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

Percent

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

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

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

Table 1.A. Economic Projections for the first half of 2019*
(in percent)

Medians, central tendencies, and ranges

	Median	Central tendency	Range
Change in real GDP	2.6	2.6	2.6
September projection	2.6	2.5 – 2.6	2.3 – 2.6
PCE inflation	1.4	1.4	1.4
September projection	1.3	1.3 – 1.4	1.3 – 1.4
Core PCE inflation	1.5	1.5	1.5
September projection	1.4	1.4 – 1.5	1.4 – 1.6

Participants' Projections

Projection	Change in real GDP	PCE inflation	Core PCE Inflation
1	2.6	1.4	1.5
2	2.6	1.4	1.5
3	2.6	1.4	1.5
4	2.6	1.4	1.5
5	2.6	1.4	1.5
6	2.6	1.4	1.5
7	2.6	1.4	1.5
8	2.6	1.4	1.5
9	2.6	1.4	1.5
10	2.6	1.4	1.5
11	2.6	1.4	1.5
12	2.6	1.4	1.5
13	2.6	1.4	1.5
14	2.6	1.4	1.5
15	2.6	1.4	1.5
16	2.6	1.4	1.5
17	2.6	1.4	1.5

*Growth and inflation are reported at annualized rates.

Table 1.B. Economic Projections for the second half of 2019* (in percent)

Medians, central tendencies, and ranges

	Median	Central tendency	Range
Change in real GDP	1.8	1.6 – 1.8	1.6 – 2.0
September projection	1.9	1.8 – 2.0	1.6 – 2.2
PCE inflation	1.6	1.4 – 1.6	1.4 – 2.0
September projection	1.7	1.7 – 1.9	1.5 – 2.0
Core PCE inflation	1.7	1.7 – 1.9	1.7 – 2.1
September projection	2.2	2.0 – 2.2	1.8 – 2.2

Participants' Projections

Projection	Change in real GDP	PCE inflation	Core PCE Inflation
1	1.8	1.6	1.9
2	1.8	1.4	1.7
3	2.0	1.8	1.9
4	1.6	1.6	1.7
5	1.8	1.6	1.7
6	1.8	1.6	1.9
7	1.6	1.6	1.9
8	1.8	1.6	1.7
9	1.8	1.6	1.7
10	2.0	1.4	1.7
11	1.8	1.6	1.9
12	1.8	1.4	1.7
13	1.6	1.6	1.7
14	1.8	2.0	2.1
15	1.6	1.6	1.7
16	1.8	1.6	1.7
17	1.8	1.4	1.7

*Projections for the second half of 2019 implied by participants' December projections for the first half of and for as a whole. Growth and inflation are reported at annualized rates.

Table 2. December economic projections, 2019-22 and over the longer run (in percent)

Projection	Year	Change in real GDP	Unemployment rate	PCE inflation	Core PCE Inflation	Federal funds rate
1	2019	2.2	3.6	1.5	1.7	1.63
2	2019	2.2	3.5	1.4	1.6	1.63
3	2019	2.3	3.5	1.6	1.7	1.63
4	2019	2.1	3.6	1.5	1.6	1.63
5	2019	2.2	3.5	1.5	1.6	1.63
6	2019	2.2	3.6	1.5	1.7	1.63
7	2019	2.1	3.5	1.5	1.7	1.63
8	2019	2.2	3.6	1.5	1.6	1.63
9	2019	2.2	3.5	1.5	1.6	1.63
10	2019	2.3	3.5	1.4	1.6	1.63
11	2019	2.2	3.6	1.5	1.7	1.63
12	2019	2.2	3.5	1.4	1.6	1.63
13	2019	2.1	3.6	1.5	1.6	1.63
14	2019	2.2	3.6	1.7	1.8	1.63
15	2019	2.1	3.6	1.5	1.6	1.63
16	2019	2.2	3.5	1.5	1.6	1.63
17	2019	2.2	3.6	1.4	1.6	1.63
1	2020	2.0	3.8	2.0	2.0	1.63
2	2020	2.1	3.4	1.7	1.9	1.63
3	2020	2.2	3.4	1.8	1.9	1.63
4	2020	2.0	3.6	1.7	1.8	1.88
5	2020	2.0	3.5	1.9	1.9	1.63
6	2020	2.0	3.5	1.9	1.9	1.88
7	2020	2.3	3.5	1.9	1.9	1.88
8	2020	2.1	3.5	1.9	1.9	1.63
9	2020	2.0	3.6	1.9	1.9	1.63
10	2020	2.2	3.6	1.8	2.0	1.88
11	2020	1.9	3.6	1.7	1.7	1.63
12	2020	2.3	3.3	1.8	1.9	1.63
13	2020	1.8	3.8	2.1	2.1	1.63
14	2020	2.0	3.8	1.9	1.9	1.63
15	2020	2.0	3.5	1.8	1.8	1.63
16	2020	2.1	3.5	1.9	1.9	1.63
17	2020	1.8	3.7	2.0	2.0	1.63

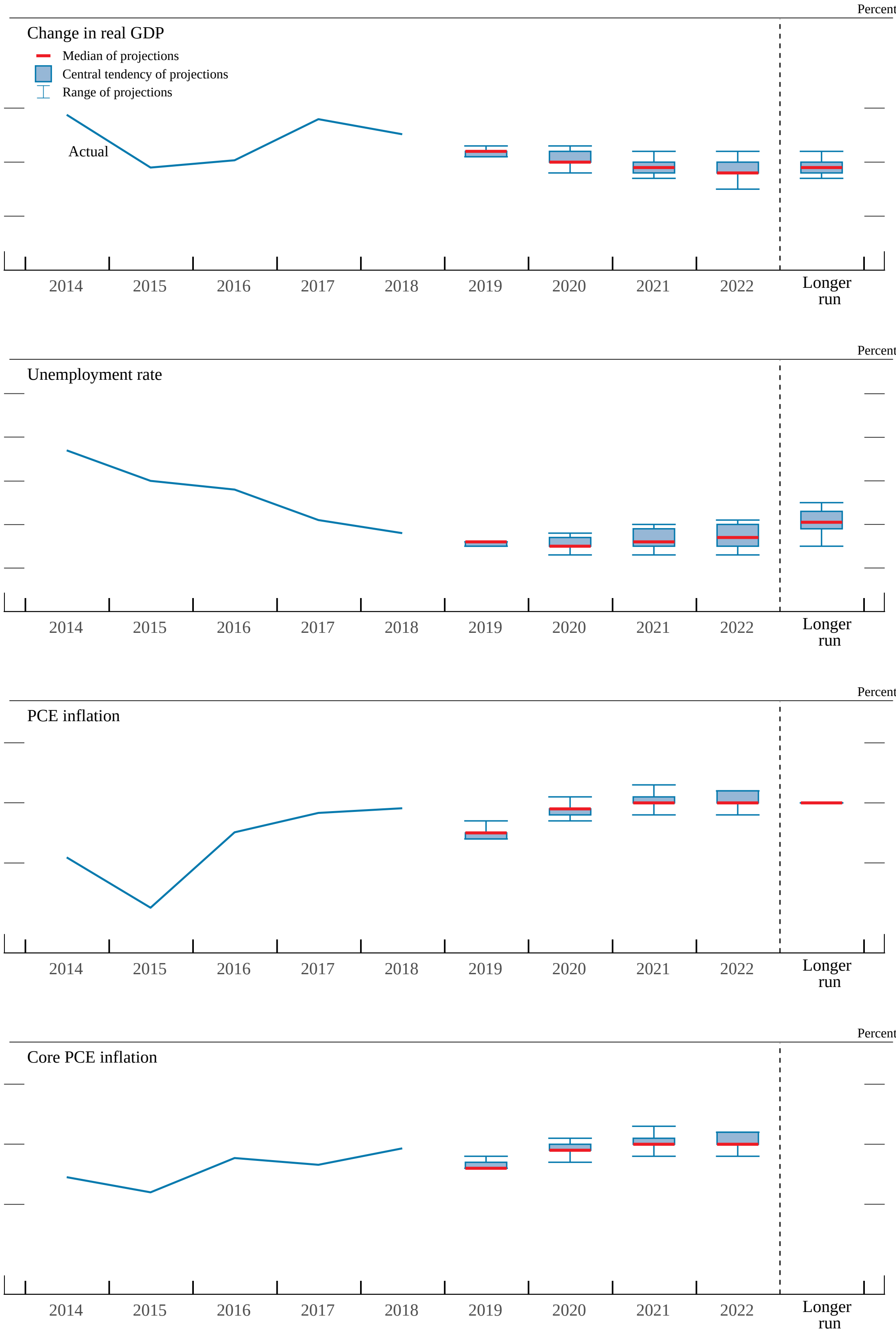
Table 2. ***(continued)***

Projection	Year	Change in real GDP	Unemployment rate	PCE inflation	Core PCE Inflation	Federal funds rate
1	2021	2.0	4.0	2.0	2.0	1.63
2	2021	1.8	3.4	2.0	2.0	1.88
3	2021	2.2	3.4	2.0	2.0	2.13
4	2021	1.9	3.9	2.0	1.8	2.13
5	2021	1.8	3.6	2.0	2.0	2.13
6	2021	1.7	3.5	2.1	2.1	2.38
7	2021	2.0	3.8	2.0	2.0	2.38
8	2021	1.9	3.7	2.1	2.1	1.88
9	2021	2.0	3.6	2.0	2.0	1.88
10	2021	2.1	3.7	2.0	2.0	2.38
11	2021	1.8	3.6	1.8	1.8	1.63
12	2021	1.9	3.3	2.0	2.0	1.63
13	2021	1.9	3.9	2.3	2.3	2.13
14	2021	2.1	3.9	2.1	2.1	1.63
15	2021	1.8	3.6	2.0	2.0	1.63
16	2021	1.9	3.5	2.1	2.1	1.88
17	2021	1.8	3.8	2.0	2.0	2.13
1	2022	2.0	4.1	2.0	2.0	1.63
2	2022	1.8	3.4	2.0	2.0	1.88
3	2022	2.2	3.4	2.0	2.0	2.63
4	2022	1.9	4.1	2.0	2.0	2.38
5	2022	1.8	3.7	2.0	2.0	2.38
6	2022	1.5	3.6	2.2	2.2	2.63
7	2022	2.0	4.0	2.0	2.0	2.88
8	2022	1.8	3.9	2.1	2.1	2.13
9	2022	2.0	3.6	2.2	2.2	2.13
10	2022	2.0	3.8	2.0	2.0	2.88
11	2022	1.8	3.6	1.8	1.8	1.88
12	2022	1.7	3.3	2.0	2.0	1.88
13	2022	2.0	4.0	2.2	2.2	2.38
14	2022	2.2	4.0	2.1	2.1	1.88
15	2022	1.7	3.7	2.1	2.1	1.88
16	2022	1.8	3.5	2.2	2.2	2.13
17	2022	1.8	3.8	2.0	2.0	2.38

