Table 1. Economic projections of Federal Reserve Board members and Federal Reserve Bank presidents, under their individual assumptions of projected appropriate monetary policy, September 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	2.1–2.3	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
June projection	2.1	2.0	1.8		1.9	2.0–2.2	1.8–2.2	1.8–2.0		1.8–2.0	2.0–2.4	1.5–2.3	1.5–2.1		1.7–2.1
Unemployment rate	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
June projection	3.6	3.7	3.8		4.2	3.6–3.7	3.5–3.9	3.6–4.0		4.0–4.4	3.5–3.8	3.3–4.0	3.3–4.2		3.6–4.5
PCE inflation	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
June projection	1.5	1.9	2.0		2.0	1.5–1.6	1.9–2.0	2.0–2.1		2.0	1.4–1.7	1.8–2.1	1.9–2.2		2.0
Core PCE inflation[4]	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	
June projection	1.8	1.9	2.0			1.7–1.8	1.9–2.0	2.0–2.1			1.4–1.8	1.8–2.1	1.8–2.2		
Memo: Projected appropriate policy path															
Federal funds rate	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
June projection	2.4	2.1	2.4		2.5	1.9–2.4	1.9–2.4	1.9–2.6		2.5–3.0	1.9–2.6	1.9–3.1	1.9–3.1		2.4–3.3

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 June projections were made in conjunction with the meeting of the Federal Open Market Committee on June 18-19, 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 June 18-19, 2019, meeting, and one participant did not submit such projections in conjunction with the September 17-18, 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	2.5 – 2.6	2.3 – 2.6
June projection	2.4	2.3 – 2.6	2.2 – 2.6
PCE inflation	1.3	1.3 – 1.4	1.3 – 1.4
June projection	1.4	1.4 – 1.5	1.3 – 1.5
Core PCE inflation	1.4	1.4 – 1.5	1.4 – 1.6
June projection	1.5	1.5 – 1.6	1.3 – 1.6

Participants' Projections

Projection	Change in real GDP	PCE inflation	Core PCE Inflation
1	2.6	1.3	1.4
2	2.6	1.3	1.4
3	2.6	1.3	1.4
4	2.5	1.4	1.6
5	2.5	1.4	1.6
6	2.6	1.3	1.4
7	2.5	1.3	1.4
8	2.6	1.3	1.4
9	2.5	1.3	1.4
10	2.3	1.4	1.5
11	2.6	1.3	1.4
12	2.3	1.4	1.5
13	2.5	1.3	1.4
14	2.6	1.3	1.4
15	2.6	1.3	1.4
16	2.6	1.3	1.4
17	2.6	1.3	1.4

*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	1.9	1.8 – 2.0	1.6 – 2.2
June projection	1.8	1.6 – 2.0	1.4 – 2.2
PCE inflation	1.7	1.7 – 1.9	1.5 – 2.0
June projection	1.6	1.6 – 1.8	1.4 – 1.9
Core PCE inflation	2.2	2.0 – 2.2	1.8 – 2.2
June projection	2.0	1.9 – 2.1	1.5 – 2.1

Participants' Projections

Projection	Change in real GDP	PCE inflation	Core PCE Inflation
1	2.2	1.7	2.2
2	1.8	1.7	2.2
3	1.8	1.9	2.0
4	1.9	2.0	2.0
5	1.9	1.8	2.0
6	2.0	1.7	2.2
7	1.7	1.7	2.2
8	1.8	1.9	2.2
9	2.1	1.9	2.2
10	1.9	1.8	1.9
11	2.0	1.7	2.2
12	1.9	1.6	1.9
13	1.9	1.7	1.8
14	1.6	1.7	2.2
15	1.8	1.7	2.0
16	1.6	1.9	2.2
17	1.8	1.5	2.0

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

Table 2. September 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	2.4	3.7	1.5	1.8	1.88
2	2019	2.2	3.6	1.5	1.8	1.63
3	2019	2.2	3.6	1.6	1.7	1.63
4	2019	2.2	3.7	1.7	1.8	1.88
5	2019	2.2	3.7	1.6	1.8	1.63
6	2019	2.3	3.7	1.5	1.8	2.13
7	2019	2.1	3.6	1.5	1.8	1.63
8	2019	2.2	3.6	1.6	1.8	2.13
9	2019	2.3	3.7	1.6	1.8	1.88
10	2019	2.1	3.7	1.6	1.7	2.13
11	2019	2.3	3.7	1.5	1.8	1.88
12	2019	2.1	3.6	1.5	1.7	2.13
13	2019	2.2	3.7	1.5	1.6	2.13
14	2019	2.1	3.7	1.5	1.8	1.63
15	2019	2.2	3.8	1.5	1.7	1.63
16	2019	2.1	3.7	1.6	1.8	1.88
17	2019	2.2	3.5	1.4	1.7	1.63
1	2020	2.2	3.7	2.0	2.0	2.13
2	2020	1.9	3.6	1.9	1.9	1.63
3	2020	2.0	3.6	1.9	1.9	1.63
4	2020	2.1	3.8	1.8	1.9	2.13
5	2020	1.8	3.8	1.8	1.9	1.63
6	2020	2.0	3.6	2.1	2.1	2.13
7	2020	2.0	3.7	1.9	1.9	1.63
8	2020	1.8	3.7	2.0	2.0	2.13
9	2020	1.7	3.8	2.1	2.1	1.88
10	2020	2.0	3.7	1.8	1.8	2.13
11	2020	2.0	3.6	2.0	2.0	1.88
12	2020	2.2	3.6	1.9	1.9	2.38
13	2020	1.9	3.7	1.7	1.7	2.13
14	2020	1.9	3.6	1.9	1.9	1.63
15	2020	2.0	4.0	2.0	2.0	1.63
16	2020	1.8	3.9	2.0	1.9	1.63
17	2020	2.3	3.3	1.9	1.9	1.63

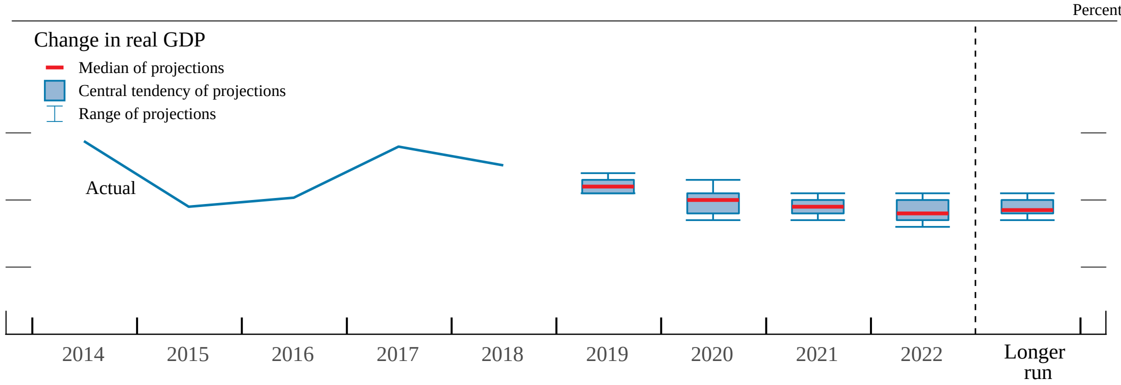
Table 2. ***(continued)***

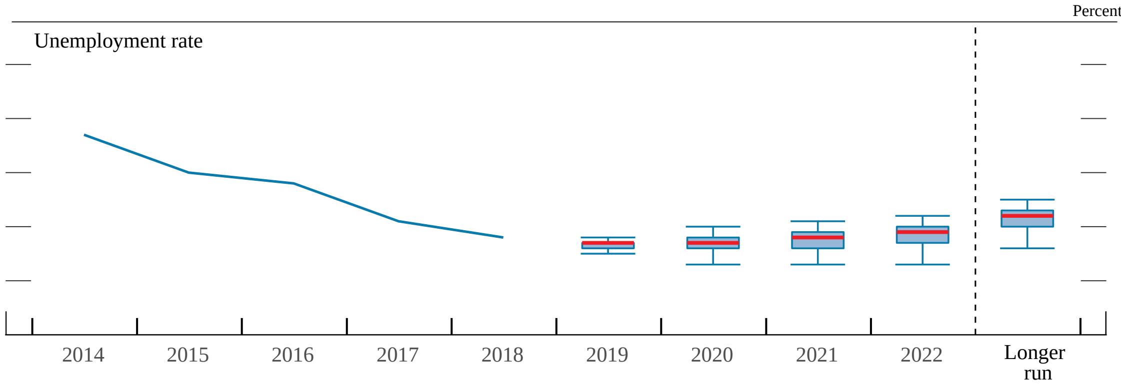
Projection	Year	Change in real GDP	Unemployment rate	PCE inflation	Core PCE Inflation	Federal funds rate
1	2021	2.1	3.8	2.0	2.0	2.38
2	2021	1.7	3.7	2.0	2.0	1.63
3	2021	1.8	3.7	2.0	2.0	2.13
4	2021	2.0	3.9	2.0	2.0	2.38
5	2021	2.0	3.9	1.8	1.9	1.63
6	2021	1.8	3.5	2.2	2.2	2.38
7	2021	2.0	3.7	2.0	2.0	1.88
8	2021	1.8	3.9	2.0	2.0	2.38
9	2021	1.9	3.9	2.3	2.3	2.38
10	2021	1.9	3.9	2.0	2.0	2.13
11	2021	1.7	3.6	2.2	2.2	2.13
12	2021	2.0	3.8	2.0	2.0	2.63
13	2021	1.8	3.7	1.8	1.8	2.13
14	2021	1.8	3.6	2.0	2.0	1.88
15	2021	2.0	4.1	2.0	2.0	1.88
16	2021	1.8	4.0	2.0	2.0	1.63
17	2021	1.9	3.3	2.0	2.0	1.63
1	2022	2.0	3.9	2.0	2.0	2.88
2	2022	1.6	3.8	2.1	2.1	1.88
3	2022	1.8	3.8	2.0	2.0	2.38
4	2022	2.1	3.9	2.0	2.0	2.38
5	2022	2.1	4.0	1.8	2.0	2.13
6	2022	1.6	3.5	2.2	2.2	2.63
7	2022	2.0	3.7	2.2	2.2	2.13
8	2022	1.8	4.1	2.0	2.0	2.63
9	2022	2.0	4.0	2.2	2.2	2.38
10	2022	1.9	4.1	2.0	2.0	2.38
11	2022	1.7	3.7	2.2	2.2	2.38
12	2022	2.0	4.0	2.0	2.0	2.88
13	2022	1.8	3.7	1.8	1.8	2.13
14	2022	1.8	3.6	2.0	2.0	1.88
15	2022	2.0	4.2	2.0	2.0	2.13
16	2022	1.7	4.0	2.0	2.0	1.63
17	2022	1.7	3.3	2.0	2.0	1.88

