Table 1. Economic projections of Federal Reserve Board members and Federal Reserve Bank presidents, under their individual assessments of projected appropriate monetary policy, June 2016

Percent

Variable	Median[1]				Central tendency[2]				Range[3]			
	2016	2017	2018	Longer run	2016	2017	2018	Longer run	2016	2017	2018	Longer run
Change in real GDP	2.0	2.0	2.0	2.0	1.9 – 2.0	1.9 – 2.2	1.8 – 2.1	1.8 – 2.0	1.8 – 2.2	1.6 – 2.4	1.5 – 2.2	1.6 – 2.4
March projection	2.2	2.1	2.0	2.0	2.1 – 2.3	2.0 – 2.3	1.8 – 2.1	1.8 – 2.1	1.9 – 2.5	1.7 – 2.3	1.8 – 2.3	1.8 – 2.4
Unemployment rate	4.7	4.6	4.6	4.8	4.6 – 4.8	4.5 – 4.7	4.4 – 4.8	4.7 – 5.0	4.5 – 4.9	4.3 – 4.8	4.3 – 5.0	4.6 – 5.0
March projection	4.7	4.6	4.5	4.8	4.6 – 4.8	4.5 – 4.7	4.5 – 5.0	4.7 – 5.0	4.5 – 4.9	4.3 – 4.9	4.3 – 5.0	4.7 – 5.8
PCE inflation	1.4	1.9	2.0	2.0	1.3 – 1.7	1.7 – 2.0	1.9 – 2.0	2.0	1.3 – 2.0	1.6 – 2.0	1.8 – 2.1	2.0
March projection	1.2	1.9	2.0	2.0	1.0 – 1.6	1.7 – 2.0	1.9 – 2.0	2.0	1.0 – 1.6	1.6 – 2.0	1.8 – 2.0	2.0
Core PCE inflation[4]	1.7	1.9	2.0		1.6 – 1.8	1.7 – 2.0	1.9 – 2.0		1.3 – 2.0	1.6 – 2.0	1.8 – 2.1	
March projection	1.6	1.8	2.0		1.4 – 1.7	1.7 – 2.0	1.9 – 2.0		1.4 – 2.1	1.6 – 2.0	1.8 – 2.0	
Memo: Projected appropriate policy path												
Federal funds rate	0.9	1.6	2.4	3.0	0.6 – 0.9	1.4 – 1.9	2.1 – 2.9	3.0 – 3.3	0.6 – 1.4	0.6 – 2.4	0.6 – 3.4	2.8 – 3.8
March projection	0.9	1.9	3.0	3.3	0.9 – 1.4	1.6 – 2.4	2.5 – 3.3	3.0 – 3.5	0.6 – 1.4	1.6 – 2.8	2.1 – 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 March projections were made in conjunction with the meeting of the Federal Open Market Committee on March 15–16, 2016. One participant did not submit longer-run projections in conjunction with the June 14–15, 2016 meeting.

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

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Table 1.A. Economic projections for the first half of 2016*
(in percent)

Medians, central tendencies, and ranges

	Median	Central tendency	Range
Change in real GDP	1.6	1.5 – 1.7	1.4 – 1.9
March projection	2.1	2.0 – 2.2	1.9 – 2.5
PCE inflation	1.2	1.2 – 1.3	0.9 – 1.9
March projection	0.7	0.7 – 1.1	0.4 – 1.2
Core PCE inflation	1.9	1.9	1.8 – 2.0
March projection	1.7	1.6 – 1.8	1.5 – 1.9

Participants' projections

Projection	Change in real GDP	PCE inflation	Core PCE inflation
1	1.5	1.2	1.8
2	1.5	1.2	1.9
3	1.5	1.2	1.9
4	1.5	1.4	1.9
5	1.5	1.2	1.9
6	1.8	1.3	1.9
7	1.7	1.2	1.9
8	1.7	1.2	1.8
9	1.9	1.2	1.9
10	1.5	1.2	1.9
11	1.5	1.2	1.9
12	1.4	1.9	2.0
13	1.8	1.2	1.9
14	1.6	1.3	1.9
15	1.6	1.2	1.9
16	1.7	1.2	1.9
17	1.6	0.9	1.9

* Growth and inflation are reported at annualized rates.

Table 1.B. Economic projections for the second half of 2016*
(in percent)

Medians, central tendencies, and ranges

	Median	Central tendency	Range
Change in real GDP	2.3	2.2 – 2.5	2.1 – 2.7
March projection	2.4	2.1 – 2.5	1.9 – 2.6
PCE inflation	1.8	1.4 – 2.1	1.4 – 2.2
March projection	1.6	1.5 – 2.0	1.3 – 2.2
Core PCE inflation	1.5	1.3 – 1.8	0.7 – 2.1
March projection	1.6	1.1 – 1.7	1.1 – 2.3

Participants' projections

Projection	Change in real GDP	PCE inflation	Core PCE inflation
1	2.3	1.8	1.8
2	2.3	1.4	1.3
3	2.5	1.4	1.3
4	2.7	1.4	1.3
5	2.5	2.2	1.7
6	2.2	1.5	1.3
7	2.3	1.4	1.5
8	2.3	1.8	1.8
9	2.5	1.6	1.5
10	2.3	1.4	1.3
11	2.3	1.4	1.3
12	2.2	2.1	2.0
13	2.2	2.2	2.1
14	2.2	2.1	1.9
15	2.4	2.0	0.7
16	2.1	2.0	1.7
17	2.6	1.9	1.5

* Projections for the second half of 2016 implied by participants' June projections for the first half of 2016 and for 2016 as a whole. Growth and inflation are reported at annualized rates.