Table 2. ***(continued)***

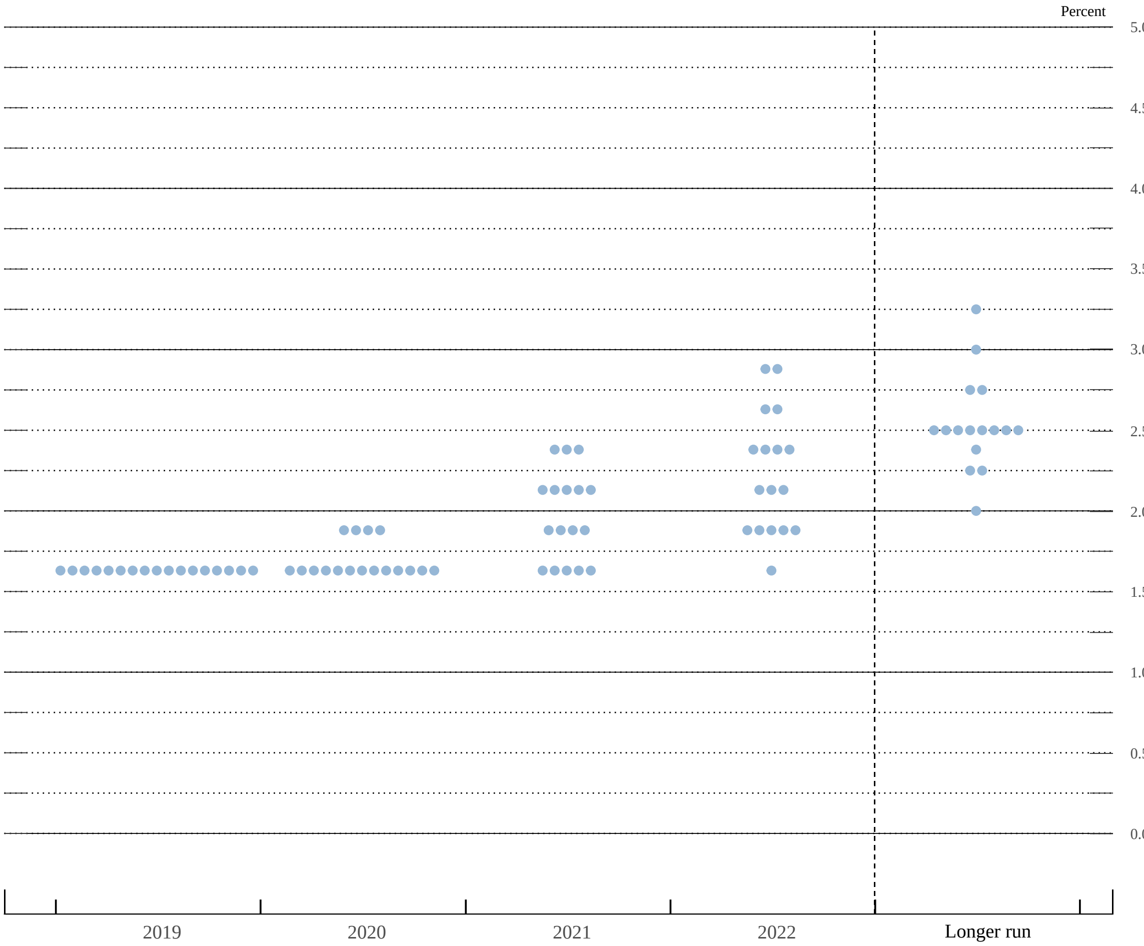
Projection	Year	Change in real GDP	Unemployment rate	PCE inflation	Core PCE Inflation	Federal funds rate
1	LR			2.0		
2	LR	1.8	4.3	2.0		2.50
3	LR	2.1	3.9	2.0		2.50
4	LR	1.9	4.5	2.0		2.50
5	LR	1.9	4.0	2.0		2.38
6	LR	1.7	4.2	2.0		2.50
7	LR	2.0	4.3	2.0		2.75
8	LR	1.9	4.1	2.0		2.25
9	LR	2.0	4.0	2.0		2.25
10	LR	2.0	4.0	2.0		3.00
11	LR	1.8	4.4	2.0		2.50
12	LR	1.7	3.5	2.0		2.00
13	LR	2.0	4.3	2.0		3.25
14	LR	2.2	4.0	2.0		2.50
15	LR	1.7	3.8	2.0		2.50
16	LR	1.8	4.2	2.0		2.75
17	LR	1.8	3.8	2.0		2.50

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



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

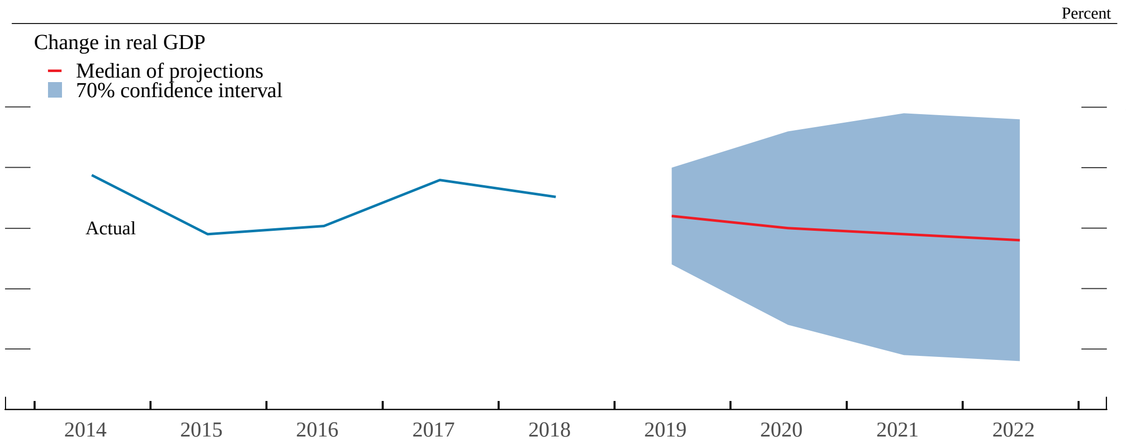
Figure 2. FOMC participants' assessments of appropriate monetary policy: Midpoint of target range or target level for the federal funds rate



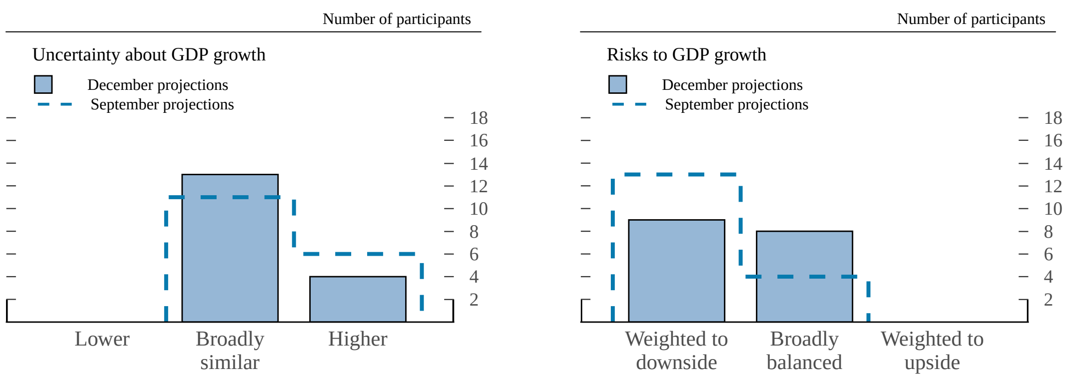
Note: Each shaded circle indicates the value (rounded to the nearest 1/8 percentage point) of an individual participant's judgment of the midpoint of the appropriate target range for the federal funds rate or the appropriate target level for the federal funds rate at the end of the specified calendar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

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

Median projection and confidence interval based on historical forecast errors



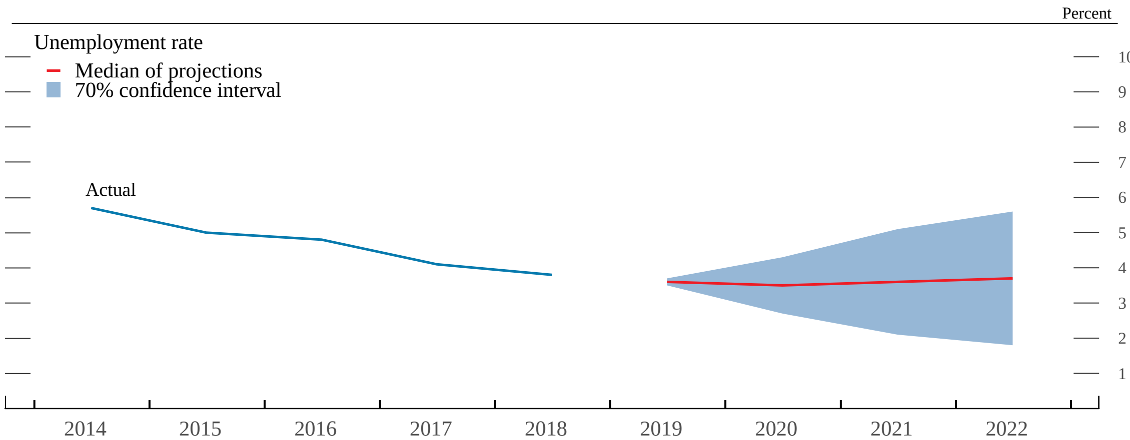
FOMC participants' assessments of uncertainty and risks around their economic projections



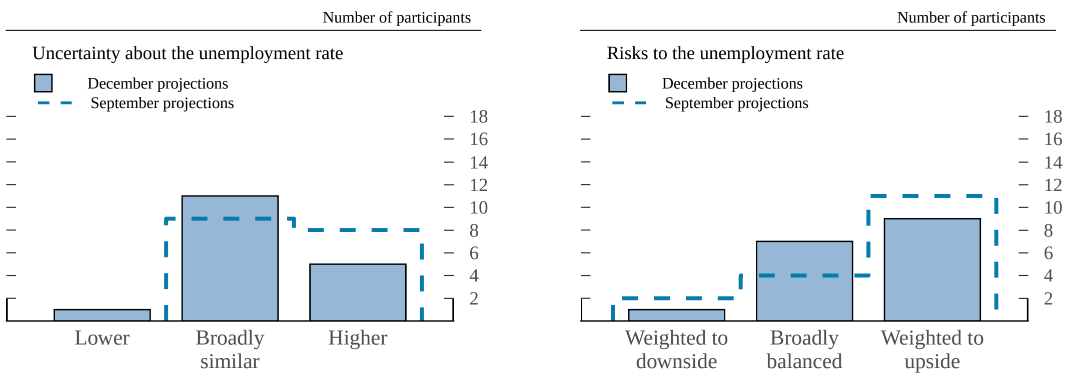
Note: The blue and red lines in the top panel show actual values and median projected values, respectively, of the percent change in real gross domestic product (GDP) from the fourth quarter of the previous year to the fourth quarter of the year indicated. The confidence interval around the median projected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

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

Median projection and confidence interval based on historical forecast errors



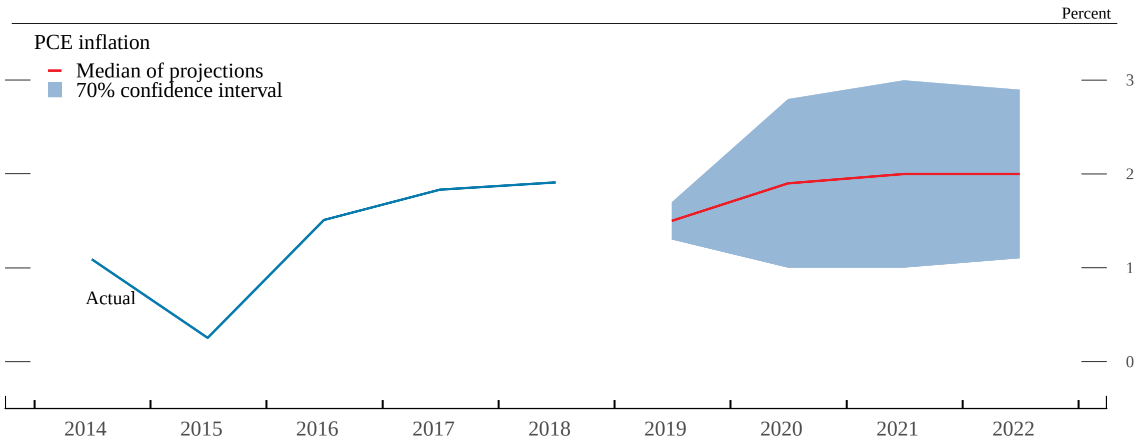
FOMC participants' assessments of uncertainty and risks around their economic projections



