Table 1. Economic projections of Federal Reserve Board members and Federal Reserve Bank presidents, under their individual assessments of projected appropriate monetary policy, September 2018

Percent

Variable	Median[1]					Central tendency[2]					Range[3]				
	2018	2019	2020	2021	Longer run	2018	2019	2020	2021	Longer run	2018	2019	2020	2021	Longer run
Change in real GDP	3.1	2.5	2.0	1.8	1.8	3.0 – 3.2	2.4 – 2.7	1.8 – 2.1	1.6 – 2.0	1.8 – 2.0	2.9 – 3.2	2.1 – 2.8	1.7 – 2.4	1.5 – 2.1	1.7 – 2.1
June projection	2.8	2.4	2.0	n.a.	1.8	2.7 – 3.0	2.2 – 2.6	1.8 – 2.0	n.a.	1.8 – 2.0	2.5 – 3.0	2.1 – 2.7	1.5 – 2.2	n.a.	1.7 – 2.1
Unemployment rate	3.7	3.5	3.5	3.7	4.5	3.7	3.4 – 3.6	3.4 – 3.8	3.5 – 4.0	4.3 – 4.6	3.7 – 3.8	3.4 – 3.8	3.3 – 4.0	3.4 – 4.2	4.0 – 4.6
June projection	3.6	3.5	3.5	n.a.	4.5	3.6 – 3.7	3.4 – 3.5	3.4 – 3.7	n.a.	4.3 – 4.6	3.5 – 3.8	3.3 – 3.8	3.3 – 4.0	n.a.	4.1 – 4.7
PCE inflation	2.1	2.0	2.1	2.1	2.0	2.0 – 2.1	2.0 – 2.1	2.1 – 2.2	2.0 – 2.2	2.0	1.9 – 2.2	2.0 – 2.3	2.0 – 2.2	2.0 – 2.3	2.0
June projection	2.1	2.1	2.1	n.a.	2.0	2.0 – 2.1	2.0 – 2.2	2.1 – 2.2	n.a.	2.0	2.0 – 2.2	1.9 – 2.3	2.0 – 2.3	n.a.	2.0
Core PCE inflation[4]	2.0	2.1	2.1	2.1		1.9 – 2.0	2.0 – 2.1	2.1 – 2.2	2.0 – 2.2		1.9 – 2.0	2.0 – 2.3	2.0 – 2.2	2.0 – 2.3	
June projection	2.0	2.1	2.1	n.a.		1.9 – 2.0	2.0 – 2.2	2.1 – 2.2	n.a.		1.9 – 2.1	2.0 – 2.3	2.0 – 2.3	n.a.	
Memo: Projected appropriate policy path															
Federal funds rate	2.4	3.1	3.4	3.4	3.0	2.1 – 2.4	2.9 – 3.4	3.1 – 3.6	2.9 – 3.6	2.8 – 3.0	2.1 – 2.4	2.1 – 3.6	2.1 – 3.9	2.1 – 4.1	2.5 – 3.5
June projection	2.4	3.1	3.4	n.a.	2.9	2.1 – 2.4	2.9 – 3.4	3.1 – 3.6	n.a.	2.8 – 3.0	1.9 – 2.6	1.9 – 3.6	1.9 – 4.1	n.a.	2.3 – 3.5

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 12–13, 2018. 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 12–13, 2018, meeting, and one participant did not submit such projections in conjunction with the September 25–26, 2018, 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.

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Table 1.A. Economic projections for the first half of 2018*
(in percent)

Medians, central tendencies, and ranges

	Median	Central tendency	Range
Change in real GDP	3.3	3.2 – 3.4	3.2 – 3.4
June projection	2.8	2.8 – 2.9	2.5 – 3.1
PCE inflation	2.2	2.2	2.2
June projection	2.3	2.2 – 2.3	1.9 – 2.3
Core PCE inflation	2.1	2.1	2.1
June projection	2.1	2.1	1.8 – 2.2

Participants' projections

Projection	Change in real GDP	PCE inflation	Core PCE inflation
1	3.4	2.2	2.1
2	3.2	2.2	2.1
3	3.2	2.2	2.1
4	3.2	2.2	2.1
5	3.4	2.2	2.1
6	3.2	2.2	2.1
7	3.4	2.2	2.1
8	3.4	2.2	2.1
9	3.4	2.2	2.1
10	3.2	2.2	2.1
11	3.4	2.2	2.1
12	3.2	2.2	2.1
13	3.4	2.2	2.1
14	3.4	2.2	2.1
15	3.2	2.2	2.1
16	3.2	2.2	2.1

* Growth and inflation are reported at annualized rates.

Table 1.B. Economic projections for the second half of 2018*
(in percent)

Medians, central tendencies, and ranges

	Median	Central tendency	Range
Change in real GDP	2.8	2.8 – 3.0	2.4 – 3.2
June projection	2.8	2.6 – 3.0	2.5 – 3.2
PCE inflation	1.9	1.8 – 2.0	1.6 – 2.2
June projection	1.9	1.9 – 2.1	1.8 – 2.1
Core PCE inflation	1.8	1.7 – 1.9	1.7 – 1.9
June projection	1.9	1.7 – 1.9	1.7 – 2.2

Participants' projections

Projection	Change in real GDP	PCE inflation	Core PCE inflation
1	2.8	1.8	1.7
2	2.8	2.0	1.9
3	2.8	2.0	1.9
4	3.0	2.0	1.9
5	2.8	1.6	1.7
6	2.8	1.8	1.9
7	2.4	2.0	1.9
8	2.6	2.0	1.9
9	3.0	2.0	1.9
10	2.8	1.8	1.7
11	3.0	2.0	1.7
12	3.0	1.8	1.7
13	3.0	1.8	1.7
14	2.6	1.8	1.7
15	3.2	2.2	1.9
16	3.0	1.8	1.7

* Projections for the second half of 2018 implied by participants' September projections for the first half of 2018 and for 2018 as a whole. Growth and inflation are reported at annualized rates.

Table 2. September economic projections, 2018–21 and over the longer run (in percent)

Projection	Year	Change in real GDP	Unemployment rate	PCE inflation	Core PCE inflation	Federal funds rate
1	2018	3.1	3.7	2.0	1.9	2.13
2	2018	3.0	3.7	2.1	2.0	2.38
3	2018	3.0	3.7	2.1	2.0	2.13
4	2018	3.1	3.7	2.1	2.0	2.13
5	2018	3.1	3.8	1.9	1.9	2.38
6	2018	3.0	3.7	2.0	2.0	2.38
7	2018	2.9	3.7	2.1	2.0	2.38
8	2018	3.0	3.7	2.1	2.0	2.38
9	2018	3.2	3.7	2.1	2.0	2.38
10	2018	3.0	3.7	2.0	1.9	2.38
11	2018	3.2	3.8	2.1	1.9	2.38
12	2018	3.1	3.7	2.0	1.9	2.38
13	2018	3.2	3.7	2.0	1.9	2.38
14	2018	3.0	3.8	2.0	1.9	2.13
15	2018	3.2	3.7	2.2	2.0	2.38
16	2018	3.1	3.7	2.0	1.9	2.38
1	2019	2.6	3.4	2.0	2.0	2.38
2	2019	2.4	3.4	2.2	2.2	2.88
3	2019	2.4	3.5	2.3	2.3	2.63
4	2019	2.7	3.7	2.0	2.0	2.13
5	2019	2.3	3.6	2.2	2.2	2.88
6	2019	2.4	3.5	2.1	2.1	3.13
7	2019	2.1	3.5	2.0	2.1	3.38
8	2019	2.4	3.7	2.0	2.1	3.13
9	2019	2.7	3.4	2.0	2.1	3.13
10	2019	2.5	3.4	2.0	2.0	3.38
11	2019	2.6	3.6	2.1	2.1	2.88
12	2019	2.8	3.4	2.0	2.0	3.63
13	2019	2.5	3.4	2.1	2.1	3.38
14	2019	2.7	3.8	2.0	2.1	2.88
15	2019	2.4	3.4	2.0	2.1	3.13
16	2019	2.3	3.4	2.0	2.1	3.38

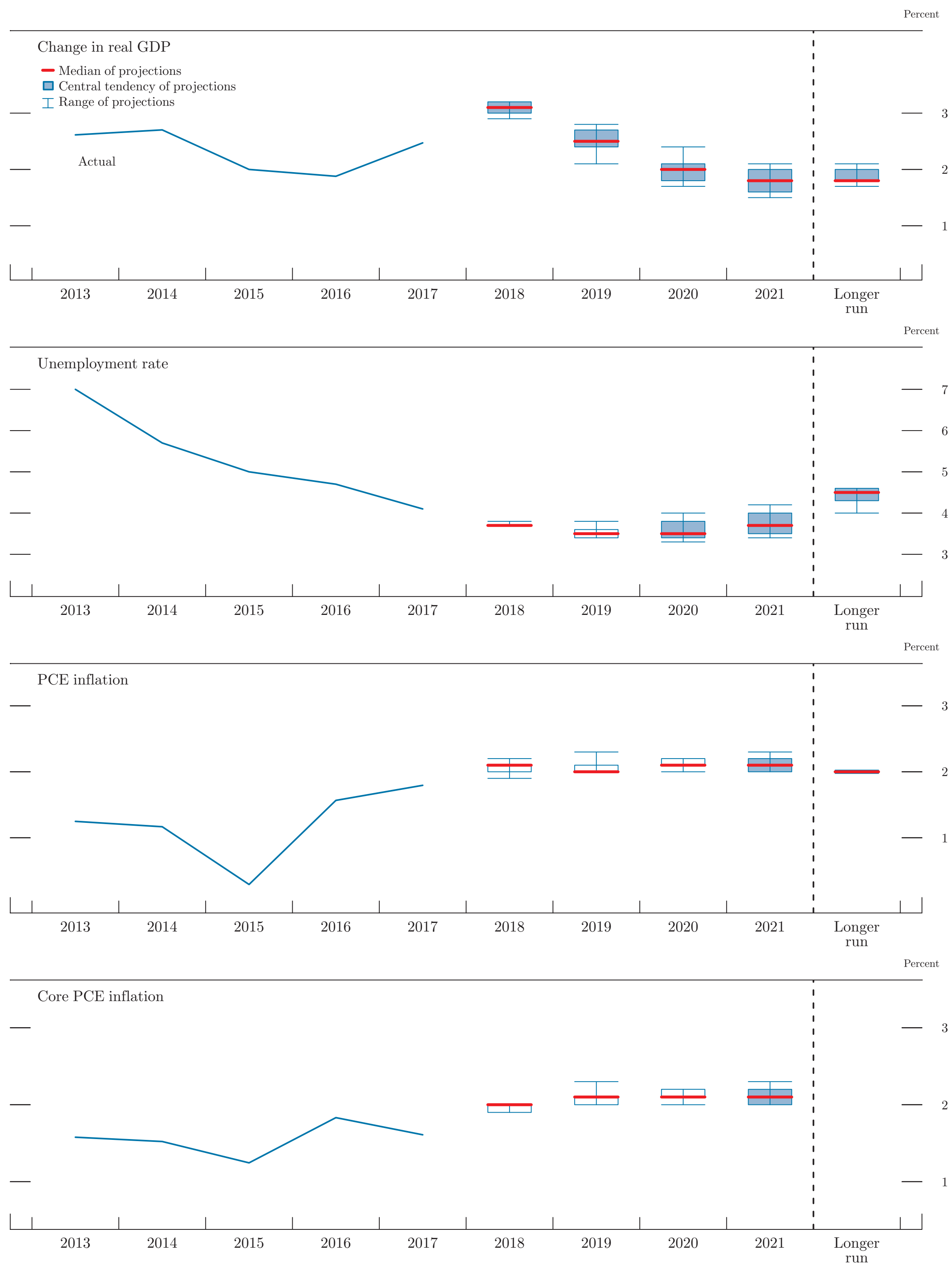
Table 2. ***(continued)***

Projection	Year	Change in real GDP	Unemployment rate	PCE inflation	Core PCE inflation	Federal funds rate
1	2020	2.0	3.4	2.1	2.1	2.63
2	2020	1.7	3.6	2.2	2.2	3.13
3	2020	2.0	3.7	2.1	2.1	3.13
4	2020	2.4	4.0	2.0	2.0	2.13
5	2020	1.8	3.8	2.1	2.1	2.88
6	2020	2.0	3.4	2.1	2.1	3.63
7	2020	1.7	3.4	2.2	2.2	3.88
8	2020	2.1	3.8	2.2	2.2	3.38
9	2020	2.1	3.3	2.1	2.1	3.38
10	2020	1.8	3.5	2.2	2.2	3.63
11	2020	2.0	3.8	2.1	2.2	3.13
12	2020	2.3	3.4	2.0	2.0	3.63
13	2020	1.7	3.4	2.2	2.2	3.63
14	2020	2.2	3.8	2.1	2.1	3.63
15	2020	1.9	3.5	2.2	2.2	3.13
16	2020	1.8	3.5	2.0	2.1	3.63
1	2021	1.9	3.5	2.1	2.1	2.63
2	2021	1.7	3.8	2.2	2.2	2.88
3	2021	2.0	3.9	2.0	2.0	3.00
4	2021	2.0	4.2	2.0	2.0	2.13
5	2021	1.8	4.0	2.0	2.0	2.88
6	2021	1.8	3.4	2.1	2.1	3.88
7	2021	1.5	3.5	2.3	2.3	4.13
8	2021	1.9	3.9	2.2	2.2	3.38
9	2021	1.8	3.4	2.1	2.1	3.38
10	2021	1.5	3.7	2.2	2.2	3.63
11	2021	2.0	4.0	2.0	2.0	2.88
12	2021	2.0	3.6	2.0	2.0	3.38
13	2021	1.5	3.6	2.2	2.2	3.38
14	2021	2.1	4.0	2.1	2.1	3.63
15	2021	1.6	3.7	2.2	2.2	3.13
16	2021	1.6	3.7	2.1	2.1	3.50

