Table 1. Economic projections of Federal Reserve Board members and Federal Reserve Bank presidents, under their individual assessments of projected appropriate monetary policy, December 2015

Percent

Variable	Median[1]					Central tendency[2]					Range[3]				
	2015	2016	2017	2018	Longer run	2015	2016	2017	2018	Longer run	2015	2016	2017	2018	Longer run
Change in real GDP	2.1	2.4	2.2	2.0	2.0	2.1	2.3 – 2.5	2.0 – 2.3	1.8 – 2.2	1.8 – 2.2	2.0 – 2.2	2.0 – 2.7	1.8 – 2.5	1.7 – 2.4	1.8 – 2.3
September projection	2.1	2.3	2.2	2.0	2.0	2.0 – 2.3	2.2 – 2.6	2.0 – 2.4	1.8 – 2.2	1.8 – 2.2	1.9 – 2.5	2.1 – 2.8	1.9 – 2.6	1.6 – 2.4	1.8 – 2.7
Unemployment rate	5.0	4.7	4.7	4.7	4.9	5.0	4.6 – 4.8	4.6 – 4.8	4.6 – 5.0	4.8 – 5.0	5.0	4.3 – 4.9	4.5 – 5.0	4.5 – 5.3	4.7 – 5.8
September projection	5.0	4.8	4.8	4.8	4.9	5.0 – 5.1	4.7 – 4.9	4.7 – 4.9	4.7 – 5.0	4.9 – 5.2	4.9 – 5.2	4.5 – 5.0	4.5 – 5.0	4.6 – 5.3	4.7 – 5.8
PCE inflation	0.4	1.6	1.9	2.0	2.0	0.4	1.2 – 1.7	1.8 – 2.0	1.9 – 2.0	2.0	0.3 – 0.5	1.2 – 2.1	1.7 – 2.0	1.7 – 2.1	2.0
September projection	0.4	1.7	1.9	2.0	2.0	0.3 – 0.5	1.5 – 1.8	1.8 – 2.0	2.0	2.0	0.3 – 1.0	1.5 – 2.4	1.7 – 2.2	1.8 – 2.1	2.0
Core PCE inflation[4]	1.3	1.6	1.9	2.0		1.3	1.5 – 1.7	1.7 – 2.0	1.9 – 2.0		1.2 – 1.4	1.4 – 2.1	1.6 – 2.0	1.7 – 2.1	
September projection	1.4	1.7	1.9	2.0		1.3 – 1.4	1.5 – 1.8	1.8 – 2.0	1.9 – 2.0		1.2 – 1.7	1.5 – 2.4	1.7 – 2.2	1.8 – 2.1	
Memo: Projected appropriate policy path															
Federal funds rate	0.4	1.4	2.4	3.3	3.5	0.4	0.9 – 1.4	1.9 – 3.0	2.9 – 3.5	3.3 – 3.5	0.1 – 0.4	0.9 – 2.1	1.9 – 3.4	2.1 – 3.9	3.0 – 4.0
September projection	0.4	1.4	2.6	3.4	3.5	0.1 – 0.6	1.1 – 2.1	2.1 – 3.4	3.0 – 3.6	3.3 – 3.8	-0.1 – 0.9	-0.1 – 2.9	1.0 – 3.9	2.9 – 3.9	3.0 – 4.0

NOTE: Projections of change in real gross domestic product (GDP) and projections for both measures of inflation are percent changes from the fourth quarter of the previous year to the fourth quarter of the year indicated. PCE inflation and core PCE inflation are the percentage rates of change in, respectively, the price index for personal consumption expenditures (PCE) and the price index for PCE excluding food and energy. Projections for the unemployment rate are for the average civilian unemployment rate in the fourth quarter of the year indicated. Each participant's projections are based on his or her assessment of appropriate monetary policy. Longer-run projections represent each participant's assessment of the rate to which each variable would be expected to converge under appropriate monetary policy and in the absence of further shocks to the economy. The projections for the federal funds rate are the value of the midpoint of the projected appropriate target range for the federal funds rate or the projected appropriate target level for the federal funds rate at the end of the specified calendar year or over the longer run. The September projections were made in conjunction with the meeting of the Federal Open Market Committee on September 16–17, 2015.

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

Table 1.A. Economic projections for the first half of 2015*
(in percent)

Medians, central tendencies, and ranges

	Median	Central tendency	Range
Change in real GDP	2.3	2.3	2.3
September projection	2.2	2.2	2.2
PCE inflation	0.1	0.1	0.1
September projection	0.1	0.1	0.1
Core PCE inflation	1.4	1.4	1.4
September projection	1.4	1.4	1.4

Participants' projections

Projection	Change in real GDP	PCE inflation	Core PCE inflation
1	2.3	0.1	1.4
2	2.3	0.1	1.4
3	2.3	0.1	1.4
4	2.3	0.1	1.4
5	2.3	0.1	1.4
6	2.3	0.1	1.4
7	2.3	0.1	1.4
8	2.3	0.1	1.4
9	2.3	0.1	1.4
10	2.3	0.1	1.4
11	2.3	0.1	1.4
12	2.3	0.1	1.4
13	2.3	0.1	1.4
14	2.3	0.1	1.4
15	2.3	0.1	1.4
16	2.3	0.1	1.4
17	2.3	0.1	1.4

* Growth and inflation are reported at annualized rates.

Table 1.B. Economic projections for the second half of 2015*
(in percent)

Medians, central tendencies, and ranges

	Median	Central tendency	Range
Change in real GDP	1.9	1.9	1.7 – 2.1
September projection	2.0	1.8 – 2.4	1.6 – 2.8
PCE inflation	0.7	0.7	0.5 – 0.9
September projection	0.7	0.5 – 0.9	0.5 – 1.9
Core PCE inflation	1.2	1.2	1.0 – 1.4
September projection	1.4	1.2 – 1.4	1.0 – 2.0

Participants' projections

Projection	Change in real GDP	PCE inflation	Core PCE inflation
1	1.9	0.9	1.4
2	1.9	0.7	1.2
3	2.1	0.5	1.2
4	1.9	0.7	1.2
5	1.7	0.7	1.0
6	1.9	0.9	1.2
7	2.1	0.7	1.2
8	1.9	0.7	1.4
9	1.9	0.5	1.2
10	1.9	0.7	1.2
11	1.9	0.7	1.4
12	2.1	0.7	1.2
13	1.9	0.7	1.2
14	1.9	0.7	1.2
15	1.9	0.9	1.2
16	1.9	0.7	1.2
17	1.9	0.7	1.2

* Projections for the second half of 2015 implied by participants' December projections for the first half of 2015 and for 2015 as a whole. Growth and inflation are reported at annualized rates.

Table 2. December economic projections, 2015–18 and over the longer run (in percent)

Projection	Year	Change in real GDP	Unemployment rate	PCE inflation	Core PCE inflation	Federal funds rate
1	2015	2.1	5.0	0.5	1.4	0.38
2	2015	2.1	5.0	0.4	1.3	0.38
3	2015	2.2	5.0	0.3	1.3	0.38
4	2015	2.1	5.0	0.4	1.3	0.13
5	2015	2.0	5.0	0.4	1.2	0.13
6	2015	2.1	5.0	0.5	1.3	0.38
7	2015	2.2	5.0	0.4	1.3	0.38
8	2015	2.1	5.0	0.4	1.4	0.38
9	2015	2.1	5.0	0.3	1.3	0.38
10	2015	2.1	5.0	0.4	1.3	0.38
11	2015	2.1	5.0	0.4	1.4	0.38
12	2015	2.2	5.0	0.4	1.3	0.38
13	2015	2.1	5.0	0.4	1.3	0.38
14	2015	2.1	5.0	0.4	1.3	0.38
15	2015	2.1	5.0	0.5	1.3	0.38
16	2015	2.1	5.0	0.4	1.3	0.38
17	2015	2.1	5.0	0.4	1.3	0.38
1	2016	2.4	4.6	1.8	1.7	1.63
2	2016	2.5	4.7	1.2	1.4	1.13
3	2016	2.6	4.3	2.1	2.1	1.38
4	2016	2.3	4.7	1.2	1.4	0.88
5	2016	2.3	4.8	1.2	1.5	0.88
6	2016	2.3	4.7	1.6	1.5	0.88
7	2016	2.7	4.8	1.7	1.7	1.63
8	2016	2.5	4.8	1.6	1.8	1.38
9	2016	2.3	4.8	1.6	1.5	0.88
10	2016	2.5	4.7	1.2	1.4	1.38
11	2016	2.4	4.7	1.7	1.7	2.13
12	2016	2.5	4.8	1.6	1.7	1.38
13	2016	2.0	4.5	1.2	1.5	1.13
14	2016	2.4	4.7	1.2	1.6	1.38
15	2016	2.5	4.9	1.8	1.8	1.38
16	2016	2.2	4.5	1.5	1.6	1.38
17	2016	2.4	4.6	1.4	1.6	1.13

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

Projection	Year	Change in real GDP	Unemployment rate	PCE inflation	Core PCE inflation	Federal funds rate
1	2017	2.2	4.6	2.0	1.9	3.13
2	2017	2.2	4.6	1.8	1.7	2.13
3	2017	2.2	4.6	2.0	2.0	3.38
4	2017	2.2	4.6	1.8	1.6	1.88
5	2017	2.1	4.7	1.8	1.7	1.88
6	2017	1.9	4.8	1.8	1.8	1.88
7	2017	2.3	5.0	2.0	2.0	3.00
8	2017	2.3	4.7	2.0	2.0	2.38
9	2017	2.5	4.7	1.7	1.7	1.88
10	2017	2.0	4.6	1.8	1.7	2.38
11	2017	2.0	4.8	2.0	2.0	3.13
12	2017	2.4	4.9	1.9	1.8	2.63
13	2017	2.0	4.5	1.8	2.0	1.88
14	2017	2.1	4.6	2.0	1.9	2.38
15	2017	2.3	4.8	2.0	2.0	2.38
16	2017	1.8	4.8	1.9	1.8	2.63
17	2017	2.0	4.5	1.9	1.9	2.13
1	2018	2.0	4.6	2.1	2.1	3.63
2	2018	2.2	4.6	2.0	1.9	3.38
3	2018	2.0	5.0	2.0	2.0	3.88
4	2018	2.1	4.7	1.7	1.7	2.88
5	2018	1.8	4.8	1.7	1.7	2.13
6	2018	1.8	4.8	2.0	2.0	2.88
7	2018	2.3	5.3	2.0	2.0	3.50
8	2018	2.1	4.8	2.0	2.0	3.38
9	2018	2.4	4.6	1.9	1.9	3.00
10	2018	2.0	4.5	2.0	1.9	2.50
11	2018	1.8	4.8	2.0	2.0	3.63
12	2018	2.3	5.0	2.0	1.9	3.50
13	2018	2.0	4.6	1.9	2.0	2.88
14	2018	1.7	4.6	2.0	2.0	3.13
15	2018	2.0	4.7	2.0	2.0	3.38
16	2018	1.8	5.0	2.0	2.0	3.25
17	2018	1.8	4.5	2.0	2.0	2.88

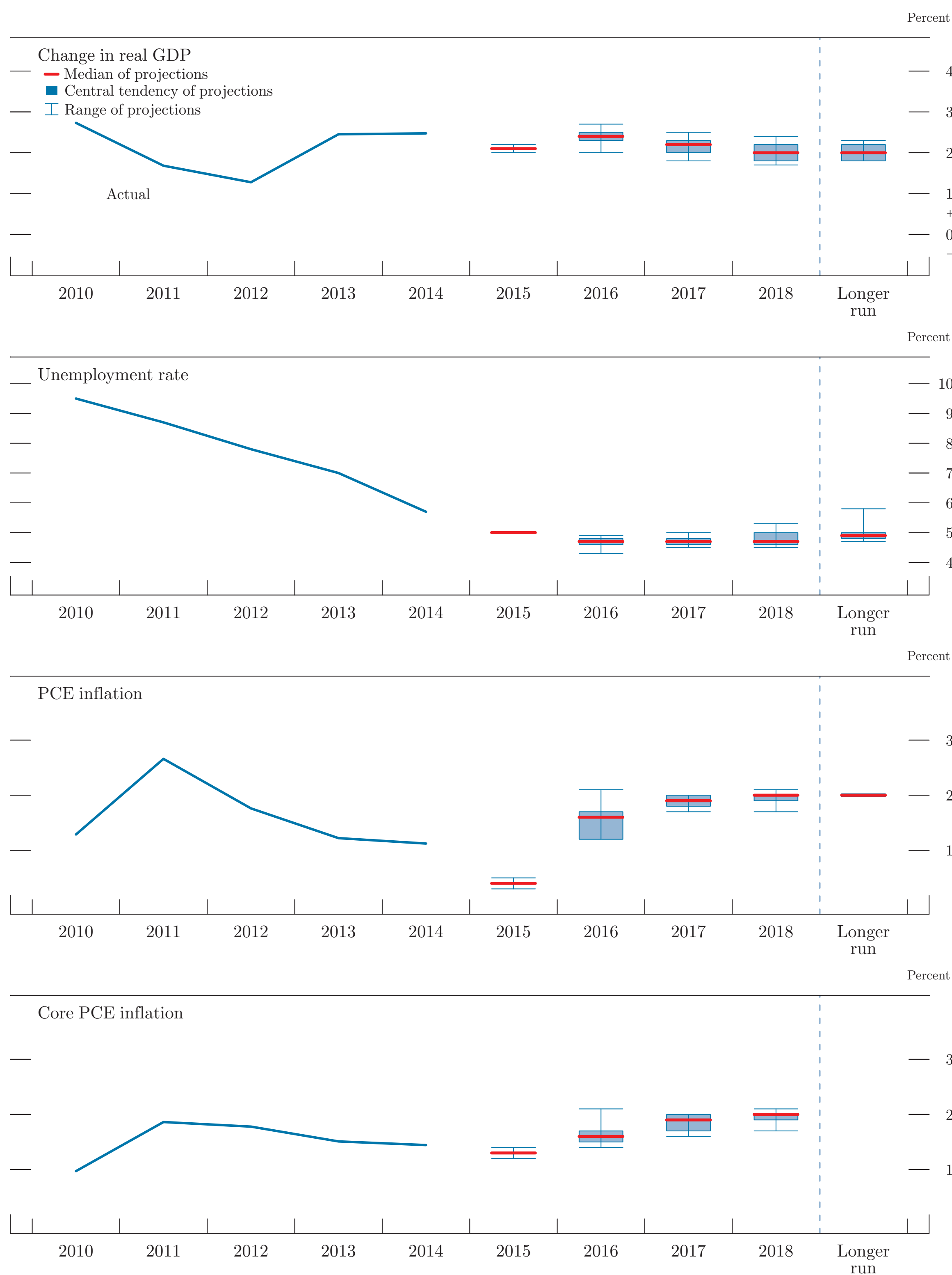
Table 2. *(continued)*

Projection	Year	Change in real GDP	Unemployment rate	PCE inflation	Core PCE inflation	Federal funds rate
1	LR	2.1	4.9	2.0		3.50
2	LR	2.3	4.8	2.0		3.50
3	LR	2.0	5.8	2.0		4.00
4	LR	2.1	4.8	2.0		3.25
5	LR	2.0	4.9	2.0		3.25
6	LR	1.8	4.8	2.0		3.25
7	LR	2.3	5.3	2.0		3.50
8	LR	2.1	4.9	2.0		3.50
9	LR	2.2	4.9	2.0		3.25
10	LR	2.0	4.7	2.0		3.00
11	LR	1.8	5.0	2.0		3.75
12	LR	2.3	5.2	2.0		3.50
13	LR	2.0	4.9	2.0		3.25
14	LR	1.9	4.7	2.0		3.50
15	LR	1.8	5.0	2.0		3.75
16	LR	1.9	5.0	2.0		3.25
17	LR	1.8	4.8	2.0		3.00

Table 2 Appendix. Timing (quarter) of liftoff and economic conditions in quarter of liftoff