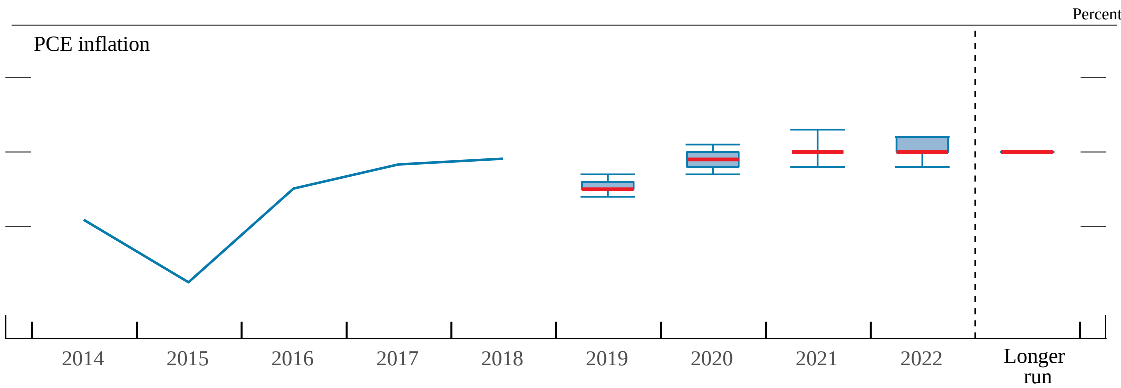
Table 2. ***(continued)***

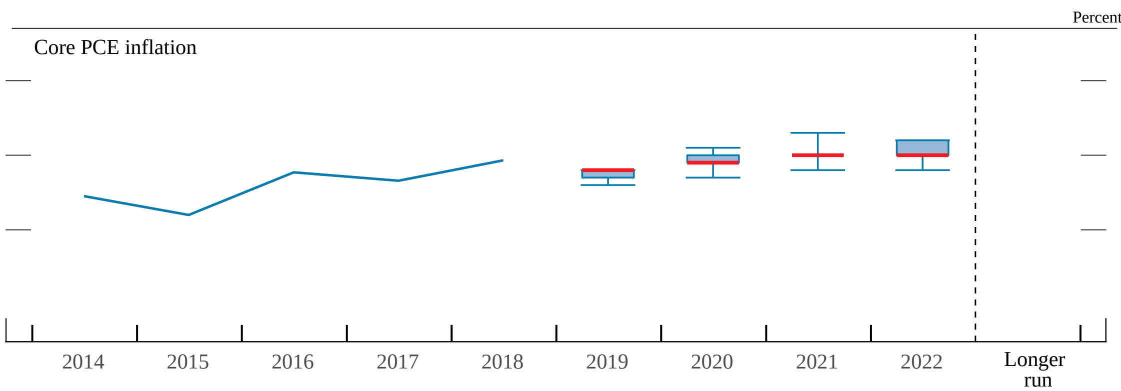
Projection	Year	Change in real GDP	Unemployment rate	PCE inflation	Core PCE Inflation	Federal funds rate
1	LR	2.0	4.1	2.0		3.00
2	LR	1.7	4.0	2.0		2.50
3	LR	1.9	4.0	2.0		2.38
4	LR	2.1	3.9	2.0		2.50
5	LR	2.1	4.0	2.0		2.50
6	LR	1.7	4.2	2.0		2.50
7	LR	2.0	4.0	2.0		2.50
8	LR	1.8	4.2	2.0		2.75
9	LR	2.0	4.3	2.0		3.25
10	LR	1.9	4.5	2.0		2.50
11	LR	1.8	4.2	2.0		2.75
12	LR	2.0	4.3	2.0		2.75
13	LR	1.8	4.4	2.0		2.50
14	LR	1.8	4.3	2.0		2.50
15	LR			2.0		
16	LR	1.8	4.5	2.0		2.00
17	LR	1.7	3.6	2.0		2.25

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



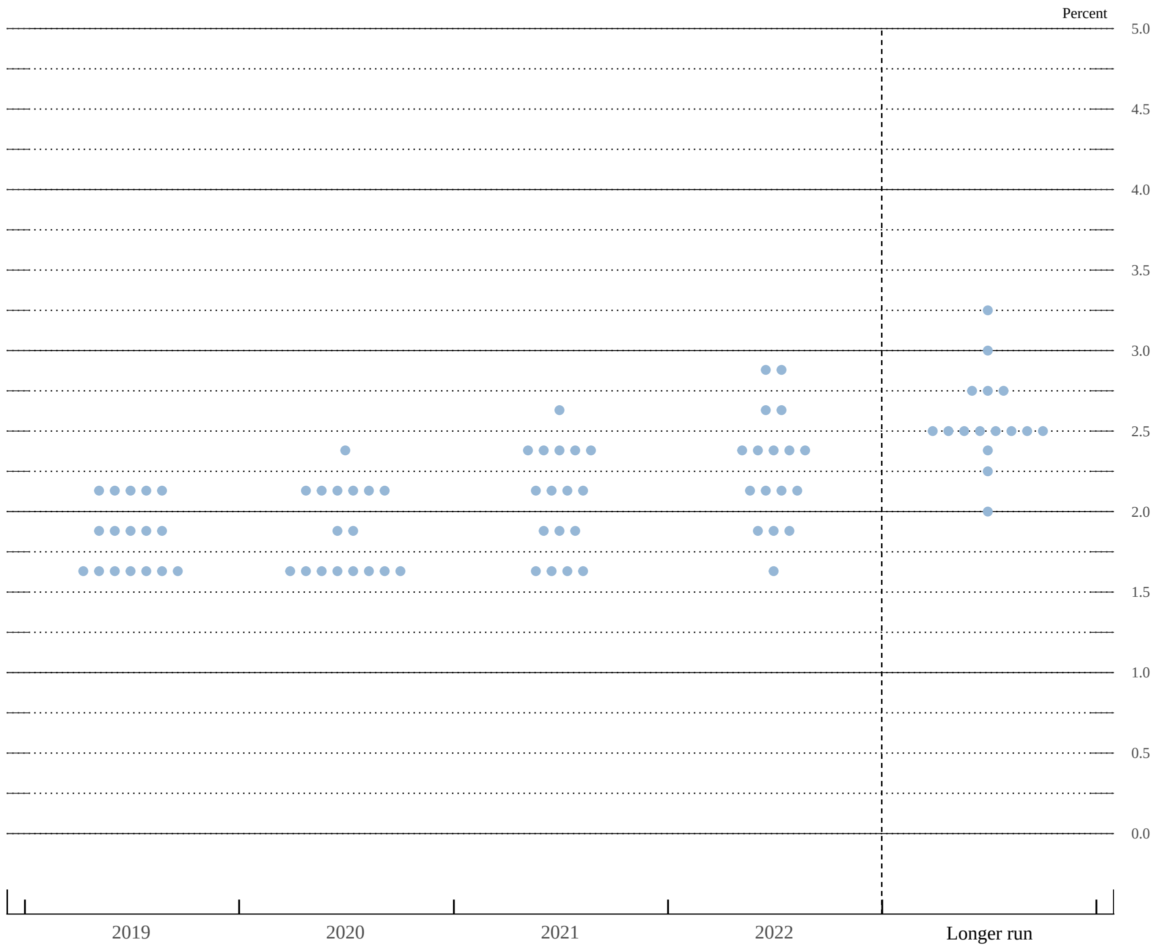






NOTE: Definitions of variables and other explanations are in the notes to table 1. The data for the actual values of the variables are annual.

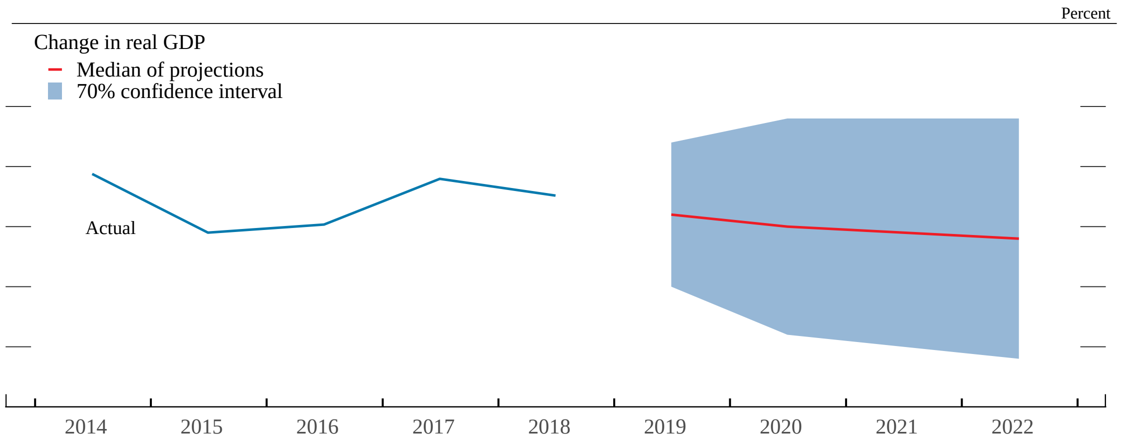
Figure 2. FOMC participants' assessments of appropriate monetary policy: Midpoint of target range or target level for the federal funds rate



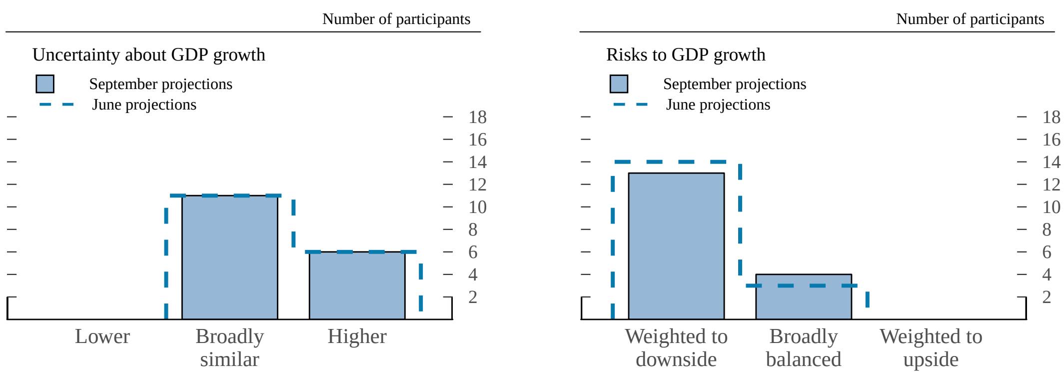
NOTE: Each shaded circle indicates the value (rounded to the nearest 1/8 percentage point) of an individual participant's judgment of the midpoint of the appropriate target range for the federal funds rate or the appropriate target level for the federal funds rate at the end of the specified calendar 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



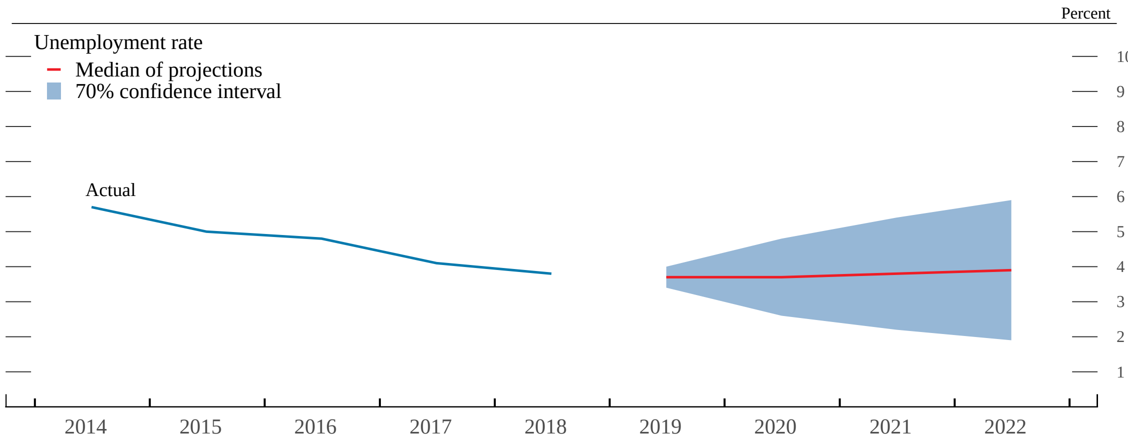
FOMC participants' assessments of uncertainty and risks around their economic projections



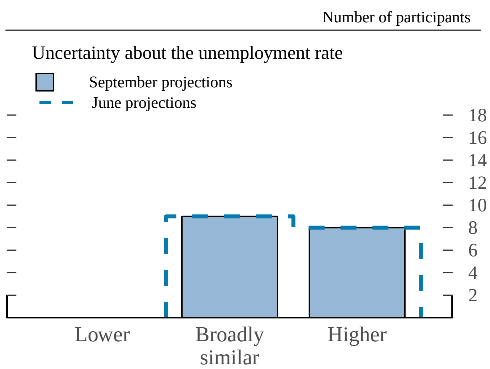
Note: The blue and red lines in the top panel show actual values and median projected values, respectively, of the percent change in real gross domestic product (GDP) from the fourth quarter of the previous year to the fourth quarter of the year indicated. The confidence interval around the median projected 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."