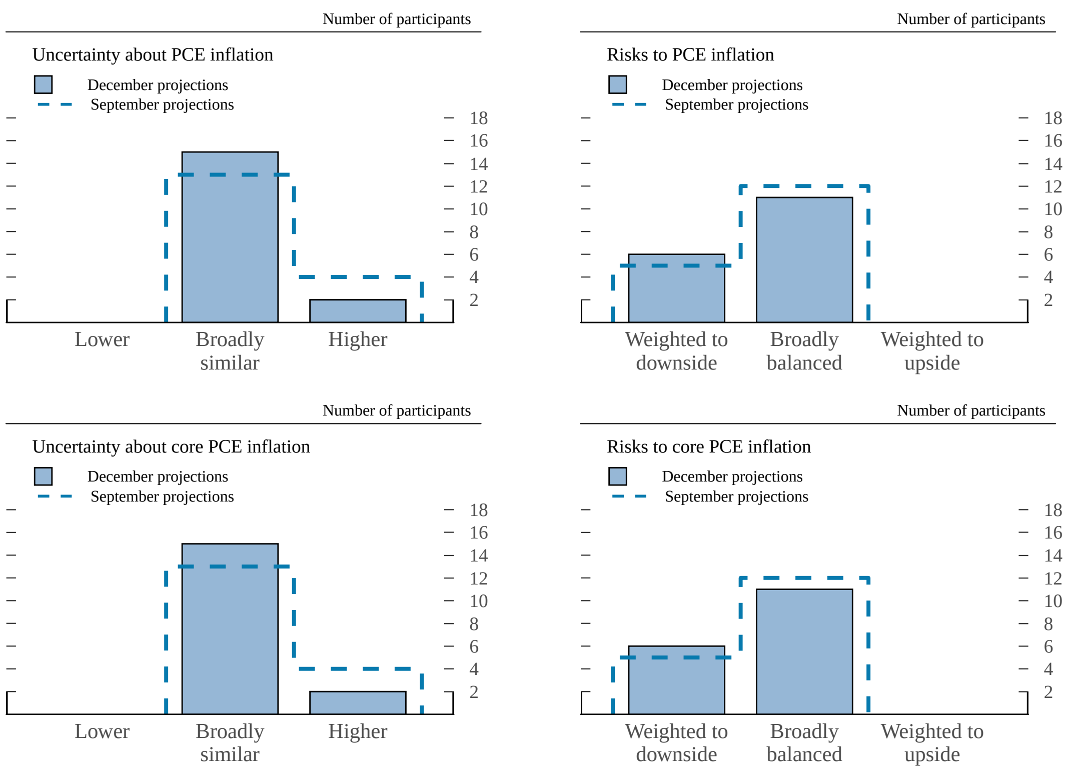
Note: The blue and red lines in the top panel show actual values and median projected values, respectively, of the average civilian unemployment rate in the fourth quarter of the year indicated. The confidence interval around the median projected values is assumed to be symmetric and is based on root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

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

Median projection and confidence interval based on historical forecast errors



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



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

Table 3. Uncertainty and risks

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	B	B	A	B	A	B	B	B	A	B	B	B	B	B	B	B
Unemployment rate	A	B	C	A	B	A	B	B	B	A	B	B	B	A	B	B	B
PCE inflation	B	B	B	B	B	A	B	B	B	B	B	B	B	A	B	B	B
Core PCE inflation	B	B	B	B	B	A	B	B	B	B	B	B	B	A	B	B	B

A = Higher   B = Broadly similar   C = Lower

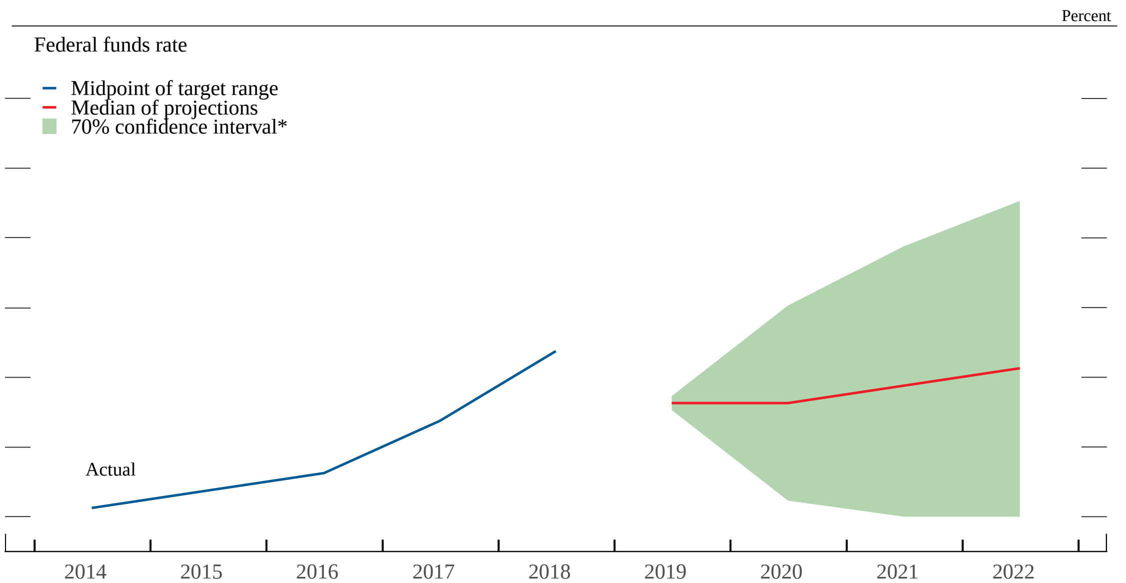
Question 2(b): Please indicate your judgment of the risk weighting around your projections.

Individual responses

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

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

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.

Longer-run Projections

Question 1(c). If you anticipate that the convergence process will take SHORTER OR LONGER than about fix 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: Based on recent data and our projections, we expect deviations of headline and core inflation from their 2.0% targets in 2019 and deviations from their long-run values conditional on the current regime of GDP growth and unemployment in 2019. The current regime, characterized by low productivity growth, no recession, and a low real interest rate on short-term government debt, features GDP growth of 2.0 percent, an unemployment rate of 4.25 percent, and inflation of 2.0 percent. Assuming appropriate monetary policy, we project GDP growth and inflation to converge to their long-run values for the current regime in 2020, while the unemployment rate will remain below 4.25 percent until 2023. Because there are multiple potential medium term outcomes, we cannot provide a single set of longer-term projections for GDP growth and unemployment. Calculating an average of these variables based on outcomes in multiple regimes is potentially misleading. We do provide a 2.0 percent longer-run inflation projection that is independent of the regime.

Respondent 2: N/A

Respondent 3: N/A

Respondent 4: I anticipate that the economy will converge to my longer run forecast within five years.

Respondent 5: The evidence since September does not warrant any further change to my estimate of 1.9 percent for the potential growth rate of the economy.

As for u*, recent data and analysis suggest no change in my estimate of the longer-run normal rate of unemployment of 4.0 percent.

My assessment of appropriate monetary policy is consistent with an undershooting of the longer-run normal unemployment rate for the next several years to help to pull inflation up to 2 percent by 2021. I expect real GDP growth, unemployment and inflation all to be at their longer-run levels by the mid-2020s.

Respondent 6: Monetary policy remains accommodative and has become more so since the time of the September projections. Even with the policy rate anticipated to remain somewhat below the neutral rate over most of the forecast horizon, it will take longer than five years for the economy to converge to the longer-run level of the unemployment rate.

Respondent 7: N/A

Respondent 8: We are at or past full employment. However, we continue to run below our inflation target. I believe that structural forces of technology and globalization are likely to continue to mute inflation pressures, offsetting the cyclical pressures. In all, I expect headline PCE inflation to gradually move back to the 2-percent goal. With fiscal stimulus fading and the economy facing headwinds from slower growth abroad and from heightened uncertainty, I believe that prospects for domestic growth have diminished. With appropriate monetary policy, growth is likely to remain at or somewhat below potential growth. Decelerating rates of growth will still be sufficient to stabilize and then gradually reduce the unemployment gap. As growth slows, it is possible that we will be more vulnerable to adverse shocks and policy missteps. But in the absence of new shocks and with appropriate policy, I would expect convergence in about 5 years.

Respondent 9: N/A

Respondent 10: N/A

Respondent 11: Real GDP growth will likely converge to its longer-run level during the first half of next year and remain at that level throughout the forecast horizon. 12-month measures of PCE inflation will likely remain somewhat below two percent throughout the forecast horizon, reflecting persistent disinflationary global factors. Whether the unemployment rate will eventually converge toward my estimate of its longer-run level is uncertain. Although I see the unemployment rate remaining below my estimate of its longer-run level over the forecast horizon, there is substantial uncertainty around estimates of the longer-run unemployment rate. Should the unemployment rate stabilize at a low level without signs of building inflationary pressures that would suggest that such a level may be consistent with sustainable growth over the medium-term.

Respondent 12: N/A

Respondent 13: N/A

Respondent 14: N/A

Respondent 15: Modestly accommodative monetary policy and a small, but waning, effect from fiscal stimulus will keep growth a bit above trend and the unemployment rate just below the natural rate for a few years before returning to longer-run sustainable levels. The overshooting of full employment is accompanied by inflation gradually returning to target by 2021.

Respondent 16: N/A

Respondent 17: N/A

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: Heightened uncertainty associated with trade policy and the potential effects on supply chains, capital expenditures, and hiring combine to increase uncertainly regarding GDP growth and unemployment relative to prior years.

Respondent 2: N/A

Respondent 3: N/A

Respondent 4: Uncertainty surrounding output growth and unemployment remains elevated by ongoing heightened uncertainty surrounding trade policy and fiscal policy. Persistent low longer-term interest rates raises uncertainty about the economy's potential growth rate. The impact on inflation uncertainty is less pronounced given flat slope of the Phillips curve. However, I remain concerned about inflation that has been running persistently below the Committee's target.

Respondent 5: Uncertainty around my projections for economic activity and inflation has decreased moderately since the September SEP, but I consider uncertainty still to be broadly similar to the SEP standard. Continued trade tensions, volatile financial markets (even if less so than earlier in the year), slower global growth, significant political tensions across the globe, the expected path of fiscal policy, limited policy space in some foreign economies, and the possibility of "too low" U.S. and global inflation expectations are sources of uncertainty.

Respondent 6: We continue to believe that there is more uncertainty than normal around the behavior of nominal and real variables. For one, engineering a soft landing from below in the labor market through a prolonged growth recession may be hard to achieve. This process will likely be even more challenging given a more uncertain political environment than we have seen in the past. We also have little historical evidence on the behavior of inflation during a prolonged period of low unemployment rates. It is also difficult to pin down the level of the equilibrium unemployment rate with a great deal of certainty given the current small inflation/unemployment tradeoff. Taken together these factors lead to an inflation outlook that is more uncertain than normal.

Respondent 7: N/A

Respondent 8: I believe that political-economy risks in the U.S. and abroad have abated in recent months, but nevertheless remain somewhat elevated. The likelihood of a no-deal Brexit and concerns about debt sustainability in Italy appear to have declined. Uncertainty surrounding trade and tariff disputes remains significant and is likely having a negative impact on business investment and manufacturing growth, both in the US and abroad. At the same time, changes in the level and shape of the government bond yield curve suggest that the risk of a material deterioration in the economic outlook has lessened since September. I believe the uncertainty around the modal outlook is now not much different from what we've seen in the recent past.

Respondent 9: N/A

Respondent 10: N/A

Respondent 11: N/A

Respondent 12: The current level of uncertainty lies somewhere between the low levels experienced during the Great Moderation and the high levels experienced during the financial crisis and its immediate aftermath.

Respondent 13: N/A

Respondent 14: I write down u* = 4% but just as likely it is 3.75 - very flat posterior

Respondent 15: Uncertainty about my projection for economic activity and inflation is similar to its average level over the past 20 years. Inflation remains anchored by stable longer-run inflation expectations at the FOMC's stated goal of 2 percent.

Respondent 16: The direction of trade policy, the growth prospects of our major trading partners, and the degree to which business caution might extend into hiring and thus weigh more heavily on domestic activity all remain highly uncertain. However, the apparent stabilization in some indicators of foreign growth and continued solid performance of the U.S. labor market suggest these risk factors may be less powerful than they appeared in September. Accordingly, our assessment of the uncertainty over our growth and unemployment forecasts remains in the "broadly similar to historical average" bucket.

Important uncertainties remain over the prospects for inflation achieving our symmetric objective during the projection period. The latest slippage in core inflation highlights the continued concern that inflation expectations and underlying inflation trends are too low. That said, the stability since September in financial market inflation compensation and survey measures of inflation expectations suggest that inflation expectations have not slipped further since the last SEP. Uncertainty about the current level and prospective path for the short-run neutral interest rate remains high. This makes it difficult to judge if enough policy accommodation is in place to generate the desired overshooting of target in our inflation forecast, though with the changes in our funds rate path we have somewhat more confidence that policy is commensurate with reaching our symmetric inflation objective. Balancing these factors, we continue to think the overall assessment of inflation uncertainty falls into the "broadly similar" category.

Respondent 17: N/A

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: With respect to GDP growth, the current productivity regime is in its low state. A higher productivity regime is possible, but we see no compelling reason to predict a switch at this time. However, as changes in fiscal and regulatory policy, as well as advances in technology, continue to affect the economy, more rapid GDP growth is possible. On the other hand, we see trade policy as generating substantial downside risk for growth. A weak global economy is a related reason for concern. Albeit lessened recently, the possibility of a persistent yield curve inversion is a additional reason for concern. Thus, we view the risk as weighted to the downside.