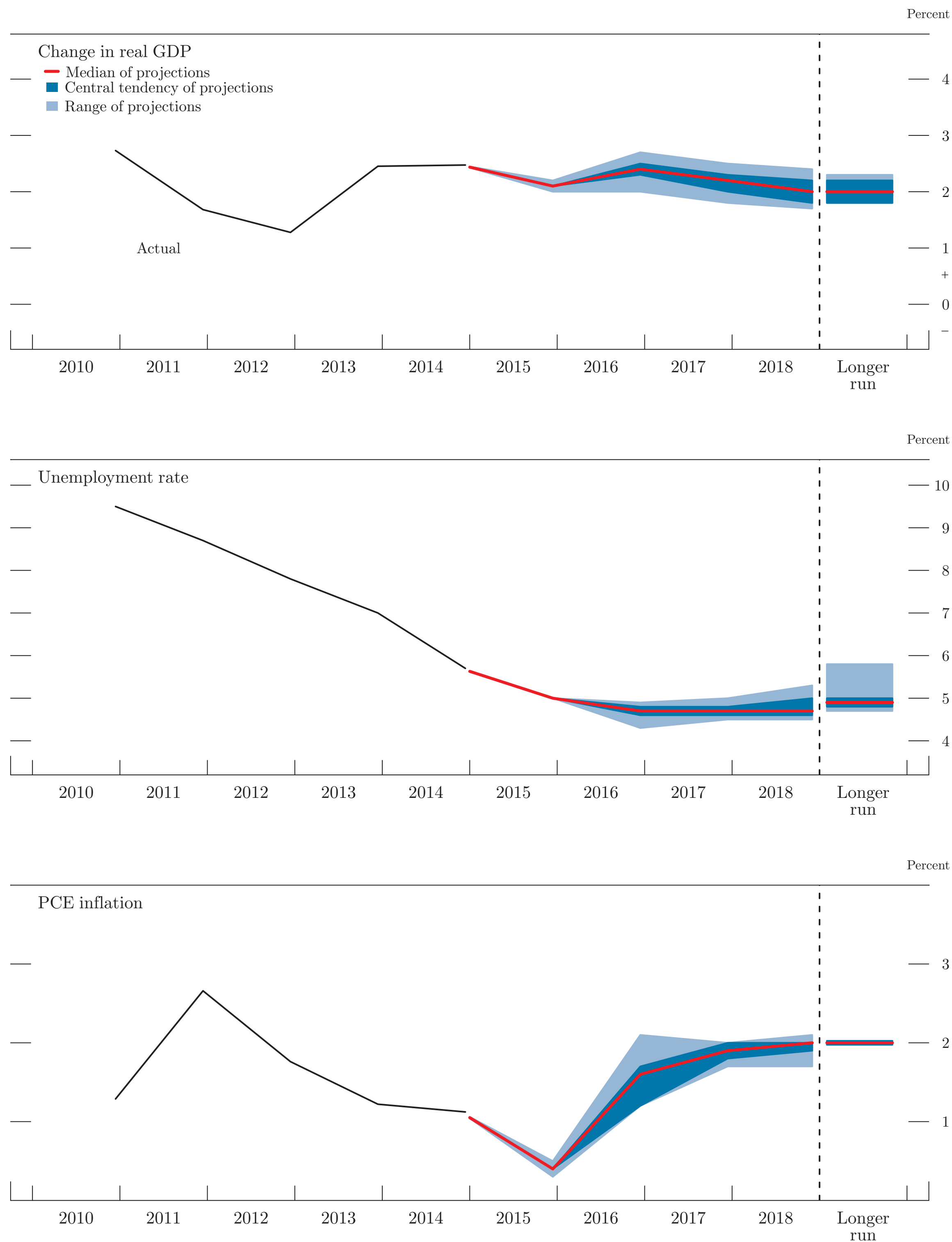
Projection	Year of first increase	Quarter of first increase	Change in real GDP	Unemployment rate	PCE inflation	Core PCE inflation
1	2015	4	2.1	5.0	0.5	1.4
2	2015	4	2.1	5.0	0.4	1.3
3	2015	4	2.2	5.0	0.3	1.3
4	2016	1	2.1	4.9	1.5	1.4
5	2016	1	2.1	5.0	0.5	1.3
6	2015	4	2.1	5.0	0.5	1.3
7	2015	4	2.2	5.0	0.4	1.3
8	2015	4	2.1	5.0	0.4	1.4
9	2015	4	2.1	5.0	0.3	1.3
10	2015	4	2.1	5.0	0.4	1.3
11	2015	4	2.1	5.0	0.4	1.4
12	2015	4	2.2	5.0	0.4	1.3
13	2015	4	2.1	5.0	0.4	1.3
14	2015	4	2.1	5.0	0.4	1.3
15	2015	4	2.1	5.0	0.5	1.3
16	2015	4	2.1	5.0	0.4	1.3
17	2015	4	2.1	5.0	0.4	1.3

Figure 1.A. Medians, central tendencies, and ranges of economic projections, 2015–18 and over the longer run



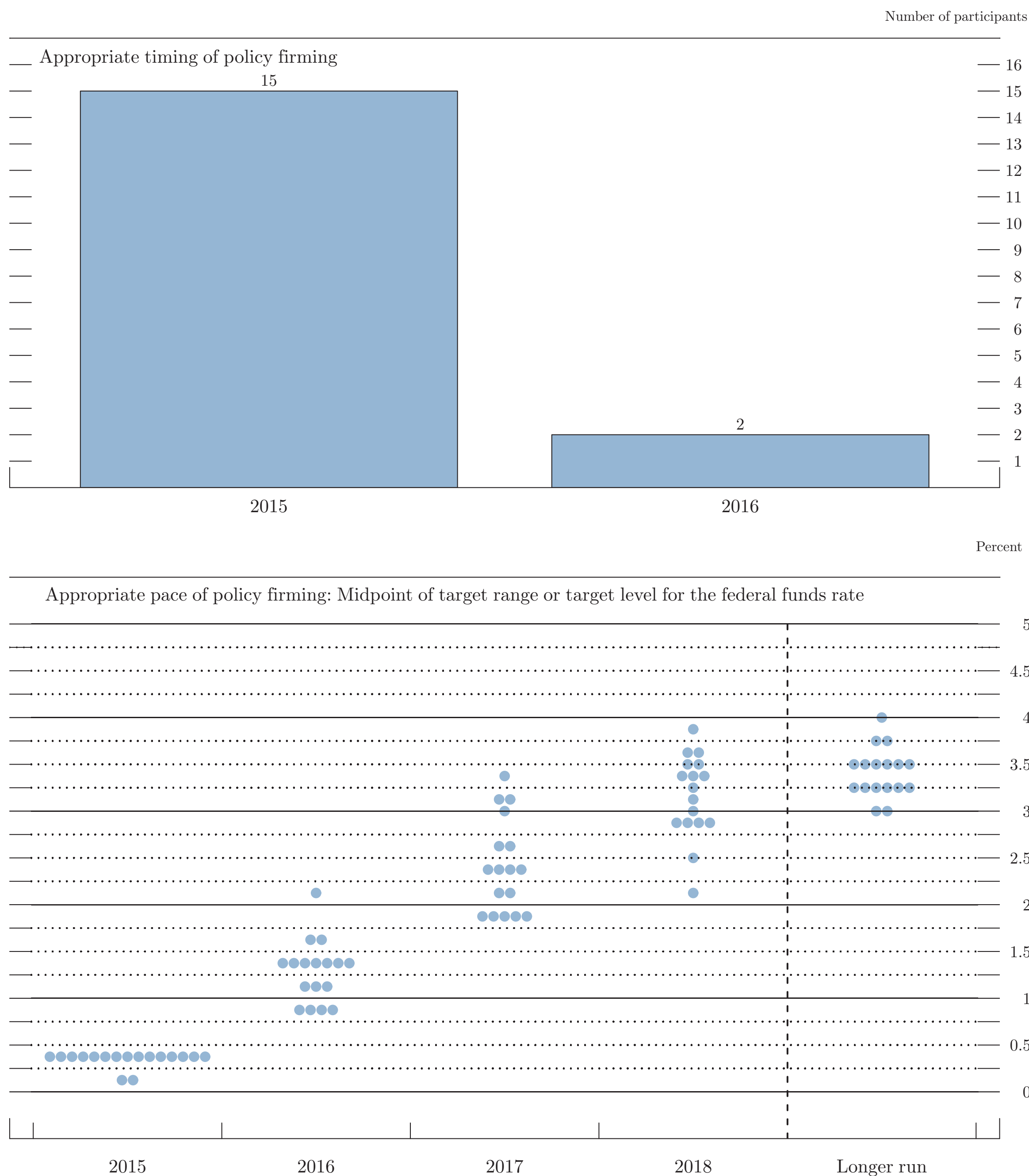
Note: Definitions of variables are in the general note to table 1. The data for the actual values of the variables are annual.

Figure 1.B. Medians, central tendencies, and ranges of economic projections, 2015–18 and over the longer run



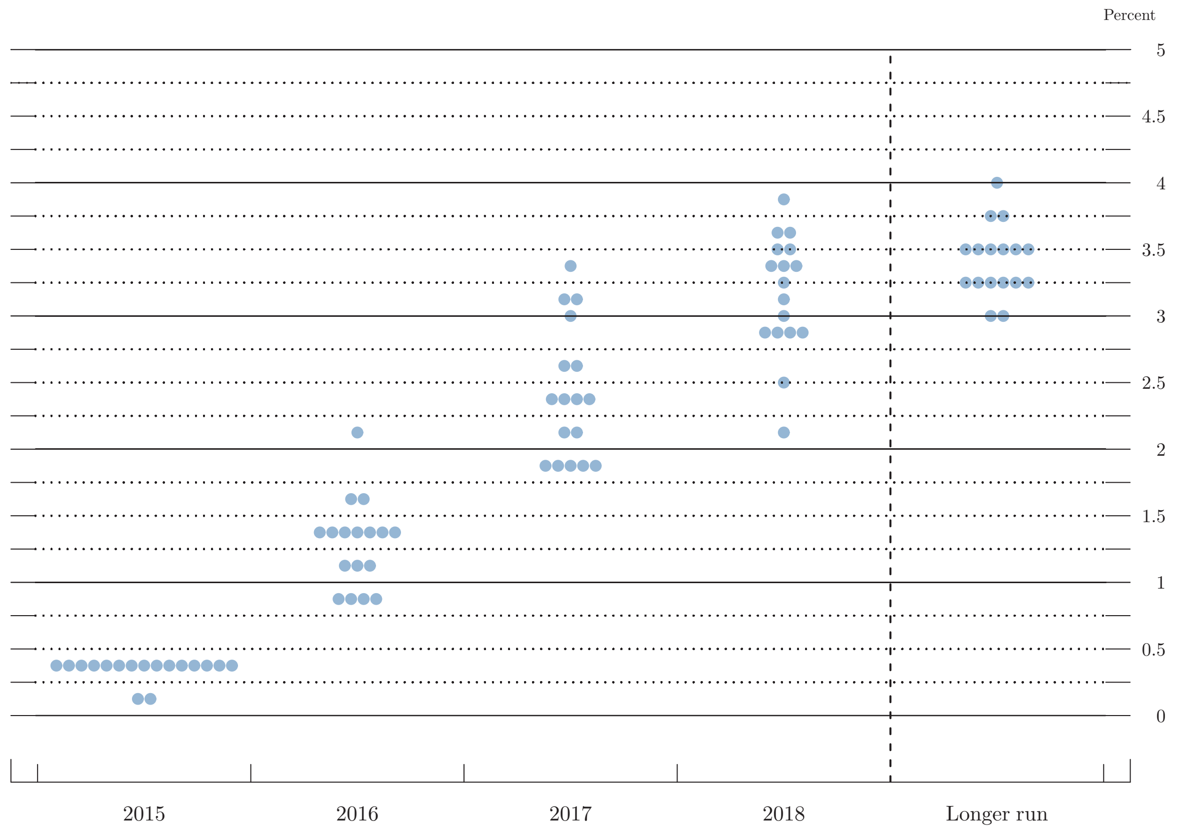
NOTE: Definitions of variables are in the general note to table 1. The data for the actual values of the variables are annual.

Figure 2. Overview of FOMC participants' assessments of appropriate monetary policy



NOTE: In the upper panel, the height of each bar denotes the number of FOMC participants who judge that, under appropriate monetary policy, the first increase in the target range for the federal funds rate from its current range of 0 to 1/4 percent will occur in the specified calendar year. In September 2015, the numbers of FOMC participants who judged that the first increase in the target federal funds rate would occur in 2015, 2016, and 2017 were, respectively, 13, 3, and 1. In the lower panel, 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.

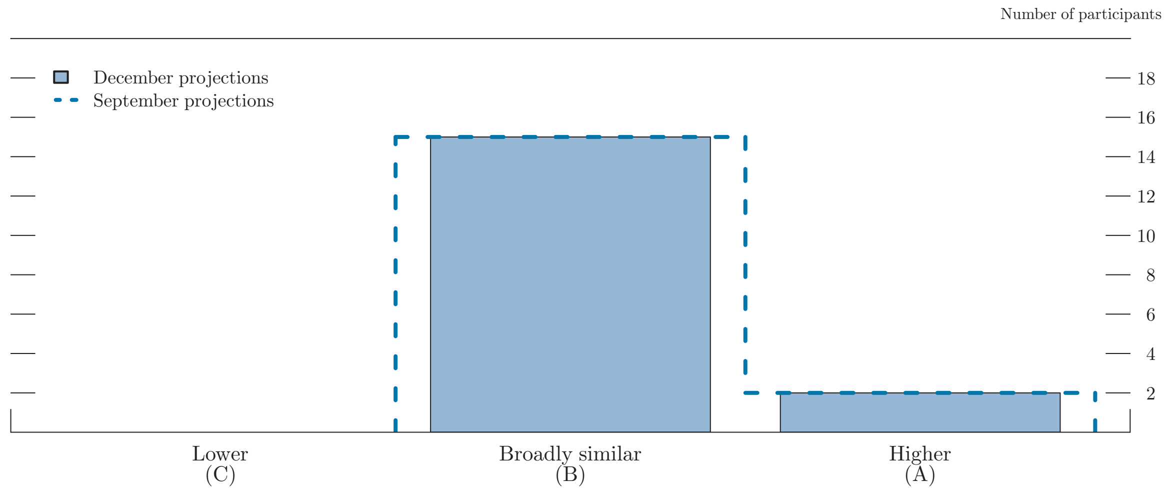
Figure 2. FOMC participants' assessments of appropriate monetary policy: Midpoint of target range or target level for the federal funds rate



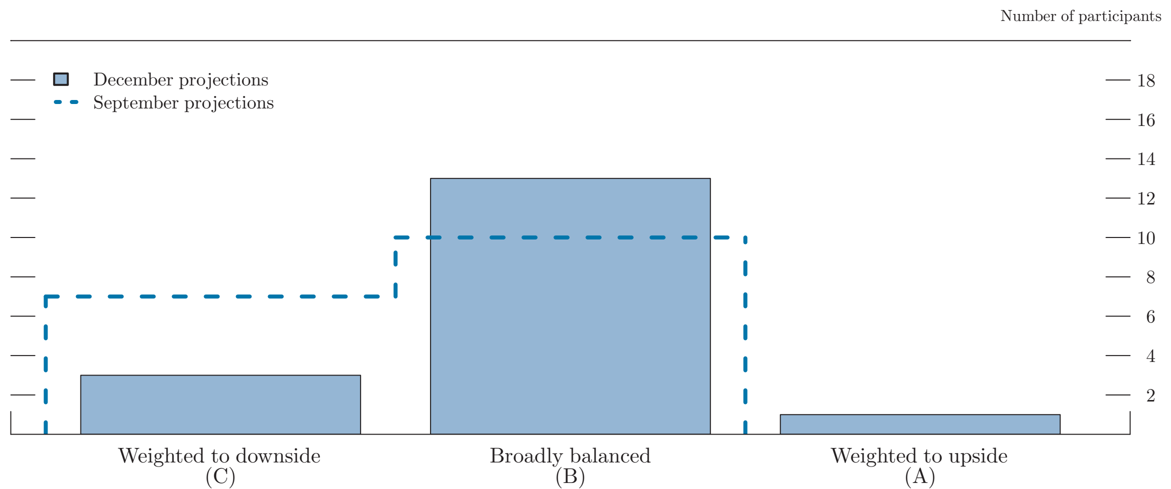
NOTE: Each shaded circle indicates the value (rounded to the nearest 1/8 percentage point) of an individual participant's judgment of the midpoint of the appropriate target range for the federal funds rate or the appropriate target level for the federal funds rate at the end of the specified calendar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

