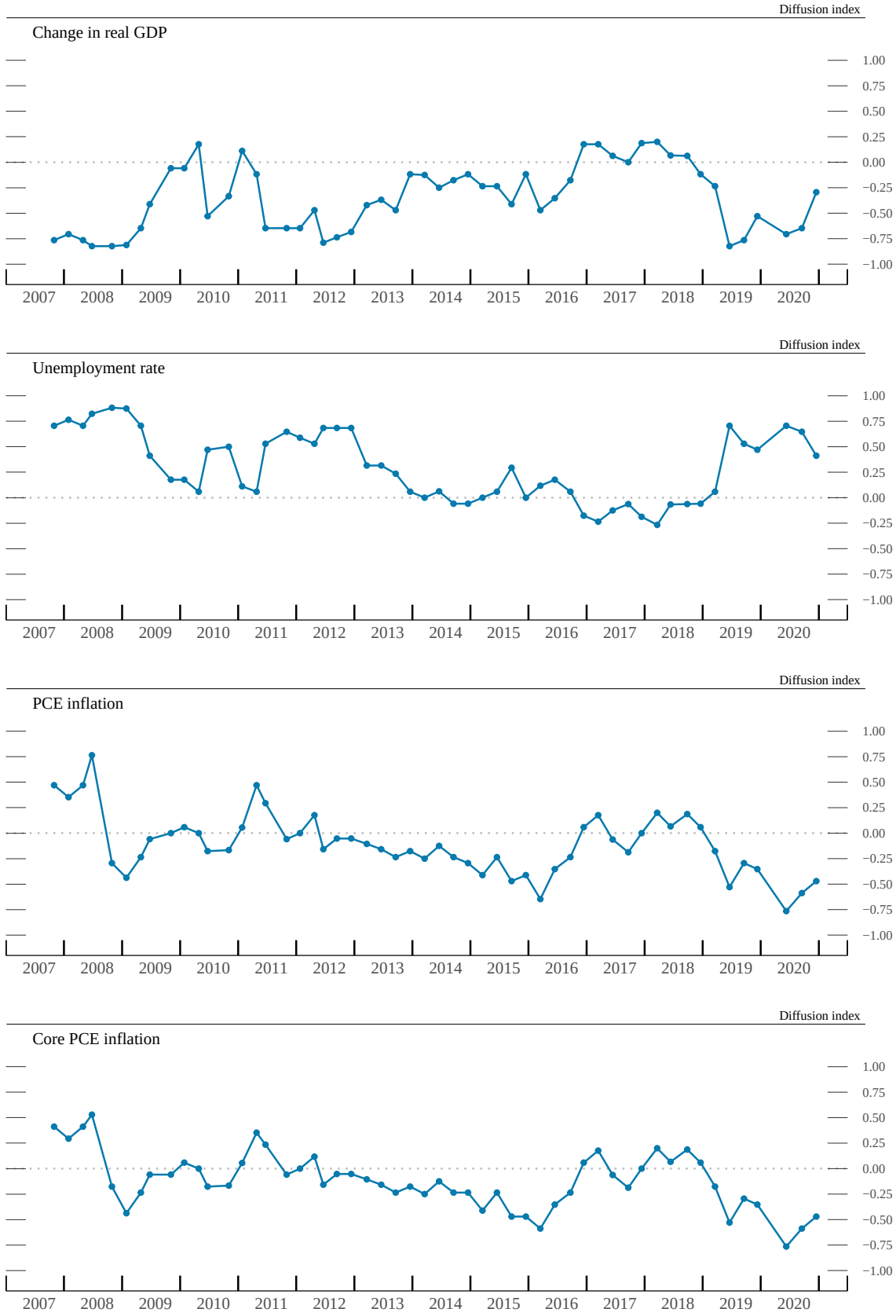
NOTE: The blue and red lines in the top panel show actual values and median projected values, respectively, of the percent change in the price index for personal consumption expenditures (PCE) from the fourth quarter of the previous year to the fourth quarter of the year indicated. The confidence interval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

Figure 4.D. Diffusion indexes of participants' uncertainty assessments



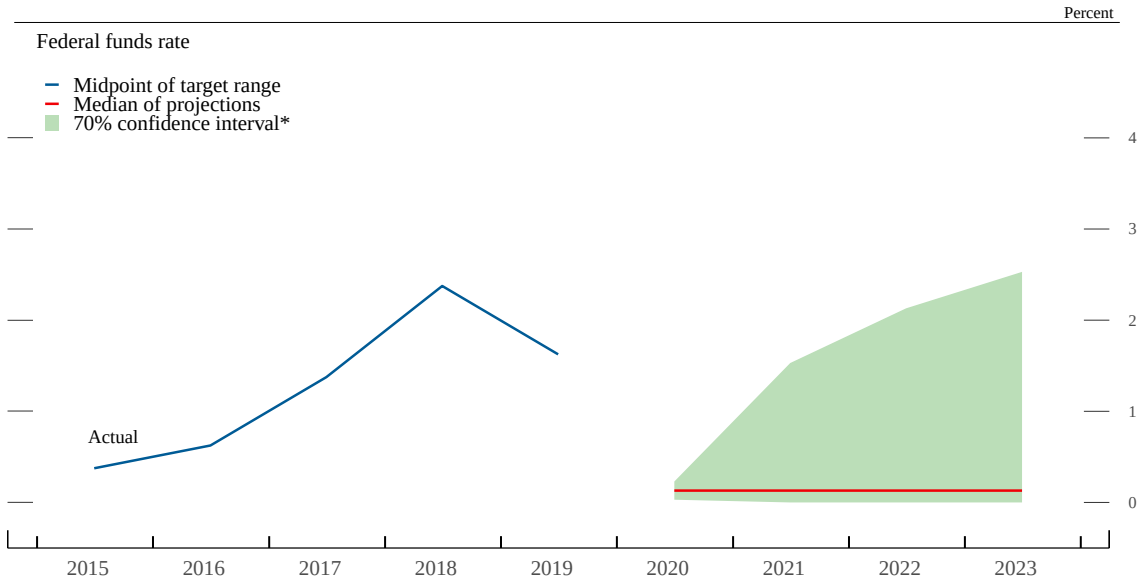
NOTE: For each SEP, participants provided responses to the question "Please indicate your judgment of the uncertainty attached to your projections relative to the levels of uncertainty over the past 20 years." Each point in the diffusion indexes represents the number of participants who responded "Higher" minus the number who responded "Lower," divided by the total number of participants. Figure excludes March 2020 when no projections were submitted.

Figure 4.E. Diffusion indexes of participants' risk weightings



NOTE: For each SEP, participants provided responses to the question "Please indicate your judgment of the risk weighting around your projections." Each point in the diffusion indexes represents the number of participants who responded "Weighted to the Upside" minus the number who responded "Weighted to the Downside," divided by the total number of participants. Figure excludes March 2020 when no projections were submitted.

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.

Table 2. Average Historical Projection Error Ranges (Percentage points)

Variable	2020	2021	2022	2023
Change in real GDP[1]	±0.8	±1.5	±1.9	±2.0
Unemployment rate[1]	±0.1	±0.8	±1.4	±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 2000 through 2019 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.

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, 1.5 to 4.5 percent in the second year, 1.1 to 4.9 percent in the third year, and 1.0 to 5.0 percent in the fourth year. 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.

Individual Projections Table. December economic projections, 2020–23 and over the longer run (in percent)

Projection	Year	Change in real GDP	Unemployment rate	PCE inflation	Core PCE Inflation	Federal funds rate
1	2020	-2.3	6.7	1.2	1.4	0.13
2	2020	-2.5	6.7	1.2	1.4	0.13
3	2020	-2.0	6.8	1.2	1.4	0.13
4	2020	-3.0	6.8	1.2	1.4	0.13
5	2020	-2.5	6.7	1.2	1.4	0.13
6	2020	-2.0	6.7	1.4	1.5	0.13
7	2020	-2.4	6.8	1.2	1.4	0.13
8	2020	-2.4	6.8	1.2	1.5	0.13
9	2020	-2.5	6.7	1.1	1.3	0.13
10	2020	-2.4	6.8	1.2	1.4	0.13
11	2020	-3.3	6.7	1.2	1.4	0.13
12	2020	-2.2	6.7	1.2	1.4	0.13
13	2020	-2.5	6.9	1.1	1.3	0.13
14	2020	-1.0	6.6	1.3	1.5	0.13
15	2020	-2.4	6.8	1.2	1.4	0.13
16	2020	-2.5	6.7	1.2	1.4	0.13
17	2020	-2.3	6.7	1.2	1.4	0.13
1	2021	4.5	5.0	1.8	1.8	0.13
2	2021	4.0	5.3	2.2	2.2	0.13
3	2021	3.7	5.0	1.7	1.7	0.13
4	2021	0.5	6.8	1.2	1.5	0.13
5	2021	4.7	5.2	1.8	1.7	0.13
6	2021	5.0	5.0	1.9	1.9	0.13
7	2021	5.0	5.0	1.7	1.7	0.13
8	2021	4.2	4.9	1.8	1.6	0.13
9	2021	4.3	4.9	1.8	1.8	0.13
10	2021	4.7	4.7	1.8	1.8	0.13
11	2021	3.3	5.7	1.8	1.7	0.13
12	2021	4.2	4.5	2.3	2.3	0.13
13	2021	5.5	4.0	2.0	1.8	0.13
14	2021	5.0	4.0	1.7	1.8	0.13
15	2021	3.8	5.4	1.7	1.7	0.13
16	2021	3.5	5.8	1.7	1.7	0.13
17	2021	4.0	5.1	1.8	1.8	0.13

Individual Projections Table. *(continued)*

Projection	Year	Change in real GDP	Unemployment rate	PCE inflation	Core PCE Inflation	Federal funds rate
1	2022	4.0	4.0	1.9	1.9	0.13
2	2022	3.5	4.6	2.0	2.0	0.13
3	2022	3.0	4.5	1.8	1.8	0.13
4	2022	3.5	5.8	1.5	1.6	0.13
5	2022	2.5	4.2	1.9	1.8	0.13
6	2022	4.0	4.0	2.1	2.1	0.13
7	2022	2.9	4.2	1.8	1.8	0.13
8	2022	3.0	3.8	1.9	1.8	0.13
9	2022	3.2	4.0	1.8	1.8	0.13
10	2022	3.2	3.7	1.9	1.9	0.13
11	2022	2.5	4.8	1.9	1.9	0.13
12	2022	3.0	4.3	2.1	2.1	0.13
13	2022	3.2	3.6	2.2	2.2	0.38
14	2022	3.3	3.5	1.9	1.9	0.13
15	2022	3.0	4.5	1.9	1.9	0.13
16	2022	3.4	5.0	1.8	1.8	0.13
17	2022	3.2	4.1	2.0	2.0	0.13
1	2023	2.5	3.5	2.1	2.1	0.13
2	2023	2.2	4.3	2.1	2.1	0.38
3	2023	2.5	3.7	2.0	2.0	0.13
4	2023	3.5	5.0	1.7	1.7	0.13
5	2023	2.5	3.7	2.1	2.0	0.38
6	2023	3.0	3.5	2.1	2.1	0.13
7	2023	2.4	3.7	1.9	1.9	0.13
8	2023	2.2	3.3	1.9	1.9	0.63
9	2023	2.4	3.5	1.9	1.9	0.13
10	2023	2.4	3.4	2.1	2.1	0.13
11	2023	2.3	4.4	2.1	2.1	0.13
12	2023	2.0	4.3	2.0	2.0	0.13
13	2023	2.2	3.4	2.0	2.0	1.13
14	2023	3.0	3.5	2.0	2.0	0.13
15	2023	2.6	4.0	2.0	2.0	0.13
16	2023	2.7	4.5	1.9	1.9	0.13
17	2023	2.4	3.7	2.2	2.2	0.38