Concerning unemployment, the current rate is on the low end for an economic expansion. If a recession were to occur, the unemployment rate would rise substantially and quickly. While we have no compelling reason to predict a recession during the forecast horizon, many forecasting models indicate elevated recession probabilities. As suggested above, the interaction between US and foreign trade policies raises the probability that trade and other disruptions might increase unemployment. On the other hand, we also see the possibility of further small declines in the unemployment rate, if GDP growth surprises on the upside. Overall, consistent with our view about GDP growth, we see upside risk.

For core PCE inflation, we place negligible weight on the prospect of Phillips Curve effects. However, there is some risk that such effects assert themselves and inflation moves higher. Trade policy changes might also put some upward (temporary) pressure on import prices. On the other hand, a weak global economy could offset this price pressure. Despite monetary policy actions during 2019, it is also possible that inflation expectations drift even lower and become anchored at a low level. Overall, we view the risks on this variable as weighted to the downside.

For PCE inflation, the risks include those identified for core PCE inflation. In addition, PCE inflation depends on energy prices. A disruption in energy supplies would put upward pressure on energy prices. On the other hand, a weaker-then-expected global economy have put downward pressure on prices. Overall, we view the risks as weighted to the downside.

Respondent 2: A further escalation of trade tension continues to be an important risk which remains tilted to the downside. Another important downside risk is that of a sharper slowdown in foreign growth.

Respondent 3: N/A

Respondent 4: N/A

Respondent 5: Even with some reduction in tail risks, the risks to real economic activity remain weighted to the downside, as the most salient risks seem to be primarily in that direction. One such pertinent risk is that the continued weakness in manufacturing in the U.S. and globally eventually spills over more broadly, adversely affecting the labor market and consumer spending. Beyond that, downside risks include the possibility that escalating trade tensions, global political events, and slower global growth could lead to slower growth for the U.S. economy, especially in a world where policy space is limited in many major economies. In addition, the recurrent fragility in financial conditions and a relatively flat yield curve also indicate continued risk of a substantial deterioration in economic conditions. In contrast, the upside risks—primarily renewed momentum associated with still-high household confidence and spending—seem fairly muted.

The risks to inflation also appear to be weighted modestly to the downside. Significant downside risks, including those to real activity listed previously, particularly slower global growth, could lead to greater domestic disinflationary pressures than I have judged, and leave inflation expectations below levels consistent with the FOMC objective. In addition, a stronger-than-anticipated foreign exchange value of the US dollar as well as subdued inflation and inflation expectations in many advanced economies pose downside risks. Continued low levels of market-based inflation compensation in the U.S. and low measures of inflation expectations in Europe are notable in this regard. Partially offsetting the downside risks is the possible impact of continued tight resource constraints and of higher tariffs and trade restrictions.

Respondent 6: Although the degree of economic uncertainty has moderated some since September, the risks to the outlook from trade policy and other foreign economic developments remain, as highlighted by recent threats of tariffs against countries other than China. Continued uncertainty regarding trade and election outcomes may result in continued weakness in business investment, as firms remain reluctant to spend until more of that uncertainty is resolved. Indeed, we believe that the risk of sluggish business investment persisting for longer than we currently anticipate outweighs potential upside risks to economic activity from continued strong household fundamentals—especially a saving rate that remains quite elevated by historical standards. In comparison, we see the risks to the inflation outlook as more balanced as some of the risks to economic activity take the form of adverse supply shocks. However, firms' profit margins continue to be squeezed by low labor productivity growth and we may reach the point that inflation picks up faster than we expect as firms raise prices more rapidly in response to further declines in their profitability.

Respondent 7: Overall, my modal forecast is little changed from my September SEP submission. I have slightly higher growth and a slightly lower unemployment rate next year compared to my September submission, reflecting the shallower policy path in my current submission. Economic growth is moderating toward trend, with weak business investment offset by strong consumption. The labor market remains strong, with the unemployment rate over the forecast horizon projected to remain below my estimate of its longer-run level of about 4-1/4. I expect inflation to move back gradually to our goal of 2 percent. In this scenario, monetary policy remains on hold for a time to support the rise in inflation. Although my modal forecast does not have inflation rising above 2 percent, I would not expect the Committee to react if inflation were to modestly overshoot 2 percent for a time.

The downside risks to my growth forecast have abated somewhat since my September projections, but I still see the risks as tilted slightly to the downside. Trade policy and tariffs continue to create uncertainty that is weighing on business sentiment, investment, exports, and manufacturing activity. Slower growth abroad partly reflects the imposition of tariffs and trade policy. If the weakness in business spending begins to affect hiring and then consumption, then a weak-growth scenario could emerge, in which the economy slows more than expected. Geopolitical uncertainty continues to weigh on the outlook: Brexit remains unresolved, and protests are ongoing in Hong Kong and have arisen in other countries. My forecast assumes that the global economy will push through these headwinds.

An upside risk to the forecast is the effect of the shallower path of monetary policy assumed in the forecast. The recent cuts will take some time to work themselves throughout the economy and there is some possibility their effect on output growth and employment will be stronger than I've assumed in my forecast. In addition, one could read the strength in U.S. consumption and in labor markets, which have held up well despite the uncertainties, as suggesting there is more positive underlying momentum in the U.S. economy.

So far wages have grown in line with productivity growth and inflation, but the apparent tightness in labor market conditions poses an upside risk to my inflation forecast if nonlinear Phillips curve dynamics being to kick in. On the other hand, with inflation running at or below the 2 percent goal for some time and the recent readings of inflation expectations being soft, there is a risk that inflation could run below my forecast.

Risks to financial stability remain somewhat elevated and these risks could grow markedly in an environment of low long-term Treasury yields and as foreign central banks add accommodation, which causes investors to reach for yield. Leveraged lending is at high levels and underwriting standards on this debt have deteriorated; equity valuations are high; commercial real estate valuations continue to be high; and corporate debt levels are high. These and other less visible financial vulnerabilities could amplify an economic slowdown.

Respondent 8: Any of a variety of trade and global political-economy risks, if realized, could adversely affect U.S. GDP and employment growth in 2019. At the same time, a benign resolution to any number of these risks could lead to an improvement in business investment; given the relative health of the US consumer, we could very well then see a material pickup in real GDP growth. The high level of BBB and lower rated corporate debt is likely to be an amplifier in the event of a downturn. Nevertheless, I believe at this juncture that risks to my outlook are roughly balanced.

Respondent 9: N/A

Respondent 10: N/A

Respondent 11: N/A

Respondent 12: Downside risks stemming from the recent softness in business spending data and the continued soft outlook for foreign growth remain elevated. Consequently, I consider the risks to GDP and inflation to be weighted to the downside and unemployment to the upside.

Respondent 13: I believe the downside risks to GDP growth have lessened since midyear. For example, there is now a clear path to a negotiated Brexit. Also, an accommodative setting for monetary policy has reduced risks. While I see risks as elevated, relative to 2017 and 2018, they are not significantly above the 20-year trailing average.

Respondent 14: I write down a slight overshoot of core pce in out years based on accommodation in place over time pushing up inflation expectations but inflation risk to the downside from that path

Respondent 15: My assessment is that risks around the outlook appear broadly balanced conditional on my assumptions about monetary policy. The tight labor market and strong equity markets have supported continued gains in consumer spending, and there is some risk of future upside surprises. By contrast, recent readings on investment spending, manufacturing, exports, and commodity prices have been less positive. This reflects, at least in part, the effects of the escalating tariff dispute, weak growth abroad, and an appreciating dollar. These headwinds could be greater than expected, which poses some downside risk to my forecast.

Respondent 16: We see the risks to the outlook for growth, unemployment, and inflation as broadly balanced.

On the downside, sluggish foreign growth and trade policy continue to be important concerns. So, too, is the risk that the pullback in business spending could spillover from capital expenditures to hiring, with a weaker labor market then having important downside repercussions for household spending. Furthermore, while we view the recent slower growth in consumer spending as largely noise around a solid trend, there is some risk that we are seeing a more fundamental downshift in expenditures. On the up side, the continued strength in the labor market is impressive and it, along with low borrowing rates and solid household balance sheets, could generate stronger spending than we forecast. In addition, our business contacts appear to have become accustomed to a "new normal" regarding the ebb and flow of news regarding trade and other geopolitical risks, suggesting more stable business sentiment and an associated reduction in the risk of confidence-related swings in spending.

The likelihood that inflation expectations are undesirably low continues to challenge the attainment of our inflation goal. The recent softening in core inflation highlights the importance of this risk. We have, however, incorporated a somewhat lower path for the federal funds rate relative to September, and feel this change in policy leaves the risks to the inflation forecast as broadly balanced.

Respondent 17: N/A

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: The reductions in the policy rate during 2019 will help re-center inflation and inflation expectations at the inflation objective. The current target is consistent with generating and maintaining longer run values in the current regime of GDP growth of 2.0 percent and an unemployment rate of 4.25 percent. Thus, we are not projecting any target changes during the current projection period. However, as the economy evolves, especially in the event of a regime change, our optimal path for the federal funds rate will likely change.

Respondent 2: I expect the economy to grow at a pace modestly above potential over the next year or so, and then close to potential. But risks remain tilted to the downside and inflation remains below 2 percent. Against this backdrop, I view a path for the federal funds rate that is modestly accommodative as appropriate.

Respondent 3: N/A

Respondent 4: My path for appropriate monetary policy is slightly lower compared to last time given the increase in accommodation since the September SEP. I anticipate that the economy will be running at a pace close to trend over the medium term and that inflation will rise to its target level. I see this outcome as consistent with a very gradual rise in the federal funds rate over the next three years.

Respondent 5: The principal factors behind my assessment of the appropriate path for monetary policy are my estimate of the natural real rate of interest, my economic outlook, and the balance of risks around that outlook.

Estimates of the natural rate have been fairly stable since the September SEP submission. Consistent with the estimates from the Holston, Laubach, and Williams model for the last few years, I judge that the range for r* is 1/4 - 1/2 percent. Adding in the 2 percent inflation objective, my range for the longer-run federal funds rate is 2 1/4 - 2 1/2 percent and I have submitted the midpoint of 2 3/8 percent as my estimate.

I see recent developments as generally consistent with my September SEP submission. In addition, the 75 bps reduction in the policy rate over this year is in line with my policy assumption in September. I see the current level of the policy rate as sufficient to address the issues that led me to call for its reduction—muted inflation pressures, the possible impact of a weak global and manufacturing outlook on the broader U.S. economy, and the downside risks to the outlook I discussed earlier. Accordingly, I have not changed my policy assumption in this submission, and I judge that maintaining the policy rate at its current range through the end of next year will be appropriate. As inflation moves up toward 2 percent, I anticipate that policy accommodation can begin to be reduced gradually in 2021 so that the policy rate is at my estimate of its longer-run level by the end of 2022. This path is below the suggestions of most simple policy rules, reflecting that inflation has remained persistently below the FOMC's longer-run objective.

Respondent 6: Optimal monetary policy under a symmetric loss function continues to call for much tighter policy than what we have written down as appropriate. Recognizing that policy must eventually get above the neutral rate in order to gradually restore equilibrium in the labor market and achieve a soft-landing, our path for policy calls for a modest tightening in the out years of the forecast. With the economy already below full employment, a more rapid removal of policy accommodation could lead to adverse outcomes that are not well captured by our linear models.

Respondent 7: With respect to our monetary policy goals of price stability and maximum employment, I continue to believe that the most likely scenario is that growth will be around trend, labor markets will remain strong with employment growth moving toward trend, and inflation will gradually move back up to 2 percent. In my forecast, the unemployment rate remains below my estimate of the longer-run level, which I put at about 4-1/4 percent. (I note that there is uncertainty around this estimate of the longer-run unemployment rate, and based on the behavior of the economy over this expansion, my estimate may be too high.) The incoming inflation data are consistent with inflation gradually moving back up to 2 percent, supported by a relatively shallow policy rate path. Headline PCE inflation has been held down by energy prices this year; core PCE inflation has also been subdued. However, other measures of inflation that focus on the center of the distribution of price changes, e.g., the median and trimmed-mean measures, point to somewhat stronger inflationary pressures than do the headline and core inflation measures. The cyclical component of core PCE inflation, which is correlated with measures of labor market slack, accounts for only 40 percent of core PCE. This measure has continued to move up as labor markets have tightened and is relatively elevated.