Figure 4.A. Uncertainty and risks – GDP growth

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



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

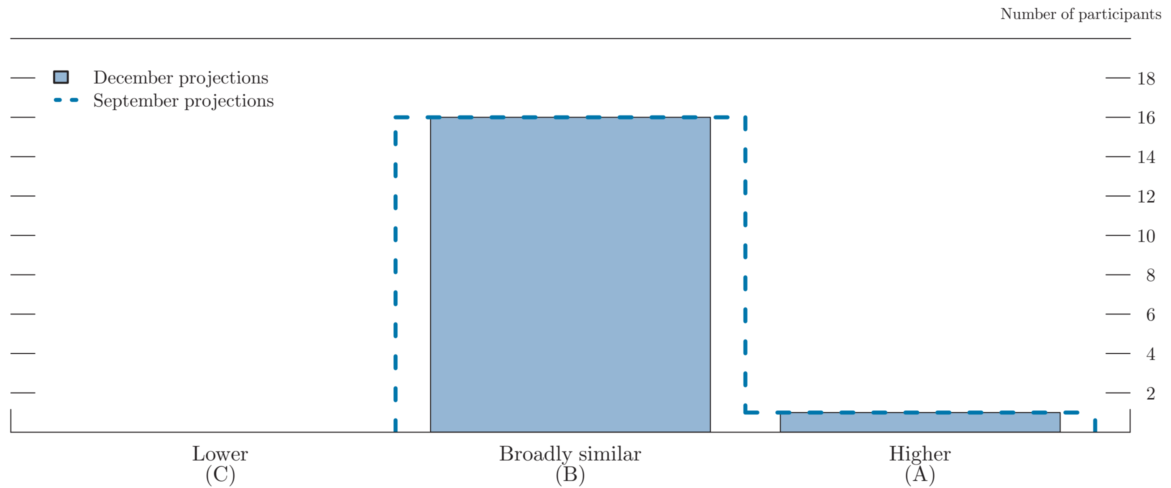


Individual responses

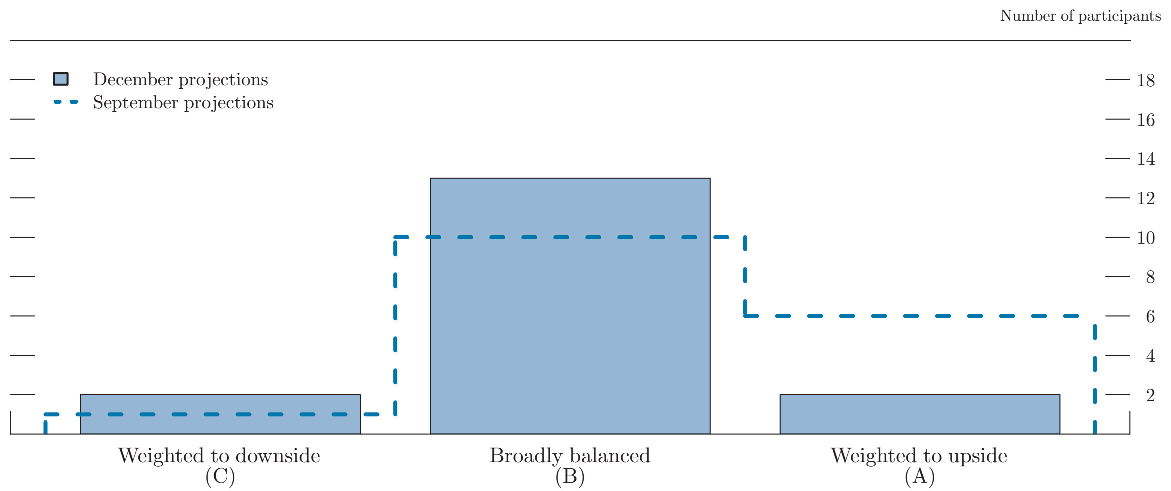
Respondent	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
2(a)	B	A	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B
2(b)	B	A	B	C	B	C	B	B	B	C	B	B	B	B	B	B	B

Figure 4.B. Uncertainty and risks – Unemployment rate

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



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

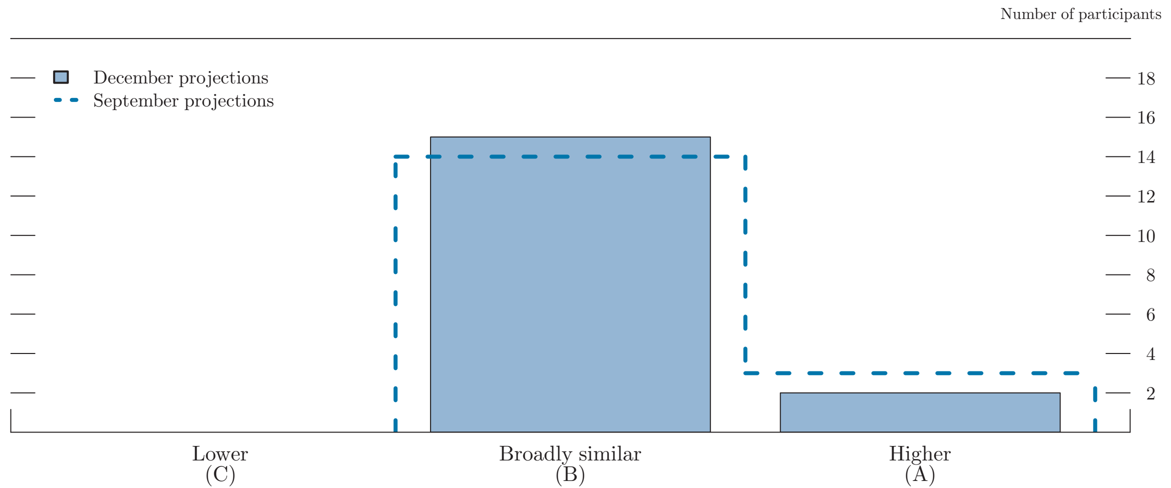


Individual responses

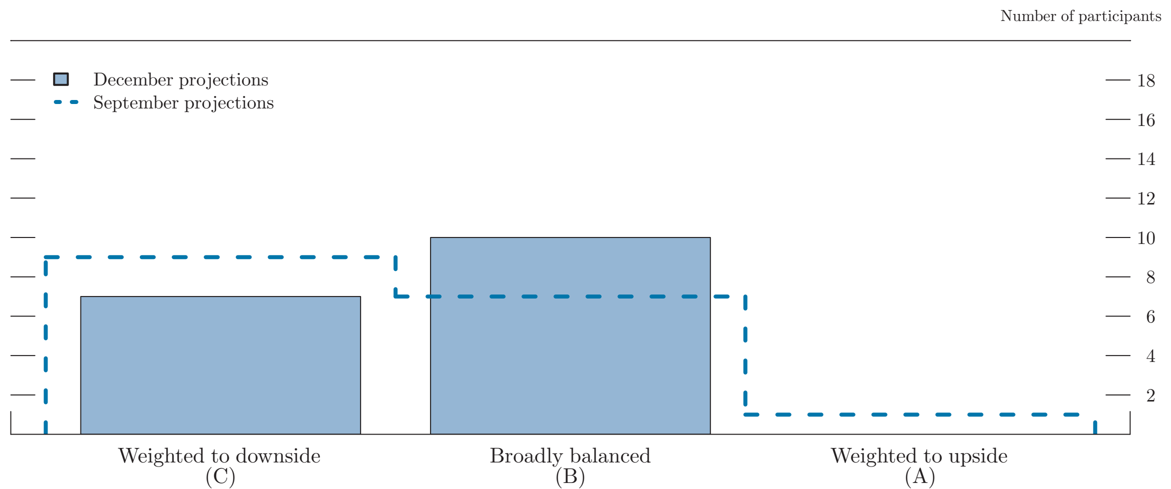
Respondent	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
2(a)	B	B	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B
2(b)	B	B	B	A	B	A	B	B	B	B	B	C	B	C	B	B	B

Figure 4.C. Uncertainty and risks – PCE inflation

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



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

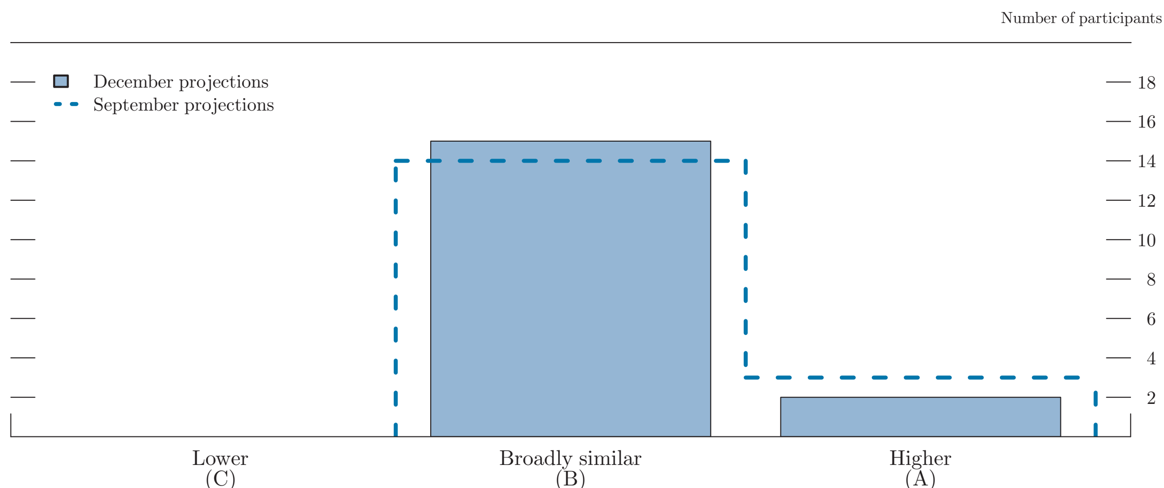


Individual responses

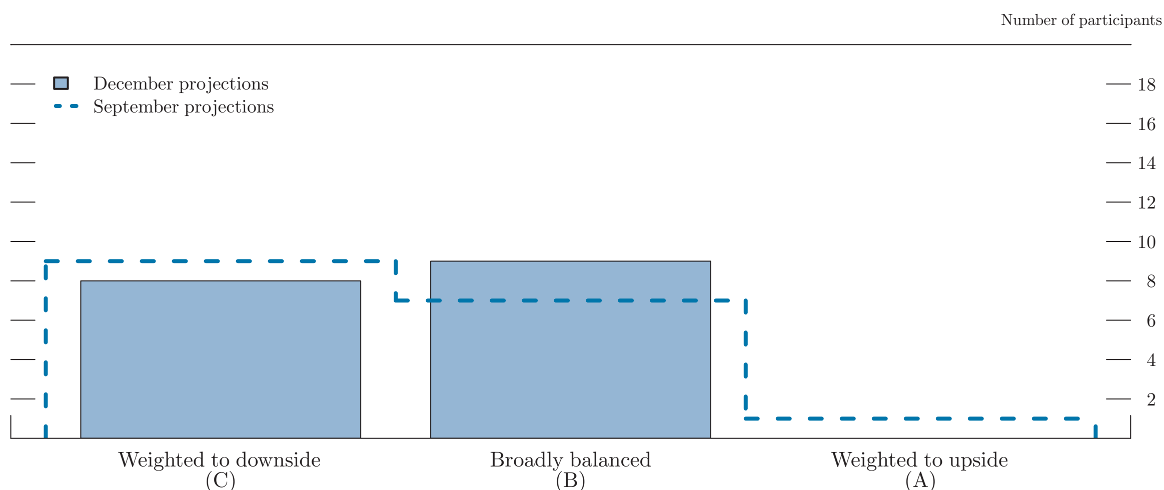
Respondent	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
2(a)	B	B	B	B	B	B	B	A	B	A	B	B	B	B	B	B	B
2(b)	B	B	B	B	B	C	B	C	C	C	B	C	C	C	B	B	B

Figure 4.D. Uncertainty and risks – Core PCE inflation

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



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



Individual responses

Respondent	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
2(a)	B	B	B	B	B	B	B	A	B	A	B	B	B	B	B	B	B
2(b)	B	B	B	C	B	C	B	C	C	C	B	C	C	C	B	B	B

Longer-run Projections

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: I expect the unemployment rate to reach its longer-run sustainable level in the first quarter of 2016, and then fall below that level. In 2017, with the labor market tight and the restraining effects of oil-price declines and a stronger dollar having waned, I expect inflation to reach our 2 percent longer-run objective and then, in 2018, to rise above that objective. In the absence of new shocks, the unemployment rate eventually converges to its longer-run sustainable level from below, and the inflation rate converges to 2 percent from above. Full convergence is likely to take 5-to-6 years.

Respondent 2: N/A

Respondent 3: All measures converge in six or fewer years. GDP growth will converge in 2018, inflation will converge in 2017, and unemployment will converge in 2020. Prior to convergence, I expect the unemployment rate to decline further below its long-run value of 5.8% and the inflation measures to slightly overshoot 2.0%.

Respondent 4: N/A

Respondent 5: N/A

Respondent 6: We project that the unemployment rate will reach its longer-run level by mid-2016, and that it will remain near that level over the rest of the forecast horizon. However, our scenario analysis of labor flows as well as the historical behavior of the unemployment rate in long expansions indicates that there is a notable probability of the unemployment rate falling below our point estimate of its longer-run normal level during some period of the forecast horizon.

We assume that long-term inflation expectations will continue to be anchored at levels consistent with the FOMC longer-run objective (2% for the PCE deflator and around 2.5% for the CPI, based on the longer-term average of the difference between CPI and PCE inflation). Under these conditions and with the resource gap anticipated to dissipate over the forecast horizon, we expect inflation as measured by the PCE deflator (on a quarterly basis) to be about 2% by late 2017.

As indicated in our projections, we anticipate that under appropriate monetary policy and no further shocks, the convergence process should be largely completed at the end of 2017. Accordingly, all of the major economic projections for 2018 are at their longer-run values.

Respondent 7: At this point, convergence is likely in two to three years.

Respondent 8: N/A

Respondent 9: N/A

Respondent 10: N/A

Respondent 11: N/A

Respondent 12: I anticipate that the economy will converge to my longer-run projections in about three years.

Respondent 13: I think that unemployment and inflation will reach mandate consistent levels in 2016 and 2017, respectively. Unemployment will then dip below my estimate of the natural rate for 3 or 4 years. The FFER will take about 3 - 4 years to converge to its long run level.

Respondent 14: Convergence to full employment is expected to occur by the end of 2016. Convergence to the inflation target is projected to follow later in 2018, as inflation expectations gradually revert back to 2 percent.

Respondent 15: I anticipate that the convergence of real GDP growth and inflation will takes less than 5 years. Specifically, I expect real GDP growth to slow to its longer-run rate after 2018 and inflation to rise to close to 2 percent in 2016. The unemployment rate reaches my estimate of its longer-run level in the fourth quarter of 2015, and I expect it will fall below its longer-run level in 2016, 2017, and 2018, before moving back to its longer-run level.

I lowered my estimate of the longer-run unemployment rate to 5.0 percent from 5.2 percent, in light of the rapid declines in the unemployment rate since the last recession, and reflecting my view that a large share of workers who left the labor force in the aftermath of the recession are unlikely to return even when labor markets tighten further.

Respondent 16: N/A

Respondent 17: In my projection, although inflation is back to 2 percent by 2018, that pace of convergence depends in part on the unemployment rate running modestly below my estimate of its longer-run sustainable level over the next three years; in addition, I expect that the federal funds rate will still be a bit below its longer-run normal level at the end of 2018. As a result, I anticipate that it will take about six years or so for the economy to return to full equilibrium.

Uncertainty and Risks

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: N/A

Respondent 2: I'm more uncertain about productivity growth than I was in the past, which is why I show uncertainty about GDP growth as greater.

Respondent 3: N/A

Respondent 4: N/A

Respondent 5: N/A

Respondent 6: Quantitative judgment based on the width of the probability intervals from the FRBNY forecast distribution for real GDP growth and core PCE inflation relative to the forecast errors over the last 20 years. The widths of these intervals have narrowed modestly at shorter-term horizons since the September SEP, as the recent data largely have been consistent with our central forecast and financial market volatility has subsided. The probability intervals for the real activity forecasts still remain wider than the SEP standard, as was the case in September; beyond the more recent developments, the extraordinary economic and financial environment, including the prospective policy divergence across advanced economies, point to significant uncertainty about the real activity outlook. The forecast intervals for core PCE inflation still appear broadly consistent with the SEP standard, taking rough account of the differences between forecast errors for overall consumer inflation and core PCE inflation.

Respondent 7: N/A

Respondent 8: I also judge the uncertainty surrounding inflation as "higher." This is due to recent disparate readings of underlying PCE inflation coming from various measures and uncertainty regarding how inflation expectations are reacting to a prolonged period of below-target core inflation readings, especially in light of inflation compensation measures that remain near cyclical lows.

Respondent 9: N/A

Respondent 10: Persistently low inflation may have had an adverse effect on inflation expectations. If so, raising inflation back to its target level may prove harder than anticipated.

Respondent 11: N/A

Respondent 12: N/A

Respondent 13: N/A

Respondent 14: N/A

Respondent 15: N/A

Respondent 16: Uncertainty about my projection for economic activity 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. Inflation expectations have been well anchored for the past two decades, so I see the magnitude of the uncertainty around the inflation outlook as broadly similar to past levels.

Respondent 17: N/A

Uncertainty and Risks (continued)

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

Respondent 1: N/A

Respondent 2: N/A

Respondent 3: N/A

Respondent 4: Although there are good reasons to expect the effects of dollar appreciation and commodity price declines on PCE inflation to wane over time (my baseline projection), there are also risks of a renewed bout of currency appreciation and commodity price declines.

In addition, the recent edging down in some survey-based measures of longer-run inflation expectations and the continued low level of market-based expectations introduce some risk that inflation expectations could drift lower.

Finally, the weakness and fragility in foreign activity, combined with the economy's proximity to the zero lower bound, make downside risks to economic activity particularly prominent.