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

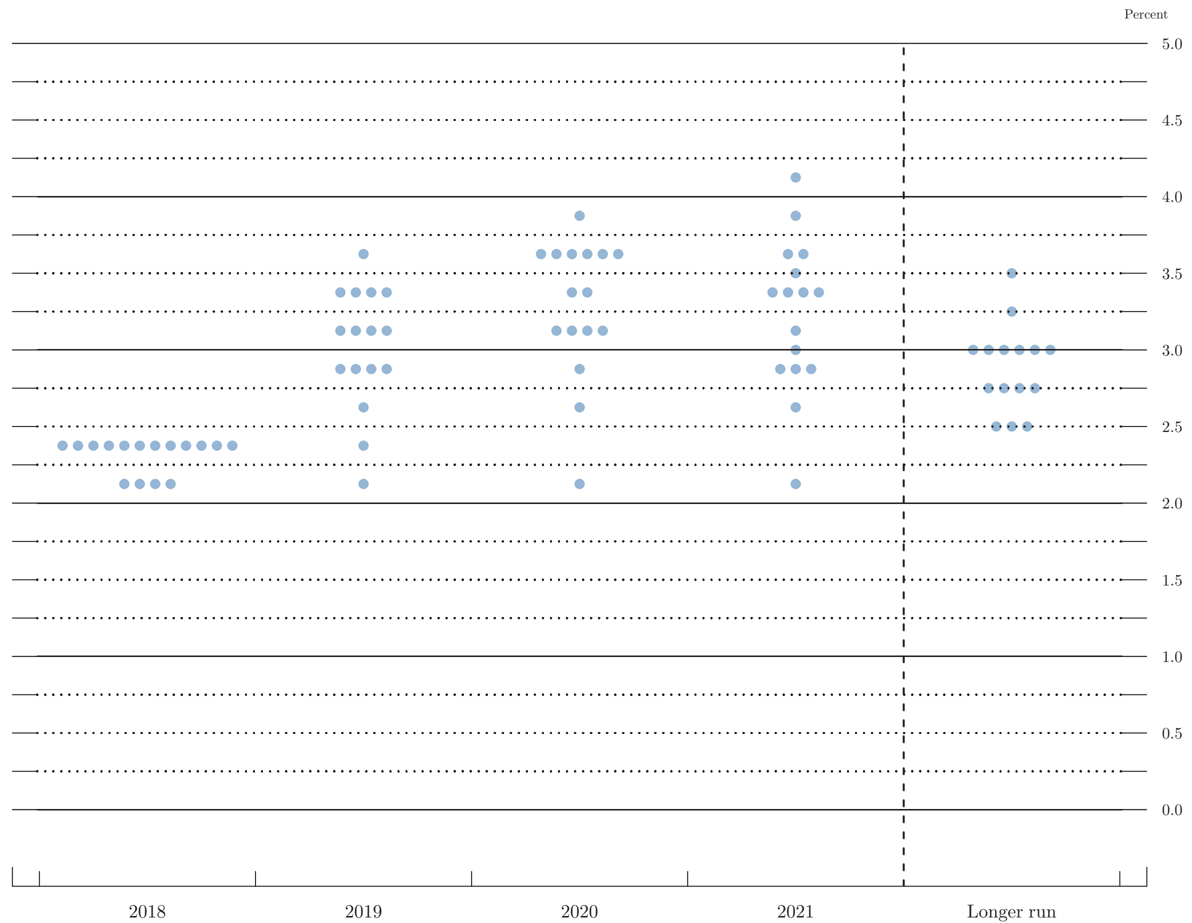
Projection	Year	Change in real GDP	Unemployment rate	PCE inflation	Core PCE inflation	Federal funds rate
1	LR	1.7	4.0	2.0		2.50
2	LR	1.8	4.6	2.0		2.75
3	LR	2.0	4.5	2.0		3.00
4	LR			2.0		
5	LR	1.8	4.2	2.0		3.00
6	LR	1.8	4.6	2.0		3.00
7	LR	1.7	4.6	2.0		2.75
8	LR	2.0	4.5	2.0		3.50
9	LR	2.0	4.3	2.0		3.00
10	LR	1.8	4.5	2.0		2.50
11	LR	2.1	4.2	2.0		2.50
12	LR	2.0	4.5	2.0		3.00
13	LR	1.9	4.3	2.0		3.00
14	LR	2.1	4.4	2.0		3.25
15	LR	1.8	4.3	2.0		2.75
16	LR	1.7	4.6	2.0		2.75

Figure 1. Medians, central tendencies, and ranges of economic projections, 2018–21 and over the longer run



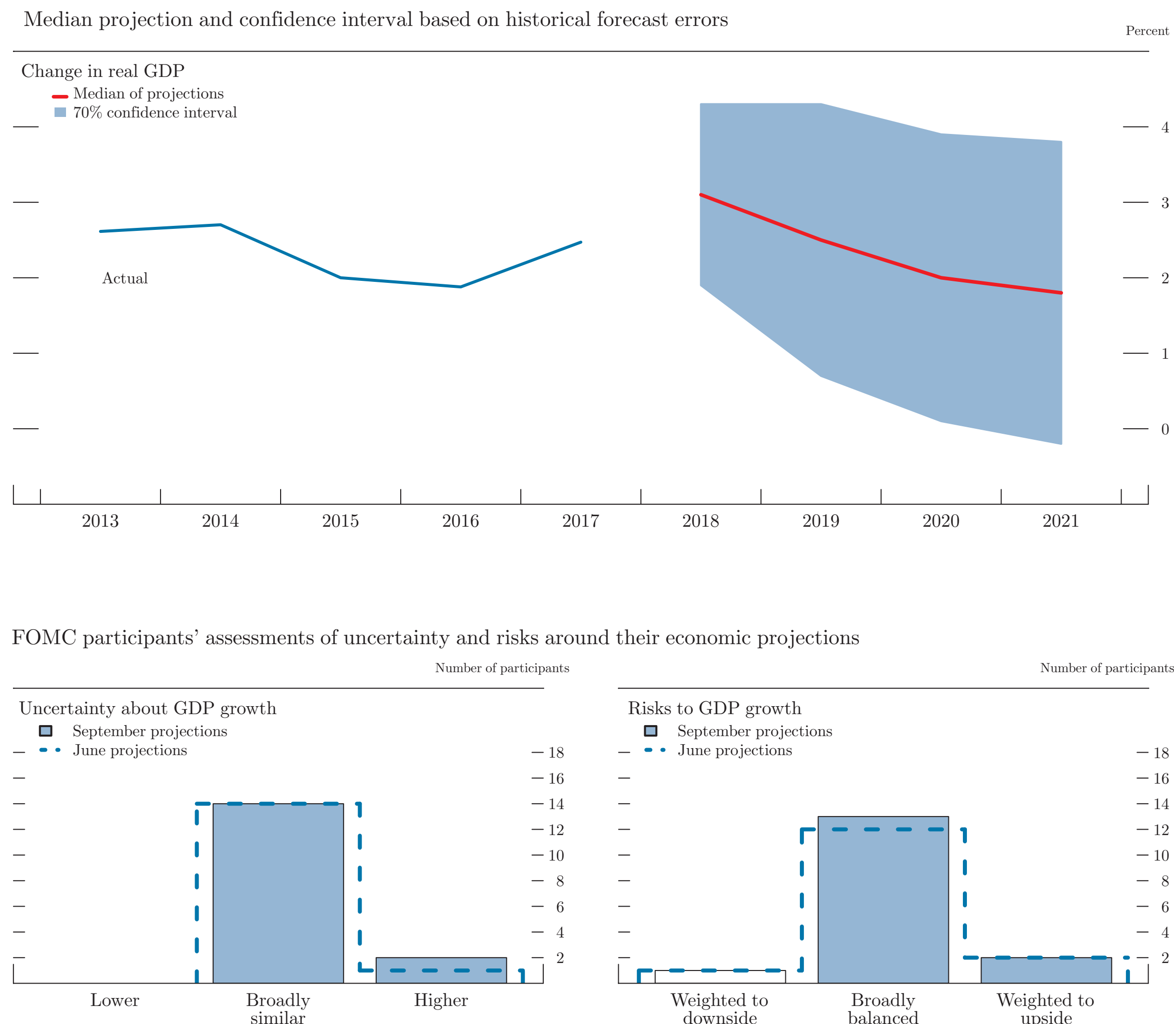
NOTE: Definitions of variables and other explanations are in the notes to table 1. The data for the actual values of the variables are annual.

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



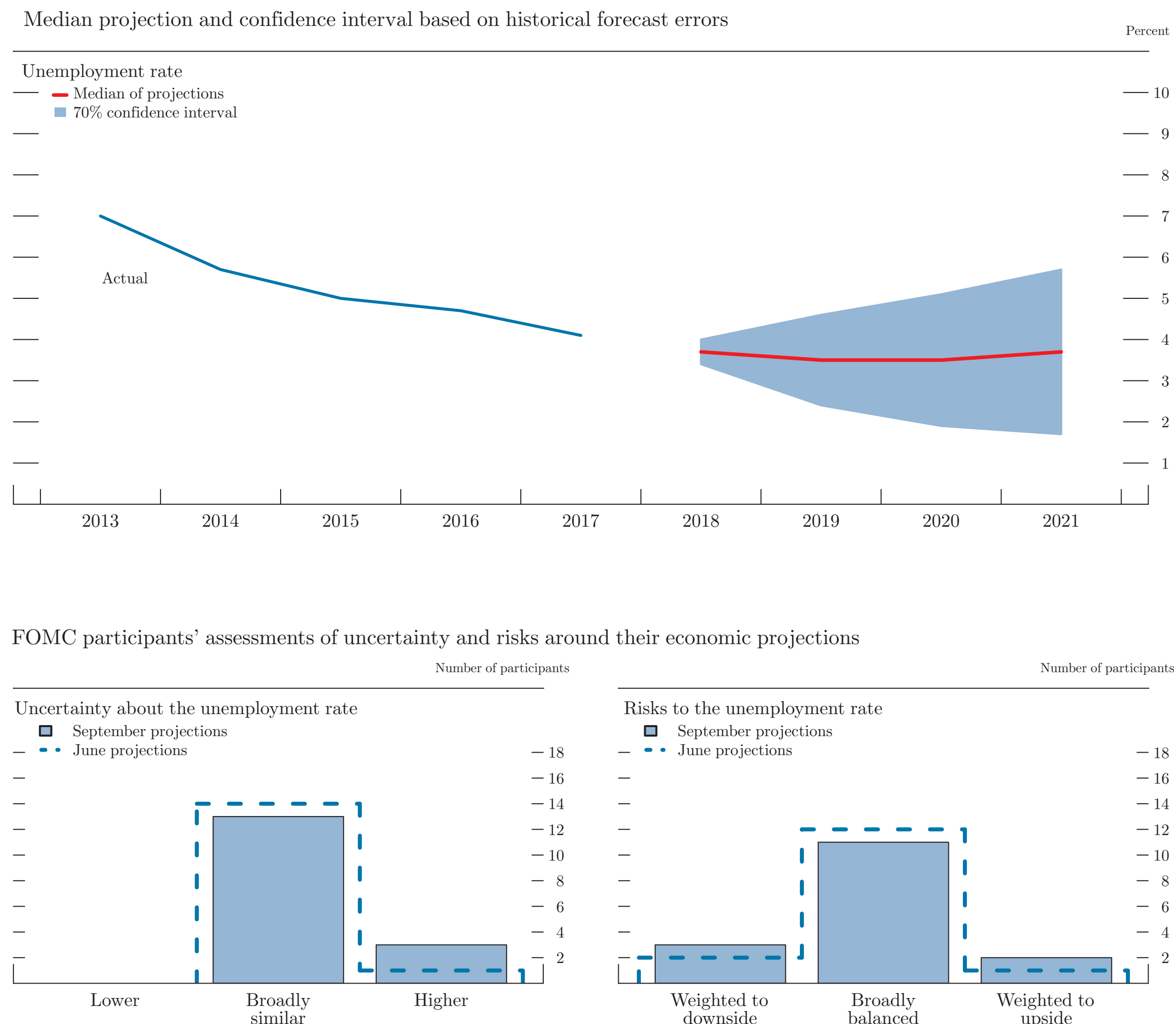
Note: Each shaded circle indicates the value (rounded to the nearest 1/8 percentage point) of an individual participant's judgment of the midpoint of the appropriate target range for the federal funds rate or the appropriate target level for the federal funds rate at the end of the specified calendar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