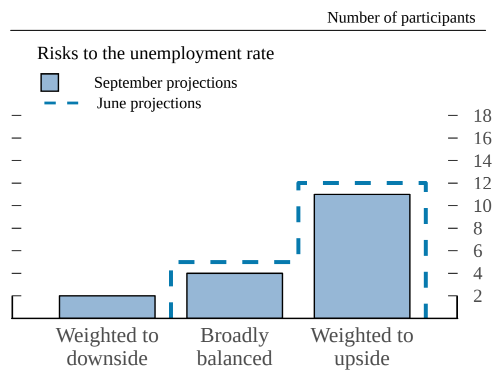
Figure 4.B. Uncertainty and risks in projections of the unemployment rate

Median projection and confidence interval based on historical forecast errors



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

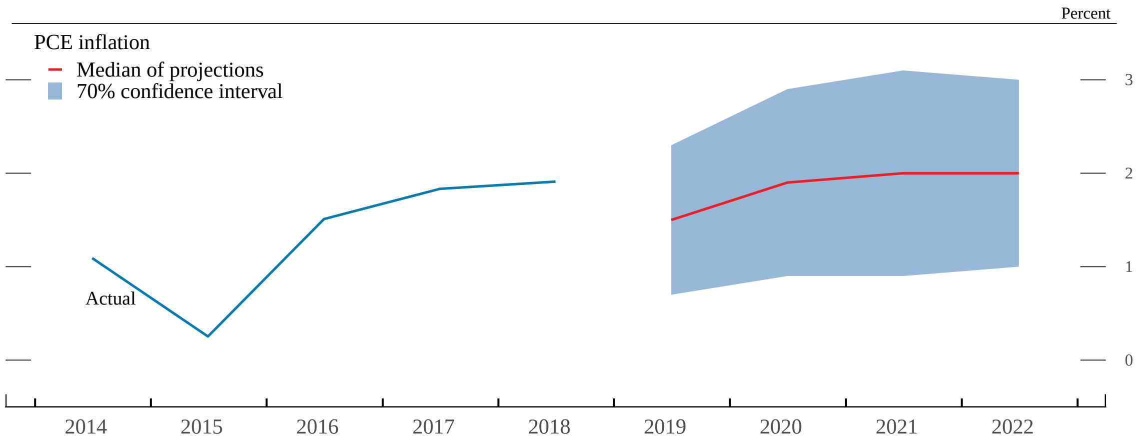




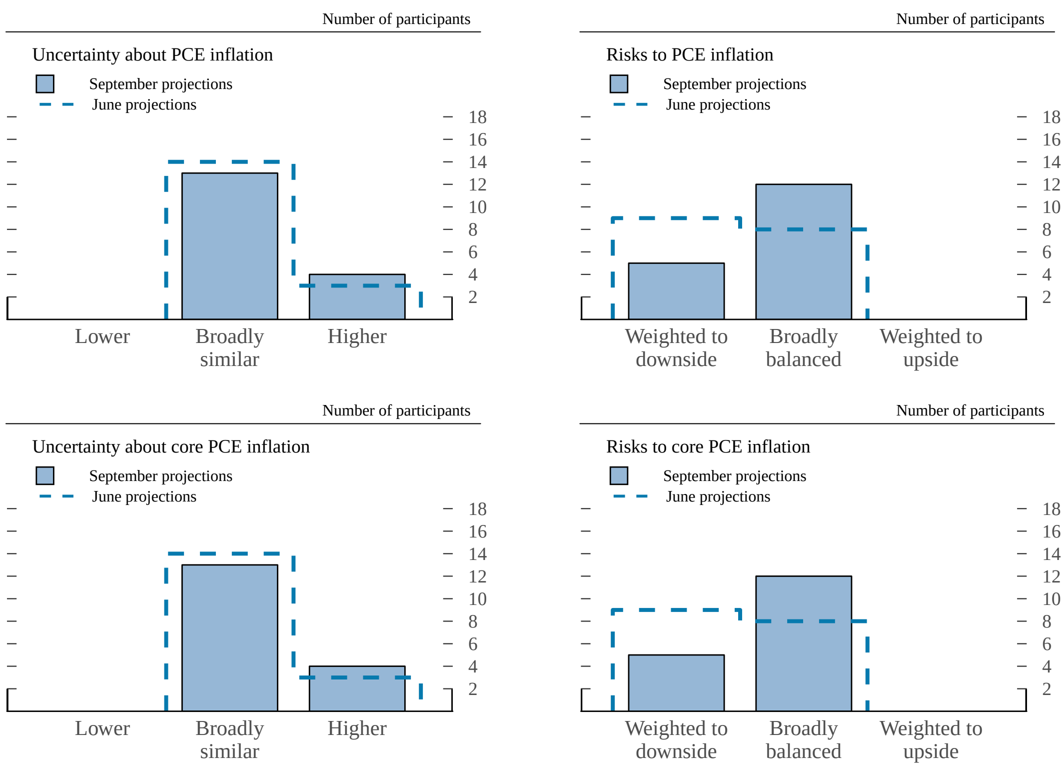
NOTE: The blue and red lines in the top panel show actual values and median projected values, respectively, of the average civilian unemployment rate in the fourth quarter of the year indicated. The confidence interval around the median projected values is assumed to be symmetric and is based on root 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 con?dence 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	B	B	A	B	B	B	A	B	B	B	A	A	A	B
Unemployment rate	A	B	B	A	A	A	B	B	B	A	B	B	B	A	A	A	B
PCE inflation	B	B	B	A	A	A	B	B	B	B	B	B	B	B	B	A	B
Core PCE inflation	B	B	B	A	A	A	B	B	B	B	B	B	B	B	B	A	B

A = Higher B = Broadly similar C = Lower

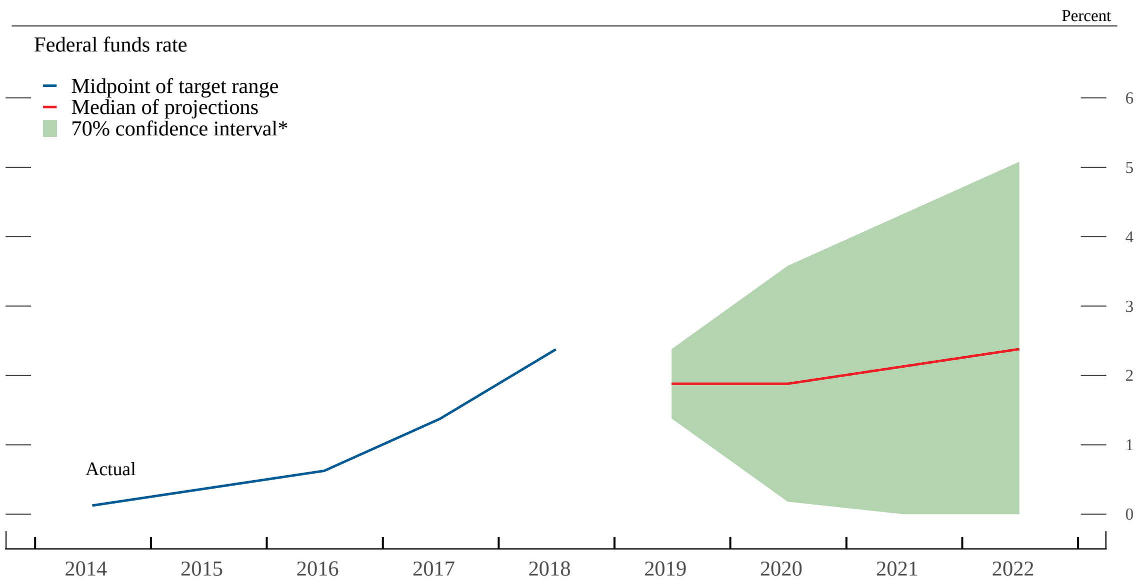
Question 2(b): Please indicate your judgment of the risk weighting around your projections.

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

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 efects 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 difer 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: N/A

Respondent 2: Accommodative monetary policy, with some contribution from the (waning) fiscal stimulus, will keep growth above trend and the unemployment rate below the natural rate for several years before returning to longer-run sustainable levels. The overshooting of full employment is accompanied by inflation gradually returning to target by 2021.

Respondent 3: Recent evidence, including an upward trend in the Holston, Laubach, and Williams model estimate of trend growth, a moderate decline in the probability of the low-trend-productivity-growth regime of the Kahn-Rich model, and a continuation of firm labor force participation relative to the demographically-implied trend, indicate that the potential growth rate of the economy has increased modestly. I therefore have raised my estimate from 1¾ percent to 1.9 percent.

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 that will 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 4: N/A

Respondent 5: N/A

Respondent 6: Convergence to the longer-run level of the unemployment rate will require longer than five years under the assumption that monetary policy will turn only mildly restrictive in the medium term.

Respondent 7: N/A

Respondent 8: N/A

Respondent 9: N/A

Respondent 10: I anticipate that the economy will converge to my longer run forecast within five years.

Respondent 11: N/A

Respondent 12: N/A

Respondent 13: Real GDP growth will likely converge to its longer-run level this 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 and would likely lead me to revise down my estimate of the longer-run unemployment rate.

Respondent 14: N/A

Respondent 15: Based on recent data and our projections, we expect deviations from target of headline and core inflation 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 and a low real interest rate on short-term government debt, features GDP growth of 2.0 percent, an unemployment rate of 4.5 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 undershooting of unemployment will end in 2023. Because there are multiple potential medium term outcomes, we cannot provide a single set of longer-run 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 16: 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 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: N/A

Respondent 2: 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 3: Uncertainty around my projections for economic activity and inflation has increased further since the June SEP. Nevertheless, because the historical level of uncertainty as defined in the SEP—the average levels over the past 20 years—is quite high, I still consider uncertainty broadly similar to that standard. Further trade tensions, volatile financial markets, slower global growth, significant political tensions across the globe, the future path of fiscal policy, the limited policy space in some foreign economies, and the possibility of "too low" U.S. and global inflation expectations are sources of uncertainty.