Table 2. June economic projections, 2016–18 and over the longer run (in percent)

Projection	Year	Change in real GDP	Unemployment rate	PCE inflation	Core PCE inflation	Federal funds rate
1	2016	1.9	4.7	1.5	1.8	0.88
2	2016	1.9	4.8	1.3	1.6	0.63
3	2016	2.0	4.5	1.3	1.6	0.88
4	2016	2.1	4.7	1.4	1.6	0.88
5	2016	2.0	4.7	1.7	1.8	0.88
6	2016	2.0	4.8	1.4	1.6	0.63
7	2016	2.0	4.6	1.3	1.7	0.88
8	2016	2.0	4.6	1.5	1.8	0.88
9	2016	2.2	4.7	1.4	1.7	1.13
10	2016	1.9	4.9	1.3	1.6	0.63
11	2016	1.9	4.8	1.3	1.6	0.63
12	2016	1.8	4.7	2.0	2.0	0.88
13	2016	2.0	4.7	1.7	2.0	0.63
14	2016	1.9	4.8	1.7	1.9	1.38
15	2016	2.0	4.6	1.6	1.3	0.63
16	2016	1.9	4.5	1.6	1.8	0.88
17	2016	2.1	4.7	1.4	1.7	0.88
1	2017	1.9	4.6	2.0	2.0	1.63
2	2017	2.2	4.6	1.7	1.6	1.38
3	2017	2.0	4.3	1.7	1.7	1.63
4	2017	2.4	4.6	1.8	1.8	1.63
5	2017	2.3	4.4	1.9	1.8	1.88
6	2017	2.2	4.6	1.7	1.7	1.38
7	2017	2.1	4.5	1.9	1.9	1.88
8	2017	2.1	4.5	2.0	2.0	1.63
9	2017	2.3	4.5	2.0	2.0	2.25
10	2017	2.0	4.8	1.6	1.6	1.38
11	2017	2.1	4.6	1.8	1.8	1.38
12	2017	2.0	4.5	2.0	2.0	1.88
13	2017	2.0	4.7	2.0	2.0	0.63
14	2017	1.9	4.8	2.0	2.0	2.38
15	2017	2.0	4.5	1.7	1.7	1.38
16	2017	1.6	4.6	1.9	1.9	2.13
17	2017	1.7	4.8	1.9	1.9	1.38