Individual Projections Table. ***(continued)***

Projection	Year	Change in real GDP	Unemployment rate	PCE inflation	Core PCE Inflation	Federal funds rate
1	LR	2.0	4.0	2.0		2.25
2	LR	1.6	4.3	2.0		3.00
3	LR	1.8	4.2	2.0		2.50
4	LR	1.7	3.5	2.0		2.00
5	LR	2.0	4.3	2.0		2.75
6	LR	2.0	3.9	2.0		2.50
7	LR	1.7	3.8	2.0		2.30
8	LR	1.8	4.1	2.0		2.25
9	LR	1.8	4.3	2.0		2.50
10	LR	1.9	4.0	2.0		2.38
11	LR	1.8	4.4	2.0		2.50
12	LR			2.0		
13	LR	2.0	4.0	2.0		3.00
14	LR	2.2	3.9	2.0		2.50
15	LR	1.9	4.5	2.0		2.50
16	LR	1.7	4.5	2.0		2.50
17	LR	1.8	3.8	2.0		2.50

Individual Economic Projections for the first half (H1) of 2020*
(in percent)

Medians, central tendencies, and ranges

	Median	Central tendency	Range
Change in real GDP	-19.2	-19.2	-19.2
September projection	-19.4	-19.5 to -19.4	-20.0 to -19.4
PCE inflation	-0.2	-0.2	-0.2
September projection	-0.3	-0.3	-0.3
Core PCE inflation	0.4	0.4	0.4
September projection	0.3	0.3	0.3

Participants' Projections

Projection	Change in real GDP	PCE inflation	Core PCE Inflation
1	-19.2	-0.2	0.4
2	-19.2	-0.2	0.4
3	-19.2	-0.2	0.4
4	-19.2	-0.2	0.4
5	-19.2	-0.2	0.4
6	-19.2	-0.2	0.4
7	-19.2	-0.2	0.4
8	-19.2	-0.2	0.4
9	-19.2	-0.2	0.4
10	-19.2	-0.2	0.4
11	-19.2	-0.2	0.4
12	-19.2	-0.2	0.4
13	-19.2	-0.2	0.4
14	-19.2	-0.2	0.4
15	-19.2	-0.2	0.4
16	-19.2	-0.2	0.4
17	-19.2	-0.2	0.4

*Growth and inflation are reported at annualized rates.

Individual Economic Projections for the second half (H2) of 2020* (in percent)

Medians, central tendencies, and ranges

	Median	Central tendency	Range
Change in real GDP	17.9	17.7 to 18.4	15.7 to 21.3
September projection	15.2	14.3 to 16.7	10.9 to 26.7
PCE inflation	2.6	2.6	2.4 to 3.0
September projection	2.7	2.5 to 2.9	2.3 to 3.3
Core PCE inflation	2.4	2.4	2.2 to 2.6
September projection	2.7	2.3 to 2.7	2.1 to 2.9

Participants' Projections

Projection	Change in real GDP	PCE inflation	Core PCE Inflation
1	18.1	2.6	2.4
2	17.7	2.6	2.4
3	18.9	2.6	2.4
4	16.4	2.6	2.4
5	17.7	2.6	2.4
6	18.9	3.0	2.6
7	17.9	2.6	2.4
8	17.9	2.6	2.6
9	17.7	2.4	2.2
10	17.9	2.6	2.4
11	15.7	2.6	2.4
12	18.4	2.6	2.4
13	17.7	2.4	2.2
14	21.3	2.8	2.6
15	17.9	2.6	2.4
16	17.7	2.6	2.4
17	18.1	2.6	2.4

*Projections for the second half of 2020 implied by participants' December projections for the first half of 2020 and for 2020 as a whole. Growth and inflation are reported at annualized rates.

Individual Uncertainty and Risk Responses

Question 2(a): Please indicate your judgment of the uncertainty attached to your projections relative to levels of uncertainty over the past 20 years.

Individual responses

Respondent	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Change in real GDP	A	A	A	A	A	A	A	B	A	A	A	A	A	A	A	A	A
Unemployment rate	A	A	A	A	A	A	A	B	A	A	A	A	A	A	A	A	A
PCE inflation	A	B	A	A	A	A	A	A	A	A	A	A	B	B	A	A	A
Core PCE inflation	A	B	A	A	A	A	A	A	A	A	A	A	B	B	A	A	A

A = Higher B = Broadly similar C = Lower

Question 2(b): Please indicate your judgment of the risk weighting around your projections.

Individual responses

Respondent	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Change in real GDP	B	B	C	B	B	B	C	A	C	C	B	C	B	B	C	B	B
Unemployment rate	B	B	A	B	B	B	A	B	A	A	B	A	A	B	A	B	B
PCE inflation	C	B	C	C	C	A	C	B	C	C	B	C	B	B	C	B	B
Core PCE inflation	C	B	C	C	C	A	C	B	C	C	B	C	B	B	C	B	B

A = Weighted to upside B = Broadly balanced C = Weighted to downside

Longer-run Projections

Question 1(c). If you anticipate that the convergence process will take SHORTER OR LONGER than about five or six years, please indicate your best estimate of the duration of the convergence Process. You may also include below any other explanatory comments that you think would be helpful.

Respondent 1: N/A

Respondent 2: N/A

Respondent 3: Yes. Note, we achieve this because our forecast has inflation rising to 2.5 percent within this window. Without this, the answer would be no.

Respondent 4: Recovery from the Great Recession was not complete before the novel coronavirus outbreak in the sense that we had achieved neither full employment nor our 2 percent inflation target. The current recession is considerably deeper than the Great Recession and is likely to result in many bankruptcies and deep scarring in labor markets. In addition, longer-run changes to consumption patterns and work practices induced by the pandemic are likely to take a while to settle in to a "new normal." As a result, the time needed to complete this evolution is likely to be longer than five or six years.

Respondent 5: N/A

Respondent 6: Shorter than 5 years. The pandemic shock was unusual along many dimensions including the time to fully recover from it. There was nothing wrong with the economy in February and with continued good policy and vaccine/ herd immunity now the baseline recovery can be much more rapid than following the GFC.

Respondent 7: Aggressive and timely monetary and fiscal policy actions helped to mitigate the downside impacts of the COVID-19 pandemic on U.S. growth, employment, and core inflation in the first half of the year. These actions have also contributed to the ongoing rebound in the second half. Going forward, the shape of the recovery remains uncertain and depends on: (1) the progression of new COVID-19 cases, (2) the timing of widespread vaccination, and (3) the timing, size, and composition of any additional federal fiscal policy relief. My assessment is that, even with a relatively optimistic scenario for all three of these factors, the economy will still take time to fully heal, not reaching longer run levels for several years. The labor market in particular is likely to be slow to recover. As more workers transition from temporary to permanent unemployment, I expect the elevated job finding rates observed during the early stages of the recovery to soon fall back towards those observed during typical recoveries. I also expect the labor force participation rate to recover back to trend, contributing to a slower decline in the unemployment rate.

Respondent 8: Under my modal outlook, the unemployment rate ends 2023 at 3.3 percent, below my estimate of its long-run level, with PCE inflation of approximately 1.9 percent. Given our objective of moderately overshooting 2 percent inflation for some time as well as the need to eventually guide unemployment gradually to a long-run sustainable level, I expect convergence will take more than two years from that point—that is, more than five years from now. Monetary policy will need to walk a fine line if it is to promote the FOMC's goals without stoking real and/or financial imbalances that could ultimately impede attainment of those goals.

Respondent 9: N/A

Respondent 10: The long-run effects of the pandemic remain highly uncertain, and thus I have not adjusted my assumptions regarding the longer-run values of GDP growth, unemployment, and interest rates.

As discussed in the narratives for monetary policy and for the projections, it will take some time before the SEP variables converge to their longer-run values. Consistent with the policy rate forward guidance in the FOMC statement, I expect that unemployment and inflation will have to overshoot their longer-run levels for some time to achieve our dual-mandate goals on a sustained basis. Consequently, real GDP growth, unemployment and inflation will not be all at their longer-run levels before the second half of this decade.

Respondent 11: Under my modal outlook, I continue to expect that real GDP growth and the unemployment rate will converge to their longer-run levels within the next five or six years.

I am less certain that inflation and the federal funds rate will converge to their longer-run levels within this same timeframe. Prior to the onset of the pandemic, low rates of global inflation and persistent declines in energy prices restrained PCE inflation over the past several years. These elements, combined with pandemic-induced declines in aggregate inflation and increases in domestic labor market slack, suggest that inflation will remain below 2 percent over the next couple of years. However, as these effects fade, policymakers will have the opportunity to demonstrate their commitment to 2 percent inflation on average by allowing annual inflation to rise above 2 percent, facilitated in part by ongoing monetary policy accommodation. After a sustained period of PCE inflation moderately above 2 percent — achieved in the context of balanced growth, financial stability, and longer-run inflation expectations near 2 percent — I ultimately anticipate that inflation will converge to 2 percent and the federal funds rate will move up to its longer-run level under appropriate monetary policy.

While I have not changed my assumptions on the longer-run rate of unemployment or trend growth at this time, I will be watching for signs that the sharp contraction in economic activity during the first half of this year and the still elevated rates of unemployment will cause lasting damage to labor markets or the productive capacity of the economy.

Respondent 12: I expect that convergence to long-run values—conditional on a regime characterized by low productivity growth and a low real interest rate on short-term government debt—will occur by 2023 for GDP growth and inflation. I expect unemployment to converge to its regime-dependent long-run value by 2022.

Respondent 13: N/A

Respondent 14: N/A

Respondent 15: I think the convergence process will take 4 to 5 years. Resource reallocation in response to the pandemic is likely to take some time to fully play out.

Respondent 16: Convergence to full employment and the 2 percent inflation target occurs by late 2023. By then, we expect little residual scarring from the pandemic, with the natural rate of unemployment projected to be 4.5 percent.

Respondent 17: The convergence to the longer-run projection is expected to take several years beyond 2023. The unemployment rate is projected to bottom out at around 3 percent several years beyond the forecast horizon. This degree of undershooting of the longer-run level of the unemployment rate is necessary to ensure that inflation mildly overshoots 2 percent for a few years before returning to its longer-run target.

Uncertainty and Risks

Question 2(a). (Optional) If you have any explanatory comments regarding your judgment of the uncertainty attached to your projections relative to the uncertainty over the past 20 years, you may enter them below.

Respondent 1: N/A

Respondent 2: Uncertainty is elevated due to the unprecedented nature of the ongoing pandemic, political deliberations on further fiscal support, and other factors.