Respondent 4: N/A

Respondent 5: Uncertainty about u* and the slack - price inflation linkage remains elevated

Respondent 6: We judge that in the current environment there is more uncertainty than normal about the behavior of both nominal and real variables. As concerns inflation, there is uncertainty about the equilibrium unemployment rate that is exacerbated by a small inflation/unemployment tradeoff. We have also little historical experience to draw from about inflation behavior when the unemployment rate is projected to stay low for a very prolonged period of time. As concerns the real side, the medium-term process of steering the economy toward a soft landing via a prolonged growth recession that avoids a full-blown economic downturn will be challenging, especially so if this process occurs in an environment where political uncertainty remains high.

Respondent 7: N/A

Respondent 8: N/A

Respondent 9: N/A

Respondent 10: Uncertainty surrounding output growth and unemployment remains elevated by heightened uncertainty about trade policy and fiscal policy. The persistent low value of the real natural rate of interest raises uncertainty about the underlying rate of economic growth. The impact on inflation uncertainty is less pronounced given how flat the Phillips curve is. However, I remain concerned about inflation that is persistently running below the Committee's target.

Respondent 11: The new budget agreement eliminated a key source of uncertainty about the impulse to GDP growth from fiscal policy. But the direction of trade policy and the growth prospects of our major trading partners remain highly uncertain. And uncertainty over the extent to which recent developments in financial markets reflect changes in perceptions for U.S. growth and inflation as opposed to international flight-to-quality demand have made it more difficult to gauge overall financial conditions. Nevertheless, we do not feel the overall situation is sufficient to boost our assessment of the uncertainty over our growth and unemployment forecasts into the "higher than historical average" bucket.

Meanwhile, the recent pickup in monthly core inflation has reduced the uncertainty regarding the degree to which the soft readings earlier in the year would persist. However, a further drop in market measures of inflation compensation since June has heightened concerns that inflation expectations are drifting further below 2 percent. Uncertainty about the current level and prospective path for the short-run neutral interest rate is higher than usual, adding to the difficulty in judging the appropriate policy path needed to reach our inflation objective. However, like with growth and unemployment, we still think the overall assessment of inflation uncertainty falls into the "broadly similar" category.

Respondent 12: N/A

Respondent 13: N/A

Respondent 14: Uncertainty is likely to be greater than average because of heightened uncertainty about trade policy.

Respondent 15: Heightened uncertainty associated with trade policy and the potential effects on supply chains, capital expenditures, and hiring combine to increase uncertainty regarding GDP growth and unemployment relative to prior years.

Respondent 16: Political-economy risks in the U.S. and abroad remain elevated. The list of risks includes—but is by no means limited to—trade and tariff disputes, concerns about debt sustainability in Italy, the possibility of a hard Brexit, and domestic and trade decisions by China. I believe that those risks have the potential to spill over into economic results. Moreover, the level and shape of the government bond yield curve suggest risks of a material deterioration in the economic outlook. I believe the uncertainty around the modal outlook is higher than we've seen in the recent past.

Respondent 17: 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. Changes in trade policy and other financial and international developments have increased the uncertainty around my forecasts, but not significantly.

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: Absent any increase in monetary accommodation, risks to projected economic activity appear somewhat skewed to the downside. Despite strong first-half growth and continued gains in consumer spending, recent readings on employment, investment spending, industrial production, exports and commodity prices suggest some loss of momentum. This reflects, at least in part, the effects of the escalating tariff dispute, weak growth abroad, and an appreciating dollar. The high degree of uncertainty regarding how these events play out increases the risk around my projections. More broadly, tail risk for another recessionary/ELB episode remains elevated as signaled by the inverted yield curve. Although we have unconventional policies to respond should we hit the ELB, lowering the short rate will help alleviate these heightened risks. My assessment is that risks appear broadly balanced after taking into consideration that appropriate monetary policy will continue to ease this year and offset these negative effects.

Respondent 3: Even with the further change to my policy path assumption, the risks to real economic activity are weighted to the downside, as risks that are most salient seem to be primarily in that direction. These include the possibility that escalating trade tensions, global political events, and slower global growth could spillover and 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 the inversion of the yield curve also indicate a greater 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 more muted at the moment.

Although closer to balanced, the risks to inflation also appear to be still weighted 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. The decline in market-based inflation compensation in the U.S. over this year and the continued 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 4: N/A

Respondent 5: Our views on the level u* continue to decline as we observe no cost push pressure on price price inflation from a low unemployment rate

Respondent 6: Trade policies and foreign economic developments could slow economic activity down by more than what we are envisioning in our baseline outlook. The recent softness in business investment could also prove more persistent given the deterioration in profit margins. These risks are only partially offset by the fact that underlying fundamentals for household spending remain favorable and could lead to stronger domestic demand. The risks to the inflation outlook are more balanced because some of the downside risks to real activity take the form of adverse supply shocks. Too, the recent inflation readings could signal an unemployment/inflation tradeoff that is becoming more meaningful as labor markets remain tight.

Respondent 7: N/A

Respondent 8: N/A

Respondent 9: I believe that it is possible that the trade disputes with China will intensify, and it is also possible that trade restrictions with other countries will emerge. If these events materialize, business investment would be affected.

Respondent 10: Ongoing trade policy uncertainty and weak foreign economy growth have increased the downside risk in my projection.

Respondent 11: We see the risks to the outlook for growth, unemployment and inflation as broadly balanced.

On the downside, the international economy and trade policy continue to be important concerns. BFI and manufacturing remain lackluster, which could be foreshadowing a broader slowdown in growth than we currently anticipate. We see two-sided risks to our outlook for consumer spending. On the downside, our forecast carries forward a healthy portion of the recent strength in consumer expenditures through 2020, and we may have overestimated the sustainability of such spending, especially if consumer sentiment falters or business-sector caution begins to have a meaningful imprint on hiring. On the upside, continued strength in labor markets, low borrowing rates, and healthy household balance sheets could generate even more spending than we forecast. Also on the upside, business sentiment could turn more positive if trade uncertainty abates, and with the new budget deal, fiscal policy could prove somewhat more expansive than we have assumed.

The likelihood that inflation expectations are at undesirably low levels continues to challenge the attainment of our inflation goal, and this problem now seems somewhat larger than it did in June. We have, however, incorporated a lower-for-longer path for the federal funds rate, and feel this change in policy leaves the risks to the inflation forecast as broadly balanced.

Respondent 12: Overall, my modal forecast is little changed from my June SEP submission. Economic growth is moderating in line with my June projections, with weak business investment offset by strong consumption. In my modal forecast, this moderation toward trend growth continues. 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 4 to 4 1/2 percent. I expect inflation to move back gradually to our goal of 2 percent. In this scenario, monetary policy remains on hold for an extended period to support the rise in underlying inflation and better position us to respond should a more sustained downturn in the economy emerge.

I continue to see the risks around my GDP forecast as weighted to the downside. The ongoing uncertainty caused by trade policy and tariffs has weighed on business sentiment, weakened business investment and manufacturing activity in the U.S., and has contributed to slower growth abroad. 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. The low level of Treasury yields and other sovereign debt yields suggests that bond market investors may be placing high weight on this scenario. But the recent increases in long yields over the past few days suggest there may be other drivers. Other downside risks weighing on the outlook include Brexit and the potential for a disruptive resolution to the protests in Hong Kong. Should the weak-growth scenario comes to pass, the short- to medium-term equilibrium interest rate would move down and the fed funds rate would need to move down as well in order to sustain the expansion and foster achievement of our longer-run goals of maximum employment and price stability.

On the other hand, a quicker and more positive resolution to some of these uncertainties would support growth and be an upside risk to my forecast. Consumer spending, which has held up very well despite the uncertainties, may be indicating there is more positive underlying momentum in the economy; equity market investors may be putting higher weight on this possibility than do investors in the bond market.

Labor market conditions continue to be tight, which could pose 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 are 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; commercial real estate valuations continue to be high; and corporate debt levels are high. Further monetary easing could exacerbate these risks and financial vulnerabilities could amplify an economic slowdown.

Respondent 13: N/A

Respondent 14: A further escalation of trade tensions is an important risk and it is tilted to the downside: the prospects of additional tariffs on imported goods do not come with commensurate upside risks. Also, changes in the yield curve currently imply an elevated recession risk, according to many models. Other sources of downside risk include: A sharper slowdown in foreign growth, triggered perhaps by geopolitical developments abroad, such as a hard Brexit. And, the ongoing slowdown in business investment and manufacturing production could be an early sign of a broader and more severe slowdown in the economy.

Respondent 15: 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 as this time. Despite some upward movement, productivity remains in its low regime. 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 weakening global economy is a related reason for concern. Finally, the possibility of a persistent yield-curve inversion is an 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, we do note that yield-curve based recession probabilities are elevated. As suggested above, the interaction between US and foreign trade policies raises the possibility of trade and other disruptions that might increase unemployment. On the other hand, we also see the possibility of further small declines in the unemployment rate, if GDP 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 a 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 weakening global economy could offset this price pressure. 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. Energy prices have been volatile with concerns about supply disruption putting upward pressure on energy prices and concerns about a weakening global economy putting downward pressure on prices. Overall, we, we view the risks aw weighted to the downside.

Respondent 16: Any of a variety of trade and global political-economy risks, if realized, could adversely affect U.S. GDP and employment growth in 2019. The high level of marginal-quality corporate debt is likely to be an amplifier in the event of a downturn. Risks to GDP growth are, therefore, weighted to the downside, and risks to the unemployment rate are weighted to the upside.

Respondent 17: Downside risks stemming from the recent softness in business spending data, increased trade tensions, a downgraded outlook for foreign growth, and an inverted yield curve remain elevated. Consequently, I consider the risks to GDP and inflation to be weighted to the downside and unemployment to the upside.

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: The headwinds to domestic growth from the trade dispute and developments abroad have become somewhat stronger since the June SEP. Therefore, appropriate policy provides additional monetary accommodation this year. 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 ½ percent. My projected unemployment gap is 0.2 percentage point narrower given my lower reassessment of U* which supports a lower funds rate path.

Respondent 3: 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.

Most estimates of the natural rate have been fairly stable since the June SEP submission. However, because the FOMC's decision to maintain an ample reserves regime probably will lead the FOMC to continue to express the policy target as a range, it seems appropriate to me to make a technical adjustment and convey my estimate of r* as a range. Consistent with the estimates from the Holston, Laubach, and Williams model for the last few years, I judge that range to be ¼ - ½ percent. Adding in the 2 percent inflation objective, my range for the longer-run federal funds rate is 2¼ - 2½ percent and I have submitted the midpoint of 2 3/8 percent as my estimate.