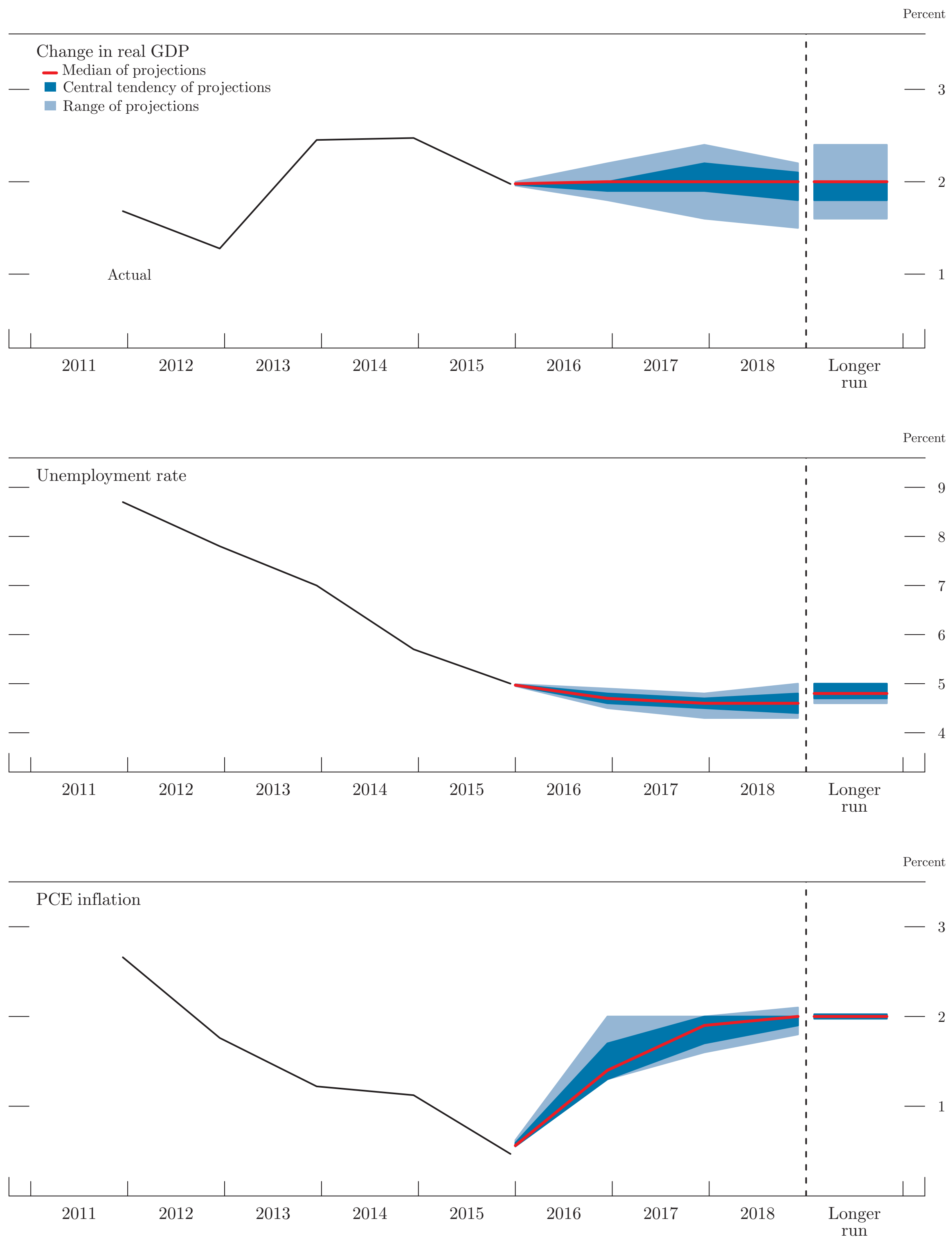
Table 2. *(continued)*

Projection	Year	Change in real GDP	Unemployment rate	PCE inflation	Core PCE inflation	Federal funds rate
1	2018	1.9	4.6	2.0	2.0	2.63
2	2018	2.0	4.4	1.8	1.8	2.38
3	2018	2.0	4.3	2.0	2.0	2.38
4	2018	2.2	4.6	1.9	1.9	2.38
5	2018	2.1	4.4	2.0	2.0	2.88
6	2018	2.2	4.5	1.9	1.9	2.38
7	2018	1.9	4.4	2.0	2.0	2.88
8	2018	2.1	4.6	2.0	2.0	2.38
9	2018	2.0	5.0	2.0	2.0	3.00
10	2018	1.8	4.8	1.8	1.8	2.13
11	2018	1.8	4.6	1.9	1.9	2.13
12	2018	2.0	4.5	2.0	2.0	2.88
13	2018	2.0	4.7	2.0	2.0	0.63
14	2018	1.7	4.8	2.0	2.0	3.38
15	2018	2.0	4.5	1.9	1.9	2.13
16	2018	1.5	4.7	2.1	2.1	3.25
17	2018	1.8	4.8	2.0	2.0	2.13
1	LR	2.0	4.8	2.0		3.00
2	LR	2.0	4.7	2.0		3.00
3	LR	1.9	4.8	2.0		2.75
4	LR	2.4	4.8	2.0		3.50
5	LR	2.2	4.7	2.0		3.25
6	LR	2.1	4.8	2.0		3.25
7	LR	1.9	4.7	2.0		3.00
8	LR	2.0	4.7	2.0		3.25
9	LR	2.0	5.0	2.0		3.25
10	LR	2.0	4.6	2.0		2.75
11	LR	1.8	4.7	2.0		3.00
12	LR	1.8	5.0	2.0		3.75
13	LR					
14	LR	1.8	5.0	2.0		3.75
15	LR	1.9	4.7	2.0		2.75
16	LR	1.6	5.0	2.0		3.00
17	LR	1.8	4.8	2.0		3.00

Figure 1.A. Medians, central tendencies, and ranges of economic projections, 2016–18 and over the longer run

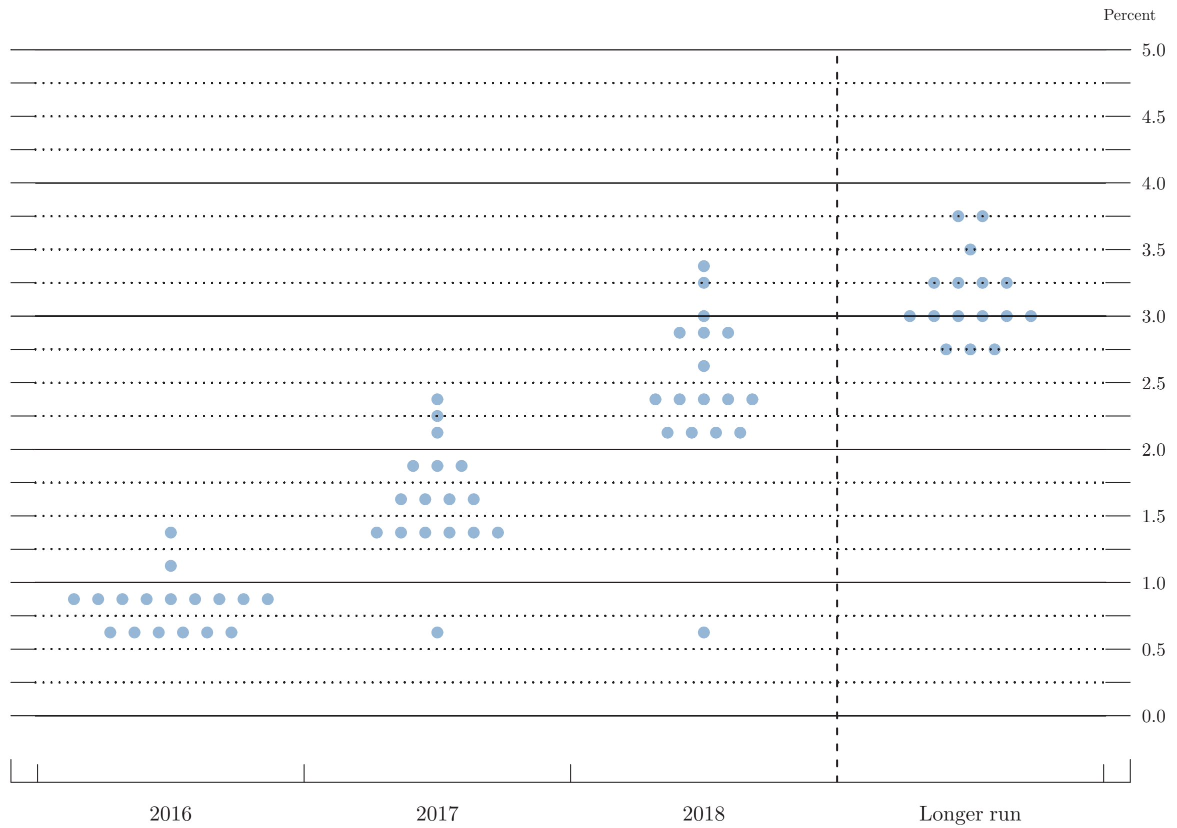
Note: Definitions of variables and other explanations are in the notes to table 1. The data for the actual values of the variables are annual.

Figure 1.B. Medians, central tendencies, and ranges of economic projections, 2016–18 and over the longer run



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

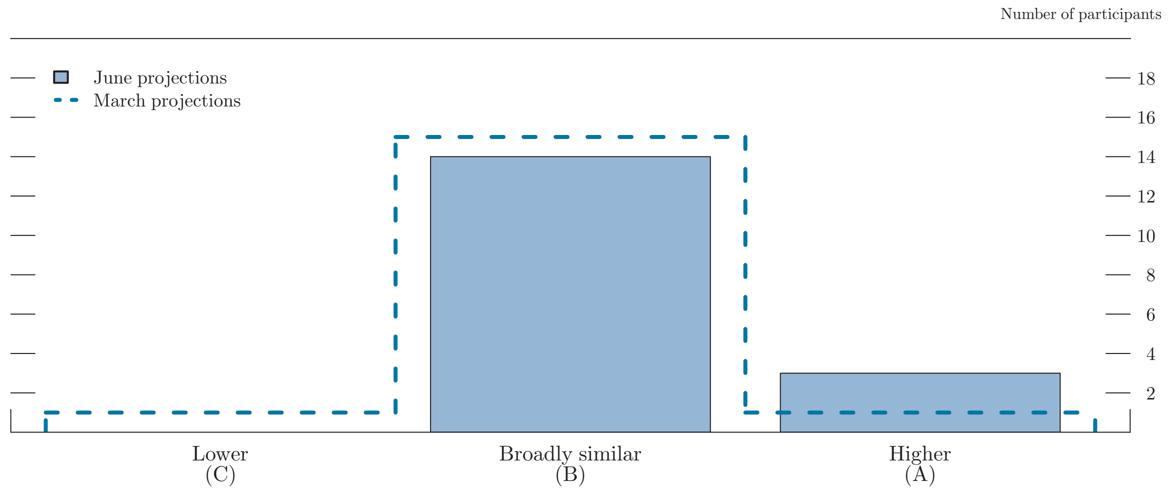
Figure 2. FOMC participants' assessments of appropriate monetary policy: Midpoint of target range or target level for the federal funds rate