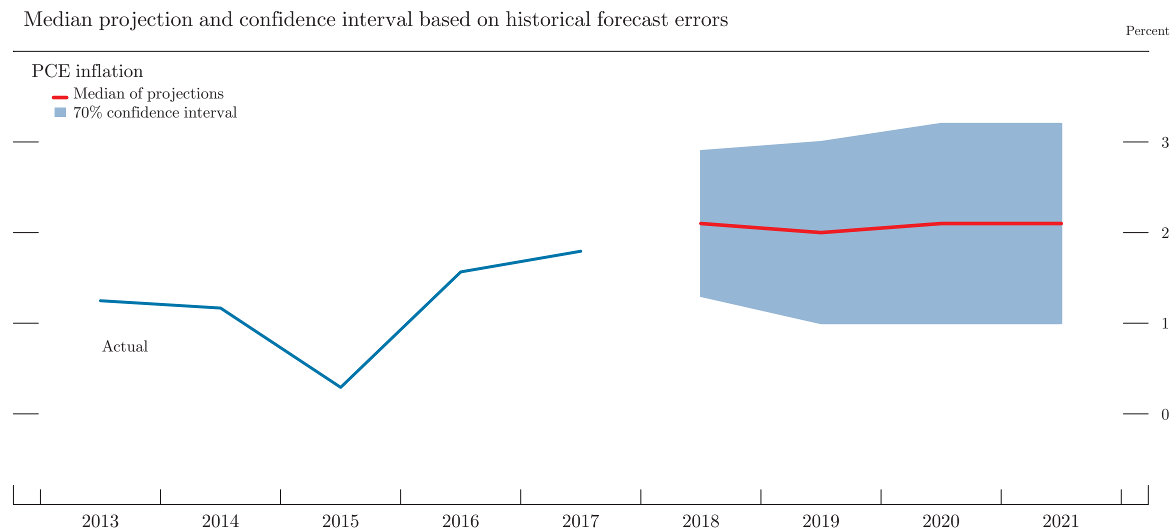
NOTE: The blue and red lines in the top panel show actual values and median projected values, respectively, of the percent change in real gross domestic product (GDP) from the fourth quarter of the previous year to the fourth quarter of the year indicated. The confidence interval around the median projected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

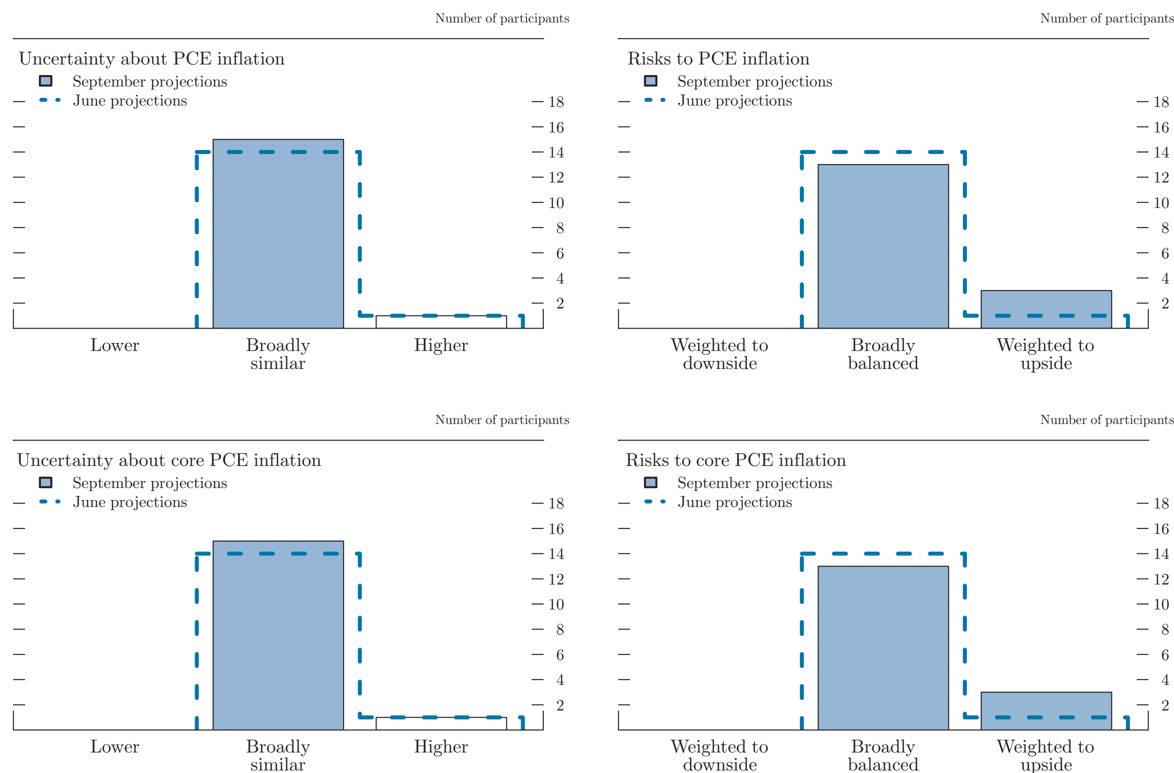
Figure 4.B. Uncertainty and risks in projections of the unemployment rate



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

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





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

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
Change in real GDP	B	B	A	B	B	B	A	B	B	B	B	B	B	B	B	B
Unemployment rate	B	B	A	B	B	B	A	B	B	B	A	B	B	B	B	B
PCE Inflation	B	B	B	B	B	B	A	B	B	B	B	B	B	B	B	B
Core PCE Inflation	B	B	B	B	B	B	A	B	B	B	B	B	B	B	B	B

A = Higher B = Broadly similar C = Lower

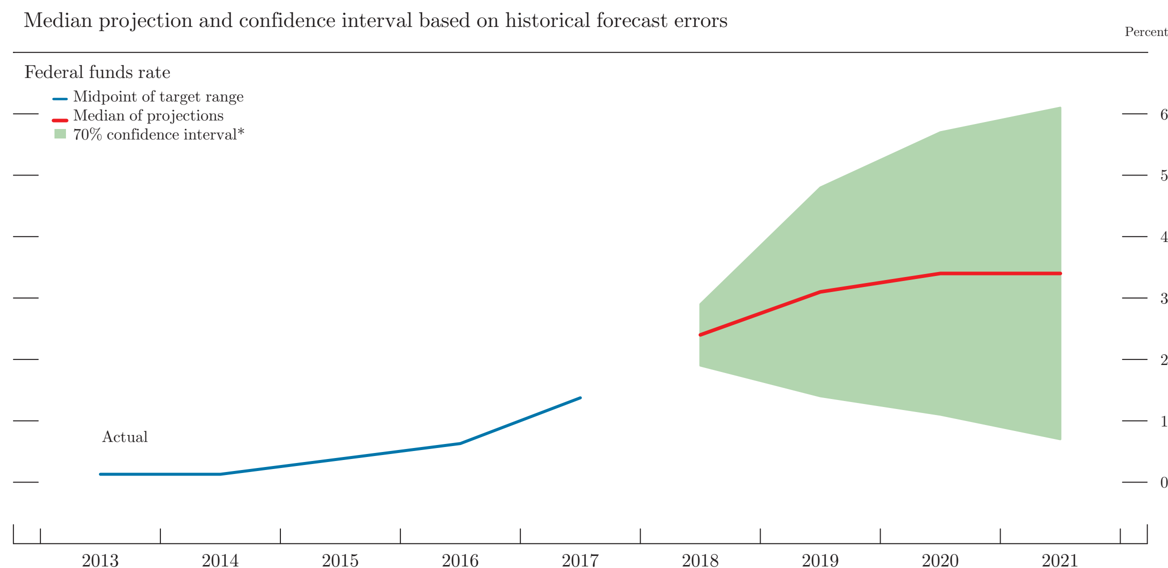
Question 2(b): Please indicate your judgment of the risk weighting around your projections.

Individual responses

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

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

Figure 5. Uncertainty 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 offset the effects of shocks to the economy.

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

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

Longer-run Projections

Question 1(c). If you anticipate that the convergence process will take SHORTER OR LONGER than about five or six years, please indicate below 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: We are at or very near our inflation target, but likely well past full employment. The challenge is to gradually rein in growth–leaving the economy vulnerable to policy missteps and adverse shocks. Full convergence is likely to take at least 5 years.

Respondent 3: I anticipate that the economy will converge to my longer-run projection within 5 years.

Respondent 4: We expect values of headline and core inflation to be on or very close to target in 2018 and beyond, but GDP growth and unemployment are expected to deviate from their long-run values conditional on the current regime. This 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. The projected deviations, due in part to federal stimulus, are expected to be temporary. We project that overshooting of GDP growth will end in 2021 and the undershooting of unemployment will end in 2022. Because there are multiple medium term outcomes, we cannot provide a single set of projections for GDP growth and unemployment. Calculating an average of these variables based on multiple outcomes is potentially misleading. We do provide a 2.0 percent longer-run inflation projection that is independent of the regime.

Respondent 5: No comment.

Respondent 6: Having essentially achieved our objectives for inflation and unemployment, the current stance of monetary policy will likely promote a further decline of the unemployment rate below its longer-run level. Policy rates will need to adjust over several years to bring unemployment back in line with the longer-run objective and ensure sustainable economic growth with price stability.

Respondent 7: The forecast entails a declining unemployment rate until 2020. Thereafter, a prolonged "growth recession" is needed to achieve a soft landing. The historical record, however, places a high probability on a recession occurring once growth starts to slow below potential. In sum, while a purely model-driven forecast would suggest convergence to the equilibrium unemployment rate from below around 2024, the probability that the projected soft landing will not materialize in practice is sizable.

Respondent 8: N/A

Respondent 9: N/A

Respondent 10: The recent data, including the comprehensive revision to GDP and the associated historical revisions to productivity growth, provide no compelling reason to change my estimate of 1 3/4 percent for longer-run real GDP growth. In addition, there is no strong evidence to suggest a substantial change in my estimate for the longer-run normal rate of unemployment of around 4 1/2 percent.

I assume that long-term inflation expectations will remain anchored at levels consistent with the FOMC's longer-run objective. Under those conditions, the monetary policy stance will be consistent with a modest overshooting of inflation and an undershooting of the longer-run normal unemployment rate for the next several years. I expect these variables to return to their longer-run levels by the mid-2020s.

Respondent 11: N/A

Respondent 12: N/A

Respondent 13: N/A

Respondent 14: N/A

Respondent 15: N/A

Respondent 16: Our policy goals have effectively been reached. However, it will take some time to achieve sustained convergence to longer-run levels. The effects from continued fiscal stimulus and effects from past accommodative monetary policy will generate a modest degree of overshooting of the inflation target and an unemployment rate that will remain well below the natural rate for several years before returning back to its longer-run level. Recent data show no indication of a shift in longer-run levels of GDP growth or the unemployment rate.

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 levels of uncertainty over the past 20 years, you may enter them below.

Respondent 1: 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 increase the uncertainty around my forecasts, but not significantly.

Respondent 2: Near-term uncertainty is likely somewhat below average. Uncertainty two or three years out may be above average: We have seldom succeeded in stabilizing the unemployment rate–much less engineering a non-trivial increase in unemployment–without triggering a recession. Strong, unpredictable fiscal- and trade-policy crosswinds have the potential to make the convergence process more-than-usually challenging.

Respondent 3: Uncertainty surrounding output growth and unemployment remains elevated by heightened uncertainty about the effects of fiscal stimulus and the future course of both fiscal and trade policy. The impact on inflation uncertainty is less pronounced given how flat the Phillips curve seems to be.

Respondent 4: N/A

Respondent 5: No comment.

Respondent 6: N/A

Respondent 7: While the forecasting exercise under current conditions may not be as uncertain as during the Great Recession, we have limited experience with some of the factors affecting the forecast. We assume a small effect from the change in tariffs, but these changes may become broad-based enough and disrupt global supply chains in ways that models have difficulty in capturing. We have also limited experience with an economy significantly above full employment for a considerable period of time – the kind of scenario implied by our forecast.

Respondent 8: N/A

Respondent 9: N/A

Respondent 10: Uncertainty around my projections for economic activity and inflation is similar to their respective average levels over the past 20 years (the SEP standard). Continued trade tensions, the impact of stresses in emerging market economies (EMEs) on the U.S. economy, and the future path of fiscal policy are sources of greater uncertainty. However, economic and financial developments since the June SEP have been largely consistent with my outlook, which indicates some offsetting reduction of uncertainty.

Respondent 11: I believe uncertainty about u* and thus my projections for the unemployment rate are subject to greater uncertainty than on average for the past 20 years. A late cycle rise in real wages is typical in a fully employed economy, and we may be starting to see this in the data. Importantly, in past two cycles, the late cycle rise in real wages was not accompanied by a material increase in core inflation, but instead was absorbed through a late cycle decline in profit margins. How the unemployment, wage, and profit margin relationships play out over the next several years will be an important factor in determining the appropriate path of policy normalization.

Respondent 12: N/A

Respondent 13: N/A

Respondent 14: N/A

Respondent 15: Fiscal policy and the trade situation continue to add uncertainty to the outlook, both in terms of the magnitude and timing of their potential direct effects and – particularly for trade – through their current and prospective influences on sentiment and spending. These considerations raise the uncertainty of our projections for real activity, but not by enough to move us out of the "broadly similar" uncertainty box. With inflation running near our 2 percent target since March, we are somewhat more confident about our inflation outlook, but not enough to alter our characterization of the uncertainty as "broadly similar" to historical levels.

Respondent 16: 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.