Given this modal outlook, a variety of simple monetary policy rules suggest a rising path for the federal funds rate, and some suggest a relatively steep path. However, given the risks around the outlook and softness in inflation and inflation expectations, in order to support a gradual and sustained firming in inflation, my appropriate policy path has the funds rate remaining near current levels for about a year (so long as output growth remains at trend and the labor market remains solid, as I'm assuming in my forecast). This constitutes an opportunistic approach to inflation, which refrains from taking deliberate action at this point to reinflate the economy and refrains from taking deliberate action to curtail an inflation overshoot so long as inflation doesn't rise too much above 2 percent. This funds rate path is lower than the path in my September SEP submission, reflecting recent cuts in the fed funds rate target range. The gradual increases in the funds rate in my forecast come only when there is evidence that inflation is running at the 2 percent objective on a sustained basis.

Respondent 8: I believe that the level of long-term market interest rates—especially long-forward interest rates—conveys useful information about the neutral policy interest rate, and that the yield-curve inversion that began around midyear was a strong indication that monetary policy was becoming overly restrictive. With the FOMC's adjustments to the fed funds rate in September and October, I believe monetary policy is now well-calibrated given my outlook for real activity and inflation. If the economy evolves in line with my modal outlook, I believe it will be appropriate to begin gradually raising the funds rate toward its long-run level in the out years of the forecast horizon. I stand ready to make additional adjustments in the near term, as needed, if there are material changes in the outlooks for real activity and inflation, or in the neutral rate, in order to achieve our dual mandate goals.

Respondent 9: N/A

Respondent 10: N/A

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. At this time, I anticipate that a flat trajectory for the federal funds rate over the next two years will best promote these goals. With the economy growing near my estimate of trend and the unemployment rate at a historically low level, I see little rationale for additional policy accommodation at this time. While I expect trade tensions and uncertainty to remain elevated for some time, I anticipate that the headwinds from these forces will begin to abate a bit towards the end of the forecast horizon. At that time, I would expect the funds rate to start gradually converging towards its longer-run level.

In the process of forming my policy view, I consider the contour of rates prescribed by benchmark policy rules. In light of the uncertainty that surrounds estimates of the neutral federal funds rate and the natural rate of unemployment, I favor a monetary policy strategy that deemphasizes these unknown targets and instead predicates policy actions on the outlook for inflation and the evolution of labor market conditions. Given that my outlook calls for the unemployment rate to stabilize at its current low level and inflation to remain subdued, I anticipate that the funds rate will remain persistently below my uncertain estimate of its longer-run normal rate, even with a modest increase in the funds rate at the end of the forecast horizon. This policy path is broadly consistent with benchmark "first difference" policy rules that divorce that path of the policy rate from any particular model or estimate of natural rates.

However, under these benchmark "first difference" rules, my modal outlook for inflation to persist below 2 percent for several years would call for decreases in the federal funds rate over the next few years. Given the apparent flatness in the Phillips curve and the disinflationary global factors that are weighing on inflation, I view the costs of additional policy accommodation at this time as greater than the benefits of modest easing actions that are unlikely to counteract the factors weighing on inflation. The potential costs of additional easing to attempt to guide inflation back to 2 percent may be especially high at this point in the business cycle. In particular, reducing the federal funds rate in an attempt to pull demand forward risks fostering already apparent financial excesses and may only serve to exacerbate a future economic downturn. In light of these concerns, I view a deviation from rules-based policy as appropriate at this time. In the process of forming my view of appropriate policy going forward, I will continue to reassess the costs and benefits of a deviation from rules-based policy as I monitor the evolution of downside risks to the outlook. If downside risks to the outlook materialize in a way that meaningfully affects economic conditions, more monetary policy accommodation than I currently anticipate may be necessary to foster a sustained economic expansion and price stability.

Respondent 12: Inflation remains below target and inflation expectations are still at low levels. While the unemployment rate is currently near my estimate of its long-run level, wage growth remains moderate. As a result, it is not clear that we have reached maximum employment. Given the persistent undershooting of our inflation target and the insufficient evidence that we are at maximum employment, I believe that appropriate monetary policy implies committing to not raise the federal funds rate until core inflation has reached 2.0 percent on a sustained basis.

I have lowered my estimate of the long run federal funds rate in response to declines in long-term interest rates that, even after accounting for term premia, suggest a lower level for the federal funds rate in the future.

Respondent 13: As long as growth is near trend, unemployment is below the natural rate, and inflation is near 2 percent and stable, I believe that the funds rate should not change. Once inflation picks up, I believe the funds rate should move up gradually toward its longer run value.

Respondent 14: N/A

Respondent 15: For many years, we have fallen below our 2 percent inflation goal. These failures can come with costs. Long-term inflation expectations can slip lower, risking a situation like in Japan or, more relevantly, that in Europe. Moreover, without progress on inflation, getting it sustainably to 2 percent, we risk entering the next downturn with lower nominal rates, closer to the effective lower bound, and with less conventional policy space. As a result, I view continued policy accommodation as essential to get inflation back to target. In addition, the trade dispute and developments abroad remain a headwind to domestic growth. Therefore, appropriate monetary policy is modestly accommodative for the next couple of years. This policy path takes into account the risks to financial stability, particularly those that could arise from increased corporate indebtedness due to lower borrowing costs, but weighs them against the risks of a downturn and a return to the ELB, which could also raise the risk of corporate defaults. To be specific, my assessment of appropriate policy is generally informed by simple non-inertial policy rules that assume a longer-run natural rate of interest of 1/2 percent. My projected unemployment gap is 0.2 percentage point narrower given my lower reassessment of U* which supports a relatively low funds rate path.

Respondent 16: As it has been for some time, our appropriate policy path is designed to move inflation modestly above 2 percent during the projection period. After years of underrunning target, we feel such overshooting is necessary to firmly establish the symmetry of our inflation objective.

We think achieving this objective requires keeping policy rates on hold until inflation is clearly on a path to move above 2 percent. We feel this threshold for moving policy, along with ex ante communication of this tactic, are necessary to buoy inflation expectations enough to move actual inflation up to our symmetric target on a sustainable basis. Our forecast assumes leaving the funds rate in the range of 1-1/2 to 1-3/4 percent well into 2021, at which time inflation will have moved sustainably above 2 percent. Then, with modest overshooting in train and firmer inflation expectations, we assume one 25 basis point hike in late 2021 and one in 2022. We feel this initial removal of accommodation needs to be quite restrained to avoid the public perceiving that we are overly concerned with inflation moving modestly above 2 percent. As long as inflationary momentum does not stall, the funds rate can be returned to neutral shortly after the forecast horizon.

As noted before, this plan is well designed from a risk-management perspective. Notably, there is little cost if this policy generates a larger boost to inflation than we expect, as such an outcome would simply help achieve our inflation objective sooner than we currently forecast. Furthermore, some estimates suggest that the current equilibrium funds rate may be modestly lower than its long-run level. With this possibility for r*, a lower-for-longer path is consistent with managing against the asymmetric risks between policy being overly restrictive rather than overly accommodative.

Respondent 17: I have revised down my estimate of the longer-run normal value of the federal funds rate by 25 basis points in light of longer-term interest rates that have remained low and statistical estimates of r* that have persisted in their current low range.

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: Our forecast continues to use a regime-based conception of outcomes for the US economy. In our conception, there are multiple regimes. The current regime is viewed as persistent and we see no compelling reason to forecast a switch from the current regime over the forecast horizon. However, we are paying close attention to the effects or regulatory and tax policy changes that might move the economy to a high productivity state and to trade policy uncertainly and actions that might substantially affect economic activity in the US and abroad. Longer term the economy may visit other regimes, such as ones associated with higher productivity growth, a higher return to short-term government debt, or recession. If the economy transitions to any of these states, all variables are potentially affected and, in particular, the optimal regime-dependent monetary policy path may require adjustment. However, predicting when these transitions may occur is quite difficult, so we forecast that the economy will remain in the current regime over the forecast horizon.

Respondent 2: Risks and uncertainty associated with trade policy continue to play an important role in shaping both the modal outlook and the assessment of risks.

Respondent 3: N/A

Respondent 4: My forecast is little changed from my September projection. I expect growth to be near its trend rate over the next three years and inflation to run at a pace close to the Committee's target. I do not anticipate further significant tightening in the labor market. Rather, employment growth tapers down to a pace more consistent with an economy growing at trend and the unemployment begins to rise at a gradual pace in 2021. I see the appropriate path of policy that is consistent with growth near trend and inflation near target as one that implements a very gradual rise in the federal funds rate target toward my longer-run value of 2.5 percent. I continue to be concerned that uncertainty about trade policy is having a significant negative impact on the economy.

Respondent 5: With no change in my policy rate path assumption and recent U.S. data being fairly consistent with my outlook, my projections for the SEP variables are generally unchanged from those in my September SEP submission.

I continue to project that real GDP growth in 2019 will be about 2 1/4 percent. The recent data still indicate that consumer spending growth will likely remain solid through the end of the year, supported by a strong labor market. This strength offsets continued weakness in business fixed investment, manufacturing, and exports, which reflects spillovers from soft global growth. With this growth path, I expect the unemployment rate to remain near its current level.

The inflation data over the past two months have been softer than I anticipated in September. With continued muted inflation pressures and low inflation expectations, I do not expect a substantial pickup over the rest of the year. Consequently, I project core PCE inflation for this year to be 1.6 percent, slightly below my September projection.

My projections over the rest of the forecast horizon have not changed from my September submission. In an environment where global growth remains relatively subdued and fiscal stimulus fades, I project real GDP growth to slow gradually to slightly below its potential rate in 2021 – 22. Consequently, the unemployment rate is flat in 2020 and then begins to rise gradually in 2021 and 2022, although it is still below its longer-run natural rate at the end of 2022. Tight resource utilization leads to a gradual rise of inflation to the FOMC objective in 2021. With resource utilization starting to loosen and a flat Phillips curve, inflation remains at objective in 2022. A near-neutral monetary policy stance and minimal fiscal policy impetus thereafter contribute to bring inflation, growth, and unemployment to their longer-run normal levels by the middle of the next decade.

Respondent 6: Economic activity continues to evolve about as we expected with our previous forecasts. Readings on inflation continue to suggest that the low-level of price growth we saw earlier this year was transitory, although the most recent inflation numbers came in a bit below our expectations. On the real-side of the economy, fundamentals in the household sector remain strong. The stock market has continued to trend higher, and overall household wealth as a ratio to disposable income remains near its historic high. The labor market continues to expand at a pace above that needed to keep up with population growth and household income growth remains favorable. Consumer sentiment also remains elevated despite ongoing economic and political uncertainty. The strength in consumer spending has offset continued weakness in manufacturing and business investment due to trade policy and more general concerns about the strength of the global economy. Given solid fundamentals we continue to expect consumer expenditures to support growth next year, even as business investment remains somewhat sluggish. In the out years of the forecast, growth slows below potential as interest rates rise and the effects of fiscal policy wane, even as business investment may pick up some to the extent that some of the existing economic uncertainty is resolved. The unemployment rate ends the forecast horizon at 3.6 percent, a good bit below the level we believe is consistent with full employment. With this continued labor market tightness, inflation is anticipated to rise a little above 2 percent.

The forecast is conditioned on a gradual increase in the federal funds rate that is only slightly above the neutral rate by the end of the forecast horizon. This path for policy is not optimal, but we believe it is appropriate as it incorporates the need for policy to eventually become restrictive to restore equilibrium in the labor market, while also taking into account the current elevated degree of economic and political uncertainty. Indeed, we anticipate the unemployment rate to edge higher in 2022 as growth declines.

While our outlook incorporates some persistent sluggishness in business investment due to the current uncertain political and economic environment, it is possible that the adverse effects are larger than we envision. This downside risk outweighs the potential for faster than expected consumption growth due to a saving rate that is quite elevated by historical standards given the current level of household net worth relative to income.

Respondent 7: On the whole, incoming data on the economy have been generally consistent with my September projection. The strength in consumer spending is offsetting softness in business investment and manufacturing activity. In my view, the most likely outcome is that output growth and employment growth will slow toward trend over the forecast horizon and that inflation will gradually rise to 2 percent. Consumer spending and sentiment remain solid, supported by the strength in the labor market. Payroll job growth continues to be above trend and the unemployment rate is below my estimate of its longer-run natural rate. In my modal forecast, as output growth slows toward its trend pace, payroll employment growth also slows to a more sustainable pace, which helps to keep the unemployment rate low.

I expect that inflation will gradually move up to 2 percent over the forecast horizon, supported by a relatively shallow policy rate path. Headline PCE inflation has been held down by energy prices this year; core PCE inflation has also been subdued. However, other measures of inflation that focus on the center of the distribution of price changes, e.g., the median and trimmed-mean measures, point to somewhat stronger inflationary pressures than do the headline and core inflation measures. The cyclical component of core PCE inflation, which is correlated with measures of labor market slack, accounts for only 40 percent of core PCE. This measure has continued to move up as labor markets have tightened and is relatively elevated.