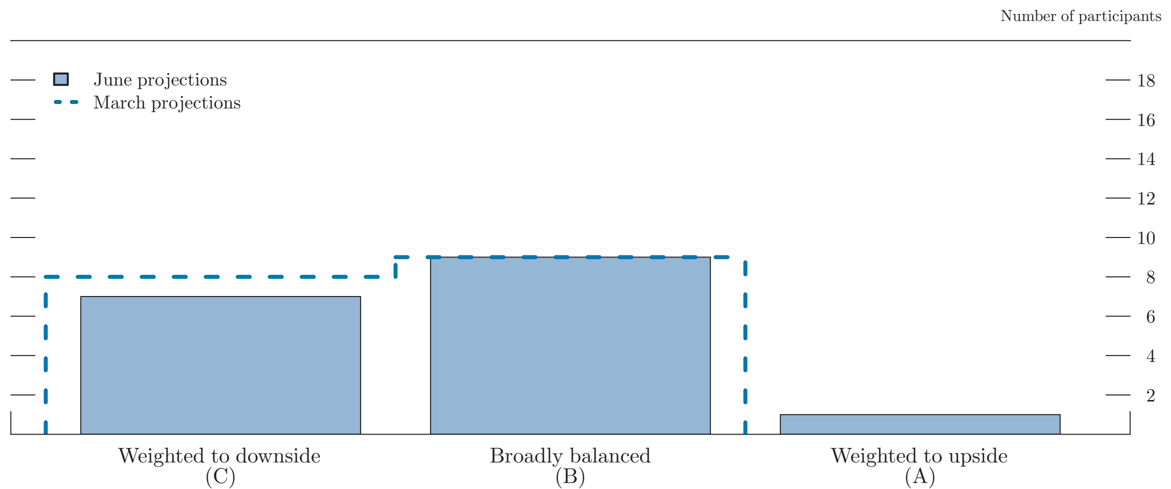
NOTE: Each shaded circle indicates the value (rounded to the nearest 1/8 percentage point) of an individual participant's judgment of the midpoint of the appropriate target range for the federal funds rate or the appropriate target level for the federal funds rate at the end of the specified calendar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

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.

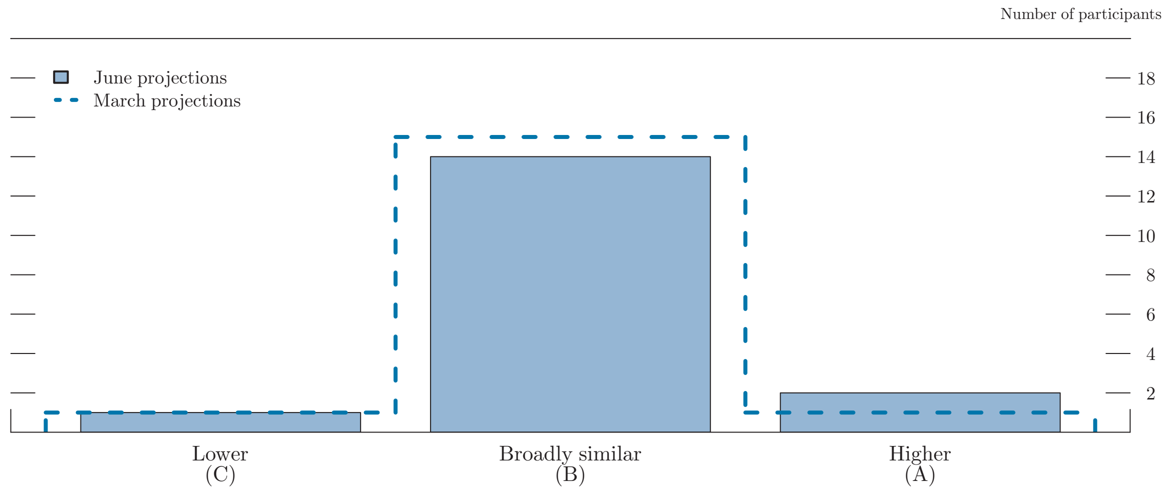


Individual responses

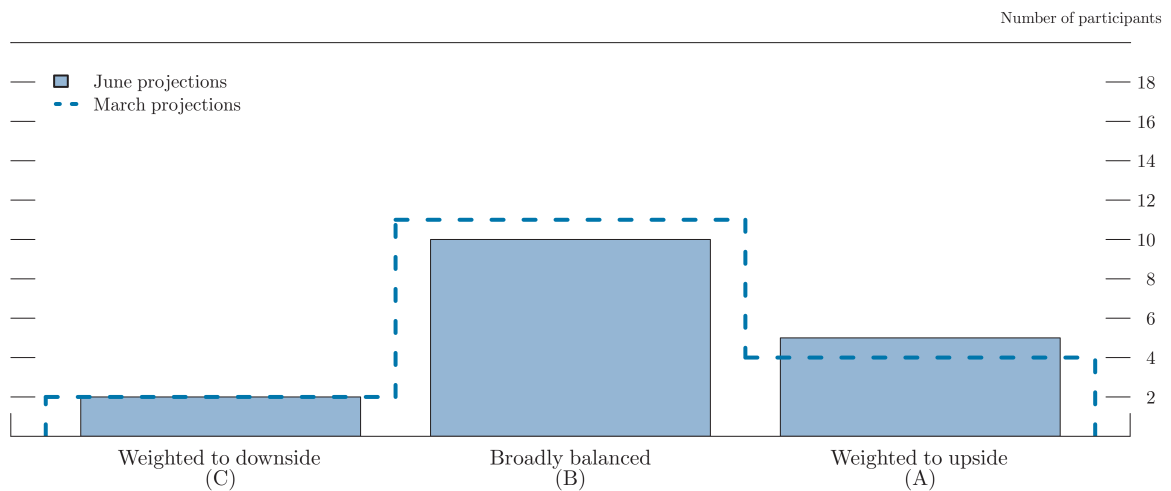
Respondent	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
2(a)	B	B	B	A	B	B	B	B	B	B	B	B	B	B	A	B	A
2(b)	B	C	B	B	B	C	B	C	B	C	C	B	A	B	C	B	C

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.