Respondent 3: The overall level of uncertainty in our projection is still higher than historical norms. With the surge in virus caseloads, there is considerable uncertainty in the near term about both mandatory and voluntary restrictions on activity. Looking ahead, although news on vaccine development has been positive, much uncertainty remains about the speed at which vaccines will be manufactured and deployed, as well as about take up rates. The outlook regarding further fiscal support remains highly uncertain. Uncertainties continue to surround the growth prospects of our major trading partners, most notably in Europe and Latin America.

Uncertainty over the inflation outlook remains elevated as well. Our projection of slowly rising inflation is dependent on the trajectory of aggregate demand, and so is subject to the same uncertainties as our outlook for growth. In addition, there is uncertainty regarding the degree to which monetary policy communication will buoy inflation expectations, and thus help lift actual inflation, which is a key factor in our forecast narrative.

Respondent 4: The current level of uncertainty is considerably higher than seen during the financial crisis. The health and economic effects of the coronavirus and their potential implications for financial stability are hard to project. Additional sources of uncertainty include the size and timing of future fiscal support, and the ability of foreign governments to support their economies.

Respondent 5: Macroeconomic forecasting remains particularly challenging given the uncertainties about the course of the COVID-19 pandemic and the difficulties in extracting the signal about the underlying state of the economy from extreme swings in the economic data. The pandemic and economic shutdown represented an unprecedented situation that resulted in unprecedented job losses and a strong contraction in activity in the first half of the year followed by a sharp rebound in the third quarter. The country is now experiencing another widespread rise in virus cases, which is putting strains on the medical system. There is uncertainty about the extent to which this will affect economic activity. At the same time, vaccine developments have been very positive, but there is uncertainty about the timing of the widespread deployment of the vaccines. The level of uncertainty surrounding the forecast remains higher than normal, but it has come down considerably since earlier in the year.

Respondent 6: My uncertainty about the outlook is somewhat diminished relative to the September SEP because of the vaccine news - the left tail of the distribution has shrunk and the the right tail has expanded. That said, uncertainty will remain elevated until the virus is no longer suppressing activity in contact intensive sectors.

Respondent 7: The projected path of the economy is particularly uncertain. The unknown path of future COVID-19 cases, the unprecedented task of rapidly deploying massive quantities of temperature-sensitive vaccines, and the current lack of agreement in Congress over fiscal policy relief are all keeping uncertainty at historically high levels. However, the recent positive news about vaccine efficacy and safety has helped to reduce uncertainty surrounding the duration of the pandemic and its associated effects on

the economy over the medium term. On balance, these factors translate into higher uncertainty about my projections for economic activity and inflation than the average level over the past 20 years. Inflation remains anchored by stable longer-run inflation expectations that have been further solidified at the FOMC's stated goal of 2 percent by the recent framework review. However, there remains heightened near-term uncertainty in inflation stemming from those sectors most sensitive to the disruptions caused by the pandemic.

Respondent 8: Over the next 3 to 4 months, there is considerable uncertainty around the level of economic activity, owing to the ongoing surge in Covid-19 cases and the potential for a sharp decline in mobility and engagement. Beyond that horizon, with the likelihood of vaccines in wide distribution by the second half of 2021, uncertainty around the path of economic activity is likely to be greatly reduced. Looking over the entire forecast horizon, I view uncertainty around my projections for real GDP growth and unemployment as not unusually elevated.

This is not the case regarding inflation, however. Based on my conversations with businesspeople across the District and nationally, I believe that the pandemic has accelerated the structural forces of technology and technology enabled disruption—these forces are significantly impacting the competitive environment and ability of firms to exercise pricing power. As a result, I see substantial uncertainty surrounding inflation outcomes in the near-to-medium term.

Respondent 9: The COVID-19 global pandemic is outside the realm of recent historical experience. It is a severe shock to both demand and supply that emanated from outside the economic and financial system. While the probability of widespread vaccinations in the next six months has increased significantly, there remains substantial uncertainty around the timing and pace of normalization of social interactions and attendant economic activities. Additionally, the recent sharp rise in cases and resulting increase in social distancing—whether mandatory or voluntary—is likely to weigh heavily on employment and spending in COVID-sensitive sectors over the next few months.

Respondent 10: The uncertainty surrounding the economic outlook remains centered on developments regarding the COVID-19 pandemic. Very good news on vaccine development has reduced the probability of more dire pandemic scenarios. Nonetheless, it is still very difficult to predict the future course of the pandemic and its economic effects. Beyond the pandemic, considerable uncertainty about the path of fiscal policy clouds the outlook, both in terms of medium-term growth prospects and the longer-run damage to the economy. In addition, global geopolitical developments, including fraught negotiations between the U.K. and the euro area about the post-Brexit relationship, signal notable uncertainty surrounding the global outlook. Consequently, uncertainty around the outlook remains high and above the SEP standard.

Respondent 11: N/A

Respondent 12: Uncertainty attached to my projections remains elevated due to the high uncertainty on the evolution of the COVID-19 pandemic and its economic effects.

Respondent 13: The level of uncertainty about growth and employment in the near term remains quite high as a result of the potential for significant and widespread restrictions going into place as a result of high levels of hospitalization associated with the latest spread of COVID-19, and the continued negotiations over the size and composition of fiscal support.

Respondent 14: My forecast assumes further fiscal stimulus or nearer term resumption of economic activity, and will rely on the timing of the broad distribution of the vaccine.

Respondent 15: The coronavirus pandemic and the responses to it by households and firms is both accelerating existing trends and driving new trends in economic interactions and resource allocation. How smoothly this resource reallocation will play out and how long it takes remains uncertain. My baseline

is that widespread vaccination will begin to rapidly quell the pandemic sometime this summer. However, the uncertainty surrounding production at scale and rollout of the vaccines remains high. Near-term uncertainty about the economic consequences of rapidly rising cases and hospitalizations is high.

Respondent 16: Uncertainty around the economic projections remains elevated in the near term because of the uncertainty surrounding the evolution of the pandemic, the measures taken to contain it, fiscal policy, and the behavior of consumers and firms. This uncertainty spills over to the medium term as it affects the degree of recessionary dynamics and the extent of scarring from the downturn, despite the favorable news about a highly effective COVID-19 vaccine.

Respondent 17: The timing of the end of the pandemic remains uncertain. There is also considerable uncertainty about the persistence of the impacts of the pandemic on households and businesses and the amount and duration of fiscal support.

Uncertainty and Risks (continued)

Question 2(b). (Optional) If you have any explanatory comments regarding your judgment of the risk weighting around your projections, you may enter them below.

Respondent 1: N/A

Respondent 2: Prior recoveries suggest a more gradual path for normalization of unemployment. Offsetting that, a greater share of unemployed are from lower-skilled sectors, and may be easier to re-employ once the post-vaccine recovery accelerates.

Respondent 3: Although we see two-sided risks to activity, the overall balance is still to the downside. Importantly, our forecast assumes an additional $1 trillion of fiscal support will be coming soon. However, we assess the risks to this stimulus as being to the downside in terms of its timeliness, its size, and its ability to adequately support many vulnerable households, this latter factor being particularly relevant for the inclusiveness of our maximum employment mandate. As in our previous projections, we see downside risks from the effect of uncertainty on business investment and household precautionary saving as well as the degree to which business failures, joblessness, and interruptions to schooling might weigh on the economy. On the upside, many businesses have proved very resilient in adapting to virus-impacted conditions, and could surprise us in that regard again. Furthermore, in the aggregate, the saving rate is elevated and higher asset prices have buoyed wealth, factors that could boost household spending more than we expect.

Sporadic supply pressures could cause some higher readings on inflation, especially as activity rebounds with the take up of vaccination. However, we don't view these relative price changes as generating any meaningful upside risks to underlying inflation trends. The downside risks to our growth forecast also impart downside risks to our inflation projection. In addition, the long period of below-target inflation could make it difficult for policy to lift inflation expectations to the degree we have assumed in our forecast. So, on balance, we see the risks to the inflation forecast as tilted to the downside.

Respondent 4: My projections for output and unemployment are sufficiently downbeat that the uncertainty around them is broadly balanced. The risks to my inflation projections are weighted to the downside because inflation was stubbornly below target in the years leading up to the current recession, despite record low levels for the unemployment rate.

Respondent 5: In my baseline forecast submission, I assume that the current surge in virus cases in the U.S. is brought under control by social distancing and mask wearing and that, while there are targeted shutdowns in activity, widespread shutdowns are avoided. I assume that vaccines become available in 2021Q1 and are widely deployed in 2021Q3.

Conditional on this pandemic scenario, there are several downside risks to my forecast. First, a more severe turn in the virus could necessitate broader shutdowns in activity or generate a larger-than-expected pullback in spending by households and businesses, and higher levels of permanent layoffs and business closures and bankruptcies. My baseline forecast incorporates additional fiscal support, which will support the economy in the first half of 2021, but passage of this legislation is far from certain.

I expect to see further stress developing in the commercial real estate market but the stress could be larger than I have assumed.

In addition, the pandemic scenario on which I am conditioning my submitted forecast could be too optimistic.

At the same time, there are also upside risks to my forecast. The economy has exhibited more resiliency than expected throughout the pandemic, which suggests there could me more upward momentum than I have incorporated into my baseline. The news about vaccines has been very positive and the vaccines could be distributed faster than I have assumed. The pickup in activity and hiring post-vaccine deployment could turn out to be considerably stronger than I have assumed, in line with some of the anecdotal evidence of strong pent-up demand and firms being ready to ramp up quickly after the threat of the virus has subsided.

On net, I now view the risks to the real economy as being roughly balanced.

Regarding inflation, the potential for a stronger-than-expected recovery, coupled with supply constraints,

poses upside risks to my inflation projection. However, there is also the possibility that inflation expectations are anchored at a level below our inflation objective. During the past expansion, inflation was held down by idiosyncratic factors which could still be in place. In my view, the risks to inflation still appear tilted to the downside, although less so than in the past.

Finally, highly accommodative monetary policies across much of the globe are helping to boost the outlook and contributing to highly accommodative financial conditions. But an extended period of monetary accommodation could generate search-for-yield behavior and contribute to frothy financial conditions.

Respondent 6: I have marked up my post vaccine projections thus relative to September SEP - now project growth of 4.5% next two years and a record decline in the unemployment rate to my u* by year end 2022. With out new guidance and pent up demand/saving cushion / post herd immunity risk to inflation is to upside of 2%

Respondent 7: Despite the stronger-than-expected recovery so far and the recent positive news about vaccine efficacy, I view the risk weighting around my projections as remaining tilted to the downside. First, the stark resurgence of new COVID-19 cases may intensify further, triggering additional rounds of restrictive state and local health orders that curtail economic activity. Second, obstacles to the timely distribution and uptake of recently developed vaccines may arise and delay the lifting of the restrictive health orders and a resumption of normal activity. Third, lack of agreement in the U.S. Congress may delay or block the enactment of additional fiscal relief spending.

Respondent 8: My modal outlook assumes that the ongoing surge in Covid cases and hospitalizations leads to a short-lived retrenchment in mobility and economic activity, which I assume will be tempered by some form of additional fiscal relief. With vaccines expected to be in wide distribution in the second half of 2021, mobility and engagement begin to normalize quickly, and economic activity picks up rapidly. The pace of expansion moderates gradually over remainder of the forecast horizon.