To achieve the outcomes in my modal forecast, my funds rate path is relatively shallow, with the funds rate at its current level through most of next year, followed by gradual increases in the funds rate when there is evidence that inflation is running at the 2 percent objective on a sustained basis. This shallow policy path supports rising inflation and reflects a strategy that does not take further deliberate action to reinflate the economy (so long as output is growing at trend and the labor market remains solid) and does not take deliberate action to curtail an inflation overshoot so long as inflation doesn't rise too much above 2 percent.

Downside risks to my growth forecast have abated somewhat since my September projections, but I still see the risks as tilted slightly to the downside. I see the risks to my inflation forecast as broadly balanced.

Respondent 8: Heightened trade tensions and decelerating rates of global growth have increased risks to the downside; slower growth abroad and increased uncertainty are likely holding back business fixed investment. As a result, the consumer will continue to be the primary underpinning of the US economy, based on improved household balance sheets and a historically tight labor market. In the background, the economic outlook continues to be shaped by adverse demographic trends, technology enabled disruption (which is increasing the need for improved education and skill levels), education and skill levels that are not keeping pace with business needs and are contributing to sluggish productivity growth, and the likely unsustainable path of U.S. government debt. Slow trend U.S. growth, a fading fiscal stimulus, downside risks to already weak prospects abroad, and strong global demand for safe assets continue to hold down the equilibrium level of interest rates and the appropriate path for policy. Cyclical pressures on wage inflation remain strong, but appear more likely to squeeze margins than put upward pressure on price inflation. To the extent the cyclical pressures are translating into wage growth, the effect is likely stronger at the bottom end of the wage scale and for middle-skill workers. Elevated levels and rapid growth in BBB corporate, leveraged, and high-yield debt mean that we risk a rapid deterioration in financial conditions in the event of a negative economic shock. That deterioration could turn what would otherwise have been a mild growth slowdown into something more serious.

Respondent 9: N/A

Respondent 10: I believe that the economy still has considerable underlying momentum, particularly in consumption. But the recent weakness in business fixed investment does continue to give me pause. Growth will encourage workers to rejoin/remain in the labor force, increasing labor force participation and keeping the unemployment rate about flat. Above potential growth and a tight labor market will lead to a gradual increase in the inflation rate.

Respondent 11: Central economic outlook: My forecast for real GDP growth calls for near-trend growth throughout the forecast horizon, supported by moderate household spending underpinned by a strong labor market. I expect 12-month PCE inflation to remain modestly below 2 percent over the next few years, reflecting the effects of global disinflationary factors. As real GDP is expected to run near trend over the next few years, I expect the unemployment rate to stabilize at its current level throughout the forecast horizon.

Uncertainty and risks: I view uncertainty surrounding my projections as broadly similar to levels of uncertainty over the past 20 years, considering the magnitude of historical forecast errors and current economic and policy uncertainty at home and abroad. However, risks to economic growth and inflation appear tilted to the downside, while risks to the unemployment rate are tilted to the upside. While recent signals from the yield curve look less worrisome, I continue to see downside risks from more restrictive trade and immigration policies, further slowing of global demand in an environment where many central banks have limited scope for easing policy, the potential for a sharper and more persistent slowdown in domestic business investment, and elevated geopolitical uncertainty. Beyond these short-run risks, I have some concerns about the sustainability of our current fiscal policies and their effects on the economy over the longer run.

Respondent 12: Core inflation remains below target, market-based inflation expectations remain soft, and wage growth remains moderate. This reinforces my assessment that there may still be some slack left in the economy and that steps need to be taken to move inflation expectations up.

Respondent 13: I believe that uncertainty has led many firms to delay investments, and in an election year it is likely that policy uncertainty will be a headwind for investment. This will result in GDP growth slightly below trend. Removing some of the policy uncertainty will allow growth to increase slightly beyond 2020. However, slow population growth in prime working ages will combine with productivity growth in line with recent trends to limit GDP growth to 2 percent.

Respondent 14: Policy will need to remain somewhat accommodative for most of the forecast horizon to re anchor inflation expectations in face of modest overshoot

Respondent 15: Along with waning fiscal stimulus, ongoing strength in household disposable income coupled with past gains in household wealth and high consumer confidence should support continued consumption growth. Modestly accommodative monetary policy is also supporting growth by offsetting the negative effects of trade uncertainty and lower foreign growth on aggregate demand. Still, recent data on investment and exports have been somewhat weaker than expected. There is a risk that this deceleration could persist beyond 2019, especially given the uncertainty regarding trade policy and declining prospects for global growth. With the continued momentum in consumer spending and tight labor market conditions, I expect the continuing overshoot of full employment to lead to a gradual pickup in inflation. I anticipate core inflation will reach our 2 percent target on a sustained basis by 2021.

Respondent 16: While we think business investment will be soft for a while, we do not see this weakness extending into a large reduction in hiring, especially given the difficulties firms have had filling positions in this tight labor market. Accordingly, household spending should stay strong enough to maintain GDP growth in the neighborhood of trend. In turn, we expect to see some modest recovery in investment to meet this household-sector demand. Furthermore, our path for monetary policy is accommodative, even when benchmarked against a short-run r* that appears to be somewhat below its long-run level. On the downside, we see a bit less fiscal impetus to growth coming over the projection period, and continued soft foreign demand.

All told, we expect growth to be somewhat above our estimate of potential output in 2020, and then move down close to potential in 2021 and 2022. (Our estimate of potential output growth is 1.8 percent per year throughout the forecast period.) We expect the unemployment rate to stay close to 3.5 percent over the projection period. This compares with a natural rate of unemployment that we see edging down from 4.3 percent now to 4.2 percent over the next few years.

While we recognize that some of the recent decline in core inflation might reflect noise in the data, we remain concerned that underlying inflation trends and inflation expectations are too low. The degree of resource pressure in our forecast ought to boost inflation some. But in order to buoy inflation expectations and achieve 2 percent on a sustainable, symmetric basis, we think it is also necessary to communicate that we will not raise the funds rate until inflation has moved up more solidly and is on a path to modestly overshoot 2 percent and then follow through on that plan. Our assumptions for appropriate policy do just that. Our resulting projection is for core inflation to move up from 1.6 percent in 2019 to 1.9 percent in 2020, 2.1 percent in 2021, and 2.2 percent by the end of 2022.

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

Respondent 17: My baseline projection has growth converging to trend next year. This forecast is supported by ongoing solid consumer spending and a modest rebound in business investment spending.

The risks to this outlook are largely balanced. While the impact from trade tensions and weak global manufacturing conditions on the U.S. economy could intensify, I view the current stance of monetary policy as providing an insular effect against such a downside shock. On the other hand, given strong fundamentals, consumer spending could accelerate from here.

Underlying inflation has been running close to target. Given the absence of slack in my modal projection and stable inflation expectations that are still anchored at mandate-consistent levels, I project inflation returning to the FOMC's objective in 2020.

I judge the risks to my inflation outlook as broadly balanced. While I put much more weight on professional and business inflation expectations, the relative softness of household and financial market expectations measures might be a signal that inflation expectations are softening. On the other hand, amid tight labor market conditions, further cost increases due to tariffs and trade disruptions may push more firms to more rapidly increase prices.

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: Recent data has led to a slight decrease in our projection for the unemployment rate for 2019 and 2020. Data over recent years has also caused us to lower our long-run value of the unemployment rate in the current regime from 4.5 percent to 4.25 percent. We view this change as consistent with our GDP growth projection.

Respondent 2: The data on aggregate spending and the labor market received since the previous SEP have been somewhat stronger than anticipated and suggest a modestly stronger momentum going into next year.

Respondent 3: N/A

Respondent 4: My forecast is not much changed since the September SEP. My path for the unemployment rate is somewhat lower compared to last time based on incoming data. My path for appropriate monetary policy is somewhat lower compared to last time given the lower starting point for the effective federal funds rate.

Respondent 5: As noted in my response to question 4(a), the recent soft inflation data have led me to lower slightly my inflation projection for this year. I see these soft data as reflecting the impact of weaker global economic conditions on U.S. inflation. As I anticipate that the global outlook will improve over the medium term, I expect this factor will fade. Consequently, the soft inflation data do not have a material impact on my projection for inflation in subsequent years.

The November unemployment rate was slightly below the level I anticipated in September, and I have shifted down my projected path for unemployment in response.

Respondent 6: The outlook is little changed overall from September and for that matter from our outlook earlier this year. The current forecast is conditioned on a lower path for short-term interest rates in the near-term given the policy easing at the September and October meetings. This lower path for rates is mostly offset by an assumption that economic and political uncertainty will have a more persistent effect on business investment than we previously assumed. With regard to government policies, our assumptions have not changed, and we continue to expect waning fiscal policy effects in the out years of our forecast.

Respondent 7: Overall, my modal forecast is little changed from my September SEP submission. I have slightly higher growth and a slightly lower unemployment rate next year compared to my September submission, reflecting the shallower policy path in my current submission. This shallower path reflects the recent reductions in the fed funds rate; the funds rate gradually increases when there is evidence that inflation is running at the 2 percent objective on a sustained basis.

Respondent 8: Given adjustments to the funds rate this year as well as the easing of some global political-economic risks, I view risks to the baseline path for GDP growth and the labor market as being more balanced than in September. Our internal models, informed to some extent by improvements in financial market signals, now point to a more solid pace of economic activity in the first half of 2020; accordingly, I have marked up my forecast for 2020 GDP growth and marked down somewhat my projection for the unemployment rate in 2020 and 2021. Informed by recent research on the implications of worker and firm demographics for the natural rate of unemployment, I have also marked down somewhat my forecast for the rate of unemployment prevailing in the longer run.

Respondent 9: N/A

Respondent 10: My outlook is more or less unchanged. I also do not see the risk outlook as having appreciably changed, with the risks to GDP growth remaining tilted to the downside. I have lowered my near-term inflation forecast in response to the incoming data.

Respondent 11: My December projections are in line with my September projections with a similar outlook for real GDP growth, unemployment, and inflation in 2020. In my September projections, I incorporated the recent federal budget agreement which slightly boosted my outlook for growth next year. I anticipate that trade tensions and uncertainty will remain elevated over the next few years, eventually fading at the end of the forecast horizon. Moreover, uncertainty over future fiscal policies, driven in part by next year's election, likely provides an additional source of uncertainty around the economic outlook.

Respondent 12: My forecasts are little changed.

Respondent 13: My forecast for 2019 has changed slightly in response to the data flow. Beyond 2019 the forecast is little changed.

Respondent 14: N/A

Respondent 15: My forecast has somewhat higher growth in 2020 and 2021, reflecting gains in equity markets and persistently strong readings on consumer spending.

Respondent 16: We changed our GDP growth forecast modestly since September. The incoming spending data have led us to lower our forecast for 2019 by 0.1 percentage point. With slightly more accommodative monetary policy, steady business sentiment, and possible stabilization in growth abroad, we revised up our forecasts for growth a tenth or two over the remainder of the projection period. The unemployment rate is ending 2019 a bit lower than we thought it would in September. Along with our revisions to GDP growth, this means our current forecast has the rate running near 3.5 percent throughout the projection period. This path is down 0.1 to 0.2 percentage point from our September SEP. The incoming data on core inflation have been softer than we projected in September. As a result, we revised down our projection 0.2 percentage point in 2019 and 0.1 percentage point in 2020 and 2021.

Our forecast is premised on a slightly more accommodative policy path than in September. At that time, we assumed one cut in 2019, flat rates through late 2021, and then two increases that would put the rate at 2-1/4 – 2-1/2 percent at the end of 2022. Our path this round is 25 basis points lower throughout the projection period, as we took on board the additional rate cut in 2019 that has already occurred and then assumed the same pattern of rate increases as we did in September.

Respondent 17: My baseline outlook for growth, the labor market, and inflation is largely unchanged from the September SEP. However, the unemployment rate has persisted at 4 percent or lower for 21 consecutive months without any significant pickup in retail prices, a fact that has led me to lower my estimate for its longer-run normal value.

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: Our projections for GDP growth and inflation are similar to those in the Tealbook. We differ from the Tealbook with respect to unemployment. We see unemployment inching upward during the projection horizon, while the Tealbook indicates that the unemployment rate will decline slightly to 3.5 percent and remain at that level. Also, our appropriate path for monetary policy differs form the Tealbook. For reasons discussed earlier, we project no changes in the target for the federal funds rate during the forecast horizon. Meanwhile, the target in the Tealbook increases and moves further above our target.