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: Risks are roughly balanced. On the one hand, the effective lower bound limits monetary policy's ability to respond to negative shocks. On the other, the recent changes in fiscal policy present increased upside risks to activity.

Respondent 2: N/A

Respondent 3: I anticipate that the recent fiscal stimulus will boost demand, raise output growth, and lower unemployment but I remain uncertain about the magnitude of the effect. I am concerned that fiscal stimulus may be giving a temporary boost to inflation. As well, I am concerned about possible adverse effects from international trade conflicts but have not yet factored that into my forecast.

Respondent 4: With respect to GDP growth, the current productivity regime is low. A higher productivity growth regime is possible, but we see no compelling reason to predict a switch at this time. Recent changes in productivity growth still leave productivity in its low regime. However, as changes in fiscal and regulatory policy continue to impact the economy, we see the possibility of more rapid GDP growth. On the other hand, we see US trade policy as generating some downward risk for growth. An additional factor is the possibility of yield-curve inversion. Further upward movements in the federal funds rate may increase the risk of recession; however, we anticipate a lag of more than a year between yield-curve inversion and recession.

Concerning unemployment, the current rate is at the low end for an economic expansion. If a recession were to occur, the unemployment rate would rise substantially. We have no compelling reason to predict a recession during the forecast horizon. The interaction between US and foreign trade policies raises the possibility of trade disruptions that might increase unemployment. On the other hand, we also see the possibility of further declines in the unemployment rate if GDP growth surprises on the upside. Federal stimulus associated with recent tax and spending changes might produce such a surprise. Overall, we see the risks as balanced.

For core PCE inflation, we place negligible weight on the prospects of Phillips Curve effects. There is, however, a risk that Phillips Curve effects reassert themselves and inflation moves higher as the unemployment rate falls. It is also possible that inflation expectations drift higher and become unanchored. In addition, federal stimulus associated with recent tax and spending changes could push prices higher. Trade policy changes might also put some upward pressure on import prices. Anecdotal reports are consistent with building price pressures. Thus, we see the risks on this variable to be weighted to the upside.

For PCE inflation, the risks are the same as for core PCE inflation. In addition, the variable depends on the behavior of energy prices. While an upward energy-price shock is a possibility, a case can also be made for some downward drift in energy prices. Overall, we see the risks for PCE inflation as weighted to the upside.

Respondent 5: No comment.

Respondent 6: N/A

Respondent 7: With the economy growing above potential, labor markets are expected to tighten further. There is the risk that the additional demand for labor may not be accommodated by improvements in the cyclical position of labor force participation of the size implicit in our baseline forecast, but rather by a more pronounced decline in the unemployment rate. If this is indeed the case, we would also expect more upward pressure on wages and prices.

Respondent 8: N/A

Respondent 9: N/A

Respondent 10: The risks to real economic activity appear to be broadly balanced over most of the forecast horizon. The primary downside risks come from the possibility that trade tensions or EME stresses could impact financial markets and eventually have more adverse effects on the U.S. economy than has been apparent so far. Another downside risk is that fiscal policy could become more restrictive than anticipated following the expiration of the budget agreement. An upside risk, particularly at shorter-term horizons, is that fiscal stimulus could have more positive demand- and/or supply-side effects than I anticipate. Possible stronger momentum associated with robust household and business confidence also is an upside risk. Because the upside risks are shorter term, the balance of risks shifts modestly to the downside at longer horizons of the projection.

The risks to inflation also appear to be broadly balanced. A major upside risk is that aggregate demand pressures as well as the effects of higher tariffs and trade tensions could begin to put more upward pressure on inflation than has been apparent so far. On the downside, EME stresses, declines in industrial commodities prices, a stronger-than-anticipated foreign exchange value of the US dollar and subdued inflation in many advanced economies indicate that domestic inflation pressures may be weaker than I have judged. Even though the risks are balanced, in an environment where inflation is likely to run around or slightly above our longer-run goal, the costs of upside risks probably are now greater than those of downside risks.

Respondent 11: I believe the risk to my projections are weighted to the upside on unemployment for the reasons outlined in my answer to 2a.

Respondent 12: I continue to view the risks around my forecast as broadly balanced, conditional on my monetary policy path that is somewhat steeper over 2019-2020 than the median path in the June SEP.

The underlying fundamentals of the U.S. economy are healthy. Financial conditions are accommodative. Household and business sentiment readings are high, suggesting there could be more underlying momentum in the economy than I've been assuming.

Expansionary fiscal policy has added to growth, and that should continue over the next two years. I am estimating that it will provide an additional 0.5 percentage point to Q4/Q4 GDP growth in 2018-2020, but there is an upside risk that the effect could be larger. Beyond the forecast horizon, these fiscal policy actions pose some downside risk to the outlook because higher fiscal deficits will likely necessitate reduced fiscal spending, an increase in taxes, and higher term-premia in longer-term interest rates.

Continued uncertainty over trade policy poses a downside risk to the forecast, potentially lowering business investment spending, aside from the direct effect of the actual tariffs. However, so far, the economy has proved to be quite resilient through this. To the extent that uncertainty over the trade situation has been a headwind, resolution of the uncertainty could be considered an upside risk to the forecast.

The outlook for most foreign economies remains positive, supported in part by accommodative monetary policies. However, activity abroad appears to be decelerating somewhat. Continued divergence between growth and policy paths in the U.S. and abroad could put further upward pressure on the dollar and poses a downside risk to U.S. exports. In addition, financial stresses are increasing in some emerging market economies that have low levels of reserves, large current account deficits, and high external debt burdens. There is some risk of contagion to other emerging market economies, which could eventually feed back to the U.S. economy through financial market channels and trade linkages.

I continue to see inflation risks as roughly balanced, contingent on my policy rate projection. If policy were not expected to tighten over the forecast horizon, I would view inflation risks as tilted to the upside. Incoming data suggest that inflation has moved back up to target. My modal forecast is that I will be able to say by year-end that inflation is at 2 percent on a sustainable basis and I expect it to remain near 2 percent over the medium run.

If the dynamics of inflation have fundamentally changed, then I may be overestimating inflation. But if labor markets tighten more than I expect, or if nonlinear Phillips curve dynamics begin to kick in, inflation could move higher than I anticipate, especially if the withdrawal of monetary accommodation is slower than I've assumed. Tariffs present firms with an opportunity to raise prices. To the extent that these are one-o changes, they should not raise the inflation rate. However, a continued roll-out of tariffs over time could lead to continued one-o changes in inflation; this could push up inflation expectations and lead to higher inflation rates over time.

The value of the dollar has been rising since the spring. I expect further appreciation given the strength of the U.S. economy and prospects for tighter monetary policy relative to growth and monetary policy abroad. But the risks around the path of the dollar are two-sided. A considerably stronger-than-expected appreciation in the dollar poses a downside risk to the inflation forecast.

Risks to financial stability are increasing as the economy continues to grow above trend and financial conditions remain quite accommodative. Domestic equity prices continue to be high relative to earnings even accounting for the low level of interest rates and lower tax rates. Commercial real estate valuations also continue to be lofty, and leveraged lending is growing.

Respondent 13: China's debt problems continue to pose a downside risk to the world economy. That risk is further exacerbated by the trade situation.

Respondent 14: N/A

Respondent 15: With regard to growth, the large NIPA revision to the personal saving rate presents both upside and downside risks to consumer spending: an upside risk if the higher saving rate represents yet-to-be spent wealth; a downside risk if it represents more persistent post-crisis precautionary behavior than we assume in our forecast. Overall, we see the odds as roughly equal that fiscal policy will result in a bit more, or a bit less, stimulus than we built into our projection. Trade and international developments pose a downside risk: Trade war scenarios appear to have become more likely, and there is a small risk that turmoil in selected emerging market economies could weigh on global investor sentiment. However, we do not think that these risks have risen enough to tilt the overall balance to the downside.

With regard to inflation, there is a risk that we've underestimated the underlying inflationary pressures in our forecast, particularly given our projection that the unemployment rate will run a good deal below our estimate of its natural rate over the projection period. There also is a risk that tariffs could show through more visibly to consumer prices. However, on the downside, continued low levels of inflation compensation in financial markets and some surveys suggest long run inflation expectations could hold down inflation more than we assume in our forecast. In addition, some of the international risks noted above could lead to appreciation of the dollar and lower U.S. inflation.

Respondent 16: Risks to economic activity appear broadly balanced. There still remains uncertainty about the effects of tax and budget changes on the economic outlook. The possibility of further retaliatory responses to U.S. trade policies adds additional risk around the outlook.

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 for that year 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: Although inflation is essentially back to target, it had been running below our 2 percent target for quite some time. While job gains remain strong and the unemployment rate is below 4 percent, it is not clear that we have reached maximum employment as the labor force participation rate and employment-population ratio for prime age persons remain below their pre-recession levels, and wage growth remains subdued. Given the persistent undershooting of our inflation target, I believe that appropriate monetary policy implies a very gradual path of increases for the federal funds rate up to its neutral level.

Respondent 2: Policy to date has kept nominal demand growth on a fairly steady, moderate path. This gives me hope that a relatively gradual transition to a modestly restrictive monetary policy stance will be sufficient to put the economy on a path that sustains the expansion while holding inflation to mandate-consistent levels. There are two important risks to that scenario, working in opposite directions. First, there is a risk of disappointing growth or financial instability overseas that could blow back onto U.S. financial markets, putting downward pressure on r^*. Shifting U.S. trade policy is unhelpful in this regard. Second, there is a risk that U.S. fiscal policy will have larger or more persistent positive effects on real activity and r^* than I currently anticipate. My base case is for four more rate hikes over the remainder of 2018 and 2019, but I will be keeping a close watch for signs of strain in foreign financial markets, shifts in the U.S. economic outlook, and changes in the shape of the U.S. yield curve.

Respondent 3: My projection for the appropriate path of the federal funds rate over the next three years is a bit lower than in my June projection. I see one more rate increase in 2018 as appropriate, followed by two rate increases in each of 2019 and 2020. In the face of high uncertainty about the underlying strength of inflation, and elevated uncertainty surrounding fiscal and trade policies, I believe it appropriate that the Committee takes a cautious approach in raising the federal funds rate.

Respondent 4: A target of 2.13 percent for the forecast horizon is consistent with our assessment of current economic conditions and for the convergence of GDP growth and unemployment to their values in a regime characterized by low productivity growth and a low real interest rate on short-term government debt. A target of 2.13 percent is also consistent with maintaining inflation on target. We view monetary policy as having been pre-emptive and that additional increases in the funds rate would be inappropriate given our projections. In the event of a regime change, such as a shift from low productivity growth to high productivity growth, our target federal funds rate will change.

Respondent 5: In my view, appropriate monetary policy calls for a move to a neutral stance, but not materially beyond this. I have revised up my estimate of the longer-run normal value of the federal funds rate by 25 basis points, consistent with the upward drift in statistical estimates of r^*.

Respondent 6: My judgment regarding the appropriate path of the federal funds rate is predicated on promoting sustainable economic growth and price stability. The economy has gone beyond full capacity and we have essentially achieved price stability, yet I view the appropriate level of the federal funds rate to be below my estimate of its longer-run level in 2018. That the federal funds rate is still low despite the economy's return to full employment and price stability reflects the Committee's past decisions, and I view a gradual path of the federal funds rate as important to promote economic and financial stability. I believe the funds rate will need to rise above its longer-run level in 2019 and beyond.

Respondent 7: With the economy running already beyond full employment and a policy stance that is still accommodative, it is difficult to chart an appropriate path for policy. A swift tightening of policy could increase the probability of a recession in ways that our linear models are unable to capture. Our projected path for the federal funds rate tries to balance this concern against the concern that running an economy above full employment for a prolonged period of time might create distortions that, too, increase the probability of a future downturn. Given the underlying momentum in real activity, it may be appropriate to front-load some of the increases in the federal funds rate, and then raise the funds rate more gradually in 2020 and 2021 as the stance of monetary policy turns restrictive. Such a strategy would reduce the scope for further declines in the unemployment rate, while providing policymakers with more time later to assess how the economy responds to a contractionary stance, thus lowering the risk of tipping the economy into a recession.

Respondent 8: Before this meeting the real funds rate was negative, indicating an accomodative monetary policy. Real growth in this submission is well above trend for a considerable period, and labor markets are tight. Inflation expectations appear well anchored. Under these conditions I believe the federal funds rate needs to increase. I am comfortable with continuing on a gradual path of funds rate increases while we continually assess new information to determine whether a different path might be appropriate. As real growth slows while inflaiton remains near target I believe that it will become appropriate to raise rates more slowly. I also believe that our balance sheet normalization should remain on autopilot.

Respondent 9: My assessment of the appropriate path of the federal funds rate has not changed since the previous SEP.

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

Even though a number of point estimates for the natural rate have risen following the comprehensive revision to the NIPA, given the uncertainty around those estimates, the magnitudes of those increases have not yet been sufficient to lead me to raise my estimate of 1/2 percent. However, I will be monitoring closely future data and estimates to determine if an adjustment to my assumption is necessary.