Respondent 5: N/A

Respondent 6: Quantitative judgment based on the difference between the central projection and the expected value from the FRBNY forecast distribution. Despite some stabilization of domestic and foreign financial markets as well as in the foreign economic outlook since September, we see the risks to real activity and inflation as weighted to the downside. Although the near-term inflation risks are fairly balanced, the decline in market-based inflation compensation to near historical lows, declines in some survey measures of household inflation expectations, the general decline in commodity and import prices, and continued low levels in various measures of underlying inflation (including our signal component [SiCo] measure of PCE inflation) indicate significant downside risks in the medium term. The downside risk assessment for real activity also reflects some of the factors discussed in the inflation risk assessment. In addition, even though the immediate outlook in a number of emerging market economies, most prominently China, has stabilized somewhat, we still see a number of latent risks in the EMEs that could weigh on U.S. real activity more than anticipated in the modal forecast. Other downside risks include the continuing constraints that monetary policy faces at or near the effective lower bound in a number of major economies. One countervailing factor that limits the amount of downside risk we have in our outlook is the possibility that the economy has greater underlying strength than anticipated in our projection, which is consistent with the continued improvement in labor market conditions.

Respondent 7: I have made only minor adjustments to my outlook since September. I continue to view the risks to my projections as broadly balanced.

There has been sustained improvement in labor market conditions, and there are nascent signs of increased pressure in labor compensation. Low gasoline prices are also a positive for household spending. The combination of these factors alongside highly accommodative monetary policy could mean faster spending growth than I've incorporated into my growth outlook. On the downside, softness in energy and other commodity prices and the rising dollar could weigh more heavily on the energy sector and other parts of the industrial sector exposed to the dollar and commodity prices, posing a downside risk to my growth projection.

Inflation risks are balanced. The most recent declines in oil and gasoline prices and the strengthening of the dollar will weigh on inflation measures in the near-term. However, the pace of declines in oil prices and appreciation of the dollar will likely be less than those seen last year. Should that not be the case – e.g., if divergence of monetary policy in the U.S. and abroad results in a stronger appreciation of the dollar – this would be a downside risk to my inflation projection. I view inflation expectations as being relatively stable despite some recent small moves. Should inflation expectations show a more significant downward move, this would pose a downside risk to my inflation projection. On the other hand, too slow a withdrawal of monetary policy accommodation has the potential to create upside risks to inflation over the medium run.

Risks to financial stability from zero interest rates appear to be contained and I expect them to remain so as we gradually normalize interest rates. Despite the fact that market participants put a high probability on the FOMC raising interest rates at the December meeting, I would expect some volatility in financial markets but it should not be significant enough to materially change the outlook.

Respondent 8: N/A

Respondent 9: We think the risks to our GDP and unemployment rate forecasts are roughly balanced. On the downside, the somewhat softer tone of the incoming spending data suggests that weak global demand and the appreciation in the dollar may be exerting greater headwinds on the U.S. economy than we have assumed. On the upside, further improvements in the labor market, some signs that wage growth may be picking up, and continued low energy prices could lead to stronger household spending than we are expecting.

We think the risks to our projections for both total and core inflation are weighted to the downside. While we still believe accommodative monetary policy will eventually prevail and put inflation on a gradual uptrend, we have yet to see any evidence of a pick-up in core inflation and there is a risk that the pull from our appropriate policy path could be weaker than we have assumed. The further decline in oil prices, persistently low inflation breakevens, and the slight softening in some measures of inflation expectations highlight other downside risks to the inflation outlook.

Respondent 10: The zero lower bound makes it difficult if not impossible to respond to negative shocks to the economy.

Respondent 11: N/A

Respondent 12: The unemployment rate has fallen at a more rapid rate than expected given relatively modest real GDP growth. In addition, projections for the path of the labor force participation rate remain highly uncertain. This raises the risk that the unemployment rate may undershoot my estimate of its longer-run average. Inflation expectations appear to moving down slightly, which rases the risk of a timely return to our target.

Respondent 13: N/A

Respondent 14: N/A

Respondent 15: N/A

Respondent 16: Risks to economic activity appear broadly balanced. GDP over the past year has grown faster than potential, and we are very close to our objective of maximum sustainable employment according to a variety of labor market measures. Fiscal policy developments, such as the recent Bipartisan Budget Act and the 5-year highway funding act, also have reduced uncertainty and provided a fillip to growth. On the other side, while many economic headwinds and risks have abated, some significant ones remain. In particular, foreign growth continues to be weak and the dollar has appreciated a bit further.

The zero lower bound does somewhat constrain our ability to respond to adverse shocks. However, this constraint no longer appears quantitatively important, especially in light of the apparent effectiveness of forward guidance and LSAPs and greater potential scope for negative interest rates if necessary.

Inflation risks are also balanced. Although disinflationary pressures from abroad continue, the labor market continues to strengthen and is close to full employment, increasing the likelihood of wage pressures mounting and feeding through to higher inflation.

Respondent 17: Given that the risks to US growth from global conditions appear to have diminished over the past several months, and given further improvements in the labor market, I now view the risks to the outlook for both real activity and inflation as broadly balanced.

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

3(c). 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 reduced 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: Despite a variety of headwinds, many of which are related to weakness in the overseas economic outlook, U.S. monetary policy remains sufficiently accommodative to support job growth that is well above trend. A transition to a less accommodative policy stance is appropriate.

Looking ahead, policy will have to be nimble: The near-term neutral policy rate is sensitive to overseas developments, and with interest rates starting at a low base and with minimal remaining resource slack, there is little margin for error on either side. A good measure of vigilance will be needed if we are to successfully negotiate the passage between the Scylla of excess ease and Charybdis of excess restraint. The main danger from excess restraint is that we fall back against the ELB. The main danger from excess ease is that business people and investors make unwise decisions that cannot easily be unwound when accommodation is eventually withdrawn. The resultant dislocations and financial strains reduce the chances for a smooth transition to sustainable growth.

I've assumed a cautious initial series of funds-rate increases, reflecting what I think is likely to be a gradual easing of headwinds and a desire to give the private sector a chance to adjust to positive rates after 7 years at the zero bound. The pace of rate increases picks up in 2017 as the Committee seeks to limit overshoot of its employment and inflation objectives. I've shifted slightly downward my estimate of the longer-run normal policy rate–previously between 3.5 and 3.75 percent–to 3.5 percent.

Respondent 2: We are still in the process of exiting the GFC and do not want to create excessively large changes in asset prices that may create excessive financial market volatility.

Respondent 3: I have altered my path of the appropriate path of the federal funds rate. Rather than increasing the federal funds rate 200 basis points in the first year after lift-off (i.e., 2016) and 100 basis points in the second year (i.e., 2017), I have reversed the increases so that the federal funds rate increases 100 basis points in 2016 and and 200 basis points in 2017. My 2016 federal funds rate is similar to that of the Tealbook. With the unemployment rate below its long-run rate, the more rapid increase in 2017 is necessary to prevent a substantial overshooting of the 2% inflation target.

Respondent 4: Although we have seen continued improvement in U-3 unemployment and continued moderate growth in domestic demand, weak foreign demand, and the associated appreciation of the dollar, continue to weigh on net exports and import prices. Moreover, weak and fragile foreign demand,

together with the economy's proximity to the zero lower bound, and the persistence of lower-than-desired inflation, skew the risks to activity and inflation to the downside. As a result, risk management considerations argue for a very gradual normalization in monetary policy.

In addition, low potential output growth, high risk premiums for capital investment, and weak foreign demand suggest that the neutral rate is low and will remain considerably below historical norms for some time. As a result, the appropriate level of the federal funds rate will also remain quite low, relative to historical norms, throughout the medium term.

Respondent 5: A case for raising rates at the current meeting can be made based on the continued moderate growth in GDP, improvement in labor markets, and expectation that transitory factors that are holding inflation down will diminish over time. There are, however, factors arguing against a funds rate increase at the present meeting, including the fact that the presumptively transitory factors of low energy prices and a stronger dollar look set to persist longer than may have been generally expected at the time of the last SEP, that there is still no movement of core inflation back towards the Committee's stated target, and that at this time the Committee has fewer tools to deal with unexpected weakness in the economy than with unexpected strength.

Respondent 6: The crucial factors behind our assessment of the appropriate path for monetary policy and the FFR are the current state of the economy, our central economic outlook, and our balance of risks around the central outlook. As such, we believe it is important to communicate clearly to the public that these factors will dictate the path of the policy stance. The developments along these dimensions since the September SEP were such that we now assess as appropriate a slower pace of normalization after liftoff than in our September submission.

In regard to liftoff, we still judge that the December FOMC meeting is the appropriate timing. Foreign conditions, both in terms of global asset prices as well as global economic activity, appear to have stabilized somewhat. The October and November labor market reports indicate sufficient improvement in labor market conditions over the course of the year as well as prospects for further improvement. Even though inflation remains well below the longer-run goal, the strengthening of the labor market and indications of faster compensation growth are just sufficient to meet the "reasonable confidence" criterion. Given these developments and the signals that FOMC participants have given, a decision to not lift-off likely would be very costly, both in terms of the financial market reaction as well as the impact on FOMC credibility.

As for the pace of normalization after liftoff, it will depend upon our assessment of economic conditions and the outlook, longer-term inflation expectations, and the response of overall financial conditions to policy tightening. Currently, the still-low levels of inflation and longer-term inflation compensation, the continued significant uncertainty surrounding both the real activity and inflation outlooks, the downside risks to those outlooks, and the still-low projected path of the short-term neutral rate (r*) all point to a more gradual pace during normalization than was our assessment in September. Therefore, our current projection of the appropriate path has the target FFR ranges at the end of 2016, 2017, and 2018 at $^3/_4$ - 1%, 1 $^3/_4$ - 2%, and 2 $^3/_4$ - 3% respectively; these projected ranges are 25 - 50bps below the corresponding ranges in our September submission. We thus do not expect that the FFR will reach our estimate of its longer-run normal rate until after 2018. We believe that this gradual path is necessary to provide insurance against the various restraining forces still faced by the U.S. economy (including those stemming from global economic and financial developments) and to address the uncertainty about the equilibrium real FFR. Our modal forecast has the unemployment rate falling to our 4 $^3/_4$% estimate of the longer-run normal rate by mid-2016, although there is a sizable probability that it could fall further below the longer-run rate, which would provide additional insurance against the risk of being caught in a low inflation trap.

Another factor informing our assessment of the appropriate path for the target FFR is our estimate of the equilibrium real short-term interest rate, which we maintain in the range of $^1/_2$ - 3% that we

had in September: this range is modestly below our assessment of 1% - 3% for "normal times." Adding the objective for inflation (2%) then gives our estimated range for the nominal equilibrium rate as 2.5 - 5.0%. We assess that the equilibrium rate is more likely to be further in the lower half of the latter range, leading to our point estimate of 3 1/4%, as seen in the response to question 3(a). Estimates of the equilibrium rate using DSGE models and the Laubach-Williams model also suggest that the equilibrium rate remains low.

We would also note that we assume that reinvestment continues until economic and financial conditions indicate that the exit from the zero lower bound appears to be sustainable and the risks of a reversion are deemed to be negligible. Based on our modal outlook, we expect those conditions to occur sometime in 2017.

Respondent 7: I project growth returning to an above trend pace next year. The labor market has already made a great deal of progress toward our goal of full employment, and I expect further gains going forward in terms of employment growth and further declines in the unemployment rate. Measures of underemployment have improved significantly since the end of the recession. In my view, the economy is at or nearly at full employment, broadly defined–indeed, the current level of the unemployment rate is about a quarter of a percentage point below my point estimate of its longer-run level. In this scenario, labor compensation measures will eventually firm, in line with anecdotal reports of increasing wage pressures. Over time, I expect the effects on inflation of previous and the most recent declines in oil prices and the strengthening of the dollar to fade. Stable inflation expectations, solid labor market readings, and my forecast of above-trend growth make me reasonably confident that inflation will move back to our goal of 2 percent over the medium run. In my projection, I expect this to occur in 2017, a bit later than in my September projection, reflecting the further drop in oil prices and dollar appreciation that have occurred since that time.

Given that monetary policy affects the economy with a lag, I believe appropriate monetary policy should reflect both actual and projected progress toward the Committee's goals. The economy is already at or close to full employment, and I anticipate inflation to reach the Committee's goal of 2 percent in 2017. In my view, this combination of factors suggests that it is appropriate to increase the fed funds rate at this meeting. Based on my current economic outlook and risks around that outlook, I believe it will be appropriate for the federal funds rate to move up over the forecast horizon at a gradual pace, not reaching its longer-run level, which I project to be 3.5 percent, until sometime in 2018. However, the policy path will be adjusted to reflect changes in the economic outlook over the forecast horizon.

The funds rate path in my projection is somewhat less gradual than the path in the Tealbook, partly reflecting the fact that my longer-run fed funds rate is 1/4 percentage point higher and partly reflecting the somewhat stronger growth and somewhat faster return of inflation to our 2 percent goal.

Respondent 8: My outlook has liftoff for the federal funds rate in the fourth quarter of 2015 (to a range of 25-50 basis points), followed by what averages out to be 25 basis point increases at every other meeting through 2018. This trajectory is consistent with a gradual rise in the short-run equilibrium rate (r*) as some transitory headwinds dissipate, along with a closing of the resource gap and a path for inflation that gradually returns to 2.0 percent.

However, I also lowered my projection of the longer-run normal value of the federal funds rate to 3.5% after digesting the material presented at the October meeting.

Respondent 9: Our assumed appropriate policy path has the funds rate lifting off at this FOMC meeting and then increasing 25 bps two times in 2016. We believe such a gradual path is necessary to support a return of inflation to target and to provide some extra boost to aggregate demand as a risk management bu er against future downside shocks. In the absence of such shocks, we think that by late next year core inflation will finally be making some visible progress rising towards target and

that real economic activity will have continued to grow moderately above trend. These developments should give us more confidence that the equilibrium real interest rate is moving up as well. Accordingly, we think it will be appropriate to increase the pace of rate increases to about 100 bps per year in 2017 and 2018, leaving the funds rate at 3 percent by the end of the projection period.

Unconstrained, we would have assumed liftoff in mid-2016, as we currently don't have enough confidence that inflation is beginning to move back towards target and don't expect to have such confidence before then. However, given the prevailing sentiment on the Committee, we built in a December liftoff in order to base our forecast on a more realistic monetary policy assumption. Furthermore, given the strong communications from FOMC participants that improvements in economic activity and labor markets appeared to justify an increase in the funds rate at this meeting, waiting longer to begin raising rates would involve credibility risk to the Committee. Taking such a risk does not seem warranted as long as we also assume that the FOMC statement adequately describes a sufficiently shallow expected path for the funds rate so that the economic implications of the earlier move are minimal. We feel the current language in the December Tealbook's Alternative B satisfies this requirement.

Respondent 10: The labor market, as measured by the unemployment rate, is nearly back to normal, but inflation remains well below its target. In addition, the neutral federal funds rate is expected to rise from its currently low level, but that adjustment is likely to take several years. As a result, it would be appropriate for interest rates to rise gradually.

Respondent 11: I believe that we should raise the target for the federal funds rate at this meeting, and that it would be appropriate to begin reducing the size of the balance sheet very soon. Labor markets have tightened significantly, which puts the unemployment rate at its longer-run normal level. Inflation is likely to move toward the FOMC's 2 percent objective next year. Consumer spending growth has risen to 3 percent, which suggests the need for higher real rates. Private fixed investment is growing. Further delay would depart from our beneficial past behavior.

Respondent 12: My projection for the appropriate path for the federal funds rate reflects my view that policy should adjust at a more gradual pace than has been typical in past liftoff scenarios given low productivity growth and inflation that has been running below target for some time.

Respondent 13: My forecast is for liftoff at this meeting, three additional 25 bp increases in 2016, three increases in 2017, and four increases in 2018. I assume that growth in 2016 will be 2.0%, not 2.5%. I think that this lower path of rate increases will be needed to support US economic activity through an extended period of slow global growth.

I believe that it will be necessary to raise rates gradually in order to support the economy, and that rates will remain below their longer run normal levels for some time.

Respondent 14: The projected path for the federal funds rate features a gradual removal of policy accommodation, as the headwinds to the recovery gradually abate. This path keeps the economy close to full employment, and allows inflation to return to 2 percent by the end of the forecast horizon.

Respondent 15: My judgment regarding the appropriate path of the federal funds rate is predicated on promoting sustainable economic growth and price stability. My forecast calls for the unemployment rate to be below its longer-run level and inflation close to two percent in 2016. Yet I view the appropriate level of the federal funds rate to be below my estimate of its longer-run level in 2016 and 2017.