Respondent 2: Compared to Tealbook, I have written a somewhat lower path for the federal funds rate in consideration of the downward tilt in the distribution of risks and of inflation continuing to undershoot our 2 percent objective.

Respondent 3: N/A

Respondent 4: My forecast is broadly similar to the Tealbook.

Respondent 5: My set of projections is broadly aligned with the Tealbook forecast for real growth, but given my assessment of the potential growth rate, projected growth in 2021 – 22 is slightly below potential in my forecast while it is slightly above or at potential in the Tealbook forecast. This leads to some differences in the unemployment projections, as the unemployment rate begins to rise gradually in 2021 in my projection, while it falls slightly in 2020 and does not begin to rise until 2023 (based on its long-term outlook) in the Tealbook forecast.

The Tealbook estimate of u* at 4.4 percent remains above my estimate of 4.0 percent. Consequently, labor market conditions are tighter in the Tealbook forecast than in mine. Nevertheless, the projected medium-term path for inflation in the Tealbook forecast is slightly below my projections: Whereas I expect inflation to reach the 2 percent objective by 2021, the Tealbook does not expect inflation to reach objective until 2024 (again, based on its long-term outlook). Two factors seem to be behind this difference. First, the Tealbook forecast assumes a very flat Phillips Curve. Second, the Board staff judges that underlying inflation is 1.8 percent and will remain at that level over the medium term, which is below my assessment.

As has been the case over recent cycles, the Tealbook policy rate path is above my assessment of the appropriate policy path. In part, this reflects the Tealbook's assessment of tighter resource constraints than implied in my projection, but it also probably reflects the fact that in the inertial Taylor-type rule used in the Tealbook forecast does not capture some of the considerations in my policy assessment (such as the management of downside risks). These differences begin to narrow in 2021 – 22 as I anticipate that policy accommodation can begin to be reduced gradually during that time.

Respondent 6: The two forecasts are conditioned on similar paths for monetary and fiscal policies, and feature similar real outcomes. The outlook for inflation continues to be more subdued in the Tealbook than in our forecast because the pace of underlying inflation in our model is assumed to be 2.0 percent compared to 1.8 percent in the Tealbook.

Respondent 7: As in the Tealbook forecast, my modal projection is that growth will slow from the strong pace seen over the past two years toward trend, labor market conditions will remain strong, and inflation will rise from the recent low readings toward our 2 percent goal. My federal funds rate path is a bit shallower than Tealbook path in the near term, but a bit higher than the Tealbook path by the end of the forecast horizon.

Respondent 8: My projections differ most noticeably from the Tealbook baseline in their paths for the fed funds rate. My lower path reflects my belief that weak global growth prospects, geopolitical uncertainties, and corporate margin pressures are likely to dampen the outlook for economic performance over the next few years. Additionally, while the Tealbook baseline anticipates a nearly flat path for the unemployment rate through at least 2022, I expect that slower growth will be accompanied by some modest increases in unemployment after 2020. Unemployment eventually converges to a rate that is somewhat below that assumed in the Tealbook.

Respondent 9: N/A

Respondent 10: I have a stronger outlook for potential growth than the Tealbook. Consequently, I believe that the economy can grow faster than projected in the Tealbook without much additional upward impetus to price inflation. My more optimistic outlook for potential growth is consistent with a slightly higher long-run neutral interest rate compared to that in the Staff outlook.

Respondent 11: My assumptions and projections for real GDP, unemployment, and inflation are broadly similar to those in Tealbook over the forecast horizon, although I anticipate slightly weaker inflation and real GDP growth next year. My projected path for the federal funds rate is lower than the path in Tealbook over the next few years.

Respondent 12: I believe that it is appropriate to hold the federal funds rate at its current level and commit to not raise it until core inflation has reached 2.0 percent on a sustained basis rather than rise as in the Tealbook. Because of my lower policy path, my forecasts for economic activity and inflation are a touch stronger than the Tealbook.

Respondent 13: Inflation rises more rapidly in my forecast due to an accommodative monetary policy, with unemployment below its natural rate.

Respondent 14: N/A

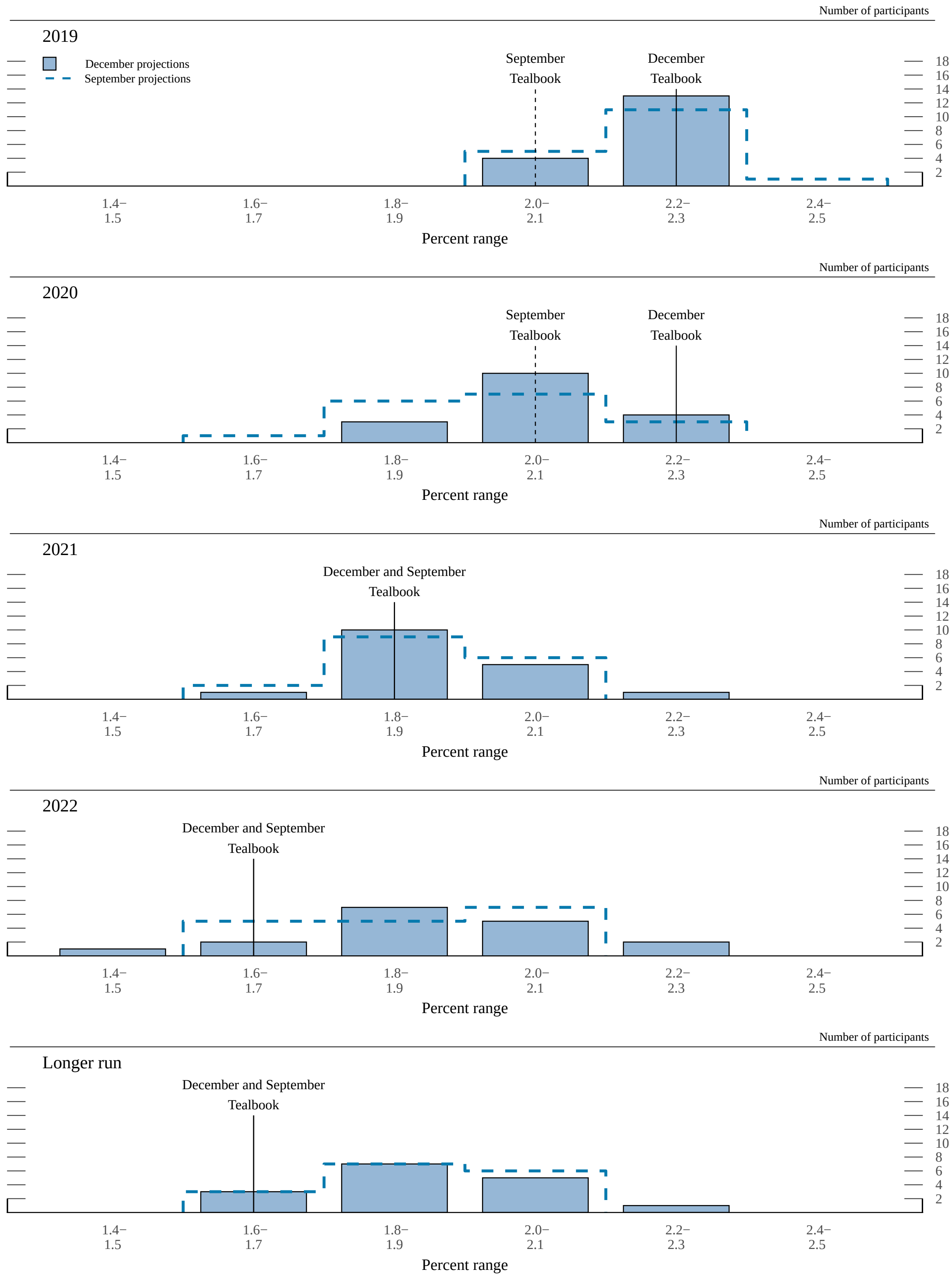
Respondent 15: The two projections are largely in alignment, with the exceptions of the inflation projection and the anticipated path for the federal funds rate. I project inflation to reach target by 2021 while Tealbook shows inflation remaining below target through 2023. In both my projection and Tealbook, the unemployment rate persists below the natural rate while the waning effects of the fiscal stimulus and the trade headwinds serve to slow growth toward trend. However, to achieve this outcome, my funds rate trajectory is somewhat below the funds rate path in the Tealbook.

Respondent 16: Our federal funds rate path is 40-50 basis points lower than the Tealbook's over 2020-2022. In addition, our assessment of long-run r* is 25 basis points higher than the Tealbook, meaning our policy path delivers even more accommodation. Our fiscal policy assumptions are broadly similar to the Tealbook.

Our projections for GDP growth and the unemployment rate are close to the Tealbook. However, we have a modestly lower natural rate of unemployment, so our unemployment rate gap is somewhat smaller as well. Our projection for core inflation in 2019 and 2020 is the same as the Tealbook. Our outlook for inflation is 0.2 percentage point higher in 2021 and 0.3 percentage point higher in 2022. Although our forecast has a bit less resource pressure, our monetary policy path is more accommodative, which should lift underlying inflation trends and expectations more than in the Tealbook.

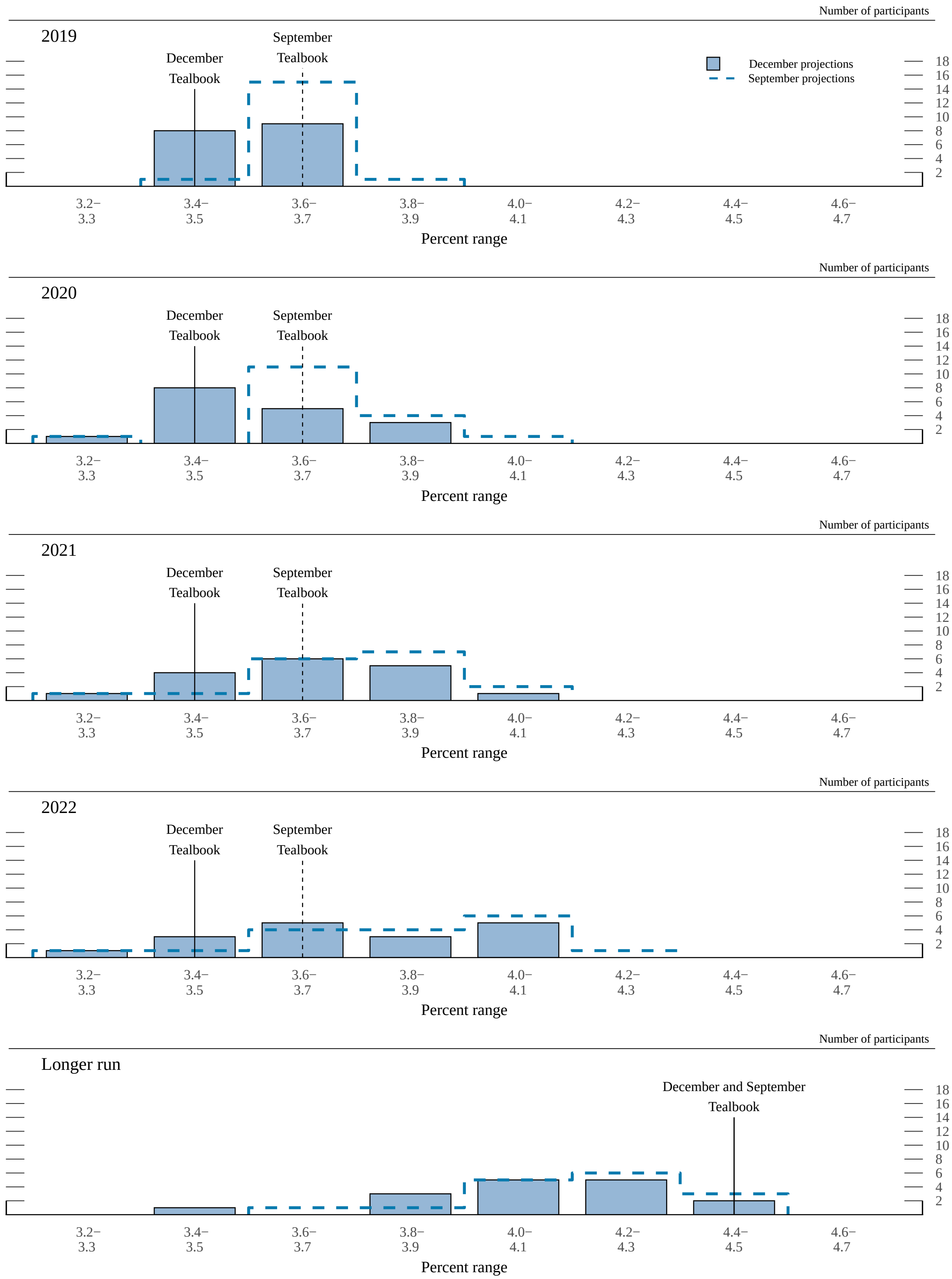
Respondent 17: My projections are similar to the Tealbook's through 2022.