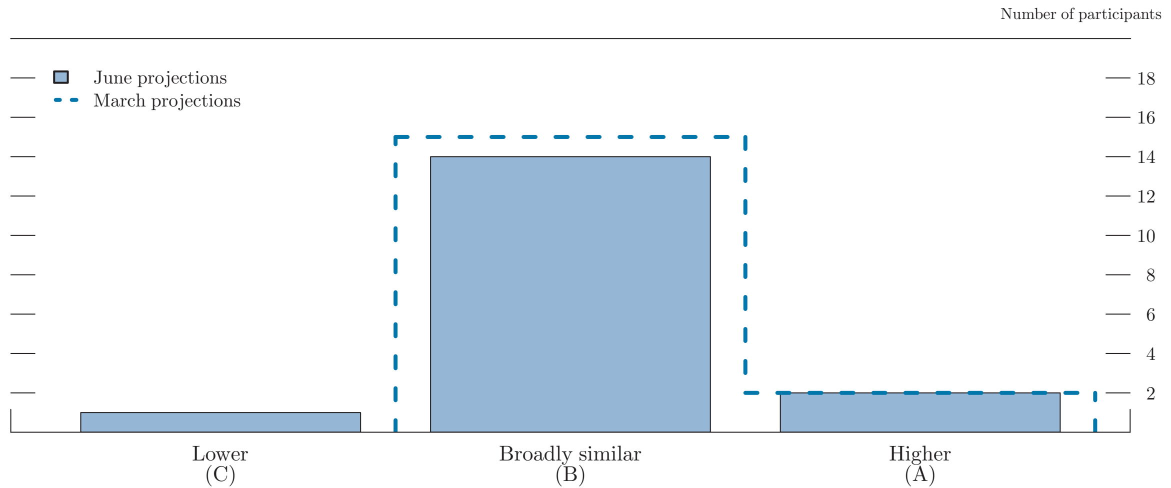


Individual responses

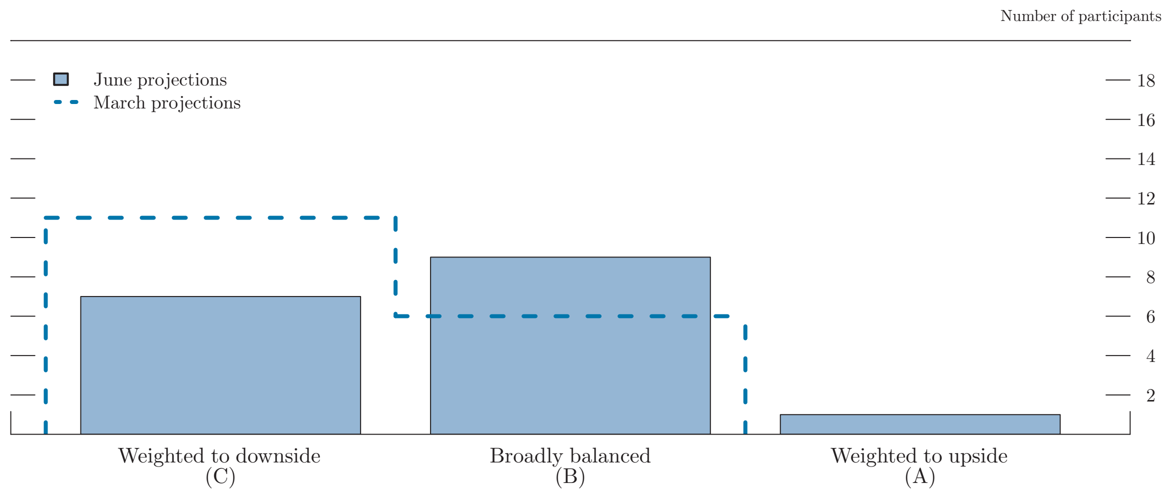
Respondent	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
2(a)	B	B	B	C	B	B	B	B	B	B	B	A	B	B	B	B	A
2(b)	B	B	B	B	C	A	C	B	B	B	A	B	A	B	A	B	A

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.