The economy has faced a number of headwinds after the last recession, such as deleveraging in the household sector, underwater homeowners, a period of contractionary fiscal policy, temporarily

low productivity growth, and periodic bouts of uncertainty related to global economic and financial conditions. The effect of such headwinds has been apparent as the near-zero level of the federal funds rate has produced only a moderate economic recovery. I anticipate that these headwinds will dissipate slowly and so continue to restrain economic activity in 2016 and 2017. Therefore, I anticipate that a federal funds rate below its longer-run level will be appropriate for the next two years.

Respondent 16: The conditions that warrant an increase in the federal funds rate from the zero lower bound are being within sight of full employment and being reasonably confident that inflation will return to our 2 percent objective in the next few years.

These conditions have now been met. The labor market is at or very near full employment and I expect any residual labor market slack to dissipate by early 2016. On inflation, transitory factors are significantly damping current inflation readings. I expect inflation to gradually rise and reach our 2 percent objective by 2018 as the economy continues to improve and transitory effects from the dollar appreciation and lower oil prices dissipate. My assessment of appropriate policy is generally informed by looking at simple rules that adjust for the zero lower bound, as well as by my expectations of, and uncertainty about, the costs and benefits of continuing unconventional actions.

Following liftoff, my fed funds path through the end of 2016 remains flatter than some simple rules would suggest. My view is based on the following: The economy continues to face headwinds in 2016, including constraints on credit availability for some borrowers, weak growth abroad, and recent appreciation of the dollar. These continue to depress the shorter-term equilibrium real interest rate relative to its long-run value.

Respondent 17: I judge that, after an increase in the target range of the federal funds rate at the current meeting, monetary policy will remain accommodative. As a result, the labor market will improve further, thereby speeding the return to 2 percent inflation. Over the medium term, however, I expect that economic conditions will evolve in a manner that will call for a gradual rise in the federal funds rate. In particular, I anticipate that a modest pickup in trend productivity growth, somewhat easier fiscal policy, further recovery of the housing market, stabilization of the dollar, and somewhat faster foreign economic growth will, on net, cause the economy's equilibrium real rate to rise over time. In addition, as trend inflation gradually moves back to 2 percent, the nominal funds rate will need to rise in tandem to prevent the effective stance of policy from inadvertently easing.

Forecast Narratives

4(a). Please describe the key factors shaping your central economic outlook and the uncertainty and risks around that outlook.

Respondent 1: Although sharp changes in the relative price of traded goods (related to weakness in the overseas outlook) and in the price of oil (partly supply driven and partly demand driven), have created challenges for some sectors of the U.S. economy, these challenges have so far not substantially altered the trajectories of aggregate output and employment. Risks to the modal outlook are significant on both sides: Headwinds could lift more rapidly than currently seems likely, resulting in a sharp acceleration in the pace of the expansion; or financial strains in the emerging-market economies and in the energy industry (and among energy-industry lenders) could take a turn for the worse. Secular influences on the outlook include demographic changes in the U.S. and around the world, and potential deleveraging.

Asset valuations are historically high (as measured by U.S. market cap divided by U.S. GDP), and investors are somewhat uncertain about the path of the economy as well as the ultimate path of Fed policy. Some amount of financial-market volatility is to be expected in these circumstances, and some amount of revaluation may even be healthy for markets. I would suggest that policy makers not overreact to (or over-read) these market movements.

Respondent 2: The key factor is uncertainty as we are embarking on the use of a new interest rate control mechanism, and with a population that is probably still shell-shocked by the experiences of the last 7 years.

Respondent 3: The absence of robust growth in conjuction with declining unemployment during this recovery are the key factors shaping my outlook. Changes in oil and commodity prices have made inflation forecasting especially challenging.

Respondent 4: N/A

Respondent 5: My baseline expectations have not changed significantly over the course of the last few SEPs – modestly above trend growth supported by continued recovery of the labor market (though still not of wages) and generally improved household balance sheets. Global developments continue to pose only very limited upside risks, but still significant downside risks (though somewhat less dramatic than seemed possible in September following the Chinese financial turbulence of the late summer).

Respondent 6: From 2.1% (Q4/Q4) in 2015, we expect growth to pick up modestly to around 2 1/4% in 2016. The firming in growth reflects an end of the current inventory correction by early 2016, continued solid growth of consumer spending, some firming in residential and business fixed investment, and somewhat stronger growth of federal spending in 2016 due to the recently signed budget agreement. These positive developments are offset to a large extent by continued drag from net exports. By 2017 we expect growth to slow to just below 2% due to a combination of aging of the business cycle and gradual tightening of financial conditions generated by our assumed upward path for the FFR. The unemployment rate is projected to decline to 4.7% by the end of 2016 and then level out at 4.8%–our estimate of the longer-run normal rate–through 2018. This path of the unemployment rate assumes that the labor force participation rate will move gradually higher from the recent 62.5% to just shy of 62.7%, while productivity growth reverts to its longer-run trend. Inflation moves gradually up close to 2% by the end of 2017 as slack continues to decline and the effects of dollar appreciation fade. The broad parameters of this forecast are in line with the September SEP.

There are several critical assumptions underlying this projection. Domestically, we expect lending standards to gradually ease, allowing for more growth in the credit sensitive sectors, particularly residential investment. The assumed level of the exchange value of the dollar is somewhat higher in this projection, though we continue to expect it to change little from end-2015 to end-2017. In addition, foreign GDP growth is expected to gradually improve in 2016 and 2017. Based on futures markets, we anticipate a gradual uptrend of energy prices over the course of 2016 and 2017. Finally, fiscal policy was already expected to move to a modestly stimulative stance in 2016 after several years of restraint. With the passage of the Bipartisan Budget Act of 2015, we expect fiscal policy to provide a modest boost to growth in FY2016.

Real consumer spending is expected to grow around 2 1/2% (Q4/Q4) in 2016, down from around 2 3/4% in 2015. Three factors underlie this projection. First, we anticipate that the boost to real disposable income from lower energy prices will wane. Second, under our assumption for productivity growth, real disposable income growth will slow in 2016. Third, the consumer durable goods cycle is aging; we think it is very unlikely that light vehicle sales will continue to increase at the pace of the past four quarters. For 2017, we expect consumer spending to slow to around 2 1/4% as real disposable income growth slows further. This consumer spending path will require some decline in the personal saving rate to around 4 1/4% by end-2017. We view the current restrained supply of credit to consumers to be an important factor behind the currently elevated saving rate.

While consumer spending slows, we expect the growth contribution from residential investment to move somewhat higher in 2016, reflecting evidence of greater tightness in housing markets that is pushing rents and home prices higher. Supporting housing starts is the recent increase in the pace of household formations, which is likely to move higher given the ongoing improvement in the labor market, and the anticipated easing in mortgage underwriting standards. By 2017, however, the growth contribution from residential investment will decline somewhat as the ongoing tightening of monetary policy begins to push long-term interest rates higher.

Given our assumptions for the exchange value of the dollar and for foreign growth, we expect exports to begin growing again by 2016Q2. Along with the end of the current inventory cycle, this development is expected to result in a gradual improvement in manufacturing output and a rising capacity utilization rate. The rising capacity utilization rate should in turn increase incentives for business investment in new capacity.

However, the net export growth contribution in 2016 is projected to be -1.0 percentage points versus the -0.6 percentage points of 2015. Growth of real imports is expected to increase from around 3 1/2% in 2015 to around 7% in 2016. Import growth this year has been weaker than expected despite the appreciation of the dollar, possibly reflecting the relatively elevated level of domestic inventories. For 2017 we project the net export growth contribution to improve to -0.5 percentage points as export growth strengthens while import growth slows.

The unemployment rate is expected to stabilize near our estimate of the longer-term normal rate of 4 3/4% from mid-2016 through the end of the forecast horizon. Monthly gains in nonfarm payroll employment are expected to slow to around 175,000 in 2016 and then to 130,000 in 2017.

Respondent 7: The fundamentals supporting the expansion remain favorable, including highly accommodative monetary policy, household balance sheets that have improved greatly since the recession, sustained strengthening in labor markets, and lower oil prices. Reinforcing the data, business contacts report some tightening in labor markets and some increased wage pressures. While global growth prospects remain subdued, a number of foreign central banks have added accommodation to promote stronger growth and higher inflation rates abroad. Overall, I see these forces contributing to above-trend growth and some further improvement in labor markets. By the end of 2018, I project that the economy will essentially be at its steady state.

Inflation rates remain subdued, as oil and commodity price declines weigh on headline PCE inflation and the pass-through of lower commodity prices and import prices weighs on core PCE inflation.

I expect that the recent declines in oil prices and the strengthening of the dollar will have a transitory effect on inflation measures. In my judgment, inflation expectations remain anchored. Anchored inflation expectations along with an improving economy are consistent with inflation moving back to the 2 percent longer-run objective in 2017. As the expansion continues and labor markets continue to improve, I expect wage growth will pick up as well.

I view overall uncertainty as roughly comparable to 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.

Respondent 8: My outlook consists of above-trend growth over the next several quarters, a further reduction of labor market slack, and inflation that gradually converges to target.

Growth over the medium term is primarily driven by a sustained pace of consumption growth and a strengthening in investment growth. This growth of domestic demand is supported by ongoing continued firming in the labor market and of household incomes. The decline in energy prices provide a modest boost to near-term consumption growth. While lower oil prices negatively impact energy-related investment in the near-term, conditions remain supportive of capital investment in other sectors. The level of the dollar and weakness from abroad are moderate headwinds in my outlook, further slowing export growth and providing some restraint to domestic industrial activity.

The risks to my growth outlook are balanced. Further dollar appreciation and weaker global conditions threaten to significantly restrain export growth and domestic industrial activity, with some potential for spill over onto the broader domestic economy. On the other hand, domestic indicators have proved resilient in the face of these headwinds that, once they diminish, could reveal a much more rapid pace of growth than I currently assume.

The risks to my inflation outlook remain tilted to the downside. The effects of declining commodity prices and a stronger dollar could prove to be more of a drag on inflation than I have built into by baseline outlook. This could be especially troublesome if inflation expectations un-anchor to the downside as a result of the prolonged period of below target inflation.

Respondent 9: Accommodative monetary policy, a healthy labor market, improved household and business balance sheets, and continued low energy prices should allow for solid consumer-led growth in domestic demand. We assume little change in the dollar going forward, and so project that the drag from net exports will wane later in the projection period. The recent budget deal also means aggregate demand will be getting a small boost from fiscal policy.

The factors supporting activity are assumed to generate growth moderately above potential over the next 2-1/2 years. We assume that resource gaps will be close to zero by late 2017; although we project the unemployment rate will reach our estimate of the natural rate (4.9 percent) next year, we think it will take longer to close the gap between actual and trend labor force participation. Correspondingly, we are projecting only a slight overshooting of potential output by the end of the projection period.

Changes in resource slack, the assumed stabilization of the dollar, and some upward movement in energy prices all work to raise inflation. Furthermore, as noted above, we assume a quite shallow path for policy normalization and that the Committee strongly communicates its (state-dependent) expectation that rates will follow such a path. This and other FOMC communication should make clear the Committee's strong commitment to a symmetric 2 percent inflation target, and thus solidify the upward pull on actual inflation from inflationary expectations. Without this pull, we would not expect inflation to rise close to target over the forecast period.

We recognize significant uncertainty about how international developments might influence the outlook for U.S. growth and inflation. Furthermore, the apparent moderate growth in current-quarter consumption against the backdrop of solid labor market improvements and lower energy prices highlights uncertainties surrounding the outlook for household spending. The linkages between Fed policy

(including communications), inflation expectations, and actual inflation also are important uncertainties. As noted in section 2(b), our judgment is that the effects of these uncertainties on the growth forecast are on balance neutral, but add up to a net downside risk to the inflation outlook.

Respondent 10: Continued gradual improvement in secondary measures of labor market slack, a slow return of inflation to its target level, and a gradual increase in the federal funds rate.

Respondent 11: Real GDP per worker has risen slightly less than 1 percent annually in recent years; my projection incorporates slightly faster growth over the forecast period. Population growth for ages 16 to 64 is projected to be 0.5 percent per year. These supply side factors suggest longer-run growth of 1 3/4 percent. My projections are slightly higher in the near term, reflecting robust consumer spending growth and solid growth in investment spending.

Respondent 12: I expect the pace of output growth over the medium term to be somewhat above my longer term trend of 2.3 percent as the headwinds that have been holding down growth recede further. With moderate headline growth over the forecast horizon and a fairly robust labor market, I anticipate that the unemployment rate will edge down further from its current level of 5 percent. However, with a cyclical rebound in the labor force participation rate and appropriate monetary policy firming, the unemployment rate goes only modestly below my estimate of the natural rate. Headline inflation has been held down by falling energy prices. As energy prices stabilize and dollar appreciation wanes, I anticipate that inflation will begin to rebound in 2016 and rise toward the Committee's 2 percent target over the remainder of the forecast horizon.

Respondent 13: My outlook is for continued growth at roughly the average level of the past 6.5 years, or 2%. While domestic demand should continue to gradually strengthen, the external sector will remain a significant drag thanks to global weakness and the strong dollar. I see it as desirable to allow unemployment to drop below the longer run natural rate to support inflation returning to 2% and the realization of maximum employment.

Respondent 14: The pace of economic growth in the second half of this year is roughly in line with expectations thus far, and so is the evolution of the unemployment rate. Other measures of labor market underutilization have been improving, too. We expect GDP growth to pick up slightly next year, as fiscal policy at the federal level is somewhat less restrictive than previously thought. The pickup in activity is sustained by strength in the domestic components of demand. In particular, we expect consumer spending to benefit from earlier increases in household net worth. The release of pent-up demand should support further improvements in the labor market, which in turn are expected to spur growth in disposable income. In the near term, consumer spending is also supported by a decline in energy prices. The acceleration in consumer expenditures and further labor market improvements should raise residential investment to levels that are more in line with demographic trends. Net exports, in contrast, are expected to exert a noticeable drag to growth in the near term, as a result of the dollar appreciation and relatively weak demand abroad.

The projected pace of GDP growth should lower the unemployment rate to 4.7 percent – our estimate of the natural level – by the end of 2016. Over the forecast horizon, the decline in the unemployment rate relative to the pace of GDP growth is attenuated by more individuals re-entering the labor force. With the unemployment rate projected to stay near its natural level, inflation gradually reaches 2 percent. In this context, the removal of policy accommodation is expected to be gradual, as the headwinds progressively abate and the pent-up demand that has accumulated so far is being released. The gradual removal of policy accommodation provides monetary policy with the opportunity to probe for a lower equilibrium real rate of interest than we are currently assuming. It also provides

room for a faster but disciplined pace of tightening should inflationary pressures occur more rapidly than expected, or should vulnerabilities to the financial system become more pronounced.

The risks to the growth outlook are roughly balanced. On the downside, a financial crisis in China triggered by a more pronounced economic slowdown remains a concern. The expected tightening of U.S. monetary policy could also increase financial stability risks in some emerging markets economies, with potential spillovers to the rest of the world. On the upside, the recent increase in the pace of growth of final sales to domestic purchasers could signal a stronger-than-expected acceleration in activity. Risks to the unemployment rate outlook are somewhat tilted to the downside, as the stronger rebound in labor force participation that we are envisioning remains a forecast at this point. Even though we have lowered out estimate of the natural rate of unemployment slightly, we continue to perceive downside risks to the inflation outlook. In particular, we see risks associated with the possibility that long-run inflation expectations are anchored at a level below the 2 percent target.

Respondent 15: My forecast for real GDP growth is characterized by above-trend growth in the period from 2015 to 2018. Real GDP growth is supported by income growth from rising employment and wages, past gains in household wealth, accommodative financing conditions, and increased purchasing power from lower energy prices. Real GDP growth is likely to slow in 2017 as the economy operates at full capacity. I see the unemployment gap as closed in the fourth quarter of 2015 after the rapid reduction in economic slack in the past few years. My inflation outlook projects a gradual rise in inflation reflecting improving labor market conditions and the dissipating of transitory effects of dollar appreciation and lower energy prices.

I see the risks to the economic outlook as broadly balanced. Downside risks for real GDP growth and inflation, stemming from the weakness in global economic and financial conditions this year, are roughly offset by upside risks related to the resilience of the U.S. economy. Consumer spending and inflation could rise faster than expected, especially given the rapid improvement in labor market conditions and the potential for faster wage gains.

Respondent 16: The economy has mostly recovered from the severe housing collapse and financial crisis. Recoveries from these types of episodes are associated with sustained weakness in aggregate demand through a variety of channels, which policy has only partially offset. Many of the associated remaining headwinds are slowly easing:

- Single-family housing construction has been and continues to be depressed. However, with household balance sheets as well as consumer credit conditions improving, I expect this to abate;
- The relatively strong performance of the U.S. economy over the past year compared with that of the rest of the world, the subsequent monetary easing in Europe and elsewhere, and the recent depreciation of the renminbi resulted in a sharp appreciation of the dollar. This appreciation has been a drag on net exports and GDP growth. The potential for further deterioration of foreign economic and financial conditions represents a downside risk.