I see developments since June as support for maintaining a more active approach to policy. Accordingly, my assessment of the appropriate federal funds rate path is below that of June. In particular, I believe that a 50 bps reduction in the policy rate over the rest of this year, for a total of 75 bps over the entire year, is warranted for a number of reasons. First, with inflation pressures remaining muted and longer-term inflation compensation having declined, this path should help lead inflation to return to the FOMC objective in an appropriately due time. Second, the global outlook remains cloudy, and investment spending and manufacturing continue to be weak, warranting a lower policy path to help support real activity and preclude an undue rise in unemployment. Third, this reduction will help mitigate the downside risks that I discussed earlier. As inflation moves up toward 2 percent, I anticipate that this 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 4: N/A

Respondent 5: N/A

Respondent 6: Optimal monetary policy under a symmetric loss function would call for much tighter policy than what we have penciled in as appropriate. The very modest tightening occurring in the out years in our baseline projection stems from the observation that it has proven exceedingly difficult to achieve a soft landing when the economy has already surpassed full employment. A more pronounced tightening of policy could increase the probability of a recession in ways that our linear models are unable to capture.

Respondent 7: N/A

Respondent 8: Given that downside risks to the real economy have persisted for some time without adversely affecting macro performance, appropriate monetary policy calls for a "wait-and-see" approach before considering further accommodation.

Respondent 9: I believe that monetary policy is currently accommodative, and no more accommodation is necessary. I believe that current policy will result in a modest uptick in inflation . We will then want to withdraw some accommodation in 2021.

Respondent 10: My path for appropriate monetary policy is slightly lower compared to last time. I anticipate the economy will be running at a pace close to its longer run trend over the forecast horizon and that the federal funds rate will move up very gradually toward my estimate of its longer run level.

Respondent 11: 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 one more 25 basis point funds rate cut this year and then leaving the rate on hold well into 2021. We expect this policy path will buoy inflation expectations enough that, by late 2021, inflation will be clearly heading above 2 percent. Once the overshooting is in train, our policy path moves back up towards its long-run neutral level at a very gradual pace. In particular, we assume a single 25 basis point hike in each of 2021 and 2022, which leaves the funds rate in the range of 2-1/4 to 2-1/2 percent by the end of the forecast period. We project the funds rate to return to our estimate of the long-run neutral rate of 2-3/4 percent not long thereafter.

A lower-for-longer policy path signals our commitment to a symmetric 2 percent objective. It also is well designed from a risk-management perspective, as it provides insurance against the downside risks to growth and inflation. 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, a shallower path for rates addresses the possibility that over the near and medium terms the short-run equilibrium funds rate may be modestly lower than its long-run level. Our DSGE model analysis suggests that this might be the case, as do some decompositions of the yield curve. Moreover, a lower-for-longer path is consistent with managing against the asymmetric risks of policy being overly restrictive rather than overly accommodative.

Respondent 12: 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. The labor market is tight and in my forecast the unemployment rate remains below my estimate of the longer-run trend, which I put in the 4 to 4-1/2 percent range, even as the pace of payroll employment growth slows to trend. The incoming inflation data are consistent with inflation moving back up to 2 percent. The headline PCE measure has been held down by energy prices. The cyclical component of core PCE inflation, which is correlated with measures of labor market slack, accounts for only 40 percent of core PCE, but it has continued to move up as labor markets have tightened. Although core PCE inflation remains below 2 percent, the trimmed-mean measure of PCE inflation has been more stable at 2 percent, and in past episodes when these two measures have diverged, core PCE inflation has tended to move toward the trimmed-mean.

Given this modal outlook, a variety of simple monetary policy rules suggest a rising path for the federal funds rate. However, given the risks, in order to support a sustained firming in the underlying inflation rate, my appropriate policy path has the funds rate remaining near current levels for some time. So long as output growth remains at trend and the labor market remains solid, this opportunistic approach to inflation would refrain from taking deliberate action in order to reinflate the economy; nor would it take deliberate action to curtail an inflation overshoot so long as inflation doesn't rise too much above 2 percent. This funds rate path is slightly shallower than the path in my June SEP submission, reflecting July's 25 basis point cut in the fed funds rate and the downward revision I made to the longer-run fed funds rate, which I now estimate to be 2.75 percent instead of 3 percent.

Risks to the outlook for growth are tilted to the downside; these risks include the ongoing uncertainty about trade policy and tariffs, weak growth abroad, Brexit, and the outcome of the protests in Hong Kong. These risks imply a potential for a weak-growth scenario in which economic growth slows below trend, the unemployment rate rises, and inflation remains low for a sustained period. The low levels of longer-term Treasury yields and other sovereign debt yields are consistent with bond market investors placing considerable weight on this scenario. But the recent increases in long yields over the past few days suggest there may be other drivers. In this scenario, the equilibrium interest rate would move down and the fed funds rate would need to move down as well in order to sustain the expansion and foster achievement of our longer-run goals of maximum employment and price stability.

Until there is evidence that the weakness in business investment and manufacturing is broadening and leading firms to reduce their hiring and consumers to pullback on spending, maintaining the current level of the fed funds rate would give us more scope to respond should a material weakening in the economy occur.

Respondent 13: My judgment regarding the appropriate path of the federal funds rate is predicated on promoting sustainable economic growth and price stability. At this time, I anticipate that a flat trajectory for the federal funds rate will best promote these goals. I view this path as most appropriate due primarily to the fact that the current level of the federal funds rate remains below even my downwardly revised estimate of the longer-run normal level of the federal funds rate. Moreover, with the unemployment rate at historically low levels and the economy growing above my estimate of its longer-run normal pace, I see little rationale for additional monetary policy accommodation at this time.

In the process of forming my policy view, I take into account 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 stabilize below my uncertain estimate of its longer-run normal rate. 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. Along these lines, 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 14: The economy is slowing, risks are tilted to the downside, and inflation remains below 2 percent. Against this backdrop, a shallow downward tilt to the funds rate path is appropriate. My revision to the longer-run normal value of the federal funds rate reflects a reassessment of the boost to r* from expansionary fiscal policy (enacted since late 2017).

Respondent 15: The appropriate path for the federal funds rate requires a cut of 50 basis points to 1.63 percent. The reduction in the policy rate will help to re-center inflation and inflation expectations at the inflation objective. The reduction will also provide some insurance against the economy entering recession. We do not view this cut as permanent in the current regime. When we think it would be wise to reverse this cut is difficult to predict; however, to indicate its temporary nature we have indicated 25 basis point increases in 2021 and 2022. Furthermore, as the economy evolves, especially in the event of a regime change, our optimal path for the federal funds rate will likely change.

Respondent 16: 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 a yield-curve inversion of any significant size or duration would signal that monetary policy is now restrictive. My baseline outlook is that we will need to make some adjustments to the policy rate this year and next. I stand ready to make additional adjustments, as needed, in response to changes in the outlooks for real activity and inflation, and in the neutral rate, in order to achieve our dual mandate goals.

Respondent 17: Inflation remains below target and inflation expectations have softened some more. 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 reducing the funds rate now and committing to not raise it 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 premiums, suggest a lower level for the federal funds rate in the future.

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: I believe that the economy still has considerable underlying momentum, particularly in consumption. But the recent weakness in business fixed investment does 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. The buffering effect of higher potential growth, both in response to policy changes as well as increased investment and labor force participation, will limit the spillover of growth into inflation.

Respondent 2: My forecast factors in a sizable, though waning, effect of the fiscal stimulus to the economic outlook. Ongoing strength in household disposable income coupled with past gains in household wealth and high consumer confidence should support continued consumption growth. However, 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 heightened 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 expect core inflation to reach our 2 percent target on a sustained basis by 2021.

Respondent 3: With the change in my policy rate path assumption and recent U.S. data being roughly consistent with my outlook, my central projections for the SEP variables has changed only modestly from that in my June SEP submission.

I project that real GDP growth in 2019 will be about 2¼ percent, modestly above my June submission, largely because growth in the first half of the year was somewhat stronger than I had anticipated. Nevertheless, developments have been consistent with a projection of slower growth in the second half. In particular, I expect continued weakness in business fixed investment, manufacturing indicators, and exports, which reflect spillovers from relatively weak global growth, to hold down overall growth. Offsetting these weak sectors, consumer spending growth should remain solid, although below the robust pace of Q2, as the labor market continues to be strong.

With the modest slowdown in growth, I expect the unemployment rate to remain near its current level over the rest of the year. Consistent with the higher readings in the past couple of months, I project that inflation in the second half of this year will be above the subdued pace of the first half. Still, with continued muted inflation pressures and low inflation expectations, this pickup is limited. Consequently, I project core PCE inflation for this year to be 1.7 percent, little different from my June projection.

The basic contours of my projection over the rest of the forecast horizon have not changed from my June projection. 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 remains fairly 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 4: N/A

Respondent 5: Central outlook shaped by global slowdown and disinflation forces

Respondent 6: Economic activity has been evolving roughly in line with our June forecast. The soft inflation numbers appear to have been temporary. Labor market developments remain favorable, with increases in the participation rate preventing further declines in the unemployment rate. Fundamentals for household spending remain very favorable given the recent upward revisions to disposable income and to the personal savings rate. Indeed, sizable advances in consumer spending are offsetting weakness in business capital expenditures. Firms' reluctance to add to capital could in part reflect uncertainty about trade policy and foreign economic developments. In the near term, we continue to expect growth in consumer expenditures to provide most of the support to GDP growth. As uncertainty gets resolved, investment demand is projected to pick up in an interest rate environment that remains favorable. Given the projected stance of monetary and fiscal policy, we expect the economy to continue to grow somewhat above potential throughout 2020. Only in 2021 and 2022, when the effects of fiscal policy wane and monetary policy turns slightly restrictive, the economy is expected to eventually slow to a pace of growth below potential. As a result, by the end of the forecast horizon the unemployment rate, at 3.5 percent, is still well below the level consistent with full employment. With continued tightness in labor markets, inflation is expected to increase above 2 percent, albeit by a modest amount.

Several recession probability models now signal a high probability of a recession twelve months from now. The signal from the 10-year Treasury rate and the associated yield curve inversion, however, is difficult to interpret under current circumstances because it seems to be reflecting weakness abroad rather than domestic weakness. Given that at least so far risks do not appear to have led to a marked deterioration in economic fundamentals, the forecast is conditioned on a flat profile for the federal funds rate until the end of 2020. Over the course of 2021 and 2022, the federal funds rate moves up to a level that is slightly above the assumed equilibrium rate. In this environment, an even more accommodative stance of monetary policy would increase financial stability risks that are already present with respect to asset valuations and firms' leverage.

There are downside risks to our baseline outlook which aren't entirely offset by the possibility of stronger growth in consumption expenditures given the high level of savings and net worth. Some of the downside risks, however, would not necessarily translate into lower inflation if realized. We also continue to place some weight on the possibility that prolonged labor market tightness may ultimately lead to a less benign unemployment/inflation tradeoff. For these reasons, we view the risks to our inflation outlook as roughly balanced.

Respondent 7: N/A

Respondent 8: My baseline projection has growth for the year coming in above its longer-run potential growth rate before settling down to trend next year and beyond. This is largely due to lasting effects from recent tax reform and fiscal stimulus. Beyond this year, I expect the strength of the consumer to continue to sustain the expansion, and after a period of softness, I see capital spending growing at a modest trajectory throughout the medium term.

The risks to this outlook are tilted modestly to the downside amid elevated noise around trade policy and indicators that global manufacturing production is becoming a drag on overall growth.

Underlying inflation has been running close to target. Given the absence of slack in my modal projection, I project inflation returning to the FOMC's objective in 2020.

I judge the risks to my inflation outlook as broadly balanced. There are downside risks, but the recent threat of additional tariffs represents a clear new upside risk.