Downside risks to the outlook include: an absence of near-term fiscal relief; a potential drop in consumer spending, as lower-income households exhaust their savings ahead of any fiscal relief; delays in vaccine rollout or take-up; and a larger than expected amount of small business failure and/or permanent job destruction. Upside risks include: the possibility that mobility and engagement fall less sharply than expected in response to the recent virus surge; a more rapid rollout of vaccines or other advances on the public health front; and the potential, once the pandemic has passed, for a rapid normalization of savings by middle to higher income households, fueling a larger-than-expected surge in spending.

I view the risks as tilted somewhat to the upside for GDP growth and roughly balanced for unemployment. For inflation, I also view the risks as roughly balanced, as there are structural technological factors competing with building cyclical forces.

Respondent 9: The overall economic impact of the likely-imminent arrival of effective vaccines presents an upside risk to my outlook, particularly given the possibility of a synchronized and rapid increase in activity across developed economies. Before that time, however, the current spike in cases combined with the uncertainty surrounding additional fiscal stimulus to bridge the gap until the arrival of widespread immunity are likely to weigh on economic activity, consumption, and employment. As a result, on the whole risks are still weighted to the downside, even though the vaccines have shifted the balance of risks around the medium term outlook in a positive direction.

Respondent 10: Although advances in vaccines and signs of the economy's greater resilience to waves of outbreaks have lowered my assessment of downside risks relative to September, the risks around my outlook for real activity remained somewhat skewed to the downside. My outlook is predicated on a fairly quick vaccination schedule (similar to that in the Tealbook) that allows for economic activity in pandemic-affected sectors to begin recovering somewhat more quickly than assumed in the Tealbook. Consequently, vaccination delays due to logistical issues, or public reluctance to vaccinate or to engage in some economic activities, could slow the economic recovery and are notable downside risks. In addition, given the continued surge in cases and strains on hospital systems, governments still may find it necessary to implement more stringent NPIs, or households and businesses may pull back more from still-hazardous activities, leading to weaker economic activity than I expect.

Also on the downside, damage to business prospects and private balance sheets could induce stronger recessionary dynamics than I currently expect, particularly if the pandemic persists and no fiscal relief is enacted. Weak state and local government finances could lead to significant austerity measures that have adverse effects on aggregate activity. Outside of the U.S., developments surrounding the U.K. – euro area trade negotiation still point to a significant risk of a hard Brexit with adverse effects on global economic and financial conditions. Finally, a failure to enact a fiscal package as I assume in my modal forecast would adversely affect the economic outlook and could exacerbate other downside risks.

On the upside, there are risks arising from an even quicker vaccine deployment or other effective treatments. Businesses and households may continue to be more effective in adapting to the pandemic environment, as they have been during the recovery. Fiscal policy actions could be larger or more effective in promoting recovery; similarly, accommodative financial conditions could be more effective than anticipated in promoting growth.

The risks around the inflation outlook are skewed somewhat to the downside, reflecting the downside risks to economic activity and risks of greater global disinflationary pressures. In particular, central banks in other advanced economies are extremely challenged in stabilizing their economies and achieving their inflation goals due to limited policy space. Negative shocks to foreign economies may only be partially offset by policy actions and thereby pose greater downside risks to U.S. economic activity and inflation.

Respondent 11: N/A

Respondent 12: The main downside risk is a further worsening of the public health situation. If this risk materializes, growth will be slower, unemployment higher and inflation lower than my baseline projection.

Respondent 13: The re-imposition of mandatory social distancing and its potential length is a downside risk to growth and an upside risk to unemployment. Those risks are offset for growth by the earlier-than-expected arrival of apparently very effective vaccines and treatments, which has substantially further diminished the likelihood of negative tail outcomes and increased the upside possibilities. I believe that early vaccination of high-risk populations will lead to significant declines in hospitalizations and deaths by the middle of 2021Q1, leading to pressure to reopen businesses and spurring more economic activity. This expectation is reflected in the sharp decline in unemployment during 2021 in my forecast, but upside risk to unemployment remains, due to potential labor market frictions that will be reinforced if a sharp slowdown occurs in December and January.

My inflation forecast balances the downside risks that renewed weakness on the back of already impaired economic activity will put downward pressure on wages and prices, with the greater chance that a quick snapback in demand in the first half of next year, reinforced by a sizeable fiscal stimulus package, could lead to higher-than-expected inflation in 2021 and early 2022 as demand outstrips supply for a time.

Respondent 14: My forecast assumes further fiscal stimulus or nearer term resumption of economic activity, and will rely on the timing of the broad distribution of the vaccine.

Respondent 15: It remains difficult to judge the magnitude of the negative effect on the economy from the current wave of the pandemic. In addition, the timeline for achieving widespread vaccination in the U.S. population is uncertain. Production and widespread distribution of the vaccine may take longer than in my baseline.

Respondent 16: The news of an effective COVID-19 vaccine has reduced the risks associated with extreme downside scenarios. Our projection for activity is weaker than the Tealbook's baseline forecast given the continued uncertainty around the evolution of the pandemic, and as a result we view the risks around our outlook as somewhat more balanced. More generally, on the downside, a worsening of the pandemic could trigger more restrictions, with greater scarring effects on productivity and employment over the medium term. On the upside, a quicker and more efficient rollout of the vaccine than anticipated could

lead to a faster rebound in economic growth. Activity also continues to surprise us to the upside, and could keep doing so, despite the worsening public health situation. Nevertheless, given the current state of the economy, the welfare implications of weaker activity remain more significant than those associated with faster growth.

Respondent 17: In my view, the next few months will be very revealing for the true strength of the economy as the effects of temporary fiscal policy support continue to wane. I am concerned that the reality of the first half of 2021 may be less positive than I have assumed, but I also see upside risks for economic activity associated with a faster-than-expected rollout of the vaccine.

Key Factors Informing Your Judgments regarding the Appropriate Path of the Federal Funds Rate

Question 3(b). Please describe the key factors informing your judgments regarding the appropriate path of the federal funds rate. If, in your projections for any year in the projection period, the unemployment rate for that year is close to or below your projection for its longer-run normal level and inflation is close to or above 2 percent, and your assessment of the appropriate level of the federal funds rate for that year is still significantly below your assessment of its longer-run normal value, please describe the factor or factors that you anticipate will make the lower-than-normal funds rate appropriate. If you have revised your estimate of the longer-run normal value of the federal funds rate since the previous SEP, please indicate the factor or factors accounting for the change. You may include any other comments on appropriate monetary policy as well.

Respondent 1: N/A

Respondent 2: Inflation is above 2.0 percent in 2021, and unemployment is on a path toward its long-run rate, which is reached in 2023. In my view there are significant costs to remaining at zero, including incentives for leverage and reaching for yield. Accordingly, liftoff occurs in 2023, though on a gradual pace to remain accommodative. My view of appropriate policy is well approximated by the ADAIT-2012 rule used in the latest Tealbook.

Respondent 3: In our view, appropriate policy will leave the federal funds rate at the effective lower bound into early 2025. At that time, we project inflation will finally be crossing 2 percent sustainably and, with output exceeding potential, will be on its way towards a persistent moderate overshooting of 2 percent. Given this inflation momentum, we've assumed a once-every-SEP-meeting path of rate increases commencing in 2025:Q1, with the funds rate reaching an equilibrium 2.50 percent in 2027. The Committee following through on strongly articulated forward guidance will be an important factor in achieving our macroeconomic objectives. Our forecast assumes that policy will aim for a healthy overshoot of 2 percent inflation, rather than trying to fine tune the overshoot to a tenth or two. Indeed, inflation rates in the vicinity of 2.5 percent for a while would be welcome. We assume asset purchases and qualitative forward guidance about them as communicated in Tealbook alternative B, but with a taper instead an abrupt cessation of purchases.

Respondent 4: My assessment of appropriate monetary policy reflects the highly adverse and uncertain effects of the coronavirus outbreak and the past, present, and potential future social distancing measures to mitigate the outbreak's spread. The recovery that started in May was strong but has slowed down. Economic activity still has a long way to go before it returns to pre-pandemic levels, especially in high-social contact services. The gradual and likely uneven recovery from here forward calls for the funds rate to remain at its effective lower bound for the foreseeable future. Even after the outbreak passes and social distancing measures are no longer in place, the economy will require the support of accommodative monetary policy for some time. Before the health crisis hit, the economy had not reached full employment and inflation had been running below target, so we started the current recession still in need of monetary accommodation more than a decade after the financial crisis. We should not repeat the mistakes made during that recovery of reducing accommodation prematurely – or even signaling that we might do so.

Respondent 5: The pandemic shock has been a very deep one and combines both demand- and supply-side aspects. In my forecast there is a relatively rapid recovery in terms of GDP growth, but the pandemic has accelerated some structural changes to the economy – e.g., establishment of more robust

supply chains, office space considerations – that will time some time to work through.

My forecast takes on board the FOMC's new consensus statement, which indicates that after periods in which inflation has run persistently below 2 percent, appropriate monetary policy will aim to achieve inflation moderately above 2 percent for some time in order to anchor inflation expectations and achieve our longer-run 2 percent inflation goal. I believe it will be appropriate to maintain a highly accommodative monetary policy throughout the forecast horizon in an effort to mitigate the current shortfall from maximum employment and to engender inflation outcomes above 2 percent in pursuit of our longer-run inflation goal.

In my forecast, the economy grows at an above-trend rate, the labor market steadily recovers, and inflation gradually rises over the forecast horizon. By the fourth quarter of 2023, inflation has risen to just over 2 percent and is on track to rise further, and labor market conditions have reached levels consistent with maximum employment. Under these conditions, it is appropriate for monetary policy to remain very accommodative but for the funds rate to have moved off of the effective lower bound.

My forecast assumes that we will continue to purchase assets at the current pace in 2021. With the economy making substantial progress toward maximum employment and price stability, I expect that additional purchases would be tapered in 2022 and halted in 2023, before the first increase in the fed funds rate.

I am assuming financial stability risks are not realized over the extended period at the ELB, but this is a risk that bears watching. Both the policy path and the pace of asset purchases could need to be adjusted if significant risks emerge.

Respondent 6: Per above, I am more bullish on economy than staff or consensus but this is not translating into an earlier lift off for the funds rate per our September guidance

Respondent 7: My near-term view of the appropriate funds rate path reflects the magnitude of the cumulative losses to production, employment, and income from the COVID-19 pandemic. In addition, the pandemic's continued negative effect on global aggregate demand will exert ongoing downward pressure on inflation in the near-term. Given that inflation was already below our 2 percent target before the pandemic, I view sustained and significant policy accommodation as essential to help return output to trend and to bring about a moderate overshooting of inflation above target so as to achieve an average inflation rate of 2 percent. Appropriate monetary policy is therefore highly accommodative for the next several years. I assume additional asset purchases and forward guidance about those purchases will be important elements of this accommodation. I view the new longer-run policy framework as consistent with this assessment and expect it will help solidify public expectations for this highly accommodative policy path.

Respondent 8: While the economy has bounced back rapidly from its trough earlier in the Spring, activity is still well below its potential, and inflation has fallen further. Monetary policy's role is to continue to support growth to help promote a rapid and full recovery.