With my economic outlook and risk assessment fundamentally little different from June and no change in my natural rate assumption, there is little change in my federal funds rate path from June: the target federal funds rate ranges at the end of 2018, 2019 and 2020 are 2 1/4 – 2 1/2 percent, 3 1/4 - 3 1/2 percent and 3 1/2 - 3 3/4 percent, respectively. I anticipate that the target range for 2021 will also be 3 1/2 - 3 3/4 percent. Consequently, I envision that the policy rate moderately overshoots its longer-run level in 2019 – 2021 and probably somewhat beyond, as policy acts to unwind the overshooting of inflation and tight labor market conditions. Even so, this path is flatter than some simple policy rules suggest, reflecting that inflation has been rising only gradually toward our longer-run objective.

Respondent 11: I am ex ante somewhat more optimistic about u* than are some others on the FOMC, but also acknowledge there is greater uncertainty about this and other parameters than in the past. My baseline/modal view is that, while it will likely be necessary over the next several years for monetary policy to enter into restrictive territory so as to contain any overshoot of core inflation – as has been the case in prior rate hike cycles, I expect the required adjustment in the policy rate to maintain price stability may be more modest (relative to my point estimate for long run r*) than in some past cycles. In making this assessment, I am factoring in that over the scenario horizon, the relative stance of US fiscal policy and Treasury supply may push up the real term premium on government bonds, and that the relative stance of US monetary policy will give support to some further dollar appreciation. Were this to occur, the longer run policy rate consistent with our dual mandate would be somewhat

lower than if the real term premium remains depressed and the dollar does not further appreciate. Of course, neither of these is pre-ordained, and there remains significant uncertainty about the point at which policy inflects from accommodative to restrictive. But my modal scenario is as described above and reflected in my projections.

Respondent 12: The policy rate has been moving toward the range of estimates of the neutral rate. There has been a compelling case to move the policy rate up given the economy's strength – characterized by above-trend growth and tight labor markets – and the fact that inflation has moved to 2 percent. We are now getting closer to a new phase in which to determine appropriate policy settings the Committee needs to be even more attentive to the evolution of economic conditions and their implications for the medium run outlook and the risks around the outlook.

My modal outlook is for the economy and labor markets to remain strong over the forecast horizon. I project that growth will be above trend over the period 2018-2020 before returning to trend in 2021 and that the unemployment rate will be well below my 4.5 percent estimate of its longer-run level. Labor markets are tight and wages are accelerating. I anticipate that further tightening in the labor market will translate into some continued firming in the labor compensation measures, in line with anecdotal reports of increasing wage pressures across a range of skill groups. However, given slow productivity growth, I expect wages to rise at a slower pace than in past expansions.

Inflation has essentially returned to our 2 percent target and I expect it to remain near this level – with the usual volatility in the monthly data – through the forecast horizon. Firms are reporting increased ability to raise prices for their customers. Inflation expectations are well anchored. My modal projection is that I will be able to say by year-end that inflation is sustainably at our goal.

To reach these outcomes, my policy path includes further fed funds rate increases in 2019, with the policy rate holding at this level until sometime in 2021. In my view, this path prudently balances the risks to the outlook for both parts of our mandate, as well as helps to take some pressure o of increasing financial market imbalances. With above-trend growth, labor markets beyond full employment, and inflation at 2 percent, I believe it will be appropriate for the funds rate to rise somewhat above my longer-run estimate of 3 percent in order to promote our longer-run goals of maximum employment and price stability.

Respondent 13: My funds rate path reflects the balancing of two key considerations. First, owing in large part to fiscal policy, the short-run neutral rate is likely rising, and may exceed its long-run level before too long. As a consequence, the path of the federal funds rate is higher than it would otherwise be. Moreover, with the path for the neutral rate pushing toward an inverted yield curve, it is not surprising that some of that pressure will be manifest in the actual outcomes for interest rates. At the same time, it is likely that, as in the sta analysis, longer-run underlying inflation is running somewhat below the Committee's 2 percent target. One important contribution the Committee can make to boosting underlying inflation will be actively signaling that the Committee is serious about achieving its target – which will require patience in raising the funds rate. A gradual path of funds rate increases, along the lines I have penciled in above, will most appropriately balance these opposing forces.

I have revised up my estimate of the longer-run federal funds rate by 1/4 percentage point. My upward revision reflects the accumulated effects of recent news: As can be seen in the exhibit in the Tealbook, model estimates of the longer-run federal funds rate have been drifting up recently, and the central tendency is now closer to 1 percent in real terms than my previous assumption of 3/4 percent. Supporting the notion that estimates of longer-run interest rates have been moving up, ten-year Treasury yields are higher now than they were six months ago.

Respondent 14: N/A

Respondent 15: Given the solid path of underlying growth, we now assume there will be four funds rate increases in 2018, leaving the rate in the range of 2 1/4 to 2 1/2 percent at the end of the year. Thereafter, we assume a gradual increase in the funds rate to the 3 to 3 1/4 percent range by the second half of 2019, at which point we hold it steady through 2021. We assume balance sheet normalization proceeds according to the announced plan.

For some time, our view of appropriate monetary policy has been predicated on the funds rate increasing only gradually in order to firm inflation expectations symmetrically about 2 percent and ensure that inflation achieves our objective on a sustainable basis. A number of factors suggest this approach is working and that underlying inflation and some measures of inflation expectations are headed in the right direction. In the absence of any surprises, we think it will be appropriate to gradually move the funds rate into a modestly restrictive stance and then pause to see if this setting is consistent with output and the unemployment rate returning to their long-run

normal rates in a measured fashion. We believe holding the funds rate in the 3 to 3 1/4 percent range – which is modestly above our 2.75 percent assumption for the neutral rate – will achieve this goal. Our policy trajectory is consistent with some modest overshooting of our 2 percent inflation objective in 2020 and 2021, which we see as a virtue that will help to firm inflation expectations symmetrically around the 2 percent target.

Respondent 16: The labor market has exceeded full employment according to various measures and I expect it to continue to strengthen over the next couple of years with impetus from fiscal policy. Given the strong momentum in the economy, I expect the unemployment rate to reach 3.4 percent by next year. With the economy above potential, I anticipate inflation will modestly overshoot our 2 percent objective beginning in 2019.There are a number of factors that suggest the natural rate of interest has increased. This includes the completion of the post-crisis deleveraging, a higher federal budget deficit, and persistent tailwinds from deregulation and corporate tax reform. This inference is corroborated by a broad range of model-based estimates which show that the natural rate of interest has recently risen. In light of this evidence, I have raised my assessment of the natural rate to 3/4 percent.

My assessment of appropriate policy is generally informed by looking at simple rules that adjust for the zero lower bound and assume a low natural rate of interest. My fed funds rate path is flatter than some simple rules would suggest. This reflects an inflation rate that has been rising only gradually toward our objective from below. Beyond the near term, I envision a path for the fed funds rate that moderately overshoots its long-run level in 2019 through 2021 as policy acts to unwind the overshooting in inflation and labor market conditions.

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: Core inflation is now back to target and the economy continues to add jobs with modest increases in wage growth. This reinforces my assessment that there may be some slack left in the economy.

Respondent 2: Near term, expansionary fiscal policy and accommodative monetary policy are pushing real activity forward at a rapid clip, increasing pressure on an already strained labor market. With longer-run inflation expectations well-anchored, the tightening labor market is likely to drive inflation past our 2-percent longer-run objective. In this setting it is appropriate that we continue to move toward a neutral policy stance while remaining cognizant of potential shifts in financial-market conditions and inflation pressures. The longer that we maintain growth above potential, the more difficult it will be to achieve a smooth transition to sustainable growth with stable, on-target inflation. Over the medium and longer runs, I continue to be concerned about eroding demographic trends, 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 relative to GDP.

Respondent 3: My forecast calls for above trend growth of 3 percent in 2018, edging down to 2 percent in 2020 and 2021. My near-term forecast is slightly higher than in June based on the strength of incoming data. My uncertainty about the effects of fiscal stimulus on output growth and inflation going forward remains elevated, especially given the economy's high level of resource utilization. As well, uncertainty about trade policy and the potential for escalating trade frictions with our trading partners is of concern. I expect the unemployment rate to remain below my estimate of the natural rate over the forecast horizon as output grows at a healthy pace and the labor force participation rate edges down. I anticipate that inflation will run slightly above the Committee's target in 2019 and 2020 before returning to target in 2021. With above-trend output growth, low unemployment, and slightly above-target inflation over the next two years I anticipate a gradual increase in the federal funds rate to a level only slightly above my longer run projection.

Respondent 4: Our forecast continues to use a regime-based conception of outcomes for the US economy. In our conception, there are multiple regimes and we appear to have nearly converged to one of them. The current regime is viewed as persistent, and we see no reason to forecast an exit from the current regime over the forecast horizon. We are, however, paying close attention to many factors, such as the effects of either regulatory or tax policy changes, which might move the economy to a high productivity state. Monetary policy is regime-dependent and can be viewed as optimal given the current regime. Longer term, the economy may visit other regimes, such as ones associated with the previously mentioned higher productivity growth, a higher real return to short-term government debt, or recession. If the economy transitions to any of these states, all variables may be affected and, in particular, the optimal regime-dependent policy may require adjustment. However, predicting when these transitions may occur is very challenging, so we forecast that the economy will remain in the current regime over the forecast horizon.

Respondent 5: Real GDP growth, in my outlook, grows at an above trend pace this year and next, before settling down to trend in 2020. A stronger profile to consumer spending owing to the recent tax reform is the primary driver of the moderate overshoot of potential growth.

The risks to my growth outlook are tilted to the upside. Recent tax cuts could have a much more transformative impact on investment and growth than I currently expect. While not a feature of my baseline outlook, the latest data (and the recent NIPA revisions) have highlighted the possibility that productivity growth may be accelerating, which would boost overall growth.

Measured inflation appears to be running at or very close to target. Given the absence of slack in my projection, I see inflation continuing at or modestly above the FOMC's inflation objective through 2021.

The risks to my inflation outlook are tilted to the upside. Given high rates of resource utilization, we could see a more pronounced inflation response than a linear Phillips curve would suggest. Also, additional tariffs could increase the pressure on firms' costs and consumer prices, leading to higher inflation expectations.

Respondent 6: Central economic outlook: My forecast for real GDP growth is characterized by above-trend growth from 2018 to 2020, where supportive financial conditions and fiscal policy stimulus are the main factors boosting growth above trend. With the economy already beyond full capacity, the growth forecast indicates that the gap between real GDP and its potential level will widen further. Consistently, I expect headline and core inflation to rise modestly above 2 percent over 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 projection errors and current economic and policy uncertainty at home and abroad. The risks to economic growth, inflation, and unemployment appear broadly balanced. On the downside, more restrictive trade and immigration policies could dampen economic growth. Softer data abroad and financial stress in emerging market economies have put upward pressure on the dollar, posing downside risk to economic growth and inflation. Upside risks to my forecast stem from greater-than-expected momentum in the economy and the possibility that deregulation and elevated business confidence translate into sustained increases in investment and productivity.

Respondent 7: Incoming data since the June projections have been roughly in line with expectations. Underlying momentum in real activity is somewhat stronger than previously thought, but a sizable cyclical rebound in labor force participation has prevented steeper declines in the unemployment rate. Some of the supports to activity in the first half of the year, most notably net exports, are unlikely to persist going forward. Still, financial conditions remain favorable, mainly as a result of higher equity prices and higher personal income than previously thought. Given the underlying momentum, financial conditions, and the ongoing fiscal stimulus, we expect growth in the second half of the year to continue to outstrip potential. As interest rates rise gradually and the effect of the fiscal stimulus becomes less pronounced, we expect real activity to slow down to a pace near potential near the end of 2019 and 2020. By 2021, the rate of growth is expected to fall below potential and the unemployment rate to rise marginally, but still remain one full percentage point below our estimate of the equilibrium unemployment rate. With the unemployment rate projected to stay well below its equilibrium level over the forecast horizon, inflation is expected to increase above 2 percent, albeit by a relatively modest amount.

Our forecast continues to be conditioned on increases in the federal funds rate that by the end of the forecast horizon steer policy to a stance that is only moderately restrictive. By historical standards, this is a cautious pace of policy tightening given that the unemployment rate is already below its estimated equilibrium level. Such an approach tries to strike a balance between the risks associated with an even more gradual increase in rates, and the risk that faster policy tightening may increase the probability of the economy falling into a recession. It is nevertheless important to recognize that the past does not provide much guidance in terms of how to conduct policy so as to achieve a soft landing when the economy is beyond full employment.

We view the risks around the GDP growth outlook as roughly balanced in the near term. We maintain a fairly conservative view of the effect of the Tax Cuts and Jobs Act on GDP growth, and it is possible that the tax cuts will stimulate activity by a cumulative amount that is greater than what we are currently expecting. We take into account in our forecast the impact of the enacted tariffs and the ones scheduled to go into effect soon. While the estimated impact so far is small, there are more substantial risks to activity associated with additional trade policy actions. In the medium term, the ability to achieve a soft landing remains questionable, and a scenario such as the one outlined in the Tealbook ("Recession ") in which the economy eventually falls into a recession as monetary policy tries to move the unemployment rate back up to its equilibrium level would find several historical precedents. The probability of such a scenario would be even higher if in the presence of persistently tight labor market conditions inflation reacts more forcefully, thus eliciting a stronger monetary policy response. As concerns the unemployment rate, the ongoing and projected increase in payrolls runs the risk of not being met by the cyclical increases in labor force participation envisioned in our baseline forecast, but rather by a steeper decline in the unemployment rate. Finally, an unemployment rate below 4 percent for an extended period of time runs the risk of eliciting a nonlinear response in inflation, even if the equilibrium unemployment rate turns out to be lower than what we are currently estimating.