Respondent 9: I have followed the Tealbook and assumed that no additional tariffs will be imposed, recognizing the downside risk to GDP if that assumption is not valid. Even with that assumption, the use of tariffs as a negotiating tool has created a climate of uncertainty that has impeded business investment. I believe that additional uncertainty in an election year will push GDP modestly below trend. Accommodative monetary policy boosts inflation modestly with a lag.

Respondent 10: My forecast for the economy is very similar to my June projection. I expect growth to be near its trend pace over the next three years and inflation to move up to the Committee's target by the end of next year. The unemployment rate to bottoms out at 3.6 percent this year and then begins to rise gradually toward its longer run value. With output growth near trend and inflation near target, I see appropriate monetary policy as keeping the path of the funds rate about flat over the forecast horizon. I see more downside risk to output growth compared to my June forecast. In particular, I see more risk that adverse consequences of trade policy and weakening growth prospects for foreign advanced economies have a significant negative impact on US growth over the medium term.

Respondent 11: We continue to see many of the underlying fundamentals for the domestic economy as solid. Our projection assumes that the strength of the consumer, buoyed by healthy labor markets, will offset weakness in business investment and a drag from the international sector. Our path for monetary policy provides a modest accommodation when benchmarked against a short-run r* that is somewhat below its long-run level. All told, we expect growth to be somewhat above our estimate of potential output growth for the remainder of this year and next and then move down to slightly below trend growth in 2021 and 2022. (Our estimate of trend growth is 1.8 percent per year throughout the forecast period.) This leaves our growth forecast at 2.3 percent in 2019, 2 percent in 2021, and 1.7 percent in 2021 and 2022. We expect the unemployment rate to reach 3.6 percent early next year, remain at that level through the end of 2021, and then edge up to 3.7 percent in 2022, 0.5 percentage points below our estimate of the natural rate of unemployment at that time.

Although recent readings on core inflation have improved, we remain concerned that underlying inflation trends and inflation expectations are too low. Accordingly, we believe monetary accommodation is necessary to put inflation on a trajectory consistent with our 2 percent symmetric objective. We think the maintenance of resource pressure, a flatter funds path, and communicating a strong commitment to a symmetric 2 percent inflation target will lift inflation and inflation expectations. Core inflation is projected to rise from 1.8 percent in 2019 to 2 percent in 2020, and 2.2 percent in 2021 and 2022.

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

Respondent 12: On the whole, incoming data on the economy have been generally consistent with my June projection. The economy appears to be slowing toward trend as anticipated, although there is some possibility that the slowdown could be more significant than that. 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 has slowed from last year but 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.

Inflation readings have shown some tentative signs of firming and my expectation is that inflation will gradually move up to 2 percent over the forecast horizon. The headline PCE measure has been held down by energy prices. The cyclical component of core PCE inflation, which is correlated with measures of labor market slack, accounts for only 40 percent of core PCE, but it has continued to move up as labor markets have tightened. Although core PCE inflation remains below 2 percent, the trimmed-mean measure of PCE inflation has been more stable at 2 percent, and in past episodes when these two measures have diverged, core PCE inflation has tended to move toward the trimmed-mean.

To achieve the outcomes in my modal forecast, my funds rate path is relatively flat, with the funds rate at current level over the remainder of this year and incorporating only a few more 25-basis point increases over the forecast horizon. This path is consistent with a strategy that tolerates the inflation undershoot we have been experiencing; does not take deliberate action (i.e., cutting interest rates) to reinflate the economy so long as output is growing at trend and the labor market remains solid; allows the funds rate path to remain shallow to support rising inflation; and does not take deliberate action to curtail an inflation overshoot so long as inflation doesn't rise too much above 2 percent.

While this is my modal forecast, there is uncertainty around how much slowing we will see both in the U.S. and abroad. The softness in business investment and manufacturing, slower growth abroad, and the uncertainty being caused by trade policy and threats of tariffs mean that there is some weight on a weak-growth scenario in which economic growth slows below trend, the unemployment rate rises, and inflation remains low for a sustained period. It is not clear what is driving the behavior of longer-term Treasury yields and other sovereign debt yields. Low levels could be consistent with bond investors placing a higher likelihood on this weak-growth scenario, but the recent increases in long yields over the past few days suggest there may be other drivers. If the weak-growth scenario manifests itself, the short- to medium-term equilibrium interest rate would move down and the fed funds rate would need to move down as well in order to sustain the expansion and foster achievement of our longer-run goals of maximum employment and price stability.

Respondent 13: Central economic outlook: My forecast for real GDP growth is characterized by near-trend growth throughout the forecast horizon supported by moderate household spending which is underpinned by a tight 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, the risks to economic growth and inflation appear tilted to the downside, while risks to the unemployment rate are tilted to the upside. Moreover, these downside risks to real activity and employment seem to have increased since earlier this year. Threats of more restrictive trade and immigration policies, additional signals of slowing 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 the domestic economy, and rising geopolitical uncertainty all pose downside risks to economic growth and inflation.

Respondent 14: 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 15: 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 of regulatory and tax policy changes that might move the economy to a high productivity state and to trade policy uncertainty 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 16: 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. 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. Though the most recent productivity numbers are heartening, it is too soon to say if we are experiencing a sustained pickup. Weak 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. 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 17: Core inflation remains below target, market-based inflation expectations have softened some more, job growth has slowed, 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. In addition, increased trade tensions and concerns about global growth have increased the downside risks to the outlook.

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: My outlook is more or less unchanged, although I do acknowledge that the risk have increased and weighted to the downside, particular in regard to GDP growth. I have lowered by headline PCE inflation forecast in response to the recent decline in oil prices. And have nudged down my forecast for core PCE inflation in response to recent weak data prints as well as spillovers from the decline in energy prices.

Respondent 2: My forecast has somewhat lower growth in the second half of 2019, reflecting recent weak business spending and export data amidst the heightened trade-policy uncertainty.

Respondent 3: Real GDP growth in the first half of this year was above my projection in June. However, the data for U.S. investment and manufacturing as well as the major foreign economies released since the June SEP have been weaker than I had anticipated. Overall, these divergent factors resulted in only a modest markup of my growth projection for 2019.

In addition, as noted in my response in question 1(c), indications of some modest improvement in the supply side of the economy has led me to raise slightly my estimate of the longer-run real GDP growth rate.

As noted in my response to question 3(b), to support the return of inflation to the FOMC's objective on a sustainable basis, to maintain economic growth in a difficult global environment, and to mitigate the downside risks to real economic activity and inflation, my assumed path for the policy rate is lower than it was in my June submission.

Respondent 4: N/A

Respondent 5: N/A

Respondent 6: The forecast has not changed materially since June. The current forecast is conditioned on a lower path for short- and long-term interest rates. However, the additional stimulus from lower rates is offset by a more appreciated dollar and lower firm profits.

Respondent 7: N/A

Respondent 8: My baseline outlook for growth, the labor market, and inflation is unchanged from the June SEP. I have not taken onboard the stronger-than-expected growth in the first half of the year as I expect the softness in business investment to persist over the next few quarters, tempering second half growth.

Respondent 9: My forecast for the funds rate path reflects policy changes since June. The low level of interest rates boosts inflation modestly with a lag.

Respondent 10: NA

Respondent 11: We changed our GDP growth forecast modestly since June, raising 2019 by two-tenths percentage point, leaving 2020 unchanged, and lowering 2021 by a tenth. Our initial estimate of 2022 growth is 1.7 percent, a tenth below potential.

Since June, we revised up our estimate of potential output growth between 2013 and 2017 to better align historical relationships between output, the unemployment rate, and the labor force participation rate; in total, these adjustments reduced the overshoot of output over potential to 1-1/4 percent by the end of 2018. Looking ahead, given a softer projection for capital spending, we lowered our assessment of potential output growth about two-tenths percentage point per year, putting it at 1.8 percent throughout the forecast period. On net, these changes leave the output gap at the end of 2021 similar to our June forecast.

Our unemployment rate projection is a tenth higher this year and a tenth lower in 2021. In light of ongoing demographic trends, we lowered our estimate of the natural rate of unemployment from 4.3 to 4.2 percent, starting in 2022. Our inflation forecast is essentially unchanged.

Although our current economic forecast is quite similar to our June SEP, we felt some adjustment to the policy path was needed to achieve those outcomes. We continue to assume one more 25 bps cut this year and no change in rates until mid-2021. But we slowed the normalization of rates back to the long-run neutral level by having only one 25 bps hike in each of 2021 and 2022. This puts the funds rate in the range of 2 to 2-1/4 percent at the end of 2021 and 2-1/4 to 2-1/2 percent at the end of 2022. This path is 25 bps below our assumption in June for 2021, and 25 to 50 bps below our implicit assumption then for 2022. The change in our policy path reflects a view that short-run r* is likely modestly lower than we had thought before, and hence a somewhat lower path is needed to lift inflation expectations enough to generate some overshooting of inflation before the end of the projection period.

Respondent 12: My forecast has changed little since my June SEP submission. My funds rate path is a bit shallower, reflecting July's 25 basis point federal funds rate cut and the downward revision I made to the longer-run fed funds rate, which I now estimate to be 2.75 percent instead of 3 percent.

Respondent 13: Given the uncertainty that surrounds my projections, my September projections are largely in line with my June projections. I expect slightly firmer readings on real GDP growth and inflation this year. Incoming data on GDP together with the recent federal budget agreement suggest a slightly stronger forecast for real GDP growth. Moreover, I anticipate that the global disinflationary forces that the U.S. continues to import will offset the modest inflationary impulses from a tight labor market, leading to stable rates of inflation near their current low levels.

Respondent 14: Risks and uncertainty associated with trade policy have played an important role in the changes to my projection.

Respondent 15: Recent data for the US economy has led to a slight increase in our projection for GDP growth in 2019. Our assessment of the speed of the convergence of unemployment to its long-run value for the current regime has slowed. We view this change as consistent with our GDP growth projection.

Respondent 16: I view risks to the baseline path for GDP growth and the labor market as being more tilted to the downside since June. I expect that some of these risks will be mitigated by adjustments to the path of the funds rate over the forecast horizon and in the long run.

Respondent 17: My forecasts are little changed. However, my assessment of the appropriate path for monetary policy has shifted down a touch in light of my reassessment of the long-run neutral funds rate.

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: 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 2: 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 beyond 2025. 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 3: My set of projections is broadly aligned with the Tealbook forecast for real growth, but with the small increase in 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 does not begin to rise until 2023 (based on its long-term outlook) in the Tealbook forecast.

Although the Tealbook has lowered modestly its estimate of u* to 4.4 percent, it still remains above my estimate of 4.0 percent, and so labor market conditions are tighter in the Tealbook forecast. Nevertheless, the projected path for inflation in the Tealbook forecast is 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 sometime in the second half of the next decade (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 views 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 well above my assessment of the appropriate policy path, particularly through 2020. In part, this reflects the Tealbook's assessment of tighter resource constraints than implied in my projection, but it also probably reflects some considerations in my policy assessment (such as the management of downside risks) that are not captured in the inertial Taylor-type rule used in the Tealbook forecast. These differences narrow in 2021 – 22 as I anticipate that policy accommodation can begin to be reduced gradually during that time.

Respondent 4: N/A

Respondent 5: N/A

Respondent 6: The two forecasts are conditioned on a similar path for the federal funds rate, and feature similar real outcomes. The outlook for inflation is more subdued in the Tealbook, in large part because inflation expectations in our model are anchored at 2.0 percent rather than 1.8 percent.