Even after the economy has weathered the pandemic, the recovery is likely to be incomplete. Appropriate monetary policy will need to remain highly accommodative for employment to return to its maximum level and for inflation to moderately exceed 2 percent. Even with highly accommodative policy, the forces of technology and technology enabled disruption may mute the pricing power of businesses and limit progress toward achieving our inflation objectives.

That said, "highly accommodative" does not necessarily require the commitment to a funds rate at the effective lower bound until the FOMC's dual mandate objectives are achieved. Indeed, it is likely that such a commitment could lead to significant real and financial imbalances, and financial market distortions which could ultimately jeopardize achievement of the Committee's goals. For these reasons I expect it will be appropriate to modestly increase the funds rate—while still maintaining an accommodative stance—during 2023.

While we are in the teeth of this pandemic, I believe we should be using our tools to support the economy. However, once it becomes clear that we are beginning to weather this pandemic, I believe we should begin to taper some of the extraordinary measures we have taken as a result of COVID. In particular, we should begin the process of tapering our asset purchases. This tapering should help to limit the extent to which asset purchases bolster financial asset prices and encourage excessive risk-taking.

Respondent 9: This forecast is predicated on the assumption that the Committee will soon put

in place outcome-based forward guidance regarding purchases of Treasury and agency mortgage-backed securities. I anticipate these purchases will continue at their current pace until substantial further progress has been made on achieving the outcomes for liftoff of the federal funds rate, and that purchases would taper before ultimately concluding some time before liftoff. I do not anticipate that the conditions established for liftoff in the current FOMC statement will have been achieved within the forecast horizon. In particular, I do not anticipate that inflation will have risen to 2 percent, and be on track to moderately exceed 2 percent for some time, by the end of 2023.

Respondent 10: The principal factors behind my assessment of the appropriate path for monetary policy are my estimate of the natural real rate of interest, the economic outlook, and the balance of risks around that outlook.

As stated in my response to question 1(c), I have not changed my longer-run assumptions in this SEP, and so the range for r* remains 1/4 - 1/2 percent. Adding in the 2 percent inflation objective, the range for the longer-run federal funds rate is 2 1/4 - 2 1/2 percent, with 2 3/8 percent submitted as my estimate.

With inflation running below 2 percent, shortfalls from maximum employment persisting well into 2023, and the risks still to the downside, I judge that the federal funds rate should remain at its current range through the end of the projection horizon, consistent with the forward guidance in the FOMC statement. This policy path will support a moderate overshooting of inflation in 2023 and for some time after that.

In addition, to help support attainment of the FOMC's goals, I anticipate that assets purchases will continue at their current pace through the end of 2021. Depending on progress to the goals, purchases may need to be continued for some time after that, possibly at a slower pace.

Respondent 11: My judgment regarding the appropriate path of the federal funds rate is predicated on promoting sustainable economic growth, maximum employment, and price stability. My modal outlook over the next two years calls for the level of output to remain somewhat below its pre-COVID trend, the unemployment rate to persist above its longer-run level, and inflation to remain below two percent. Given this economic outlook, I expect that the federal funds rate will remain at the effective lower bound for some time.

In addition, I anticipate the need for a prolonged period of monetary accommodation in light of the recent period of below 2 percent inflation coupled with the Committee's aim to achieve inflation outcomes which average 2 percent over time. In 2023, I project that the unemployment rate will decline to its longer-run level and that inflation will rise slightly above 2 percent. However, I anticipate that a federal funds rate near zero — well below its longer-run level — will remain appropriate at that time to foster sustained rates of PCE inflation moderately above 2 percent. The degree and duration to which PCE inflation overshoots 2 percent will, under my view of appropriate monetary policy, depend on a broad range of factors including the performance of the real economy, the trade-off between higher consumer price inflation and financial and economic imbalances, and the evolution of inflation expectations.

In the process of forming my policy view, I consider the contour of rates prescribed by benchmark policy rules. However, I find policy rules less useful at this time for guiding the near-term path of the federal funds rate for three reasons. First, policy rules do not consider the need to manage risks to the outlook posed by recent developments. Second, in light of the uncertainty surrounding the economic outlook, the interest rate prescriptions from benchmark policy rules are also subject to considerable uncertainty at this time. Third, formalizing average inflation targeting into a policy rules requires a formulaic approach to averaging inflation outcomes. In the future, as risks either materialize or fade, uncertainty around the economic outlook normalizes, or inflation moves above 2 percent, benchmark policy rules may again serve as a useful reference for determining the timing and pace of future policy adjustments.

Respondent 12: Assuming the economy evolves as I expect, I deem appropriate for the federal funds rate to remain at the effective lower bound throughout the forecast horizon. GDP growth and unemployment will have converged by 2023. Inflation moderately over 2 percent in 2021 and 2022 will bring average inflation closer to 2 percent and will help anchor inflation expectations.

Respondent 13: My projection of rapid growth and steep decline in unemployment during 2021 leads to a faster return of inflation to 2 percent and a moderate overshoot of the inflation goal in 2022. Therefore, I respond with one increase in the funds rate in the fourth quarter of 2022 and three further roughly evenly spaced increases in 2023 to bring the federal funds rate to about 1.0 percent as growth and inflation stabilize around my longer-run expectations for those values.

To properly sequence the end of asset purchases with the first increase in the target range for the federal funds rate, I envision that the FOMC would begin to taper asset purchases when the unemployment rate converges toward 4.0 percent with inflation near 2.0 percent in the fourth quarter of 2021. Tapering of purchases would then be complete by June 2022, when unemployment is well below the staffs current estimate of the long-run normal rate, growth well above potential, and inflation above 2.0 percent.

The target for the funds rate in 2023 would still be well below my estimate of the long-run normal level and thus highly accommodative, such a setting is consistent with the consensus statement's emphasis only on shortfalls in employment as long as inflation remains no more than moderately above 2 percent and inflation expectations remain well anchored, as in my forecast. The setting of the federal funds rate at this level appropriately balances the risks to the FOMC's inflation goal in the expected environment, given my own view that small deviations in inflation or inflation expectations from 2 percent in either direction are not cause for alarm.

Respondent 14: My forecast assumes further fiscal stimulus or nearer term resumption of economic activity, and will rely on the timing of the broad distribution of the vaccine.

Respondent 15: I anticipate that the economic reallocation that will occur in response to the pandemic will take some time to play out, especially in the labor market. My forecast calls for the unemployment rate to be generally above the natural rate over the next two years and the inflation rate to remain below the FOMC target. Consequently, the federal funds rate remains near the ELB over the forecast horizon.

Respondent 16: Monetary policy is conditioned on asset purchases at the longer end of the maturity spectrum to foster accommodative financial conditions that provide households and businesses with adequate credit support. The decision not to extend the deadline for 13(3) facilities funded by the CARES Act comes at a critical juncture when the pandemic is worsening and banks are tightening their credit standards. This makes it more difficult for firms to obtain the funding necessary to get them to the second half of next year, when the vaccine should provide widespread immunity, and increases the likelihood of additional bankruptcies, layoffs, and a more prolonged slowdown. Our baseline is predicated on the 13(3) facilities resuming with the new administration and being fine-tuned to effectively ease credit conditions for smaller businesses most affected by the crisis.

Respondent 17: In my projection, an accommodative stance of monetary policy will be required for a considerable period in order to support a robust labor market recovery and a rise in inflation consistent with the Committee's objectives. I project that the policy rate will be need to held at the effective lower bound through 2022 and that liftoff will occur in late 2023.

Forecast Narratives

Question 4(a). Please describe the key factors, potentially including your assumptions about changes to government policies, shaping your central economic outlook and the uncertainty and risks around that outlook.

Respondent 1: N/A

Respondent 2: Stronger data since the prior submission imply a more positive outlook for GDP in 2020 Q4, which may carry into Q1. Household demand has been resilient in the face of a worsening pandemic and waning fiscal support. Looking ahead to the first quarter, I place high probability on legislative roadblocks to further stimulus post the one being discussed now. But several mitigating factors may serve as backstops to the recovery, including elevated savings, low inventories, and growing confidence in the vaccine. My view is that full normalization of activity begins in late 2021 and is realized in 2022.

Respondent 3: Our conditioning assumptions for the path of vaccine deployment are close to the Tealbook. In the meantime, the surging caseloads and associated restrictions on business activity will leave a large imprint on the economy this winter, though we don't expect it will be enough to push first-quarter growth into negative territory. This outcome also assumes that fiscal support of around $1 trillion materializes shortly. With vaccine developments shortening the time to the post-pandemic economy, we assume that this degree of stimulus will be adequate to blunt recessionary dynamics emanating from business closures and labor market scarring. However, we don't think that there will be enough fiscal support to alleviate all of the strains on state and local government budgets, which will generate a drag on activity through much of the forecast period.

Given these factors, we expect growth to be around 6 percent annual rate in 2020:Q4, but then dip close to zero in early 2021. As vaccination rates build up through the winter and spring, we see a surge in activity, with the economy returning to a semblance of business-as-usual by the second half of 2021. Our projection for growth for the year as a whole is 3-3/4 percent. A back-to-normal environment, accompanied by accommodative monetary policy, produces output growth above potential in 2022 and 2023.

We project that the output gap will be closed in the middle of 2021 and that the economy will overshoot potential by a fairly sizable margin by the end of the forecast period. Given this growth projection, and with supply-side labor market disruptions subsiding, we project the unemployment rate will be 6.8 percent in the fourth quarter of 2020, and fall to 5.0 percent in 2021:Q4, 4.5 percent in 2022:Q4, and 3.7 percent in 2023:Q4. We also think that by the end of the forecast period, the natural rate of unemployment will have returned to the long-run level of 4-1/4 percent that we assumed prior to the pandemic.

On inflation, the incoming data point to sluggish aggregate demand dominating any pressures coming from supply chain bottlenecks. We see core inflation coming in at 1.4 percent in 2020. Then, aided by a noticeable overrun of potential output, accommodative monetary policy, and a well-communicated commitment by the FOMC to overshooting, we forecast inflation will rise to 2.0 percent in 2023 and 2-1/4 percent in 2024. We anticipate some temporarily higher inflation readings in 2021, in part due to the mechanical rolling off of low readings from last spring as well as from some supply bottlenecks as activity bounces back strongly. Crucially, we assume that the Committee will see through these transitory developments, which will help affirm its commitment to getting inflation moving higher.

The key factors shaping uncertainty and the risks to the forecasts were discussed earlier in the risks and uncertainty sections.

Respondent 4: The coronavirus and the past, present, and potential responses to it, both official and unofficial, dominate my outlook. I expect the disruptions from the virus to be persistent, especially for activities with high levels of social interaction. The rapid recovery experienced earlier this year has slowed dramatically, and it will take a long time and control of the virus through testing, treatment, or vaccination to get the rest of the way back to pre-pandemic levels of activity. In addition, the longer it takes to control the virus, the more likely businesses are to declare bankruptcy, resulting in additional, significant scarring in business and labor markets. As a result, I expect that the recovery will be very gradual.