In this environment, I expect the economic recovery will proceed at a moderate pace. And with substantial monetary stimulus still in play I expect output and unemployment gaps to close by the end of this year and to overshoot somewhat next year. In terms of inflation, the lagged effects of remaining slack in labor and goods markets, combined with subdued commodity and import prices, should keep inflation below the FOMC's 2 percent inflation target over the next year and a half. Well-anchored inflation expectations and above-trend growth eventually pull inflation back to our objective.

Respondent 17: My outlook for real activity assumes that increases in the underlying strength of the economy will enable real GDP to grow at a pace slightly faster than potential on average even as the federal funds rate rises gradually, thereby generating further improvements in the labor market. This increasing strength partly reflects a gradual diminution of the drag on net exports from the

dollar and foreign growth, continuing recovery of the housing market, somewhat easier fiscal policy, modestly faster productivity growth, and a bottoming out of the contraction in oil drilling. A tighter labor market (including a modest undershooting of the longer-run sustainable rate of unemployment), combined with a fading of the transitory inflation effects of dollar appreciation and lower oil prices, should enable headline inflation to move back to 2 percent by 2018.

The key risk to this forecast is that the headwinds currently restraining real activity will fail to dissipate as rapidly or by as much as I anticipate. I am also concerned that the return to 2 percent inflation may prove to be slower than I anticipate, reflecting the risk that the dollar could move higher or that labor market slack is greater than I estimate.

Forecast Narratives (continued)

4(b). Please describe the key factors causing your forecasts to change since the previous SEP.

Respondent 1: Real GDP growth appears likely to be a bit weaker in the second half of 2015 than I had anticipated. As a result, I've revised slightly downward my growth projection for 2015. The recent dynamics of unemployment and inflation, as well as demographic considerations, suggest that the long-run sustainable unemployment rate may be marginally lower than I had previously thought. In the near-term, though, the unemployment rate appears to be on a somewhat steeper downward trajectory than had been anticipated. The net result is a slightly-more-rapid projected increase in the inflation rate.

Respondent 2: N/A

Respondent 3: Recent GDP data has led me to decrease my forecast for GDP growth in 2015. Data in recent years suggests that even moderately above-trend GDP growth has an important effect on unemployment. As a result, I have reduced my unemployment rate forecasts for 2016-2018. Recent inflation data has also caused me to reduce my forecasts for 2015 for both inflation measures.

Respondent 4: N/A

Respondent 5: As noted above, some of the more negative global economic scenarios that seemed possible in September have not materialized, and the fourth quarter has continued the prevailing pattern of mixed data that supports slightly above-trend growth.

Respondent 6: Our macroeconomic projections relative to those of September have changed only marginally, as most of the data releases during this period have been roughly consistent with our central outlook. However, as noted and explained in the response to 3(c), we judge that a lower path of the policy rate is necessary to support those projections.

Respondent 7: I have made only minor adjustments to my outlook since the September SEP. The adjustments were mainly to the near-term outlook, reflecting the incoming data. Ongoing declines in oil and gasoline prices and the appreciation of the dollar caused me to revise down my forecast for headline PCE inflation in 2015 and slightly down in 2016. My qualitative outlook is unchanged from the September SEP. I continue to expect growth to pick up to somewhat above trend next year. With an improving economy and stable inflation expectations, I expect further declines in the unemployment rate and an inflation rate that gradually returns to our target.

Respondent 8: I have marked down my growth forecast in 2015 by 0.3 percentage points, as second half growth has come in weaker than I'd projected in September. My medium term outlook remains largely intact, although I have lowered my projections for growth slightly in order to square my output gap with my judgment on remaining labor market slack.

I have lowered my forecast for the unemployment rate (throughout the forecast horizon and into the longer run) by a tenth. That said, I judge broader measures, such as the U-6 measure of unemployment, as a more complete gauge of labor market slack and do not expect a great deal of pressure on wage and price growth even if the U-3 measure slightly overshoots my longer-run estimate.

On inflation, I've lowered my headline PCE inflation forecast for 2015 by 0.1 percentage points and 2016 projection by 0.2 percentage points, reflecting the decline in oil prices since the September meeting.

Respondent 9: On balance, the incoming data on spending have been a bit softer than we had expected in September, causing us to pare back our projection for growth in 2015:H2 by 1/2 percentage point. The revision shows up in lower net exports, consumption, and business fixed investment. Looking ahead, we lowered our forecasts for U.S. GDP growth in 2016 and 2017 a bit, reflecting some reduced momentum in domestic demand and a somewhat lower assumption for potential output. This latter change was made in light of a small revision to our projection for capital expansion and to better square the GDP and labor market data. These downside factors were offset to some degree by an increase in fiscal stimulus from the recent budget deal in the U.S. The stability in financial markets since the volatility last summer has been a reassuring development, but we viewed it as a diminished downside risk and not a factor affecting our baseline outlook.

We made no material changes to our inflation projection. The incoming inflation data have been in line with our expectations. The apparent pick-up in wage inflation since September was a welcome development, but this was balanced on the downside by continued low inflation breakevens, a slight softening in some survey measures of inflation expectations, and a further decline in oil prices. Indeed, these factors reinforced our judgment that the risks to the inflation outlook are tilted to the downside.

We changed our assumptions regarding appropriate monetary policy a bit. We now have liftoff occurring in December 2015 instead of June 2016, but then assume one less move in 2016, leaving the funds rate at the end of 2016 the same as in our September submission. As noted in our comments about appropriate policy, we made this change in order to have a more realistic monetary policy assumption and because given the strong communications from FOMC participants, waiting further to raise rates could involve some credibility risk to the Committee that does not seem worth taking as long as the December FOMC statement adequately describes an expected shallow path for the funds rate. We also built in one less rate hike in 2017 than in our last SEP to be more consistent with the shallow path language.

Respondent 10: N/A

Respondent 11: Unemployment has fallen more rapidly than I expected, so I expect somewhat lower unemployment at the end of next year and beyond. Energy prices have fallen more rapidly than I projected since the last SEP, and I have lowered my inflation projections accordingly for the first half of 2016.

Respondent 12: I have lowered my path for appropriate monetary policy to show a more gradual funds rate normalization in response to uncertainties about potential output growth and the speed with which inflation will return to target.

Respondent 13: N/A

Respondent 14: The projected pace of GDP growth is now slightly faster in 2016-17. As a result, the unemployment rate is expected to decline slightly more than in the previous forecast. Still, with the natural rate of unemployment now estimated at 4.7 percent, we continue to project the economy to remain in the vicinity of full employment over the forecast horizon. Revisions to the projected path of the federal funds rate have been minor, and the inflation outlook has not changed materially.

Respondent 15: The information received since September has led me to revise down my forecast of the unemployment rate in 2015-2018, as the recent declines in the unemployment rate indicate that labor markets are tightening somewhat faster than I projected in September. However, despite the removal of economic slack I revised down my forecasts of PCE inflation and core PCE inflation in 2015H2 and 2016, reflecting somewhat softer than expected inflation data and the changes in the exchange value of the dollar and oil prices since September.

Respondent 16: Since September, I have made few changes to my forecast. My forecast for GDP growth in 2016 (Q4/Q4) is a bit higher on the heels of the fiscal boost, while my forecast for 2017 and 2018 growth is a bit lower reflecting the recent and anticipated tightening of financial conditions. In addition, given stronger-than-expected labor market data in recent months, I have lowered slightly my forecast of the unemployment rate in the medium run, with the unemployment rate bottoming out at 4.5% (previously 4.7%) by the end of 2016 before rising back to my estimate of the natural rate, 5.0%, by the end of 2018.

In addition, my inflation forecast over the medium term is a touch lower, reflecting the effects of recent further declines in import and commodity prices.

Respondent 17: I have revised up real GDP growth in 2016 to reflect somewhat easier fiscal policy. In turn, stronger GDP growth, coupled with a reassessment of the persistence of the recent strength of the labor market, has led me to mark down the path of the unemployment rate. In addition, I have lowered my estimate of the longer-run natural rate slightly, to 4.8 percent.

Forecast Narratives (continued)

4(c). Please describe any important differences between your current economic forecast and the Tealbook.

Respondent 1: My unemployment and GDP projections aren't very different from those in the Tealbook. However, partly because I believe inflation responds to changes in the unemployment rate as well as its level, and partly because I believe that longer-term inflation expectations are anchored at 2 percent, I see inflation rising a bit faster and a bit farther than predicted in the Tealbook. Consequently, I believe that the appropriate funds-rate path is slightly steeper than that assumed in the Tealbook baseline forecast.

Respondent 2: N/A

Respondent 3: The primary difference involves inflation. My forecast is for an increase in inflation to 2.1% in 2016, while the Tealbook forecasts a less rapid return to 2%.

Respondent 4: N/A

Respondent 5: No important differences – in September I was slightly more optimistic about out years than the Tealbook; now I am slightly less optimistic. But in both cases, the differences are generally modest. I build in an expectation of a significant cyclical slowing in 2018, which is not reflected in the Tealbook but, as with all projections several years ahead, the conviction behind that expectation is not strong.

Respondent 6: The Tealbook forecast and our projections for the key SEP variables are fairly similar over the SEP forecast horizon. However, because of differences in some of the underlying assumptions in the two forecasts, the interpretations of these projections are quite different.

Based on its assessment of potential GDP growth, the Tealbook path of real GDP leads to a fairly sizable positive output gap by 2017-18. Even though we do not calculate precise estimates of the output gap, our assessment is that resource slack dissipates by 2018 but no significantly positive output gap develops over the forecast horizon.

The other notable difference in the underlying assumptions continues to be the longer-run natural rate of unemployment: the Tealbook has maintained its assumption of 5.1%, while we have maintained ours of 4.8%. Consequently, unemployment in our projection falls only to the natural rate, consistent with our assessment that slack dissipates by the end of the forecast horizon. In contrast, the Tealbook path means that unemployment undershoots the longer-run natural rate; this pattern is the counterpart of the positive output gap that arises in the Tealbook forecast.

One other difference in the labor market projections concerns the paths for labor force participation: our projection has a slowly-rising participation rate path through 2017 while the Tealbook has it declining gradually to 62.3% at end-2017. This difference reflects our assumption of some positive cyclical effects on participation as well as a slightly shallower downward trend component.

Turning back to real growth, we note a few differences in the details of the near- and medium-term projections. One difference that arises in this set of projections concerns the impact of fiscal policy. While both forecasts incorporate the passage of the Bipartisan Budget Act of 2015, the Tealbook forecast appears to anticipate a larger effect on real GDP growth in 2016 than the expected effect in our projection. This difference in the fiscal impact largely accounts for the small divergence in projected growth rates in 2016 between the two forecasts.

The other differences in the two projections are longstanding ones. The Tealbook continues to project slower growth in business fixed investment in 2016-17 than in our forecast; this difference

may partly reflect the Tealbook assessment that the capital stock is fairly close to steady-state levels. This factor is offset by faster consumption growth in the Tealbook forecast, another long-standing difference with our forecast, which in part reflects stronger wealth effects in the Tealbook forecast.

For inflation, the two forecasts differ on how quickly inflation reaches the 2% objective: our projection has inflation near 2% at end-2017 whereas the Tealbook projects that inflation will not reach that level until 2018. The Tealbook has this slower rise even though there are a positive output gap and undershooting of unemployment in its projection. This difference between the Tealbook and our projections reflects differing views about inflation dynamics. In the Tealbook, with the underlying inflation rate below the FOMC longer-run objective and considerable persistence in the inflation process, a prolonged period of above-potential growth (and a positive output gap) appears to be necessary to induce inflation to rise toward the longer-run inflation goal. The faster return of inflation to its goal in our forecast reflects our assumptions of less inflation persistence and of a stronger attraction provided by anchored inflation expectations.

In terms of the uncertainty and risk assessment, we see a few differences between the two projections. On the real side, we continue to see higher uncertainty than normal whereas the Tealbook sees uncertainty at near normal levels. This assessment reflects our view that the unusual nature of the current expansion, the atypical policy environment in the U.S. and many foreign economies, and latent foreign risks leave uncertainty about real activity above the SEP standard. However, we agree with the Tealbook that the risks to real growth are tilted to the downside for many of the same reasons cited in the Tealbook. As for inflation, our uncertainty and risk assessments are similar to the Tealbook, with uncertainty near the SEP standard and risks tilted to the downside.

Respondent 7: As in the Tealbook, I expect that GDP growth will pick up to an above-trend pace next year, the unemployment rate will continue to decline, and inflation will gradually return to our 2 percent longer-term objective. The differences between my forecast for growth and the unemployment rate and Tealbook's forecast stem primarily from different estimates of trend growth and the natural rate of unemployment: My trend growth rate and longer-run unemployment rate are slightly higher than the Tealbook's, so my forecast for growth and unemployment are a bit higher than the Tealbook's. I see somewhat greater inflationary pressures than in the Tealbook, with inflation returning to 2 percent in 2017 compared to 2018 in the Tealbook. As a result, my forecast calls for a somewhat steeper path for the funds rate than in the Tealbook baseline; the difference in paths also reflects the fact that my estimate of the longer-run fed funds rate is 3.5 percent compared to 3.25 percent in the Tealbook. Of course, given the confidence bands around such estimates, there is no statistical difference in our estimates.

Respondent 8: My growth forecast is similar to that in the Tealbook throughout the projection period. However, my headline and core inflation forecasts run about 1/4 percentage point above the Tealbook over the medium-term.

Respondent 9: We assume fewer increases in the funds rate during 2016 than the Tealbook does– our end-of-2016 rate is 65 bps below the Tealbook. We incorporate roughly the same pace of increase as the Tealbook in 2017 and 2018, and so this gap in funds rate assumptions is largely maintained throughout the projection period.

Our projection for GDP growth is 1/4 percentage point below the Tealbook in 2016 but then averages about 1/2 percentage point above the Tealbook in 2017 and 2018. Our view of potential output growth is a few tenths higher than the Tealbook throughout the projection period; our 2016 forecast represents less strength relative to potential than the Tealbook while our 2017 and 2018 projections are a bit stronger relative to trend. Our unemployment rate forecasts are a tenth higher through most of the projection period, but our assumption for the natural rate is 4.9 percent, 0.2 percentage point below the Tealbook's. We also think that the gap between actual and trend participation could take

longer to close. Accordingly, our forecast does not have as much overshooting of potential as does the Tealbook. Nonetheless, our outlook for inflation is very similar to the Tealbook's, as we feel our more accommodative path for monetary policy will provide a larger boost to actual inflation through expectational channels.

Respondent 10: The forecast is broadly similar to the Tealbook except that monetary accommodation will be removed more gradually.

Respondent 11: I am less pessimistic about core inflation for 2016.

Respondent 12: My forecast calls for somewhat stronger output growth, a higher unemployment path, and faster inflation convergence compared to the Tealbook.

Respondent 13: N/A

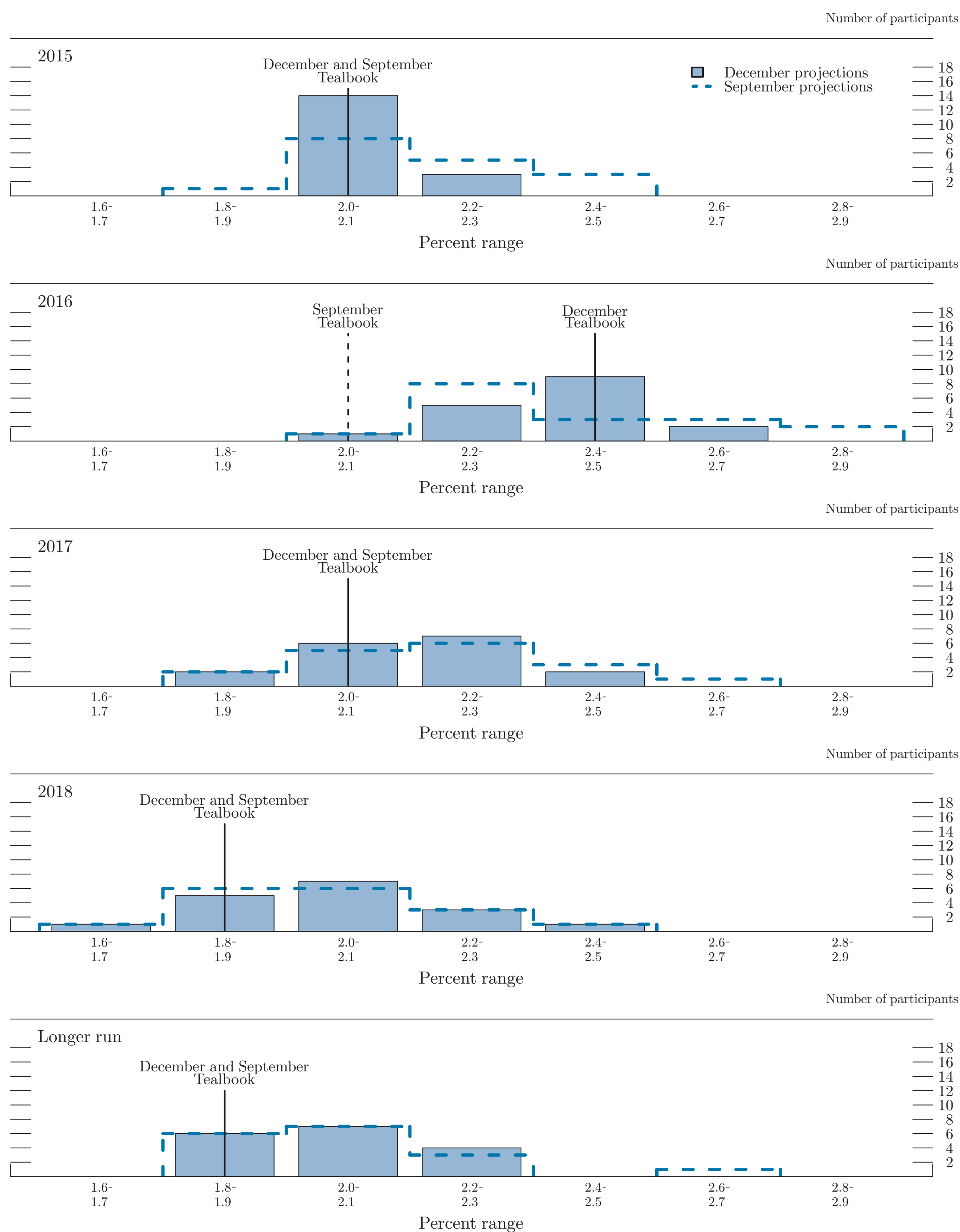
Respondent 14: The two forecasts are broadly similar both in terms of real activity and inflation outcomes. The Tealbook's estimate of the natural rate of unemployment, at 5.1 percent, is higher than our estimate, which currently stands at 4.7 percent.