Respondent 8: I believe that fiscal stimulus has temporarily boosted real GDP growth, and will soon begin to wear o . Strong business and consumer sentiment, however, are likely to support above-trend growth for some time. Beyond this year I expect supply constraints to become more prominent and become a headwind for growth. I believe that business practices will make it difficult for inflation to rise rapidly, even with above-trend real growth and tight labor markets.

Respondent 9: The main factors shaping my economic outlook include an increasingly strong labor market, still-supportive domestic financial conditions, accommodative domestic fiscal policy, and more data suggesting that inflation will stay around 2 percent on a sustained basis.

Respondent 10: The recent data indicate that the economy has continued to expand at a pace above its potential growth rate. This growth has led to further tightening of the labor market, even though the unemployment rate is little changed since my June SEP submission. Over the rest of this year, fiscal stimulus, ongoing strength in personal disposable income and high household wealth should support consumer spending growth. Robust final demand and continued business optimism should help contribute to solid growth in most categories of business fixed investment. One sector that recently has been soft is residential investment, which has been affected by rising mortgage rates, and I expect it will remain soft through the rest of this year.

Given this backdrop as well as continued fiscal stimulus and some monetary accommodation, I anticipate that real GDP growth through the rest of this year and the next will be at a pace well above potential. With continued strong growth, I expect the unemployment rate to fall to just under 3 1/2 percent by the end of next year and core PCE inflation to reach our objective of 2 percent.

The combination of a gradually tighter monetary policy stance and the fading of fiscal stimulus (although, as in the Tealbook projection, I assume that discretionary federal spending is held constant in real terms in 2020 and beyond, which would require legislative action to raise the nominal discretionary spending caps) leads to a slowdown of growth to around potential in 2020 and modestly below potential in 2021. With slower growth, the unemployment rate begins to rise gradually, but it remains well below its longer-run normal rate at the end of 2021. With resource utilization remaining tight, inflation rises and is modestly above the FOMC objective in 2020 and 2021. A still-moderately tight monetary policy and little impetus from fiscal policy contribute to bring inflation, growth, and unemployment back to their longer-run normal levels by the middle of the next decade.

Respondent 11: The US economy and labor market have been surprising on the upside for nearly two years. It is impossible to know with any precision how much of this is due to good luck, good policy, a fiscal sugar high , or just noise that will soon mean revert. My prior - which I will update as new data arrives - is that the economy may have hit bottom on trend growth and that u* may be somewhat lower than I would have though a year or two ago. However, with inflation now essentially at our LR objective of 2 percent, prudent risk management - and elevated uncertainty about u* - suggests a policy of continued gradual increases in the policy rate is likely to be appropriate for some time to come.

Respondent 12: The fundamentals supporting the expansion remain favorable. Financial conditions remain accommodative despite the gradual path of rate increases the Committee has put in place. Household balance sheets have improved greatly since the recession; labor markets continue to strengthen; monetary is accommodative; and fiscal policy – tax cuts and additional government spending – is expansionary. Despite uncertainty around trade and tariff policies, consumers and businesses are quite optimistic. There has been somewhat stronger underlying momentum in the economy than I'd been assuming. Consistent with the data, business contacts report ongoing tightness in labor markets, and more widespread difficulties in finding qualified workers. In response they have been increasing wages across a range of skill groups and occupations. The global outlook remains generally positive, although activity appears to be decelerating and financial stresses are rising, especially in some emerging market economies.

I project growth will be above trend over 2018-2020 before returning to trend in 2021, and that labor markets will continue to be strong, with the unemployment rate moving down further next year and remaining below its longer-run rate through 2021.

Inflation has essentially returned to our 2 percent target and I expect to be able to say it is sustainably at 2 percent by year-end. Inflation expectations are well-anchored. I expect inflation to remain near 2 percent – with the usual volatility in the monthly data – through the forecast horizon.

I view overall uncertainty as roughly comparable to the historical norms of the last 20 years. As described above, while there are a number of risks to my outlook, I view them as broadly balanced for both the real economy and inflation, but this is contingent on my policy rate path, which includes further increases in the fed funds rate next year.

Respondent 13: Fiscal policy is a key factor in my outlook, providing a boost to aggregate demand this year and next. With the unemployment rate already significantly below my estimate of its longer-run value, it will be

appropriate to raise the federal funds rate over the next several years, to a level that exceeds that in the longer run. On net, GDP growth is above trend this year and next, and the unemployment rate drops to 3.4 percent by the end of next year.

Several factors contribute to the further deceleration in GDP growth after next year: (i) Fading impetus to GDP growth from fiscal policy; (ii) a stepping down in the economy's underlying momentum; and (iii) elevated interest rates. By 2021, GDP growth is notably below potential and the unemployment rate moves up. At the same time, core inflation is 2-1/4 percent in 2020 and 2021. That increase in inflation is appropriate as it helps convince the public the Committee is serious about achieving its symmetric 2 percent inflation target, and provides some insurance against the next downturn. Still, it will be preferable to avoid any further increase in inflation beyond that point; tighter monetary policy and reduced resource utilization help keep those risks in check. Financial vulnerabilities are also greater when resource utilization is stretched, providing an additional reason, once the medium-term inflation objective is met, to allow growth to fall below potential.

Respondent 14: I believe that the economy has considerable momentum, helped along by expansionary fiscal policy. Strong growth will push down the unemployment rate, but by a fairly modest amount as workers are drawn into the workforce, increasing labor force participation. 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 15: The fundamentals underlying private domestic final demand remain strong. Accommodative monetary and fiscal policies, a robust labor market, and improved balance sheets support strong gains in consumer spending and investment. The need to restock inventories should add to growth in the near term as well. All told, we expect GDP to increase 3.2 percent in 2018. The movement of monetary policy to a modestly restrictive stance and a diminishing impulse from fiscal policy are projected to bring GDP growth down to 2.4 percent in 2019, 1.9 percent in 2020, and 1.6 percent in 2021. Our assumptions regarding fiscal policy are unchanged: we expect the impetus to growth from fiscal policy to be close to 1 percent in 2018 and then to decline gradually to only a tenth or two in 2020; the impulse then turns slightly negative in 2021. Our forecast does not incorporate any additional changes in trade or immigration policy. On the supply side, we assume that robust capital spending, due in part to the tax bill, will provide a modest transitory boost to potential growth over the forecast period, raising it from a bit under 2 percent now to a bit over 2 percent by 2020. Our assumption for long-run potential growth remains at 1.8 percent.

We think the natural rate of unemployment is currently 4.4 percent and that it will fall to its long-run level of 4.3 percent by 2019. We expect the actual unemployment rate to move down to 3.4 percent in 2019 and then rise to 3.7 percent by the end of 2021.

Although the trend in inflation appears to be firming, the still-relatively-low readings on some key measures suggest that inflation expectations have not yet firmed symmetrically about 2 percent. Various features of our forecast will help boost this trend closer to target. With unemployment forecast to undershoot the natural rate substantially, even with a flat Phillips curve resource pressures should provide a lift to inflation going forward. We also rely on a shallow path for policy normalization and a strongly communicated commitment to a symmetric 2 percent inflation target to firm inflation expectations around 2 percent. A non-accelerationist Phillips curve limits the upside risk to inflation, even with the unemployment rate a little below 3 1/2 percent. All told, we expect core inflation to be 2.0 percent this year, then to rise to 2.2 percent in 2020 and 2021.

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

Respondent 16: The economy continues to expand at a strong pace relative to trend, which has pushed the unemployment rate lower. My forecast factors in a sizable amount of fiscal stimulus to the economic outlook. Going forward, ongoing strength in household disposable income coupled with past gains in household wealth and high consumer confidence should support continued consumption growth. The outlook for fixed business investment also appears strong given the corporate tax changes and continued optimism. However, there is uncertainty regarding the impact of rising oil prices, an appreciating U.S. dollar, and possible further retaliatory tariffs from U.S. trading partners

In this environment, I expect the economic expansion to proceed at a pace that is well above potential. With considerable fiscal stimulus and some monetary accommodation still in place, I expect these gaps to overshoot for the next few years, leading to a further pickup in inflation. I continue to expect inflation to reach our 2 percent target

by 2019, followed by a slight overshooting that continues through 2021. Normalization of monetary policy and a tightening of fiscal policy will help bring inflation, growth, and unemployment back to their long-run sustainable levels by the following years.

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: Long-term interest rates and model-based estimates of the long-run funds rate have moved up a bit, causing me to increase my estimate of the long-run federal funds rate. The subdued response to date of wage growth to low unemployment caused me to edge down my estimate of the long-run unemployment rate.

Respondent 2: Marginally stronger-than-expected incoming data have led me to revise my GDP growth projections modestly upward in 2018 and 2019. Labor force participation has been a touch higher than expected over the first half of the year, so I have revised my outlook for the unemployment rate at the end of 2018 up a touch; beyond 2018, my outlook for labor utilization–and hence for inflation and the appropriate path of policy–is little changed since the last projections exercise.

Respondent 3: The potential for adverse effects from fiscal policy uncertainty and trade policy uncertainty have led me to be more cautious about the appropriate pace of monetary policy normalization.

Respondent 4: Recent data, as well as some upward adjustments reflecting the growth impacts of fiscal and regulatory changes, have led us to increase our projections for GDP growth for 2018, 2019, and 2020.

Respondent 5: The economic data released since the June meeting has come in above my expectations. I view some of this surprise strength as reflecting transitory or idiosyncratic factors. That said, I have taken on board some of the acceleration in consumer spending, pulling some of that momentum into 2019.

I have marked up my path for the unemployment rate modestly, reflecting its recent flattening out and an assumption that the labor force participation rate will remain relatively flat.

The latest data on consumer prices suggests inflation this year will likely be a slightly below my previous projection.

Respondent 6: I have revised up my assumption for the broad exchange value of the dollar, reflecting a downgraded foreign growth outlook from early in the year and increased financial stress in emerging market economies. As a result, I view the appropriate path of the federal funds rate as somewhat lower than in June.

Respondent 7: Revisions to the outlook have been minor. The modest downward revision to the projected path of the federal funds rate implies that the unemployment reaches a level in 2020 that is marginally lower than in our previous forecast.

Respondent 8: This submission is little changed from my June submission. I have not changed my assumptions about fiscal or trade policies.

Respondent 9: My projection has not changed all that much since the previous SEP.

Respondent 10: The developments since June have been largely in accord with my economic outlook at that time. In addition, these developments did not lead me to make any substantive changes to my longer-run assumptions. Consequently, my projections have not changed substantially since the June SEP.

Respondent 11: No significant change to my outlook since June.

Respondent 12: The narrative of my forecast is similar to that in June. Economic fundamentals remain healthy, consumer and business sentiment are at high levels, and fiscal policy will add to growth over the forecast horizon. Incoming data suggests stronger momentum so I have edged up my growth forecast and edged down my unemployment rate forecast over the projection horizon. I expect growth to be above trend over the next two years, which puts addition downward pressure on the unemployment rate and keeps it, over the forecast horizon, below my estimate of its longer-run rate. I expect inflation to remain near 2 percent over the forecast horizon.

The policy rate has been moving toward the range of estimates of the neutral rate. There has been a compelling case to move the policy rate up given the economy's strength – characterized by above-trend growth and tight labor markets – and the fact that inflation has moved to 2 percent. We are now getting closer to a new phase in which to determine appropriate policy settings the Committee needs to be even more attentive to the evolution of economic conditions and their implications for the medium run outlook and the risks around the outlook. My medium-run forecasted outcomes are contingent on a policy path that includes further fed funds rate increases in 2019, with the policy rate holding at this level until sometime in 2021. I view this fed funds path as prudently balancing the risks to our dual-mandate goals, as well as helping to contain developing financial imbalances. My funds rate path is similar to my June projection.

Respondent 13: An important factor driving my revision since the previous SEP has been the incoming data, notably on spending. While the path for the unemployment rate is slightly higher than anticipated in June, the LFPR has also been firmer. Overall, I view resource utilization as tighter than in June. I expect some of the economy's recent momentum to carry forward into next year. The stronger economy merits a slightly steeper path for the federal funds rate, and so my funds rate projection is 25 basis points higher at the end of next year and in 2020. The latest round of tariffs boosts my 2019 inflation outlook by 0.1 percentage point beyond what it would otherwise be.

Respondent 14: My outlook is little changed.

Respondent 15: On net, our GDP growth forecast is little changed compared with June. We took on board the strength in the spending data received since June and raised our growth forecast in 2018 by two-tenths, but made no changes to the growth outlook for the remainder of the forecast period. In light of the NIPA revisions, we made some small changes to our estimates of potential growth that boosted our output gap a bit. The unemployment rate has not moved down as we expected in June. In the near term, our projected gap between the unemployment rate and the natural rate is a bit smaller than in June, but by 2020 it is unchanged from our previous forecast. This still leaves us with a small Okun's Law error at the end of the projection period.

In light of the firmer inflation trends apparent since June, we raised our forecast for core inflation by 0.1 percentage point in 2019 and 2020. In response, we made monetary policy slightly less accommodative, moving one rate increase forward from 2019 into 2018. Our forecast continues to overshoot the inflation target modestly in 2020 and 2021.

Respondent 16: My forecast has changed little from the June SEP. My assumptions about the effects of fiscal stimulus on the economic outlook are unchanged; however, I have edged up the near-term inflation forecast based on recent trade policy.