Respondent 5: The Covid-19 pandemic is a global public health crisis that has inflicted pain and hardship on people all over the world. Macroeconomic forecasting remains particularly challenging given the uncertainties about the course of the pandemic and the difficulties in extracting the signal about the underlying state of the economy from extreme swings in the economic data. The pandemic and economic shutdown represented an unprecedented situation that resulted in unprecedented job losses and a strong contraction in activity in the first half of the year followed by a sharp rebound in the third quarter. The country is now experiencing another widespread rise in virus cases, which is putting strains on the medical system. There is uncertainty about the extent to which this will affect economic activity. At the same time, vaccine developments have been very positive, but there is uncertainty about the timing of the widespread deployment of the vaccines. The level of uncertainty surrounding the forecast remains higher than normal, but it has come down considerably since earlier in the year.

In my baseline forecast submission, I assume that the current surge in virus cases in the U.S. is brought under control by social distancing and mask wearing and that, while there are targeted shutdowns in activity, widespread shutdowns are avoided. I assume that vaccines become available in 2021Q1 and are widely deployed in 2021Q3.

Under this scenario, I expect economic growth to slow this winter before picking up markedly in the spring of 2021 as vaccines are distributed and people begin to feel more comfortable reengaging in more economic activities. I anticipate that additional fiscal relief will help to support the economy in the first half of 2021. The recovery continues over the rest of the forecast horizon, with growth above trend, declines in the unemployment rate, and gradually rising inflation. The recovery will be uneven, with some sectors recovering faster than others, and given the severity of the shock, it will take some time to move to a more broad-based sustainable recovery. Changes in consumer behavior including shopping and dining preferences, household living preferences, firms' demand for office space, and the reestablishment of more robust supply chains could all necessitate structural changes to the economy; some workers will need to retool for jobs in different sectors. All this will take some time to work itself through.

To achieve my forecasted outcomes, monetary policy will be highly accommodative over the forecast horizon. By the fourth quarter of 2023, the economy is still growing at an above-trend rate, inflation has risen to just over 2 percent and is on track to rise further, and labor market conditions have reached levels consistent with maximum employment, with the unemployment rate under by estimate of its longer-run level. Under these conditions, it is appropriate for monetary policy to remain very accommodative but for the funds rate to have moved off of the effective lower bound.

My forecast assumes that we will continue to purchase assets at the current pace in 2021. With the economy making substantial progress toward maximum employment and price stability, I expect that additional purchases will be tapered in 2022 and halted in 2023, before the first increase in the fed funds rate.

I am assuming financial stability risks are not realized over the extended period at the ELB, but this is a risk that bears watching. Both the policy path and the pace of asset purchases could need to be adjusted if significant risks emerge.

There are both downside and upside risks to my forecast. I now view the risks to the real economy as being broadly balanced, rather than tilted to the downside as in my September SEP submission. On the downside, there is the potential for a more adverse pandemic scenario than I have assumed, in which case the pullback in activity through voluntary and involuntary restrictions could be sharper than I have assumed. This could lead to more business failures and bankruptcies, especially among small businesses, and to more permanent job losses, which would take longer to reverse. The lack of additional fiscal support also poses a downside risk.

On the upside, the economy has exhibited more resiliency than expected throughout the pandemic, which suggests there could me more upward momentum than I have incorporated into my baseline. The news about vaccines has been very positive and the vaccines could be distributed faster than I have assumed. The pickup in activity and hiring post-vaccine deployment could turn out to be considerably stronger than I have assumed, in line with some of the anecdotal evidence of strong pent-up demand and firms being ready to ramp up quickly after the threat of the virus has subsided.

Regarding inflation, I see the risks as tilted to the downside, but less so than in past submissions. The

potential for a stronger-than-expected recovery, coupled with supply constraints, poses upside risks to my inflation projection. However, there is also the possibility that inflation expectations are anchored at a level below our inflation objective, and during the past expansion, inflation was held down by idiosyncratic factors which could still be in place.

Respondent 6: I assume a roughly 1 trillion fiscal package gets done in the next 2 months

Respondent 7: Aggressive and timely monetary and fiscal policy actions helped mitigate the severe downside impacts of the COVID-19 pandemic on economic activity in the first half of 2020. These actions have also contributed to the ongoing rebound in the second half of the year. The major hit to the economy from the COVID-19 pandemic has been due to a sharp drop in aggregate demand. But there has also been some short- and medium-run damage to the level of potential output. Most notably, investment has declined and labor market frictions have risen. My forecast assumes a relaxation of COVID-19 containment measures as recently developed vaccines are deployed during 2021, leading to a recovery in individuals' mobility and economic engagement. However, I project that some degree of restraint on economic activity lingers for the medium term. I assume significant fiscal relief during the first quarter of 2021, although there is uncertainty regarding the timing, size, and composition of the legislation. The uncertainty surrounding my economic forecast is higher than normal. This uncertainty stems from: (1) the path of new COVID-19 cases, (2) the distribution and uptake of recently developed vaccines (3) the uncertain timing, size, and composition of additional fiscal relief spending. Given these extraordinary and challenging events, the risks to my forecasts for output growth, employment, and inflation are weighted to the downside.

Respondent 8: In the near term, the factors affecting the outlook and risks about it center squarely on the evolution of the Covid-19 pandemic, the public-health actions taken to address it, and the public's behavioral responses, as well as the actions taken by fiscal authorities.

The ongoing Covid surge is likely to weigh on economic activity through the winter months and contribute to a period of elevated uncertainty. Beyond that, the likelihood of widespread vaccine distribution in the second half of 2021 should lead to increasing mobility and engagement, providing a boost to economic activity.

As the impetus from rising mobility and engagement eventually wanes, the usual factors of business and household income loss, labor market frictions, and precautionary behavior will likely play a greater role in the economy's recovery. On net, I expect that the initial rapid pace of improvement will, by 2022, give way to a pace more typical of recent recoveries.

I believe additional fiscal support will be needed: in the very near-term to provide a bridge for the unemployed and lower-income households until economic activity begins to recover more rapidly, and beyond that, for states and localities, in order to avoid more severe headwinds to growth as the economy continues to recover.

Respondent 9: Uncertainty and risks associated with the COVID-19 pandemic continue to play a key role in shaping both the modal outlook and the assessment of risks. This forecast assumes that economic activity is likely to be significantly afftected over the next few months by the resurgence of the virus. It also assumes that the arrival of vaccines later in 2021 represents a potentially large and synchronized exogenous shock across most developed economies, making possible a strong growth projection for next year despite what is anticipated to be a very slow start.

While widespread vaccination will hopefully soon begin to normalize social interaction and the attendant economic activity, another key factor in this forecast is the assumption of additional fiscal policy support in the next two to three months. This additional support is crucial to provide a bridge for struggling cash-constrained households, states and localities, and small businesses, hopefully enabling them to weather the next six months and avoid longer-term economic damage .

Respondent 10: As the course of the pandemic and the measures and actions to address it, including fiscal policies, are primary influences on the medium-term economic outlook, I begin with a short

description of the assumptions regarding those factors.

I assume a timeline of vaccinations for COVID-19 similar to that in the Tealbook, which will allow for a greater reopening of the economy beginning in mid-2021, somewhat earlier than that assumed in the Tealbook and in my September submission. In the interim before widespread vaccination, I believe that there will be more stringent government and private actions to address the recent surge in the pandemic, which will adversely affect growth in 2020Q4 and 2021Q1, although to a much lesser extent than in March and April.

I see the monetary and fiscal policy actions since March as instrumental in limiting the economic damage from the pandemic. Focusing on fiscal policy, I assume an additional fiscal package of around $350 billion, moderately below my assumption in September, will be passed soon. The direct effects of this package would occur primarily in the first half of 2021, but will be important to mitigate longer-term scarring effects on the economy as it emerges from the pandemic recovery. The risks to this assumption are two-sided: It is possible that the larger package currently being discussed in Congress will pass, but I also see significant chances that no package is enacted.

Turning to my economic projection, the economy continued to rebound more strongly in recent months than I anticipated in September. Nevertheless, some of the recent data indicate that the recent surge in the COVID-19 outbreak has begun to impact growth more adversely, and I anticipate somewhat slower growth in this quarter and the next than I would have a month ago. Overall, I project that real GDP growth over this year will be about -2 1/2 percent, better than the -3 1/2 percent I projected in September.

As I stated above, vaccinations become sufficiently widespread for a greater economic reopening in mid-2021. That reopening, the assumed fiscal package, and continued accommodative monetary policy thus help growth to rebound starting in 2021Q2. Overall, I project growth in 2021 to be near 4 1/2 percent. Part of this strong 2021 growth is a pulling forward of growth that would have occurred in 2022 - 23. Nevertheless, recovery dynamics and continued accommodative monetary policy lead to growth in those years that is above my assumption of its potential rate. As a result, the path of real GDP through the projection horizon is moderately above that under my September projection, and the level at end-2023 is modestly above the level implied by real GDP rising at its potential rate from 2019Q4.

The decline in the unemployment rate from the surge in March and April has continued to be stronger than I had expected. Given my outlook of above potential real GDP growth, I project that the unemployment rate will continue to fall quite quickly over the rest of the projection horizon. By the end of 2023, it is below my estimate of u* and just below its level of 2019Q4, consistent with the projected level of real GDP at that horizon.

Inflation developments since September have had little net effect on my projection: The stronger data in the late summer and early fall were offset by the weak data in September and October (the November CPI and PPI data were largely consistent with my outlook). Consequently, I still expect core PCE inflation to rise gradually from 1.4 percent in 2020 (Q4/Q4) to 2.1 percent in 2023. Beyond the projection horizon, I anticipate that inflation will be moderately above 2 percent for some time, consistent with the forward guidance in the FOMC statement.

Respondent 11: Central economic outlook: After historically large contractions in GDP and employment in the second quarter, economic activity rebounded in the third quarter as parts of the economy reopened. Recent news on the vaccine has been promising, suggesting that a vaccine for the coronavirus is likely to be widely available during the second half of next year. Given this development, I expect growth to pick up in the second half of next year as the economy fully reopens and households begin to re-engage with the parts of the economy that require close contact. However, recent indicators suggest that the rapid increase in coronavirus cases over the last few months may slow the pace of the recovery before a vaccine is widely available. With respect to inflation, aggregate inflation continues to be held down by a lack of demand for some contact-intensive services. However, other parts of the economy are encountering robust demand, stimulated in part by policy, against a backdrop of pandemic-induced supply constraints.

Uncertainty and risks: Uncertainty about future growth, employment, and inflation are higher than usual and I see both upside and downside risks around my outlook. On the downside, the rapid rise in virus cases over the last few months implies that a risk that the economic recovery could lose significant

momentum before a vaccine becomes widely available. The failure of further fiscal support to materialize, especially as elements of the CARES act have expired, also poses a growing threat to my near-term economic outlook. On the upside, a new fiscal support package could be larger and arrive earlier than I am currently expecting which would give the economy some additional support prior to the vaccine's arrival. Moreover, earlier distribution of the vaccine could make households less cautious about the outlook and cause them to increase their demand for goods and services, leading to a more robust recovery than I have currently assumed under my modal outlook. If these risks of higher demand are realized, supply constraints in some sectors could put upward pressure on prices and cause inflation to rise faster than my modal projections.