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



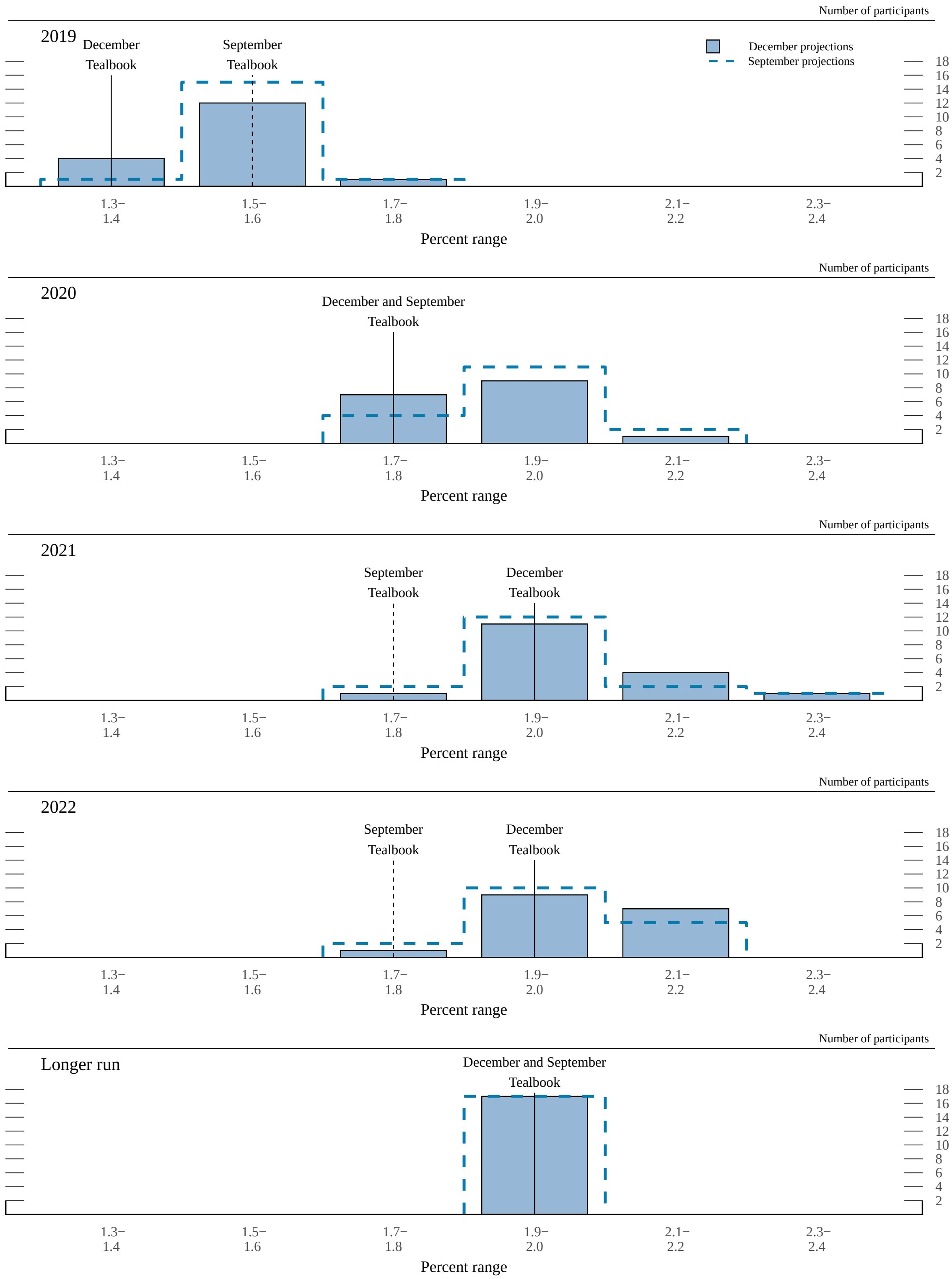
Note: Updated December Tealbook values are reported. Definitions of variables and other explanations are in the notes to table 1.

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



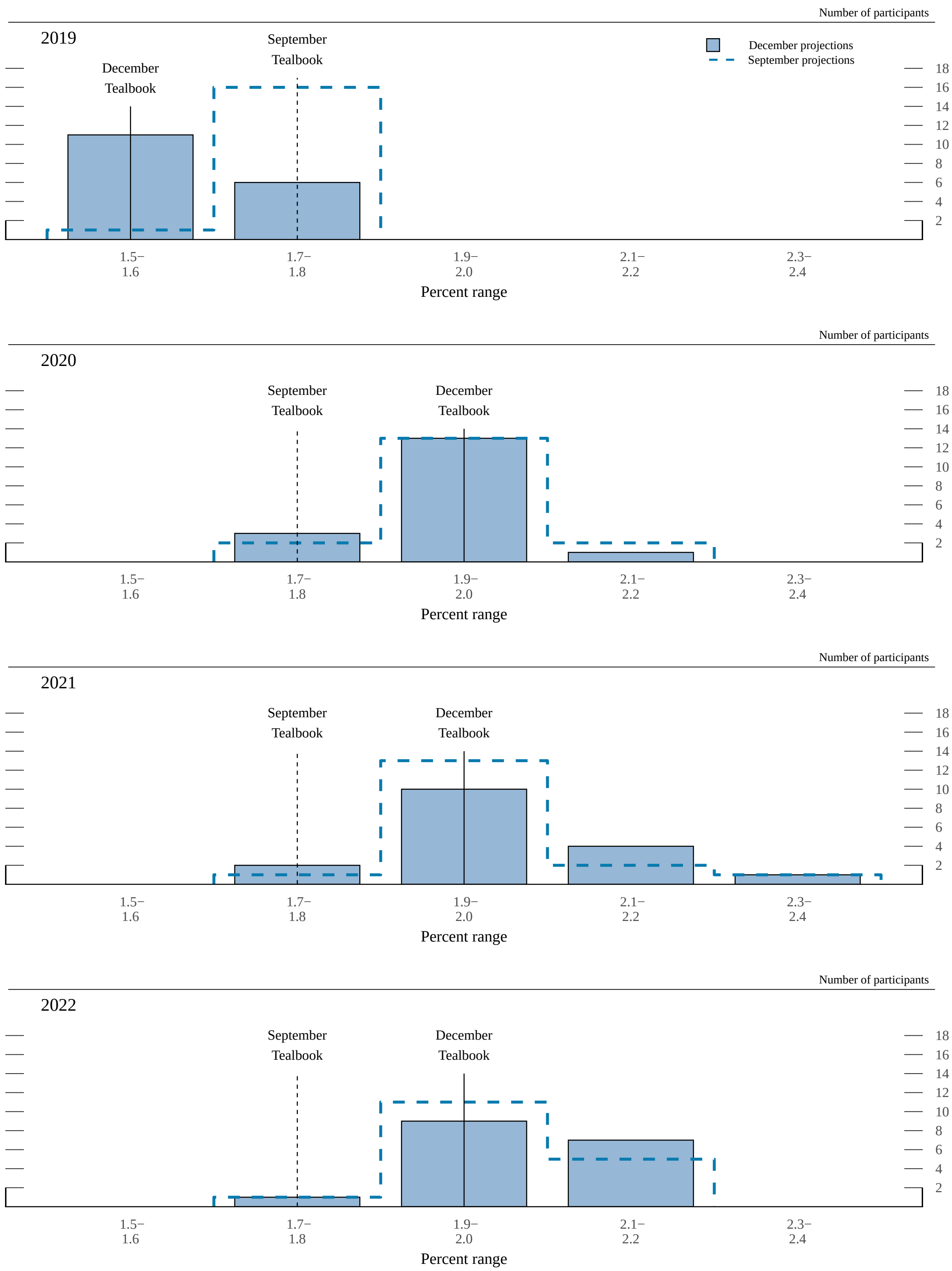
Note: Updated December Tealbook values are reported. Definitions of variables and other explanations are in the notes to table 1.

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



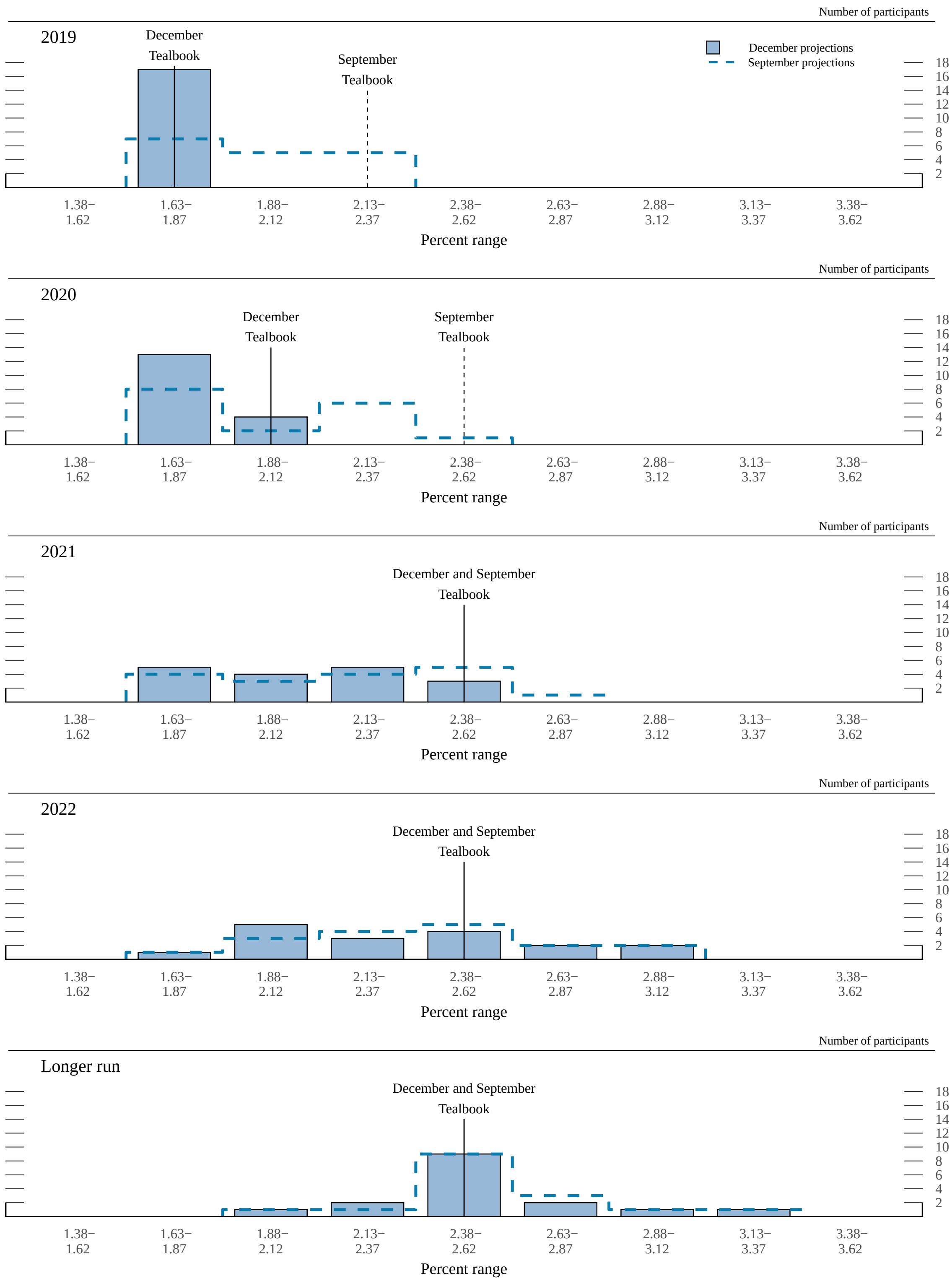
NOTE: Updated December Tealbook values are reported. Definitions of variables and other explanations are in the notes to table 1.

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



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, 2019-22 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.