Respondent 7: N/A

Respondent 8: I have not allowed trade policy uncertainty to influence my near-to-medium term growth and fixed investment projections as significantly as is marked into the Tealbook baseline. However, over the medium term our two GDP growth projections share more similarities than differences.

One key assumption underpinning my baseline forecast is that inflation expectations remain anchored at mandate-consistent levels. Moreover, I have not fundamentally adjusted my judgment regarding the amount of resource slack in the economy. As such, even in the face of an apparently flat Phillips curve, my projections for inflation run about ¼ percentage points above what is marked in Tealbook.

Respondent 9: My inflation forecast is modestly above the Tealbook's in the next three years, since I believe that the current level of accommodation is likely to boost inflation with a lag.

Respondent 10: My forecast for the economy and monetary policy is similar to that in the Tealbook. My path for appropriate monetary policy is somewhat weaker when compared to the Tealbook.

Respondent 11: Our federal funds rate path is 30-40 basis points lower than the Tealbook's through 2021 and 12 bps lower in 2022. In addition, our assessment of the long-run neutral funds rate is 25 basis points higher than the Tealbook, making for even more relative policy accommodation. Over the 2019-2022 period we assume roughly the same average impulse to growth from tax cuts and government spending as the Tealbook.

Our projection for GDP growth and the unemployment rate is close to the Tealbook. However, we have a modestly lower natural rate of unemployment, so our 2022 unemployment rate gap of 0.5 percentage point is 0.3 percentage point below the forecast in the Tealbook.

Our projection for core inflation in 2019 is the same as the Tealbook. Our outlook for inflation is 0.2 percentage point higher in 2020 and 0.4 percentage point higher in 2021 and 2022. Our boost from resource pressure is a touch less, but our monetary policy path is more accommodative, which should lift underlying inflation trends and expectations more than in the Tealbook.

Respondent 12: 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 underlying inflation will rise from the recent low readings toward our 2 percent goal. My federal funds rate path is similar to that in the Tealbook.

Respondent 13: 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. My projected path for the federal funds rate is lower than the path in Tealbook over the next few years.

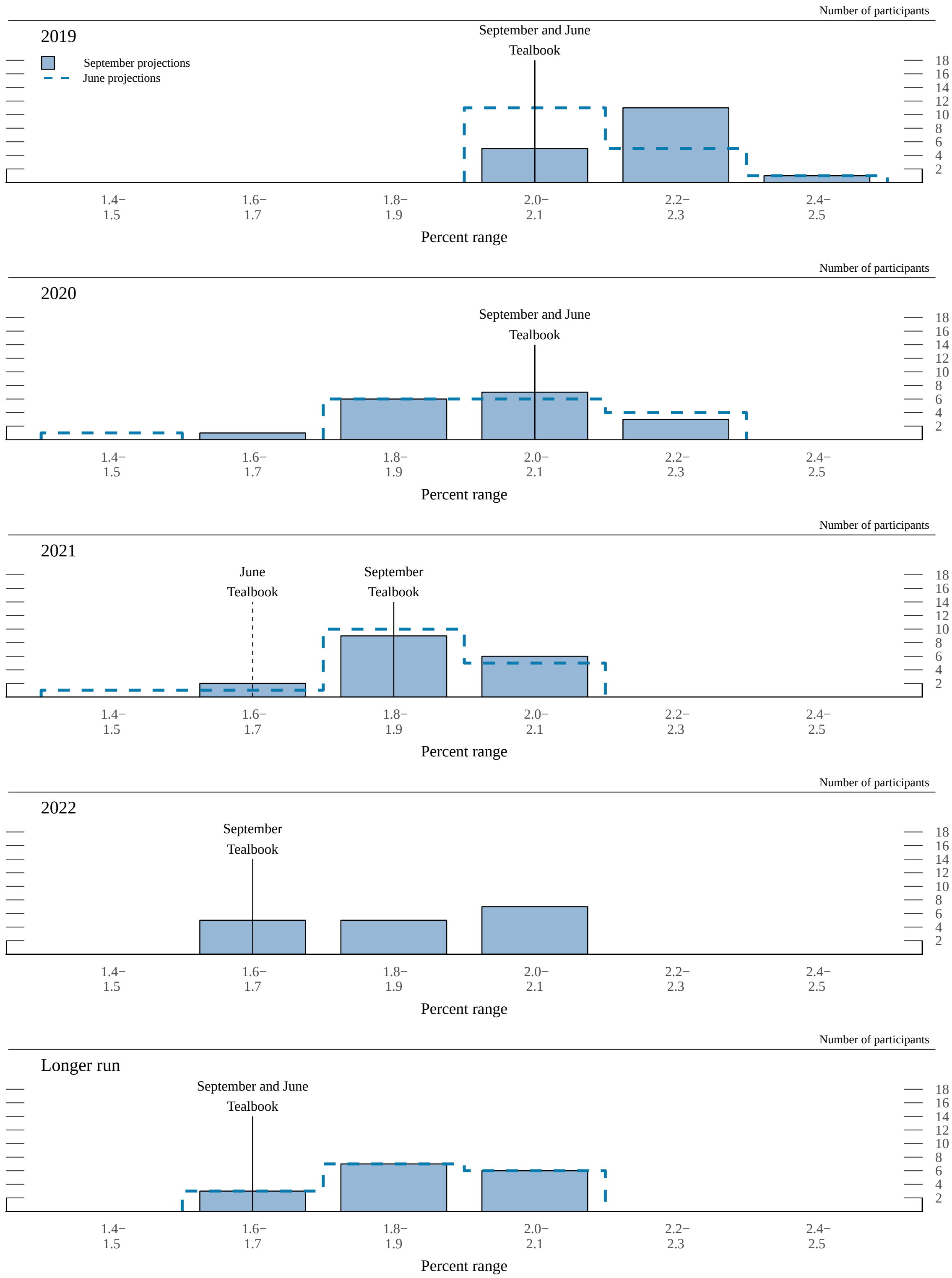
Respondent 14: Compared to Tealbook, I have written down a somewhat lower path for the federal funds rate in consideration of the downward tilt in the distribution of risks and of inflation continuing to undershoot our 2 percent objective.

Respondent 15: 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 unemployment will decline slightly to 3.6 percent and remain at that level. Also, our appropriate path for monetary policy differs from the Tealbook. For various reasons discussed earlier, we think a 50 basis point reduction in the target for the federal funds rate to 1.63 percent is appropriate; the Tealbook's target does not incorporate such a change.

Respondent 16: 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. My estimate of long-run r* is also below that in the Tealbook.

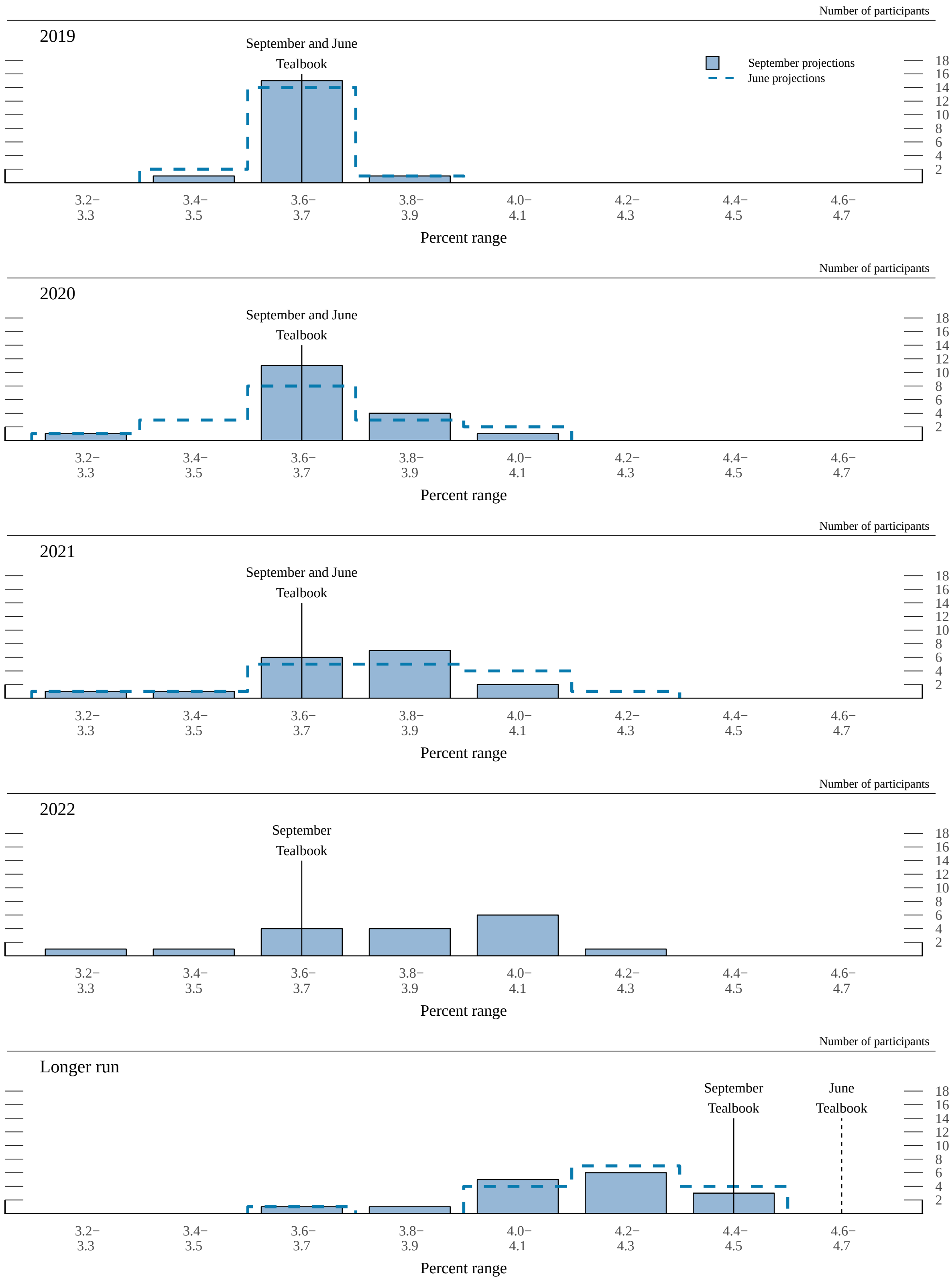
Respondent 17: I believe that it is appropriate to reduce the federal funds rate and commit to not raise it until core inflation has reached 2.0 percent on a sustained basis rather than rise as in the Tealbook. Because of my lower policy path, my forecasts for economic activity and inflation are a touch stronger than the Tealbook.