Respondent 15: My projected paths of real GDP growth and the unemployment rate in 2015-2018 are close to those of Tealbook. While the projections for headline GDP growth are similar, the contributions to growth are different as my forecast calls for somewhat softer growth in consumer spending and somewhat less weakness in net exports. My forecasts for PCE inflation and core PCE inflation are approximately 1/2 percentage point higher than Tealbook's projection in 2016 and 1/4 percentage point higher in 2017. With inflation expectations well anchored, I view inflation as less inertial than Tealbook, and therefore expect the effects of past dollar appreciation and oil price declines to wane sooner than in the Tealbook projection.

Respondent 16: The Tealbook projects a protracted overshooting of full employment and a protracted return of inflation to 2 percent. If the Tealbook forecast from 2016 to 2022 were compressed into the next three years–that is, after a time deformation–it would be fairly close to mine. In my forecast, the economy returns to steady state (closing all gaps for the real interest rate, unemployment, output, and inflation) by the end of 2018. In 2016, I anticipate above-potential growth of 2.2 percent, which lowers the unemployment rate to 4.5 percent. The removal of policy accommodation tightens financial conditions over time and slows growth to below potential in 2017 and 2018. This pushes up the unemployment rate to its 5 percent natural rate by the middle of 2018. Finally, the persistent overshoot of full employment pushes inflation back to 2 percent by the second half of 2018.

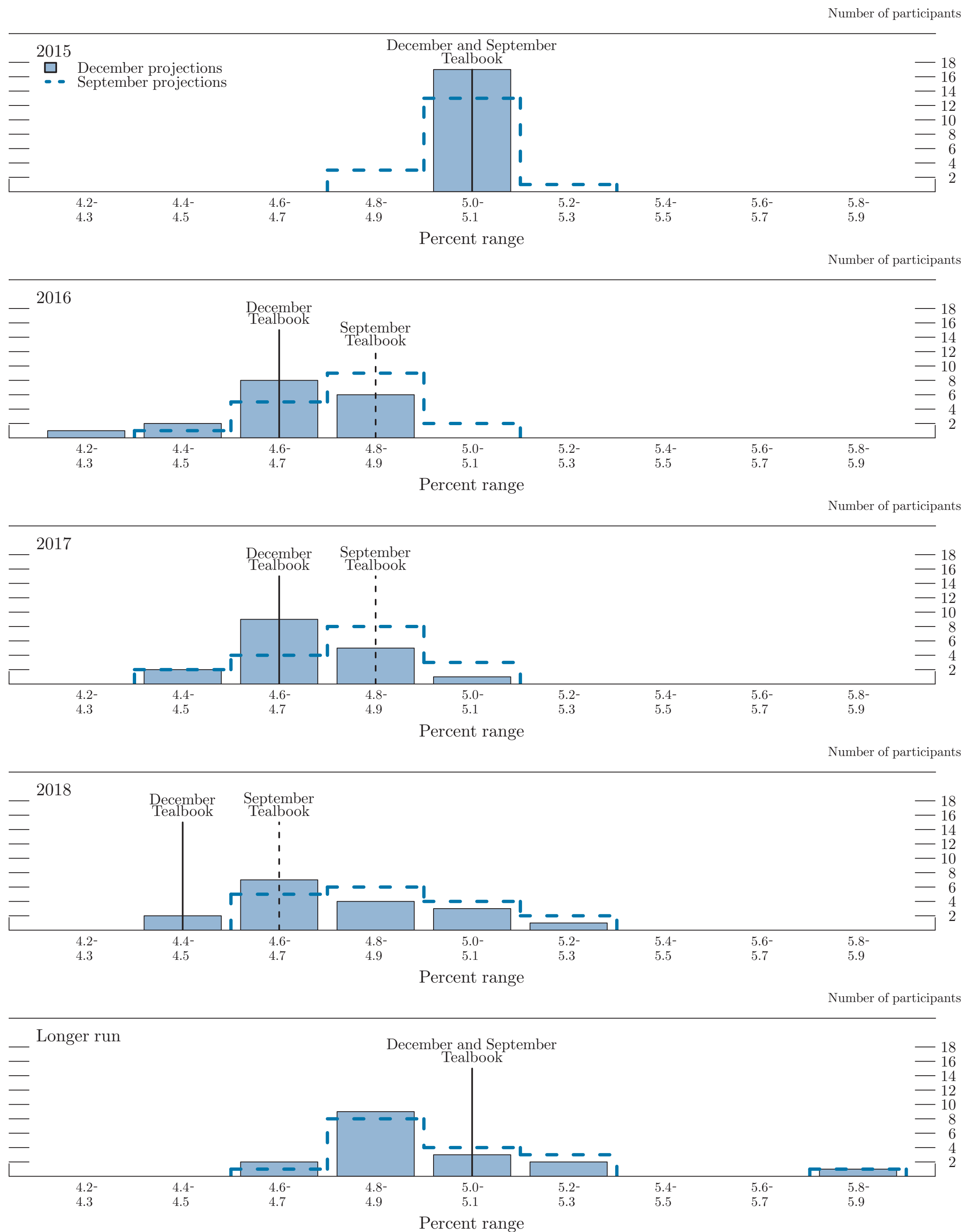
Respondent 17: Because I judge long-run inflation expectations to be anchored at 2 percent, rather than the staff estimate of 1.8 percent, my forecast shows faster convergence of actual inflation back to the Committee's objective. In addition, I envision a somewhat more gradual rise in the federal funds rate over the next three years, possibly reflecting my assessment that the longer-run funds rate is bit lower than the staff estimates, and that the labor market will be somewhat less tight on average over the next few years.

Figure 3.A. Distribution of participants' projections for the change in real GDP, 2015–18 and over the longer run



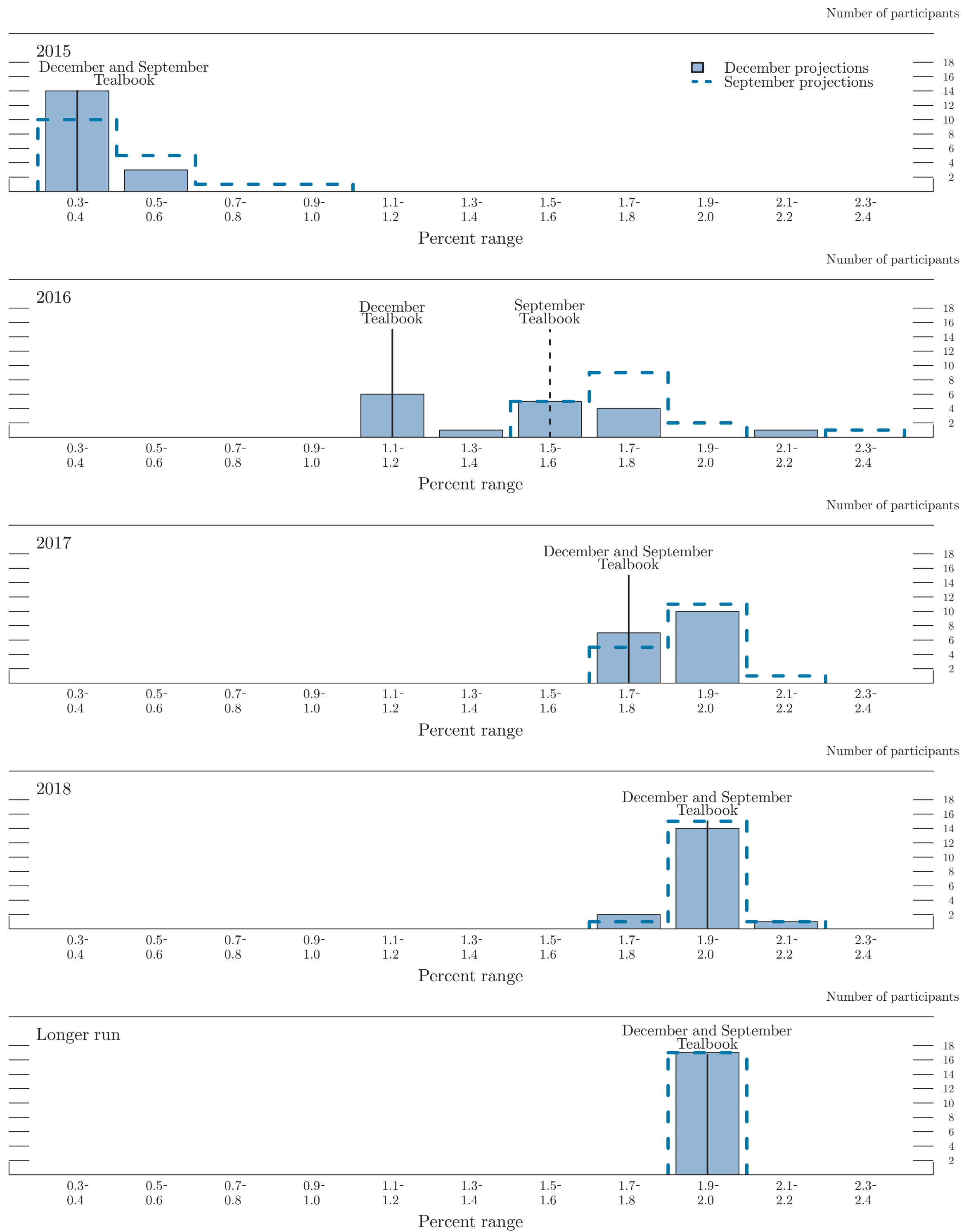
NOTE: Definitions of variables are in the general note to table 1.

Figure 3.B. Distribution of participants' projections for the unemployment rate, 2015–18 and over the longer run



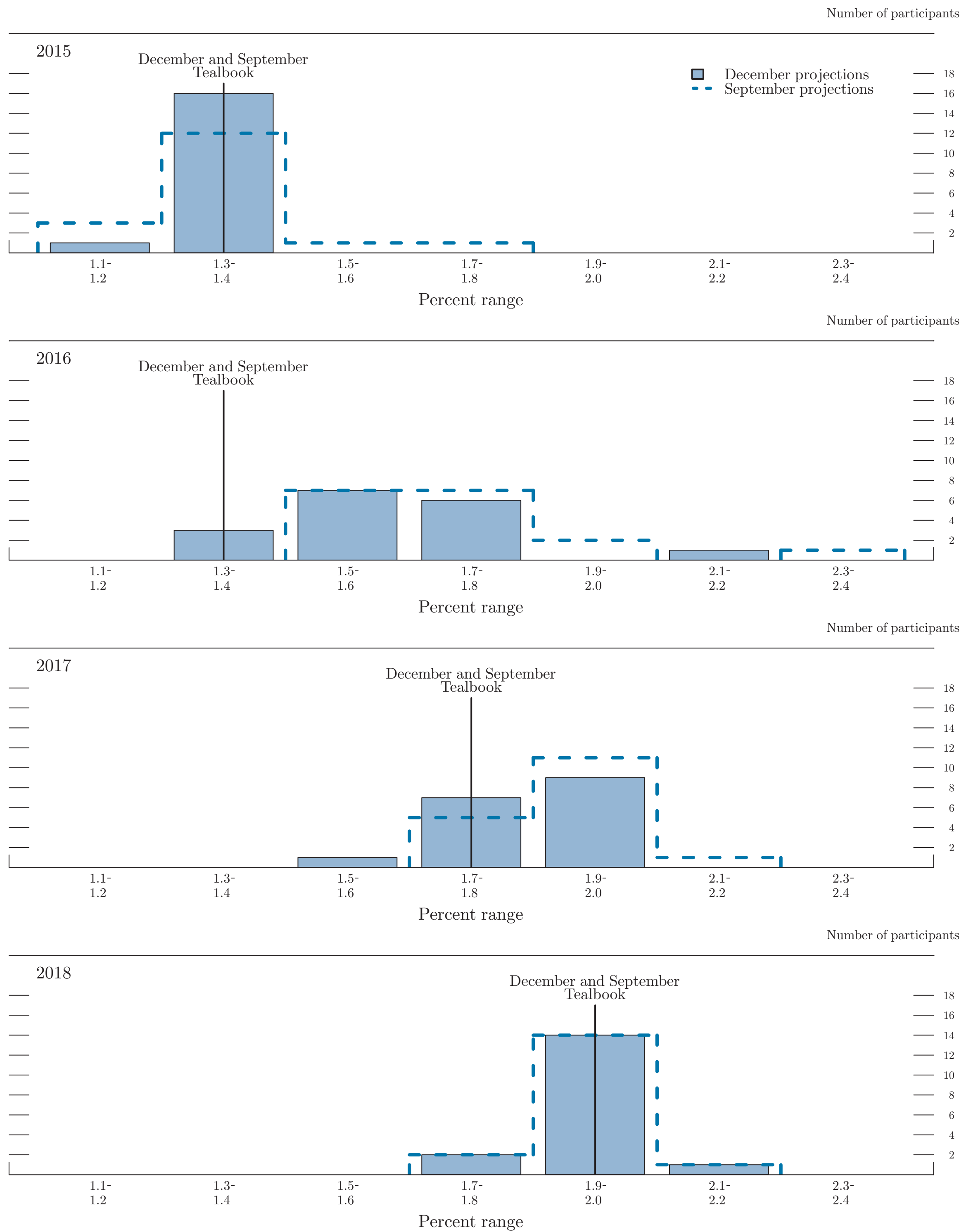
NOTE: Definitions of variables are in the general note to table 1.