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: Relative to the Tealbook, my forecasts for economic activity and inflation are a touch stronger. I believe the long-run unemployment rate is lower and the improving labor market will continue to keep the labor force participation rate from falling, minimizing the downward effects of healthy job growth on the unemployment rate. I believe that it is appropriate for the federal funds rate to rise more gradually than in the Tealbook. Even with lower rates, my projection anticipates that inflation will be just barely above the Tealbook.

Respondent 2: Despite a fed funds rate path that is considerably less aggressive than that of the Tealbook, I see slightly more of a deceleration in real activity from 2018 to 2020. I expect that slowing will cause the unemployment rate to begin to turn up by the end of 2020, earlier than anticipated by the Tealbook. Fading fiscal stimulus contributes to the anticipated growth slowdown.

My inflation path is slightly higher than the Tealbook's, principally because I'm not convinced that the longer-term inflation expectations relevant to price setting are currently below our 2-percent objective.

Respondent 3: While my output and inflation forecasts are similar to the Tealbook, I anticipate a much slower pace of federal funds rate increases over the forecast horizon.

Respondent 4: For GDP growth and inflation, our projections are similar to those in the Tealbook. Differences arise with respect to monetary policy implications because the Tealbook projections incorporate the idea of a longer-run steady state to which the economy is converging. Monetary policy has to be set appropriately as the economy transitions to the longer-run steady state. This tends to imply an upward-sloping policy rate path. Our regime conception, in contrast, views monetary policy as regime-dependent and the current regime is viewed as persistent. It is acknowledged that the economy may visit other regimes in the future, but switches to these regime are difficult to forecast. This suggests a flat path for the policy rate over the forecast horizon relative to that contained in the Tealbook. Before returning to its longer-run value of 4.7 percent, the Tealbook also has a substantial undershooting of the unemployment rate, far more than our undershooting.

Respondent 5: My projection has modestly slower growth over the next two years relative to the Tealbook baseline. I am continuing to mark in a smaller impact from tax reform on overall growth than the Tealbook, creating much of the divergence in our growth trajectories. The divergence between my path for the unemployment rate and the projection marked into the Tealbook owes to differences in our employment growth projections over the next several years.

Respondent 6: My assumptions and projections are similar to those in Tealbook.

Respondent 7: Real outcomes are similar in the two forecasts. We expect inflation to increase somewhat more meaningfully above 2 percent than the Tealbook. In both forecasts monetary policy needs to tighten noticeably more than what financial markets are currently expecting for the unemployment rate to start reverting to a level consistent with full employment. Our outlook, however, features a path for the federal funds rate which is less steep than the Tealbook's. This difference could be due to the Tealbook having a more optimistic assessment of the economy's underlying momentum, and to the fact that we take some signal from the empirical evidence suggesting that a monetary policy tightening has a greater impact on economic activity than a monetary policy easing of the same magnitude.

Respondent 8: I believe that the Tealbook's path for the federal funds rate is unlikely to be consistent with plausible paths for output and inflation.

Respondent 9: My projections for GDP growth, the unemployment rate, and inflation are broadly consistent with the Tealbook. I have slightly stronger growth. My path for the target range for the federal funds rate is substantially lower than the Tealbook path.

Respondent 10: My set of projections is broadly in alignment with the Tealbook forecast. The one notable exception is the anticipated path of the federal funds rate.

In both forecasts, the fading of fiscal stimulus and the removal of monetary policy accommodation slow real growth to near its potential rate in 2020 and somewhat below potential in 2021. The prolonged period of tight resource constraints results in inflation slightly overshooting our 2 percent objective in 2020 – 21 and for some time afterwards. The Tealbook projects a somewhat larger and more prolonged undershooting of the unemployment rate from its longer-run normal rate, with a trough of the unemployment rate at 3.2 percent in 2020, compared to the trough of 3.4 percent in 2019 in my projection. My projection for the policy rate displays a more gradual rise and less overshooting of the longer-run federal funds rate than does the projected path in the Tealbook.

Respondent 11: My economic forecast differs primarily from the Teal book in that I think that trend growth may be somewhat faster and u* lower than is assumed in the Tealbook. On trend growth, we have seen some pick up in productivity (albeit from a very low base) over the last 8 quarters in contrast to the prior cycle when productivity growth slowed sharply late in the cycle. It is premature to declare an inflection point in trend growth, but my baseline is more optimistic than the Tealbook on this front.

Respondent 12: As in the Tealbook forecast, I expect that the economy will grow at an above-trend pace, labor market conditions will continue to strengthen, and inflation will remain near our 2 percent goal over the forecast horizon. Although the outcomes in the Tealbook forecast are similar to those in my forecast, to achieve these outcomes, the Tealbook has a steeper funds rate path, especially in 2020 and 2021, compared to my policy path. By the end of the forecast horizon, the Tealbook's fed funds rate projection is more than 150 basis points steeper than mine. Thus, the Tealbook sees a stronger underlying economy that needs to be tempered by more restrictive monetary policy compared to my projection.

Respondent 13: N/A

Respondent 14: I have a stronger outlook for potential growth than the Tealbook. Consequently, I believe that the economy can grow faster in the near-term 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 Sta outlook.

Respondent 15: Our federal funds rate path is noticeably below the Tealbook throughout the forecast period, ending 2021 in the 3 to 3 1/4 percent range. We assess the long-run neutral funds rate to be 2.75 percent, a bit higher than the Tealbook. Consequently, we do not overshoot the long-run fed funds rate by nearly as much as the Tealbook does. Over the 2018-2020 period, we assume the same average impulse from tax cuts and government spending as the Tealbook; however, we assume fiscal policy will be a slight negative for growth in 2021. Our view of potential output growth through 2021 is somewhat stronger than the Tealbook's, largely reflecting more BFI and capital deepening.

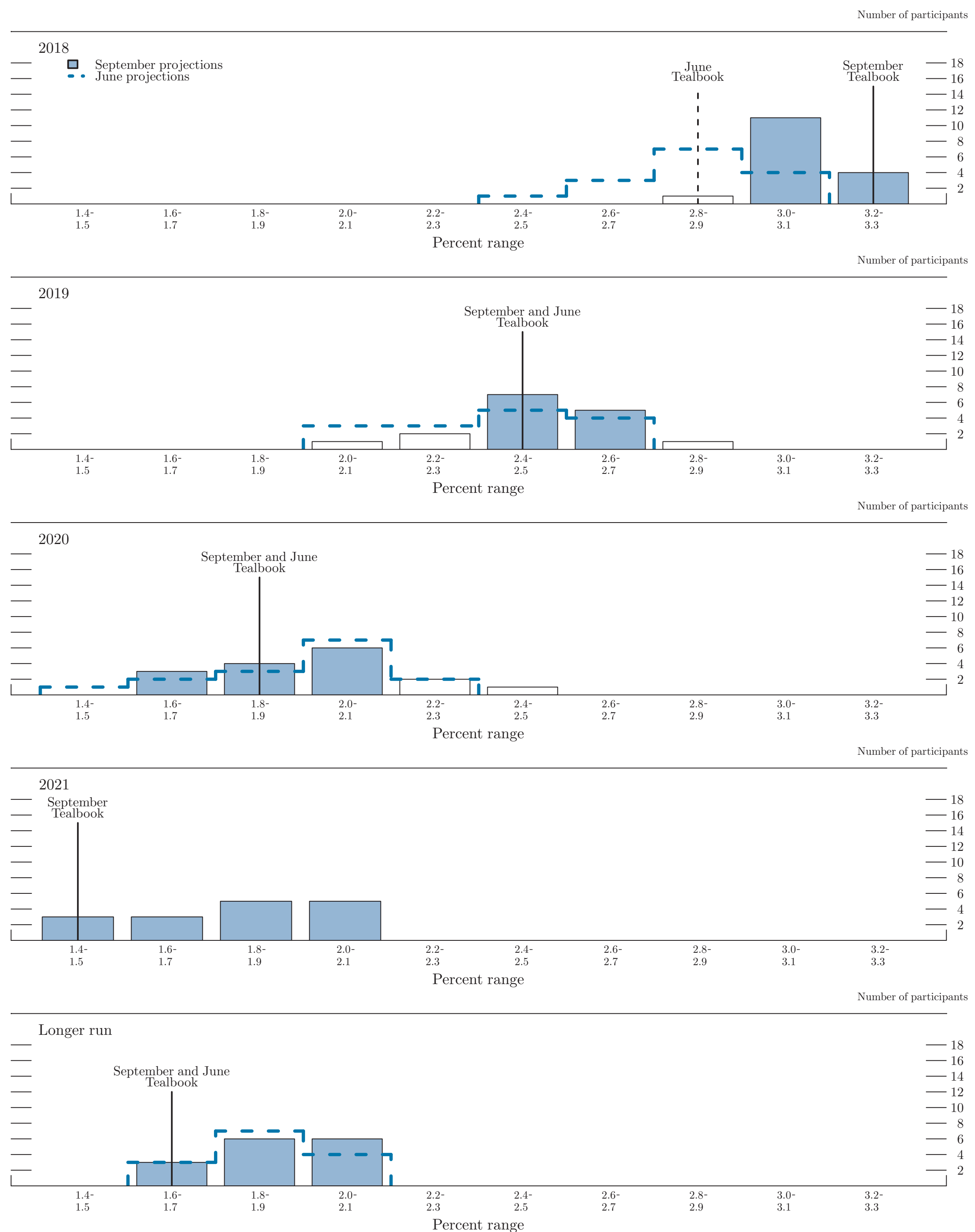
Our projection for actual GDP growth is very similar to the Tealbook throughout the projection period. Given our stronger potential, by 2020 our output gap is 1 percentage point smaller. Our projection for the unemployment rate is similar to the Tealbook's in 2018 and 2019, but we expect the rate beginning to rise in 2020, a bit sooner than the Tealbook. Combined with a lower estimate of the natural rate (4.3 percent), this leaves our unemployment rate gap at the end of 2021 at about 1/2 percentage point, half the estimate in the Tealbook.

Our forecast for core inflation is about a tenth higher than the Tealbook. Our boost from resource pressure is a not quite as large, but we condition on a more accommodative monetary policy path, which should lift underlying inflation trends and expectations more than in the Tealbook.

Respondent 16: The two projections are largely in alignment, with the exception of the anticipated path for the federal funds rate.

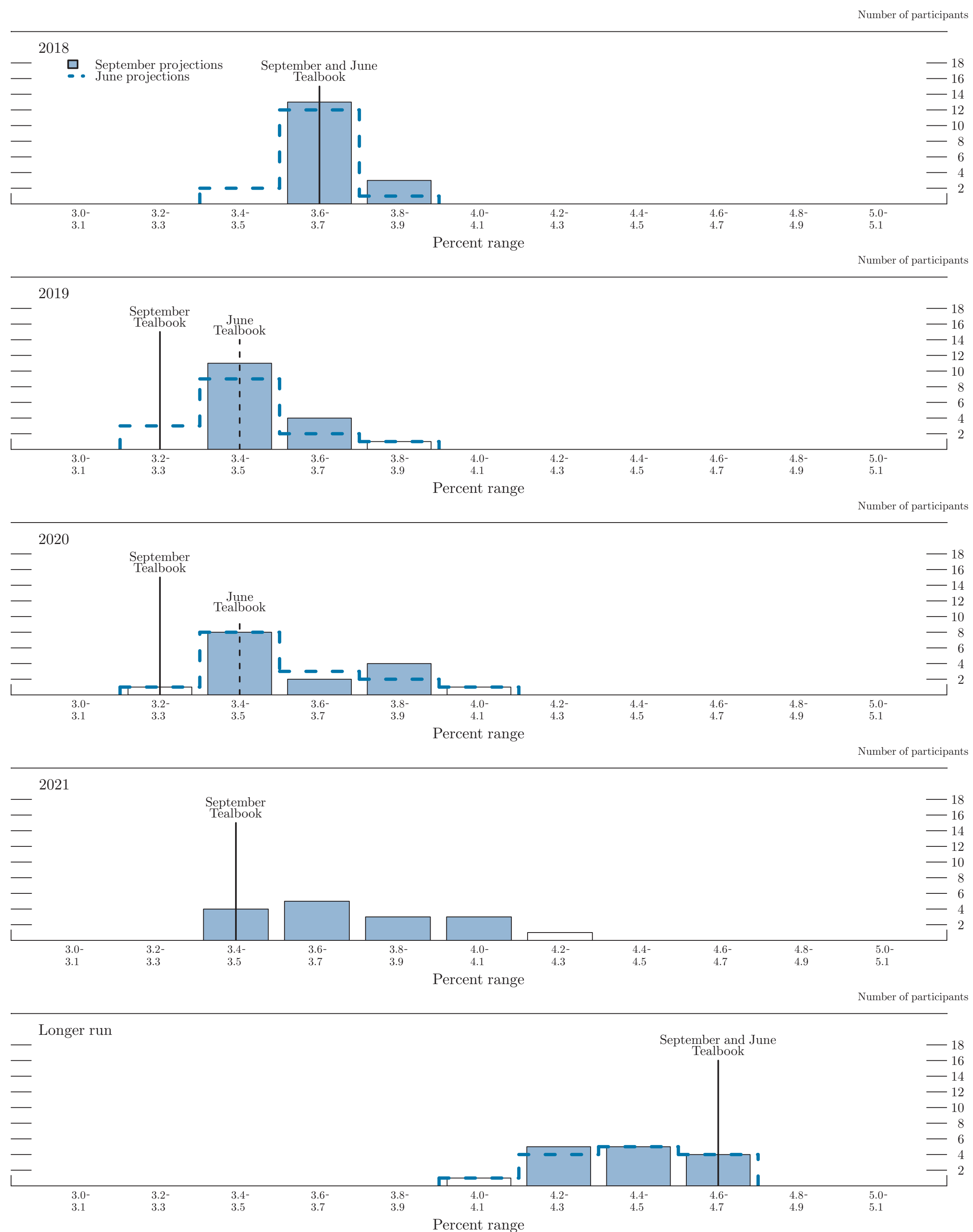
In both, the waning effects of the fiscal stimulus and the gradual removal of monetary policy accommodation slow growth closer to potential by 2020. Still, the persistent overshooting of full employment results in inflation slightly overshooting the 2-percent target for several years. In my projection, the unemployment rate bottoms out at 3.4 percent by the middle of 2019. By contrast, the Tealbook projects a slightly more protracted overshooting of full employment, with the unemployment rate declining to 3.2 percent in 2020. My projection for the funds rate path shows a more gradual rise that tops out to a lower level relative to the funds rate path in the Tealbook.