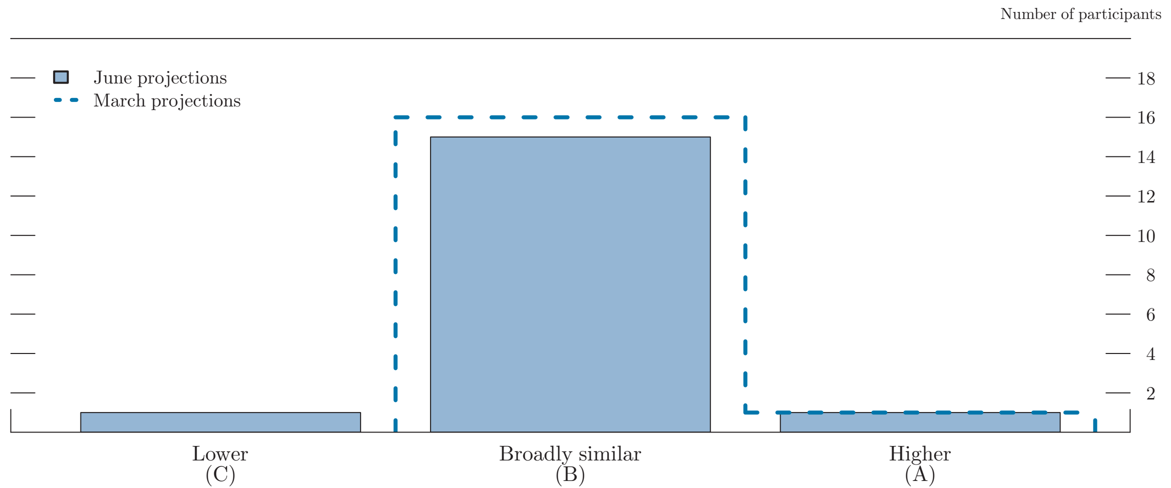


Individual responses

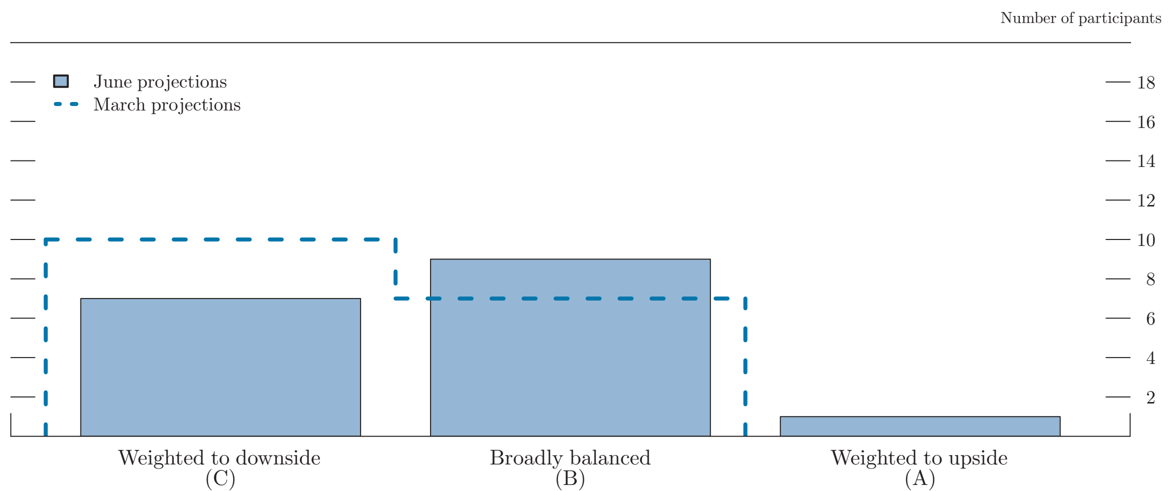
Respondent	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
2(a)	B	B	B	C	B	B	B	B	B	B	B	A	B	B	A	B	B
2(b)	B	C	C	B	C	C	B	C	B	B	C	B	A	B	C	B	B

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	C	B	B	B	B	B	B	B	B	B	B	A	B	B
2(b)	B	C	C	B	C	C	B	C	B	B	C	B	A	B	C	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: Labor-force participation is now near its demographically determined trend, and the unemployment rate is roughly at its longer-run sustainable level. The economy appears to be on a track that will push it past full employment. 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 in 2017. In the absence of new shocks, the unemployment rate eventually converges to its longer-run sustainable level from below. The inflation rate approaches 2 percent from above. Full convergence might take 5 years.

Respondent 2: N/A

Respondent 3: N/A

Respondent 4: N/A

Respondent 5: I anticipate that the economy will converge to my longer-run projections in about five years

Respondent 6: We believe convergence of the federal funds rate to its long-run level could take longer than 5 or 6 years. Currently, the equilibrium funds rate is well below its longer-run level and is expected to rise only gradually over the projection period. We think the stance of policy will return to neutral well within the 5 to 6 year window, but when it does, it is quite possible that the neutral rate itself will still have some way to go before it reaches its longer-run level.

Respondent 7: We view the current level of the unemployment rate as understating the amount of slack in the economy, but expect the activity gap to close by the end of this year. Convergence to the inflation target is projected to follow later next year, as inflation expectations gradually revert back to 2 percent.

Respondent 8: N/A

Respondent 9: At this point, convergence is likely in two to three years.

Respondent 10: N/A

Respondent 11: I anticipate that it will take five or six years to achieve full convergence. In my projection, although the unemployment rate and inflation are close to their longer-run values by the end of 2018, the federal funds rate at that point is still projected to be noticeably below its longer-run level owing to headwinds that will have not completely faded, such as still-restricted access to mortgage credit.

Respondent 12: I anticipate that the convergence of real GDP growth and inflation will take less than 5 years. Specifically, I expect real GDP growth to move above its longer-run rate in 2017 and 2018 before slowing to that rate after 2018. The unemployment rate has already fallen below my estimate of its longer-run level, and I expect it will remain there in the period from 2016 to 2018, before moving back to that level. I expect inflation to rise to close to 2 percent in 2016.

Respondent 13: We think all variables have essentially converged to a regime characterized by low productivity growth and a low real interest rate on short-term government debt. This regime features GDP growth of 2.0%, unemployment of 4.7%, and inflation of 2.0%. Because there are multiple possible medium term outcomes, we cannot provide a single set of longer-run projections. Calculating an average for a specific variable based on multiple possible outcomes is potentially misleading.

Respondent 14: I believe inflation will converge to target this year. Real GDP growth and unemployment already appear to have converged to their longer run trends.

Respondent 15: N/A

Respondent 16: Our dual mandate goals are reached or exceeded by 2018. However, it will take an additional year or two to work through the secondary dynamics and achieve complete convergence to our longer-run projections.

Respondent 17: We estimate the unemployment rate to be at its longer-run level in the current quarter, and project that it will remain near that level over the rest of the forecast horizon. However, our scenario analysis of labor flows and the historical behavior of the unemployment rate in long expansions indicate that there is appreciable probability of the unemployment rate falling below our point estimate of its longer-run normal level at some time over the forecast horizon.

We assume that long-term inflation expectations will continue to be anchored at levels consistent with the FOMC longer-run objective. 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 the end of 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, the projections of the major economic variables for 2018 are at their longer-run values.

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

Respondent 3: N/A

Respondent 4: N/A

Respondent 5: N/A

Respondent 6: N/A

Respondent 7: N/A

Respondent 8: N/A

Respondent 9: N/A

Respondent 10: N/A

Respondent 11: N/A

Respondent 12: N/A

Respondent 13: N/A

Respondent 14: N/A

Respondent 15: Regarding real activity, in the period following the Global Financial Crisis, it has been difficult to understand whether very slow GDP growth is the new normal or a temporary effect of the crisis. Productivity growth has been very weak in recent years, but because we are not sure why, it is difficult to say whether this low productivity growth will persist or whether growth will soon revert to historical norms. At the same time, the global economic environment (described below) appears quite fragile and adds to the uncertainty.

Regarding inflation, persistently low inflation compensation even after a rebound in oil prices, along with downward movements in longer-run inflation expectations in household surveys, have increased uncertainty regarding the level of inflation expectations and therefore inflation going forward.

Respondent 16: Uncertainty about my projection for economic activity and inflation is similar to its average level over the past 20 years. Inflation remains anchored by stable longer-run inflation expectations at the FOMC's stated goal of 2 percent.

Respondent 17: 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 are roughly the same as in our March SEP submission. The probability intervals for the real activity forecasts remain wider than the SEP standard, as was the case in March; the emergence of conflicting signs from economic releases and the potential financial disruptions that could follow the British referendum on EU membership 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.