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



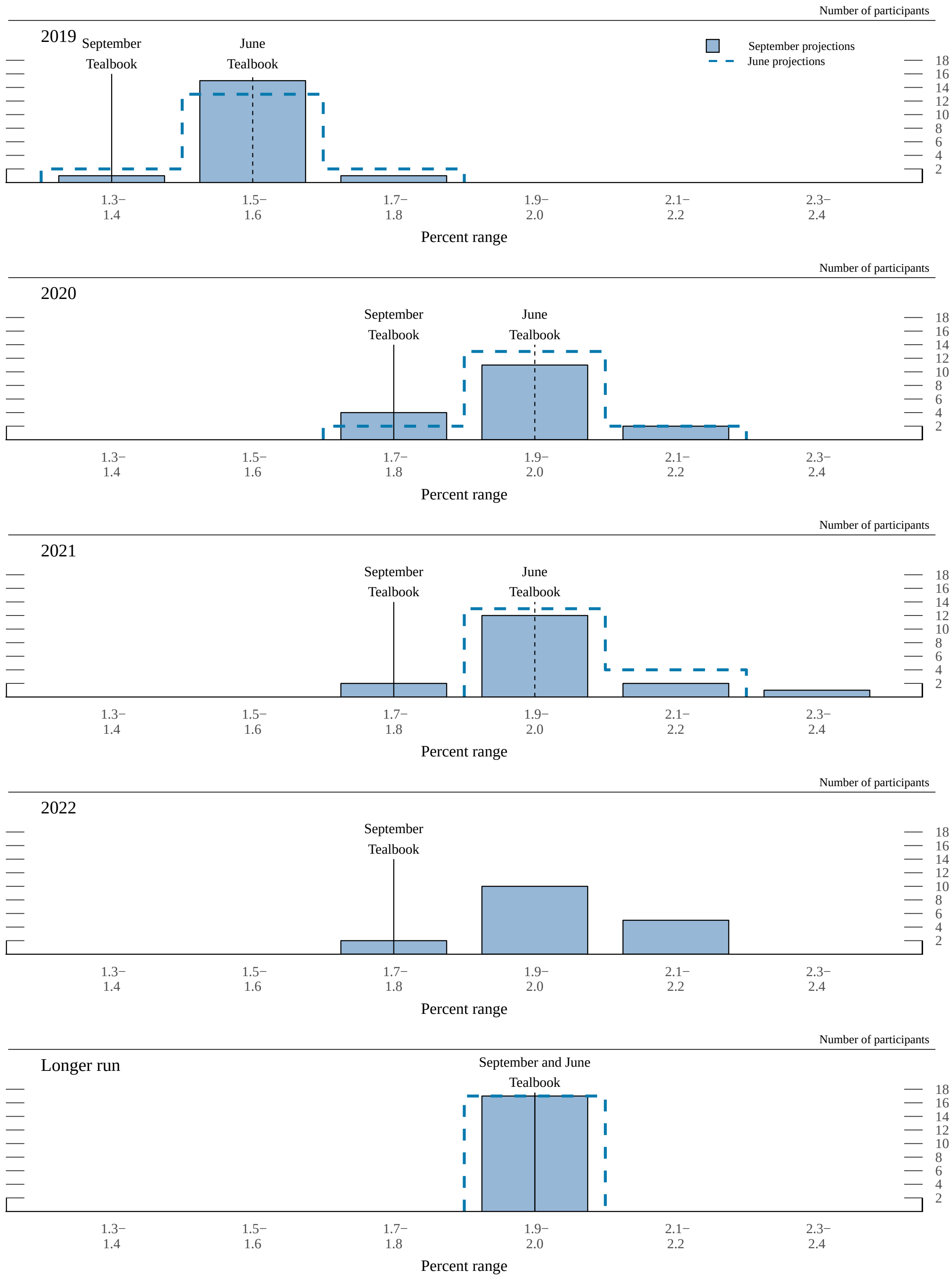
Note: Updated September Tealbook values are reported. Definitions of variables and other explanations are in the notes to table 1.

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



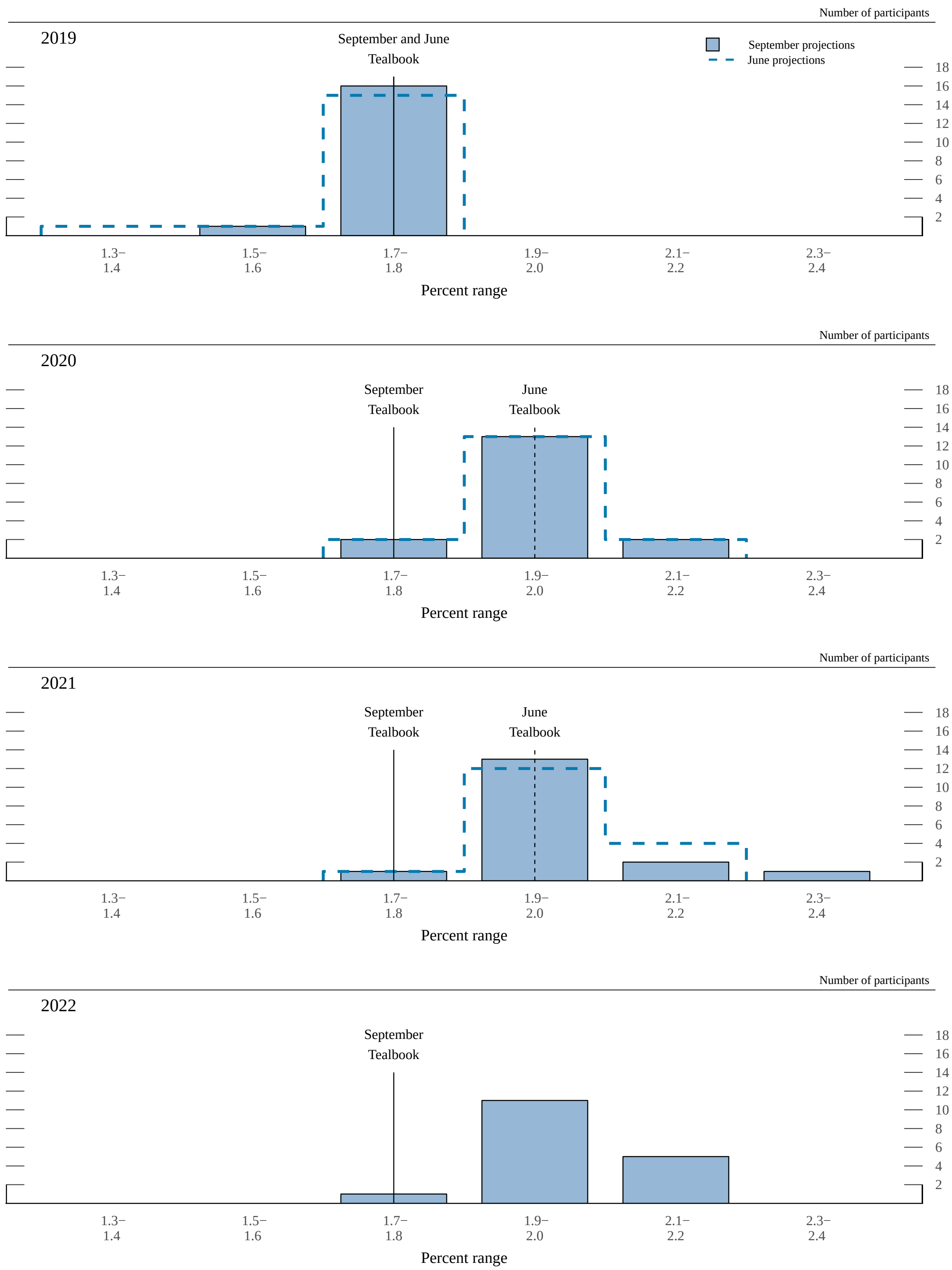
NOTE: Updated September Tealbook values are reported. Definitions of variables and other explanations are in the notes to table 1.

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



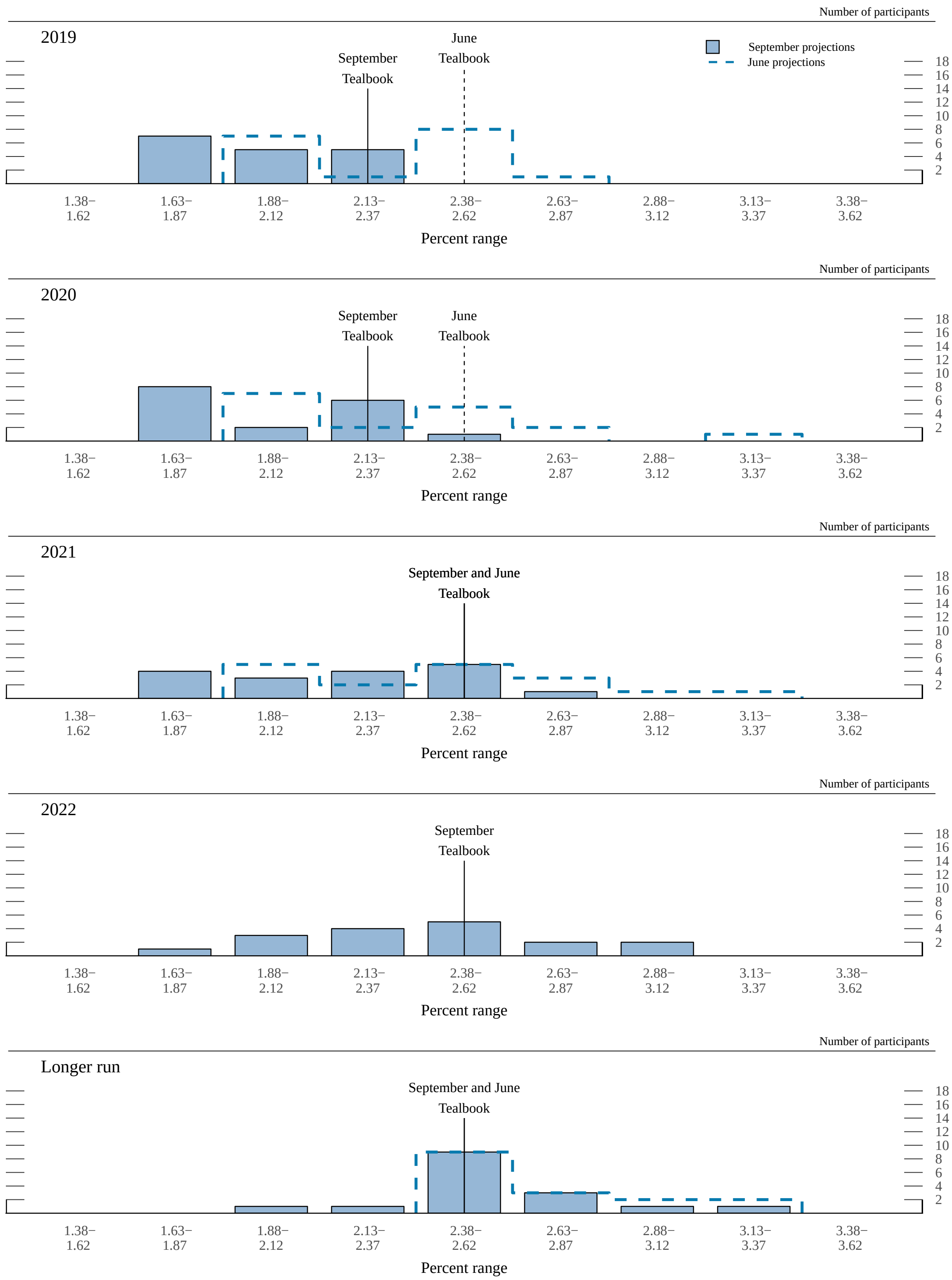
NOTE: Updated September Tealbook values are reported. Definitions of variables and other explanations are in the notes to table 1.

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



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