Respondent 12: My projections rely on the economy continuing to adjust to the disease, in spite of the recent worsening in the public health situation. As a baseline, I expect the pandemic crisis to recede over the forecast horizon (2020-2023) as vaccines will become widely available next year. I expect a small fiscal package (about $900 billion) to be enacted in the next few months and to provide additional short-term support for the economy.

Respondent 13: The most prominent feature of my forecast remains the way in which governments, households, and businesses are likely to respond to the presence of COVID-19 and the distribution of what appear to be highly effective and safe vaccines and much better treatments. This leads to a clear dichotomy in the near-term and the medium- and longer-term forecasts.

In the near-term, increasing numbers of states and localities are responding to rising hospitalizations by re-imposing restrictions on economic activity and issuing stay-at-home orders. The high frequency indicators show that these policies began to have significantly negative effects on the economy at the end of November, and those are likely to compound in December and into January. I expect the next two months to see rising unemployment and significant strains on brick-and-mortar businesses as spending shifts back online and toward necessities.

Because of these ramifications of the renewed partial lockdowns, I expect that we will see passage of the bipartisan $900 billion fiscal package, and that the unemployment and PPP part of that package will offset some of the near-term damage so that a robust recovery can resume in the second half of 2021Q1. My forecast assumes that hospitalizations and deaths will decline rapidly beginning in mid-February as a sufficient number of high-risk individuals can be vaccinated in the first half of the first quarter, and that stocks of the very promising antibody treatments expand. As hospitals empty and people see treatments working, this round of mandatory restrictions will reverse and people who are in lower-risk categories will become even more willing to engage in economic activity than they were over the summer and most of the fall.

That reduction in social distancing behavior, combined with the effects of the fiscal stimulus and the continued reduction in savings rates will jumpstart growth and employment beginning in March or early in Q2. With widespread vaccinations occurring by the end, of Q2 sectors that had been largely offline will begin to restart, leading to rapid declines in unemployment and further release of pent-up demand but most of this is pull-forward of growth that had been in later quarters.

Growth in 2022 remains well above potential as employment strengthens further, reduced uncertainty and pent-up demand spurs consumption out of still above-trend savings, and marginally more stimulus than in the Tealbook baseline from continued asset purchases in 2022H1. In 2023, growth converges toward my longer-run normal rate of 2.0.

Respondent 14: My forecast assumes further fiscal stimulus or nearer term resumption of economic activity, and will rely on the timing of the broad distribution of the vaccine.

Respondent 15: I expect that the current wave of the virus will have a negative impact on the economy into the first quarter of next year. However, given the positive developments surrounding the development and approval of new vaccines, I am optimistic that the pandemic will be under much better control and that new cases will begin steadily moving down in the spring. Nonetheless, I see significant uncertainties

surrounding any timeline for achieving widespread vaccination of the U.S. population. By summer, my baseline forecast has the economy firmly on its transition to a new normal, though there will be long-lived effects from the pandemic. It is likely that sectors such as education, healthcare, and travel will take quite some to recover from the COVID shock, and what the new normal will be in those sectors is uncertain. In addition, state and local government budgets are being hard hit and are unlikely to be a significant source of hiring and spending over the medium term. My forecast assumes that a new fiscal stimulus package is implemented that will be in the form of enhancements to existing programs rather than the roll out of major new initiatives.

Respondent 16: The United States is in the midst of a widespread second-wave of the pandemic, with record number of daily deaths. While a second wave was largely anticipated by epidemiologists, the surprise so far has been the willingness of elected officials and consumers to trade worse public health outcomes for a better economy. As a result, economic activity has not suffered as much as expected, with spending holding well entering the fourth quarter. Nevertheless, with hospital capacity under pressure, some states such as California and Ohio have recently adopted more stringent containment measures. Whether a significant number of other states will follow remains to be seen and likely depends on the extent to which the pandemic worsens during the winter months. Even if containment measures have been limited so far, high-frequency indicators point to a weakening of labor market conditions and a softening in spending in COVID-sensitive service sectors in the second half of November.

Our near-term outlook is still conditioned on increased social distancing and containment measures that will damp economic activity in the first half of 2021. However, our assessment of the economic damage associated with the second wave is smaller, as the containment measures are expected to be less stringent than previously thought. We continue to expect a fiscal policy package early next year of around 900 billion dollars that will partially offset the effects of mandated and voluntary measures to contain the pandemic and the unwinding of previously enacted fiscal stimulus.

In particular, we expect growth in first half of the year to be roughly flat given the ability of firms and consumers to better adapt to social distancing requirements and our expectation that support from fiscal policy will limit the economic fallout from the second wave. Given this trajectory for economic growth, the pace of hiring should slow significantly before picking back up towards the middle of next year, when the vaccine will start to provide widespread immunity and the health emergency will subside. Fiscal policy support remains crucial though, given the fragility of the economy in the near term.

As concerns monetary policy, keeping credit available through 13(3) facilities is especially important at a time when the pandemic is worsening and banks are tightening their credit standards. The decision not to extend the deadline for 13(3) facilities funded by the CARES Act could limit the ability of firms to sustain their operations amid economic weakness. Our baseline outlook is predicated on reopening the programs and revising their lending terms to make them more attractive to potential borrowers—especially small businesses with limited nonbank funding sources. Our outlook also assumes asset purchases concentrated at the longer end of the maturity spectrum to ensure that financial conditions remain highly accommodative in the near term.

Beyond the first half of next year, the news of an effective vaccine has reduced concerns for tail outcomes, and our medium-term outlook now features a quicker return to full employment as the vaccine should reduce the potential for more extensive supply-side damage. Nevertheless, we expect that a greater reliance on remote work and teleconferencing will limit work-related travel and accommodations in the medium term. For example, the hotel industry is now forecasting a return to normal for the high profit-margin business travelers only in two-to-three years. More reliance on work from home also means that activity in business districts will likely remain subdued for some time, negatively impacting services that cater to office work. These factors will, to some extent, limit the strength of the projected recovery.

In all, we expect the unemployment rate to be slightly below 6 percent by the end of next year, and to reach our estimate of full employment in 2023. As concerns inflation, supply damage to the economy, despite being relatively contained, is expected to offset some of the shortfall in aggregate demand, and as a result inflation is projected to run very close to 2 percent by the end of the forecast horizon.

Respondent 17: I continue to assume some additional fiscal support will be forthcoming in the near-term that will bolster the economy in the first half of 2021. Nonetheless, my outlook features a rather slow recovery as businesses and households grapple with the economic reality of waning fiscal support from the CARES Act, a relatively weak labor market featuring elevated frictional unemployment, and ongoing business caution while the pandemic persists. These conditions will necessitate an accommodative monetary policy stance for a considerable period.

Forecast Narratives (continued)

Question 4(b). Please describe the key factors, potentially including revisions to your assumptions about changes to government policies, causing your forecasts to change since the previous SEP.

Respondent 1: N/A

Respondent 2: N/A

Respondent 3: The incoming data have been stronger than we had expected in September. We were again surprised by businesses' ability to adapt to operating safely in the presence of the virus and by people's willingness to undertake more activity. Our fiscal policy assumptions are the same in size, but the package is coming later than we assumed in September. All told, we now project GDP growth will fall 2.0 percent this year, versus a 3.5 percent decline in our last SEP. The resurgence in the virus is stronger and more widespread than the scattered outbreaks we had assumed in September, and thus have a larger impact on output in the near term. On the other hand, we now assume vaccines will be available sooner. On net, by the end of 2021, our projected level of GDP is roughly 1-1/4 percentage points higher than we forecast in the last SEP. The unemployment rate has also fallen faster than we projected. Consequently, we lowered our forecast of it by 3/4 percentage point in 2020, 1/2 percentage point in 2021, and 1/4 percentage point in 2022 and 2023.

Our inflation forecast has changed little from September.

Respondent 4: Since the September SEP, I have been surprised to the downside by the rapid rise in cases and the limited official response. But vaccine developments have been a positive surprise. In addition, economic activity has picked up a bit more than I had expected. The outlook for additional fiscal support remains unclear. Uncertainty about the virus, its effects, and the response to it remains very high.

Respondent 5: The incoming data suggest a more rapid rebound in economic activity and hiring, and slightly higher inflation readings, than I had been expecting in September.

Respondent 6: N/A

Respondent 7: The rebound in economic activity during the second half has been stronger than I expected in the previous SEP. This is attributable to the effectiveness of earlier monetary and fiscal policy actions, along with successful adjustments by households and businesses to socially-distanced economic activities. I assume that monetary policy will remain highly accommodative for the next several years. In addition to taking into account fiscal stimulus from the CARES Act and other fiscal relief packages already enacted, my forecast assumes that an additional fiscal relief package will be implemented in early 2021.

Respondent 8: Labor market conditions improved more quickly than expected since the Summer, and my outlook takes these developments into account. Compared with June, I now also see stronger real output growth in both 2020 and 2021. Three factors have increased my optimism. First, we are realizing that the "recessionary dynamics" that we feared as a result of this pandemic, have not yet materialized, likely due to fiscal relief measures. Second, the vaccine news has been more positive than we expected, and the timing of broad dissemination of the vaccine is likely sooner than we expected. Finally, people and companies are proving to be more adaptable and resilient than we expected—and have adjusted their behaviors in order to continue to engage in economic activity.

Respondent 9: Economic data received since the previous SEP have been stronger than anticipated. Additionally, the strong likelihood that an effective vaccine will be widely available to the

public by the summer has improved the outlook for spending and employment over the medium term. Financial conditions have also continued to improve, particularly for market-based financing, as the boost to financial market sentiment from news of multiple effective vaccines has outstripped the near-term concerns resulting from the dramatic rise in cases. As a result, this forecast reflects the existing improvement in employment this year and projects a smaller contraction of GDP in 2020, slightly stronger growth in 2021 and 2022, with slightly less growth in 2023 as the recovery is pulled forward a little bit.

Respondent 10: The rebound in real activity and the labor market generally has been stronger than anticipated at the time of the September SEP submission. As a result, I have raised my real GDP growth projection and lowered my unemployment projection for 2020.

Given my assumptions regarding the pandemic, vaccinations, and fiscal policy, the path of the level of real GDP is moderately higher over the entire projection horizon, even though my growth projections for 2021 – 23 are all somewhat below those in my September SEP projection.

With the lower starting point and the higher path of real GDP, my projected path of the unemployment rate is lower than that in my September SEP submission over the projection horizon. Even though the pace of the decline slows from the pace since April, unemployment still declines extraordinarily fast by historical business cycle standards, befitting the unusual nature of this cycle.

Respondent 11: Relative to my September projections, my current outlook calls for a slightly smaller decline in economic activity in 2020 as many parts of the economy regained traction more quickly than I expected. However, the virus has spread more rapidly than expected since the time of our September projections and I expect that coronavirus cases will remain somewhat elevated until a vaccine is widely available. This evolution of the virus has again caused targeted restrictions in some activities, although I do not expect another broad lockdown like the one we observed in March and April of this year. With regards to fiscal policy, I continue to anticipate another round of fiscal support will be enacted sometime before the middle of next year albeit at a reduced level compared with the CARES act.