Figure 3.A. Distribution of participants' projections for the change in real GDP, 2018–21 and over the longer run



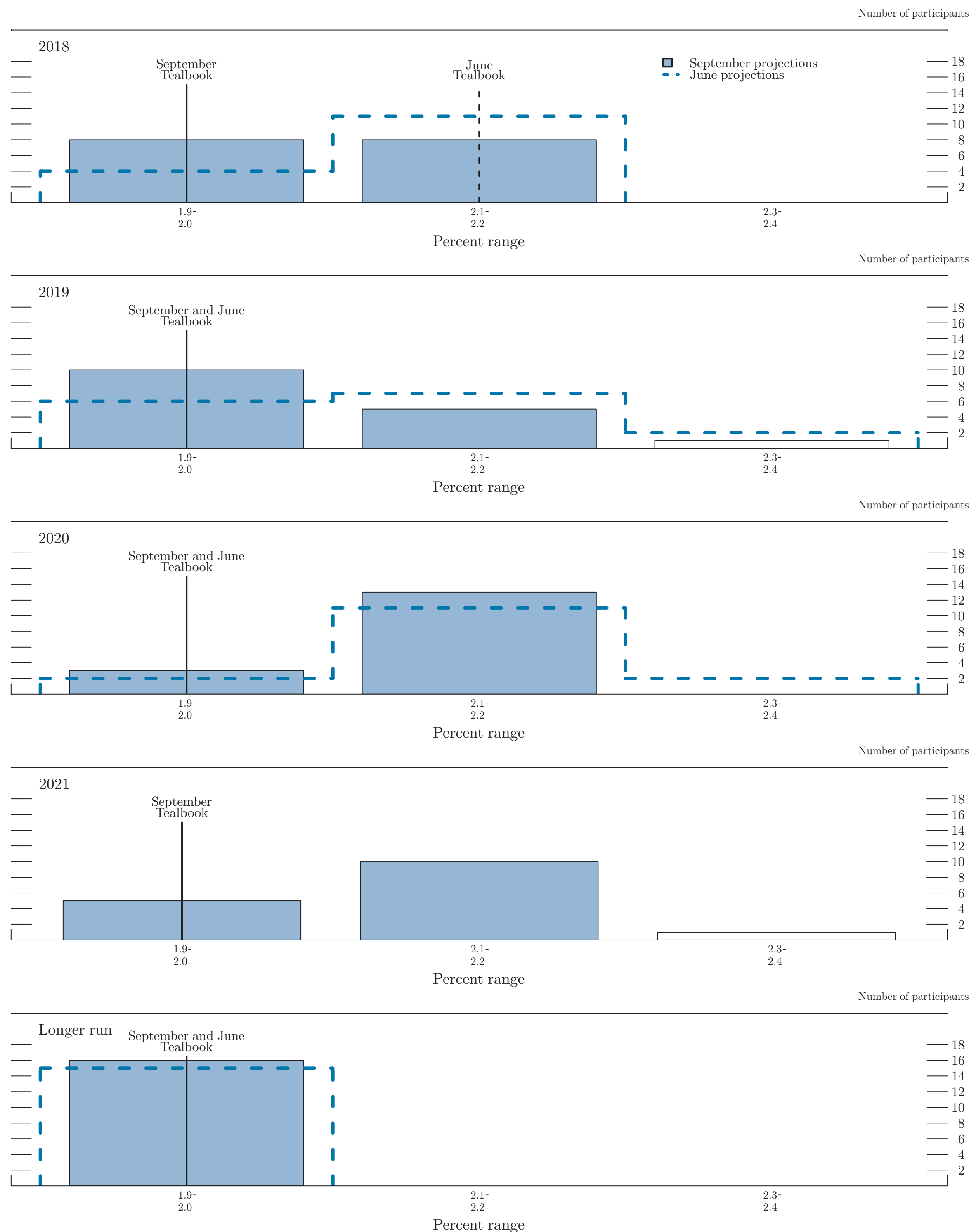
NOTE: Updated September Tealbook values are reported. Definitions of variables and other explanations are in the notes to table 1.

Figure 3.B. Distribution of participants' projections for the unemployment rate, 2018–21 and over the longer run



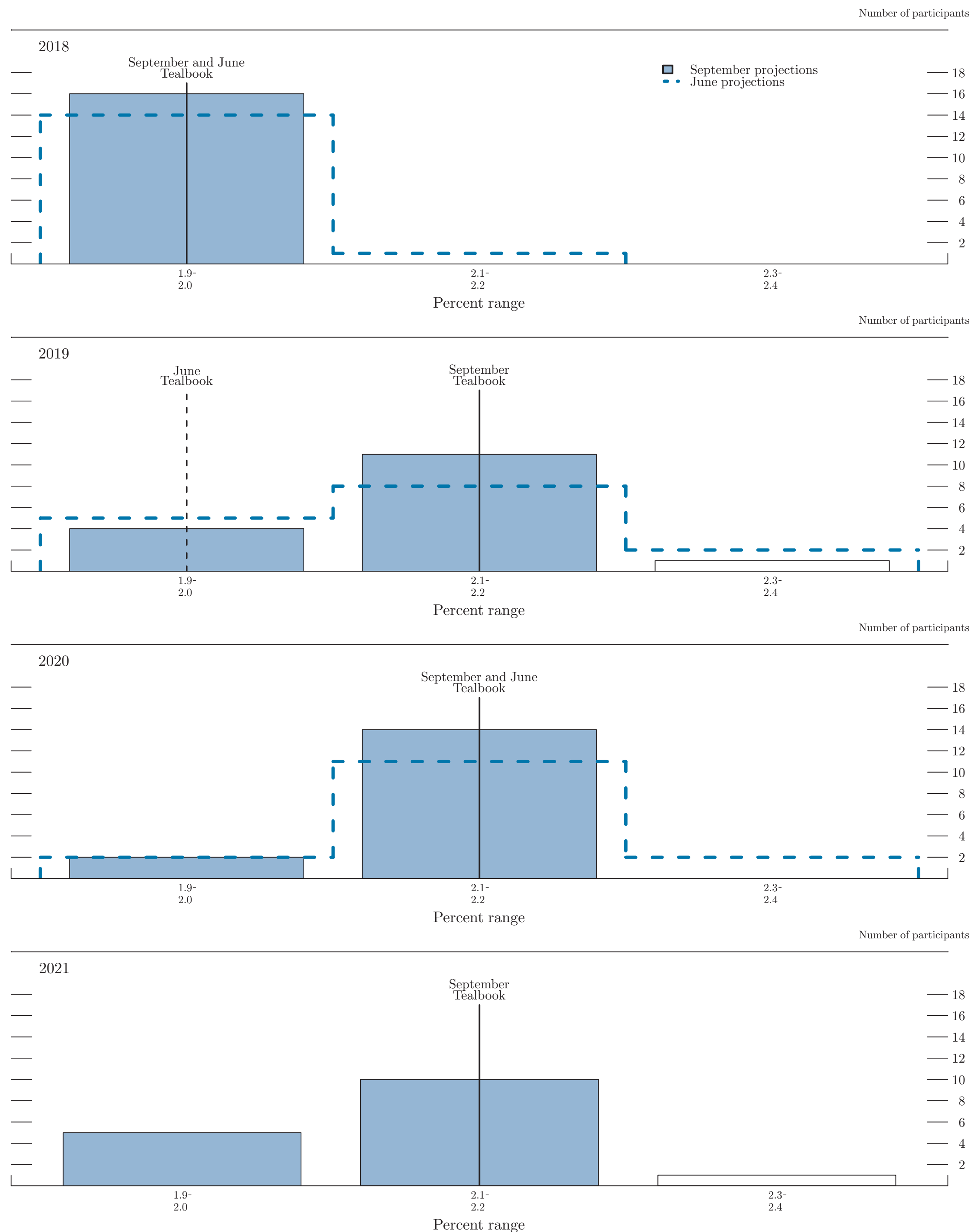
NOTE: Updated September Tealbook values are reported. Definitions of variables and other explanations are in the notes to table 1.

Figure 3.C. Distribution of participants' projections for PCE inflation, 2018–21 and over the longer run



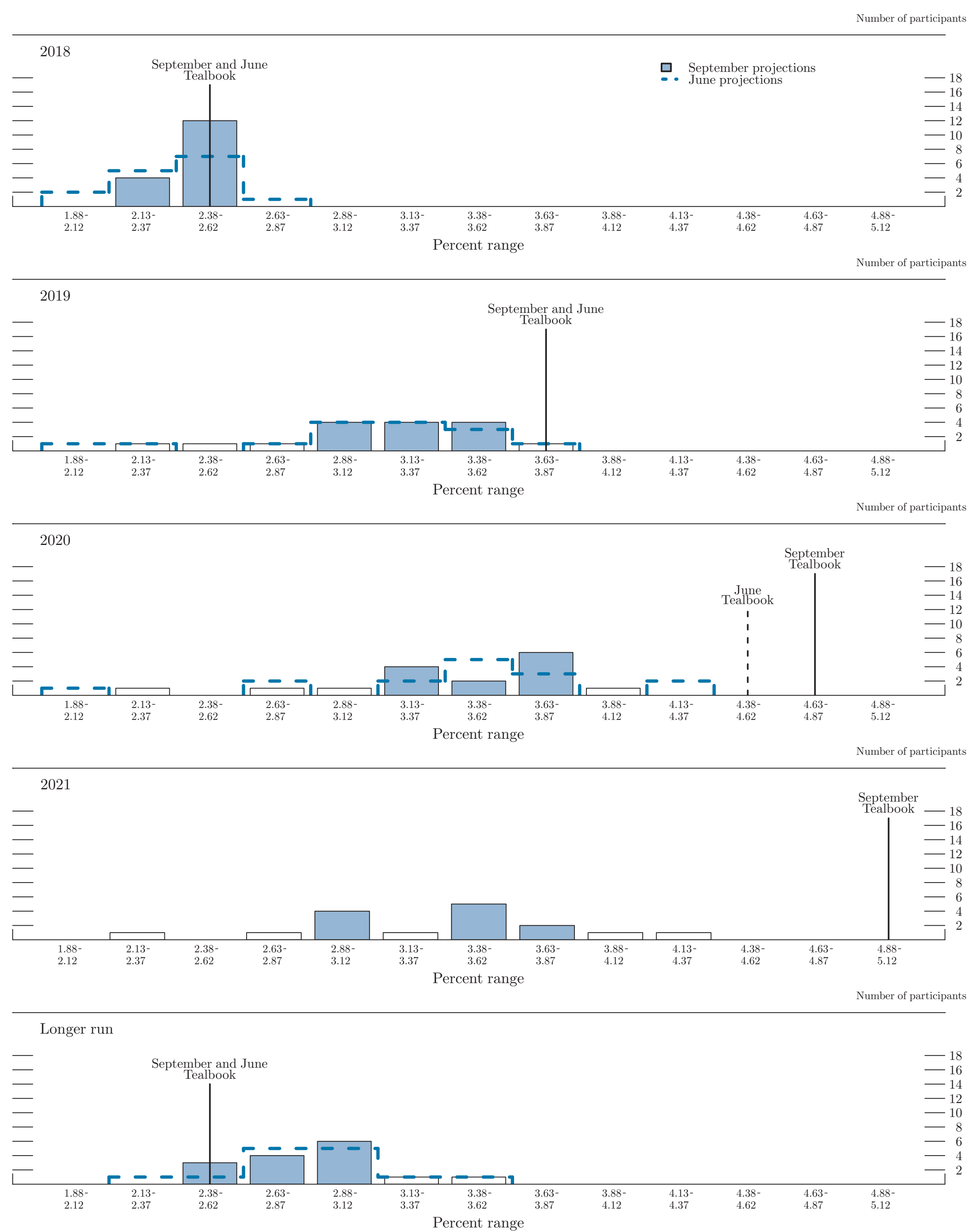
NOTE: Updated September Tealbook values are reported. Definitions of variables and other explanations are in the notes to table 1.

Figure 3.D. Distribution of participants' projections for core PCE inflation, 2018–21



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, 2018–21 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.