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: I continue to show a balanced risk weighting on GDP growth and the unemployment rate. I'm comfortable with a balanced risk weighting given that my projections have been on the conservative side of the professional consensus. However, I would note that my recent discussions with business contacts suggest there's been some softening in the outlook for the economy. I will be closely watching incoming data for evidence of a deterioration in growth.

Respondent 2: Risks for output and inflation are weighted to the downside because the effective lower bound limits the ability of monetary policy to respond to adverse shocks. The downward drift of inflation expectations presents an additional downside risk for inflation. For the unemployment rate, there is a countervailing risk that it will continue to fall more rapidly than expected for a given path for output, as it has over the past several years; therefore I see the risks to unemployment as broadly balanced.

Respondent 3: N/A

Respondent 4: N/A

Respondent 5: The unemployment rate has fallen at a more rapid rate than expected given relatively modest real GDP growth. I am anticipating a continued decline in the labor force participation rate, though there is uncertainty surrounding the path and the implied growth of the labor force. I see a risk that the unemployment rate falls further below my estimate of its longer-run average. Some measures of inflation expectations appear to be moving down slightly, which raises the risk of a timely return to our target.

Respondent 6: Our growth forecast is driven by solid household sector spending, which, in turn, is propelled importantly by further labor market gains and some overshooting of full employment. However, there is a risk that the recent softer labor-market data could be signaling less hiring momentum than we have assumed and, correspondingly, a less powerful self-reinforcing jobs-consumption cycle than what is in our forecast. Furthermore, our business contacts appear very cautious and quite attentive to any bad news they might hear. Accordingly, it is much easier to envision shocks that would result in businesses delaying hiring or capital expenditures than it is to identify developments that would cause them to spend more robustly than in our projection. In sum, we see the balance of risks to the GDP forecast as tilted to the downside and those to the unemployment rate projection as tilted to the upside.

The incoming wage and price data have generally been positive, and support our forecast that a return to target inflation may finally be underway. The downside risk to our projection for real activity imparts some downside risk to the inflation outlook. More important, however, is the fact that despite the better news on inflation, financial market inflation compensation and household inflation expectations remain persistently low. This highlights the risk that longer-run inflation expectations may have slipped below 2 percent; at a minimum, it points to fragility in inflation expectations. We do not see major offsetting upside risks to prices. As a result, we feel the risks to our inflation forecast remain tilted to the downside.

Respondent 7: Core PCE Inflation has been drifting up since the fourth quarter of last year. While part of the increase may prove transitory, we take the recent data as indicating that the risks around the inflation forecast are becoming more balanced. We continue to view the risks to the unemployment rate forecast as tilted to the downside. The unemployment rate at 4.7% is already at our estimate of the natural rate. Although it is likely that some of the most recent decline will be reversed in the near term, we expect GDP growth to be sufficient to push unemployment back down to that rate and below by the end of this year. With GDP growth projected above potential over the forecast horizon, there is the risk that the unemployment rate will fall by more than what we envisioning in our baseline forecast if higher flows into the labor force fail to materialize.

Respondent 8: N/A

Respondent 9: My modal forecast is generally little changed since March, however, the policy path associated with my forecast incorporates a slightly more gradual pace of rate increases. I continue to view the risks around my forecast as broadly balanced.

I expect financial market volatility to increase around the June 23 vote in the U.K. about whether to leave the European Union. If the U.K. votes to stay, I expect this volatility to be short-lived with no implication for the medium-run forecast. If the U.K. votes to exit, this volatility could be longer lasting; if it were to develop into a more general tightening of credit conditions, it would have implications for the outlook.

While payroll growth slowed in May, other labor market indicators do not suggest deterioration. With the economy at or near full employment, I would expect to see payroll growth slow from the pace seen earlier in the year. Thus, I do not view the disappointing May employment report as a significant downside risk.

Inflation risks are balanced. Oil prices remain low relative to their levels from several years ago but have been trending up, putting some upward pressure on recent inflation readings. The dollar has shown signs of stabilizing, which should help to reduce the downward pressure on inflation from imported goods prices. I view inflation expectations as being relatively stable, but the small downward movements in some of the survey measures bear watching. 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 and continued declines in unemployment have the potential to create upside risks to inflation over the medium run.

Risks to financial stability from very low interest rates appear to be contained so far. I expect them to remain so if we gradually normalize interest rates. However, a failure to do so increases these risks.

Respondent 10: N/A

Respondent 11: Three considerations lead me to believe that the risks to outlook for real activity are tilted to the downside. First, the disappointing May labor market report, together with the recent weakness in business investment, may signal that domestic demand is proving to be less resilient than I had thought. Second, although investor worries about global financial and economic conditions have diminished since the March meeting, some concerns (e.g., Brexit) remain. Finally, with interest rates still so low, monetary policy is less able to respond to adverse shocks than to favorable ones because of the ZLB. I also judge that the risks to the inflation outlook are tilted to the downside because of low readings on inflation compensation and some survey measures of expected inflation, as well as the downside risks to real activity.

Respondent 12: N/A

Respondent 13: We are answering this question variable by variable as they may be affected by important regime shifts.

With respect to GDP growth, the current productivity growth regime is low. A higher productivity growth regime is possible, but we see no reason to predict a switch at this time. Such a possible switch, however, leads us to weight to the upside more rapid GDP growth.

Concerning unemployment, the current unemployment rate of 4.7% is near the low for an economic expansion. If a recession were to occur, the unemployment rate would rise substantially. We have no compelling reason to predict a recession during the forecast horizon. However, such a possibility leads us to weight to the upside a higher unemployment rate.

For core PCE inflation, we place negligible weight on the prospects of Phillips Curve effects. There is, however, a risk that Phillips Curve effects reassert themselves and that inflation moves higher. It is also possible that inflation expectations, which are currently low, could drift higher and threaten to become unanchored. Thus, we see the risks on this variable to be weighted to the upside.

For PCE inflation, the risks are the same as for core PCE inflation. In addition, much depends on the behavior of energy and other commodity prices. Overall, we see the risks as weighted to the upside.