Respondent 12: While the pandemic has worsened more than I had anticipated, the healthcare system appears better equipped to manage the situation than in the spring, and efficacious vaccines have materialized sooner than I had expected. I now attach a higher probability to the enactment of further fiscal stimulus.

As households and firms continue to adjust to the disease, my projections are now for somewhat stronger growth in the second half of this year. As the pandemic crisis recedes, I now expect higher GDP growth in 2022. Unemployment has been declining faster than I expected in September and I project these sharper declines to continue until convergence is achieved in 2022. I expect headline and core inflation to be slightly lower than I projected in September, but to evolve along a similar path.

Respondent 13: The primary changes to my forecast, excepting the dynamics of a sharp slowdown in December and January due to government efforts to control COVID-19 and avoid hospital overcrowding, result from the faster-than-expected development of effective vaccines and treatments. The effect of these changes is to pull forward growth from the second half of 2021 and 2022 into the second quarter of 2021.

Respondent 14: My forecast assumes further fiscal stimulus or nearer term resumption of economic activity, and will rely on the timing of the broad distribution of the vaccine.

Respondent 15: I expect a modest fiscal stimulus package to be enacted by Congress. As well, I expect that the rollout of COVID vaccines will go reasonably well and that widespread vaccination will be achieved by next summer.

Respondent 16: Our outlook for real activity has improved. In the near-term, the economic fallout from the second wave of the pandemic is expected to be more contained, albeit at the cost of worse

public health outcomes. In the medium term, demand is stronger because of the news of a highly effective vaccine, which eventually will support more spending on services that require high social contact. The inflation outlook has been revised up marginally to reflect the revisions to the projected pace of economic activity.

Respondent 17: Much of the data on real activity in recent months has been stronger than expected and has caused me to revise real GDP growth higher and the unemployment rate lower for 2020. I have maintained my real GDP growth projections for 2021-23, implying an overall faster economic recovery given the upward revision for growth in 2020. As a result of the stronger recovery path projected for the economy, I have lowered my unemployment rate forecast and raised my inflation projection over the forecast horizon. I now project inflation rising above 2 percent in 2023 and liftoff of the federal funds target rate by the end of 2023. My views about the path of the pandemic have not changed materially, with a maintained assumption that an effective vaccine will be widely deployed during the second half of 2021.

Forecast Narratives (continued)

Question 4(c). Please describe any important differences, potentially including those related to your assumptions about changes to government policies, between your current economic forecast and the Tealbook.

Respondent 1: N/A

Respondent 2: My unemployment path is higher than in the Tealbook due to a higher forecast for labor force participation following vaccine rollout, and more gradual re-employment of long-term and jobless unemployed. Additionally, I have less confidence that stimulative monetary policy will bring about an unprecedented decline in the unemployment rate. In contrast to the current Tealbook, I maintain the prior Tealbook assumption of herd immunity in 2021Q4, due to challenges regarding production, distribution and adoption.

Respondent 3: Our fiscal policy assumptions differ from the Tealbook, as we are conditioning on about $1 trillion in stimulus begin enacted around turn of the year. Our assumptions for public health developments are in line with the Tealbook's baseline scenario. Our monetary policy liftoff occurs around the same time as in the Tealbook, but subsequently follows a somewhat steeper path. The broad contours of our growth forecast are similar to the Tealbook's. Nevertheless, we have the unemployment rate higher in 2021-2023, reflecting our somewhat more pessimistic view of the medium-term labor market damage caused by the recession. This also comes through in somewhat lower rates of GDP growth in 2021 and 2022.

We see inflation reaching target in 2023 and beginning to overshoot in 2024, a year earlier than the Tealbook. This represents a somewhat more positive view about the ability of monetary policy communications to lift inflation expectations and the underlying trend in inflation. Part of this reflects our assumption that the Committee will communicate the desirability of overshooting 2 percent inflation by much more than the de minimis amounts found in the Tealbook longer run forecast.

Respondent 4: I think the effects of the coronavirus outbreak will be comparable to the Tealbook's "Second Round of Severe Restrictions" scenario. Once the outbreak passes, I think monetary policy will need to be very accommodative, for longer than in the Tealbook baseline.

Respondent 5: Qualitatively, my projection is similar to the Tealbook forecast. Like the Tealbook, I now expect a smaller decline in GDP in 2020 than I had in my September SEP submission. And like the Tealbook, I expect that the economy will grow at an above-trend pace over 2021-2023. The unemployment rate has fallen rapidly since peaking this spring. I project further but small declines over the rest of the forecast horizon. I expect inflation to gradually rise over the forecast horizon as the recovery broadens. Quantitatively, I see somewhat more inflationary pressure than in the Tealbook, with inflation moving slightly above 2 percent by the end of 2023 even though the unemployment rate is not as far below my estimate of its longer-run level as in the Tealbook. Monetary policy is highly accommodative over the forecast horizon in both my forecast and the Tealbook forecast, but while the Tealbook assumes that the funds rate will remain at the effective lower bound until 2025, in my forecast it is appropriate for the funds rate to move up by 25 basis points in 2023. Unlike the Tealbook, I assume further fiscal stimulus will support spending in 2021H1.

Respondent 6: N/A

Respondent 7: The two projections are largely in alignment around the anticipated path for the federal funds rate. However, I am projecting a somewhat stronger recovery for real GDP during 2021, mainly because I assume a substantial fiscal relief package is passed early in the year. Tealbook projects a faster recovery in the labor market, projecting unemployment to decline to 3.4 percent by the end of 2022, and 3.0 percent by 2023. By contrast, I project unemployment to decline to 4.2 and to 3.7 percent over these time frames. I project a similar inflation path to Tealbook, as core PCE inflation reaches 1.9 percent by the end of 2023 in both forecasts. My expectation of a higher unemployment path implies a need for additional policy accommodation including expanded additional asset purchases and forward guidance about those purchases.

Respondent 8: Relative to the Tealbook, I see a somewhat less robust growth in GDP in 2022. With respect to the unemployment rate, my projected path is higher than the Tealbook's, by a small amount, as I see a somewhat smaller decline over 2021, but after that the pace of improvement is roughly similar to that in the Tealbook.

The differences in our outlooks for inflation, both headline and core, are not material.

The biggest difference in my outlook relative to the Tealbook's is, of course, regarding the policy path. I expect that it will be appropriate for policy to remain highly accommodative throughout the forecast horizon. At the same time, though, in order to avoid generating real and financial imbalances that could impede the attainment of the FOMC's goals, I expect that modest increases in the funds rate will be needed well before the Tealbook baseline's lift-off in 2025.

Respondent 9: Compared with the Tealbook projection, my forecast includes an additional round of fiscal stimulus before the end of the first quarter of 2021.

Respondent 10: Regarding the underlying assumptions in the forecasts, one difference is the fiscal assumption, where my projection assumes a $350 billion package whereas the Tealbook forecast assumes no package. On the pandemic, even though I agree with the Tealbook's assumption regarding the path of vaccination, I anticipate that economic activity in affected sectors will rebound somewhat more quickly as vaccination becomes more widespread than does the Tealbook.

Given the high uncertainty around forecasts in the current environment, the general contours of my projections for real GDP are broadly in line with the Tealbook forecast, and the projected level of real GDP in 2023Q4 is about the same for both sets of projections. As I have noted previously, there are some differences in the timing of the rebound in growth in 2021, which have to do with the differing assumptions regarding fiscal policy and the reopening of economic activity with vaccination.

While close to the Tealbook in the near term, my projection for the path of the unemployment rate in 2022 – 2023 is moderately above that in the Tealbook, despite the Tealbook having a somewhat higher u*. This difference seems to be due to modestly higher projections for labor force participation (as a strong labor market pulls in more prospective workers) and productivity growth than in the Tealbook.

The other difference between these forecasts concerns inflation. Although the forecasts are fairly close though 2022, my projection has inflation beginning to overshoot 2 percent in 2023, while the Tealbook does not anticipate that occurring until 2025 (based on its long-term outlook). This difference appears to be occurring because of the Tealbook's assumption that underlying inflation is 1.8 percent: to push inflation above 2 percent under the Tealbook's assumptions thus requires an extended period of low unemployment.

Respondent 11: My projections suggest that the economy will begin losing some momentum in the fourth quarter of this year rather Tealbook's assumption of a weaker first half of next year, which leads to a slightly different profile of growth projections. Overall, my projections call for a slower recovery of the labor market and output relative to Tealbook over the next couple of years. In my projections, I have assumed another round of fiscal support will be enacted sometime before the middle of next year.

Respondent 12: My GDP growth and unemployment projections are broadly consistent with the Tealbook for 2020 and 2021. With convergence occurring at a quicker pace, I expect growth in 2022 and 2023 to be lower than the Tealbook and unemployment to be higher.

Consistent with the Tealbook, I project PCE inflation to moderately overshoot its 2.0 percent long-run value. However, I project this to occur sooner, starting in 2021 and continuing throughout 2022, and for inflation to peak at a higher value before converging to its long-run value in 2023.

My view of the appropriate path for the federal funds rate coincides with the Tealbook over the forecast horizon 2020-2023.

Respondent 13: My forecast for growth and employment largely follows the Tealbook alternative with fiscal stimulus, with the trajectory somewhat steepened in the first half of 2021 by my assumption that mandatory social distancing will be curtailed by reductions in hospitalizations and deaths resulting from

early vaccination of high risk populations and increasing availability of effective treatments by the end of the first quarter, rather than by the achievement of herd immunity from widespread vaccine distribution later in 2021.

My forecast for inflation in 2021 and 2022 is also a quarter point higher than Tealbook baseline. Faster growth and rapid declines in unemployment in 2021 owing to the "dual stimulus" of fiscal support and earlier-than-expected declines in social distancing should put upward pressure on categories that have seen weak inflation in 2020, such as rent and personal services. This spurt in demand drives prices higher given likely need to bring supply back on line due to business failures in 2020. As in the "Inflation pressures" scenario, higher actual inflation in 2021 reinforces the Committee's communications in raising inflation expectations, which, along with lower-than-expected unemployment, speeds up the shift that staff expects in inflation dynamics (described in the Tealbook box).

Respondent 14: My forecast assumes further fiscal stimulus or nearer term resumption of economic activity, and will rely on the timing of the broad distribution of the vaccine.

Respondent 15: My forecast is somewhat less optimistic than the Tealbook. I expected somewhat slower economic growth and a slower rebound in the labor market. Resource reallocation across the economy in response to the pandemic and longer-term responses to this shock by households and firms will likely be a protracted process.

Respondent 16: Our forecast for economic activity is somewhat weaker than the Tealbook. In the near term, we expect a slower pace of growth from the second wave of the pandemic, despite an offset from fiscal policy. Over the medium term, the return to full employment occurs more slowly as we expect the effects of the pandemic on the demand for some services, especially those related to office work and travel, to be more persistent.

Respondent 17: I have a slower pace of improvement in labor market conditions than in the Tealbook. I see the unemployment rate returning to its longer run level of approximately 3.8 percent by the end of 2023, whereas Tealbook projects a much stronger labor market with the unemployment rate of 3.0 percent in 2023. In my view, the pandemic has contributed to a more rapid pace of structural change in the economy that will result in reallocation challenges for a segment of workers, thus contributing to some additional structural unemployment relative to the pre-COVID period.