Figure 3.C. Distribution of participants' projections for PCE inflation, 2015–18 and over the longer run



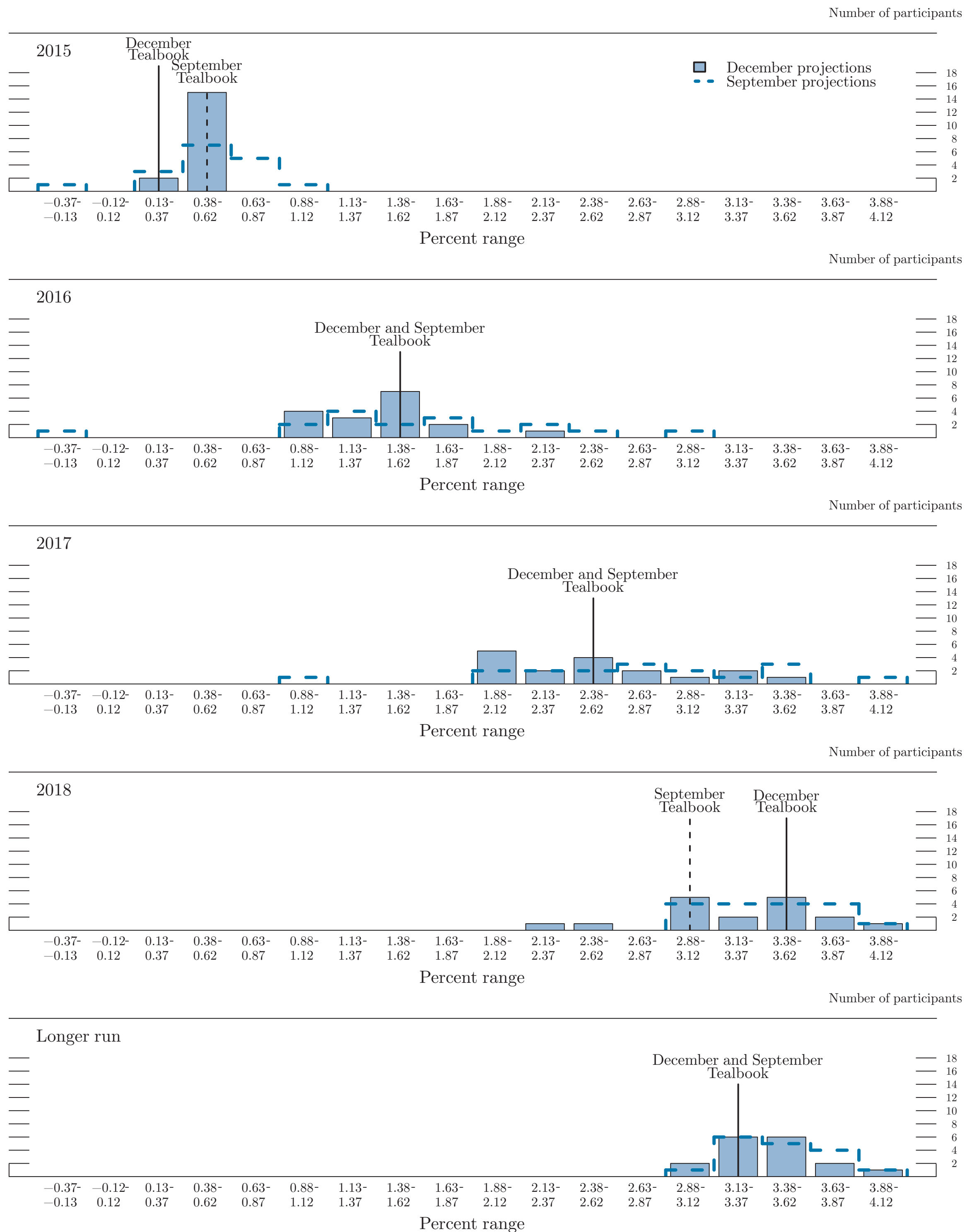
Note: Definitions of variables are in the general note to table 1.

Figure 3.D. Distribution of participants' projections for core PCE inflation, 2015–18



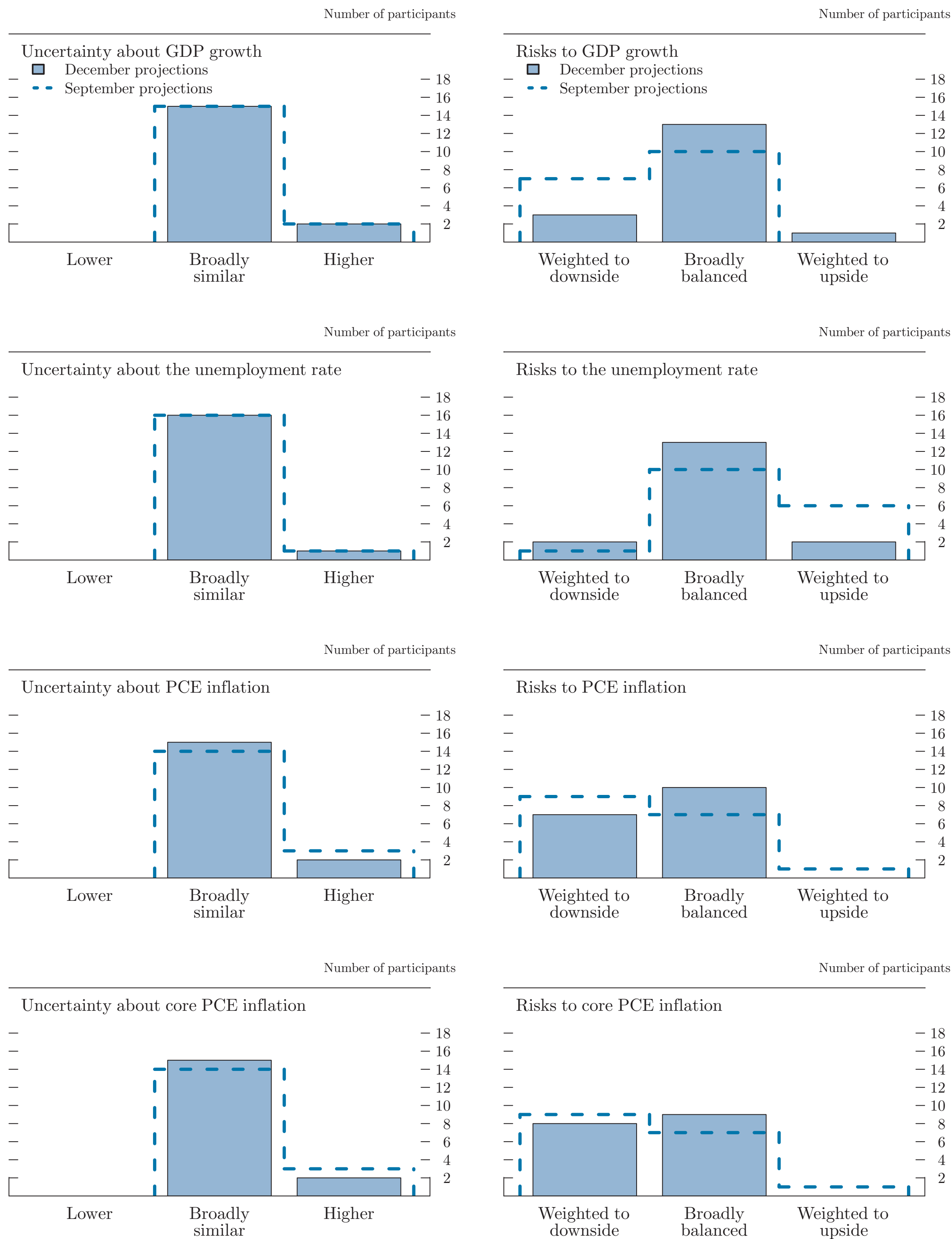
Note: Definitions of variables are in the general note to table 1.

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, 2015–18 and over the longer run



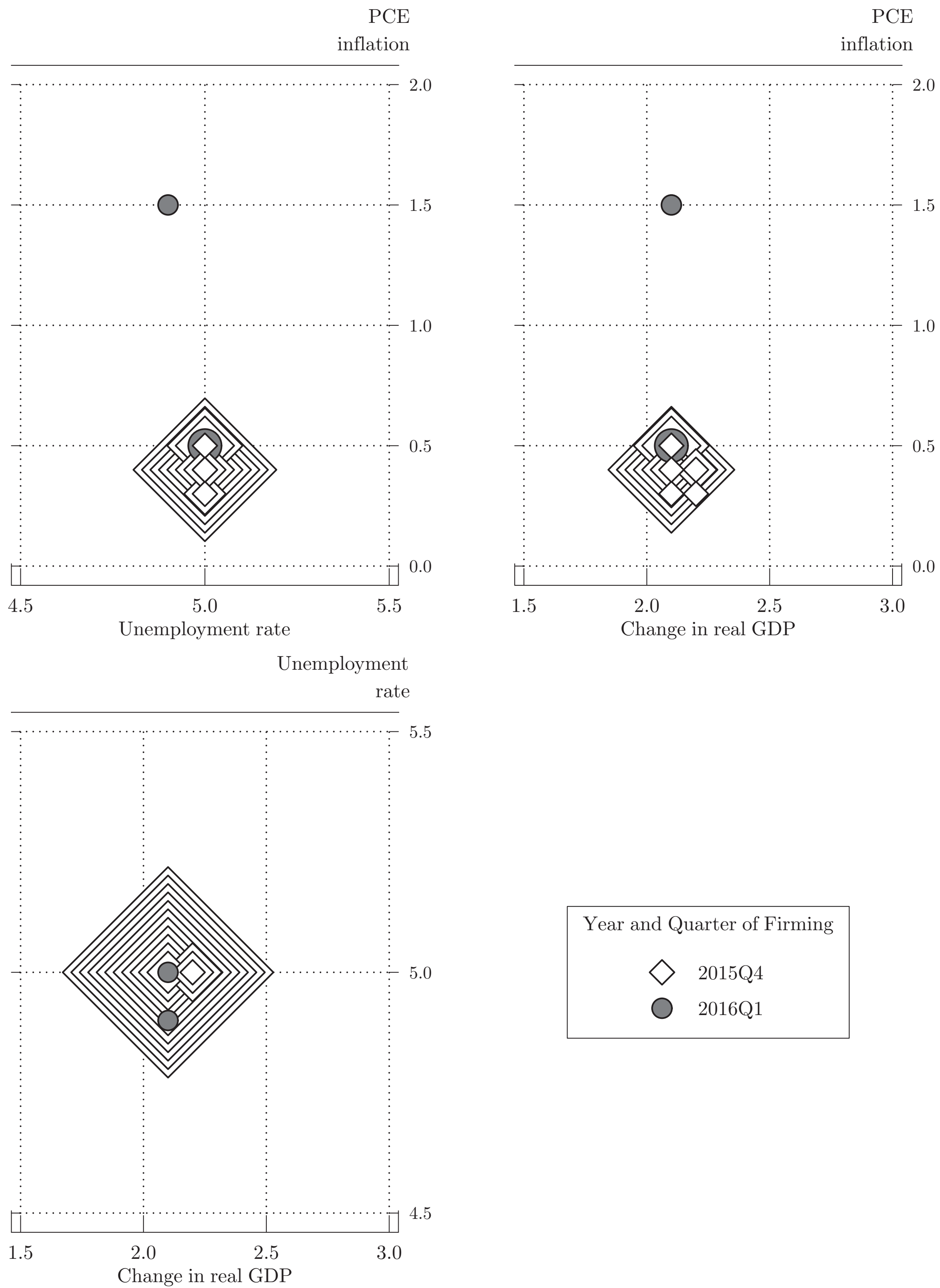
NOTE: The midpoints of the target ranges for the federal funds rate and the target levels for the federal funds rate are measured at the end of the specified calendar year or over the longer run.

Figure 4. Uncertainty and risks in economic projections



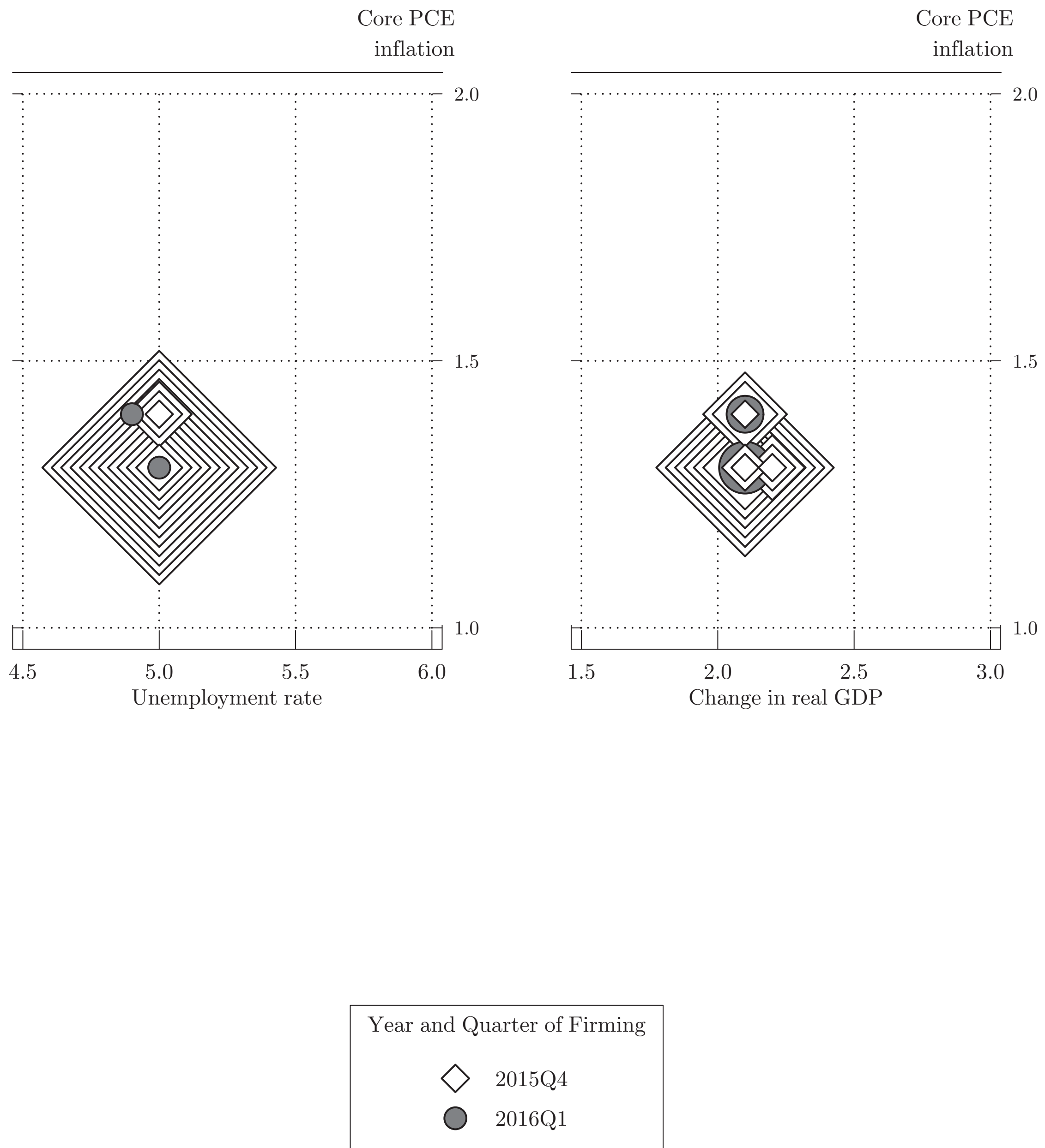
NOTE: Definitions of variables are in the general note to table 1.

Figure 6. Projections of GDP, unemployment, and PCE inflation in the quarter of liftoff



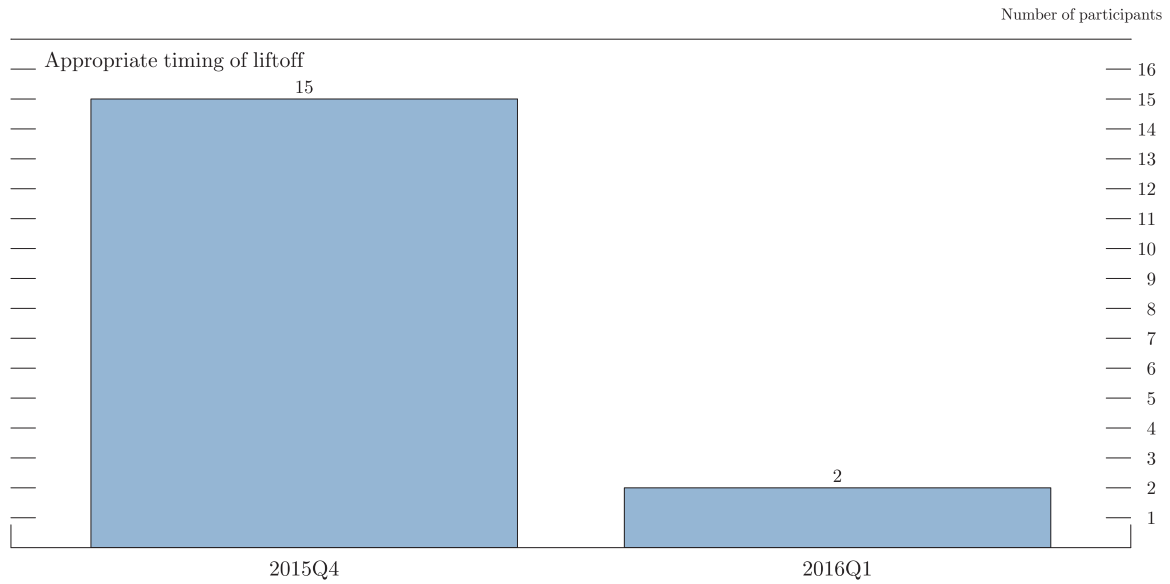
NOTE: When the projections of two or more participants are identical, larger markers, which represent one participant each, are used so that each projection can be seen.

Figure 7. Projections of GDP, unemployment, and core PCE inflation in the quarter of liftoff



NOTE: When the projections of two or more participants are identical, larger markers, which represent one participant each, are used so that each projection can be seen.

Figure 8. FOMC participants' assessments of appropriate liftoff year and quarter



Note: In the upper panel, the height of each bar denotes the number of FOMC participants who judge that, under appropriate monetary policy, the first increase in the target range for the federal funds rate from its current range of 0 to 1/4 percent will occur in the specified calendar year and quarter.