Respondent 14: N/A

Respondent 15: The global economic environment is quite fragile. Economic growth in advanced economies remains slow and heavily reliant on extraordinary amounts of unconventional monetary policy. In a number of important advanced economies (including the U.S.), the ability of conventional and unconventional monetary policies to adequately respond to adverse shocks appears constrained, while the willingness to use fiscal policy in these countries to respond to adverse developments also appears limited. At the same time, emerging market economies are experiencing a sharp slowing in growth that could have second round affects as households, businesses and financial institutions adjust to a slower pace of growth.

Persistently low inflation over the recovery, combined with signs of falling longer-run inflation expectations, suggest the risks to inflation are to the downside.

Respondent 16: Risks to economic activity appear broadly balanced. We have essentially reached our objective of maximum sustainable employment according to a variety of labor market measures and will likely persistently overshoot full employment over the next few years. The main uncertainty is by how much and for how long. Consumer spending remains on track for moderate growth this year, bolstered by a stronger labor market. Fiscal policy is set to be accommodative in the near term. There are upside risks to consumer and housing expenditure.

Growth in foreign economies appears to have firmed somewhat in recent months, but risks to the foreign outlook remain. For example, the possibility of Brexit poses some downside risk.

Although the effective lower bound constrains our ability to respond to adverse shocks, this constraint is becoming less important given that appropriate policy calls for steady increases in the target funds rate over the next two years.

Inflation risks are also balanced around an inflation path that is a little higher than in March. Ongoing reduction in economic slack supports the continued movement of inflation to 2 percent. Disinflationary pressures from abroad–namely previous strengthening of the dollar and declines in oil prices–are dissipating or even reversing (in the case of energy prices).

Respondent 17: Quantitative judgment based on the difference between the central projection and the expected value from the FRBNY forecast distribution. Given the continued softness in business fixed investment and its implications for future output, the very low levels of sovereign yields across the advanced foreign economies, and a still-weak foreign economic outlook, we see the risks to real

activity as weighted to the downside at all horizons. The notable slowdown in job growth over the past couple of months shown in the May labor market report also has increased the uncertainty around our forecast and contributes to the downward balance of risks to real activity. Our risk assessment also reflects the constrained policy space for reacting to negative shocks to real economic activity, as well as to other downside scenarios such as "Brexit" and risks associated with fundamental imbalances in China and other major economies.

Inflation risks are nearly balanced for 2016 – 17 and modestly skewed to the downside for 2018; we assess that they are overall roughly balanced. Core measures of inflation have firmed in the first half of the year and we project a slightly faster convergence to objective relative to the March projections; even though market-based longer-term inflation compensation and survey measures of longer-term household inflation expectations remain at fairly low levels, various measures of underlying inflation, including our in-house measures, as well as commodity and import prices have firmed a bit over the past several months, dissipating some of the downside risks to inflation since March.

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

3(b). Please describe the key factors informing your judgments regarding the appropriate path of the federal funds rate. If, in your projections for any year in the projection period, the unemployment rate for that year is close to or below your projection for its longer-run normal level and inflation for that year is close to or above 2 percent, and your assessment of the appropriate level of the federal funds rate for that year is still significantly below your assessment of its longer-run normal value, please describe the factor or factors that you anticipate will make the lower-than-normal funds rate appropriate. If you have 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: Weak longer-term U.S. growth prospects have combined with an expanded worldwide demand for safe assets and a weak and uncertain economic and political outlook abroad to put downward pressure on the neutral real federal funds rate. The implication is that monetary policy is substantially less accommodative at current policy settings than might have been expected.

Moreover, global financial integration means that financial-market conditions are likely to be quite sensitive to increases in the level of U.S. real short-term rates relative to foreign rates. As long as the foreign economic outlook remains subdued, a shallow path for U.S. interest rates is likely to be appropriate.

A lower and flatter policy path keeps us closer to the zero bound for longer. Downside risks to the outlook may, therefore, have increased–especially since there is little chance of fiscal stimulus to counter unexpected weakness in demand, particularly in this election year.

On the other hand, labor-market slack continues to diminish, and core inflation measures continue to drift upward. If international uncertainties were to suddenly abate, we could find ourselves very quickly overshooting our full-employment and price-stability objectives. I view the risk of this sort of shock as somewhat less likely: International weakness and uncertainties will be with us for an extended period.

I've shifted my estimate of the longer-run normal policy rate slightly downward, from 3.25 to 3.0 percent, based on my sense that longer-run real growth prospects have been adversely affected by aging demographics in developed countries, high levels of debt to GDP in these countries, and sluggish trend productivity growth. In this context, I believe that global demand for safe assets will remain elevated for quite a while.

Respondent 2: The labor market, as measured by the unemployment rate, is essentially back to normal. But secondary measures of slack, such as the fraction of the labor force working part time for economic reasons, remain elevated, and wage growth remains subdued. In addition, the neutral funds rate is expected to rise from its currently low level, but that adjustment is likely to take several years. As a result, it is appropriate to raise rates gradually.

Respondent 3: My forecast is that the unemployment rate will be below its long-run level and that inflation will reach 2 percent in 2018, while the appropriate level of the federal funds rate will still

be slightly below its long-run level. In my view, policy will need to remain accommodative to ensure that inflation remains near the FOMC's objective over the longer-term in the face of weak demand.

Respondent 4: The low level of the federal funds rate has been necessary to move inflation and unemployment back toward our targets. This is likely because r* is temporarily depressed by the low rates of productivity and other factors. Those factors are likely to dissipate only gradually, requiring a low federal funds rate in order to deliver an appropriate amount of accommodation.

Respondent 5: 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, declining labor force participation, and inflation that has been running below target for some time.

Respondent 6: Our assumed appropriate policy path has the funds rate increasing 25 bps once in 2016, 3 times in 2017, and 4 times in 2018. We also assume the Committee strongly communicates that future rate hikes will depend on increasing confidence in achieving its employment and inflation objectives. The weak first-quarter GDP data and slowdown in the labor market this spring are reminders that the economy still faces substantial headwinds and that the equilibrium real interest rate is still quite low. The current level of the funds rate likely is providing only a modicum of accommodation. We assume, however, that communication of a state-dependent path for future rates, and the likely shallow nature of this path, can deliver the degree of accommodation necessary to achieve our baseline projections for output and inflation. Furthermore, policy communication should indicate that we are aiming to achieve our inflation target symmetrically, a strategy which, by definition, calls for a policy path that allows for a strong probability of modestly overshooting 2 percent inflation. Furthermore, risk management considerations continue to argue in favor of low rates in order to provide an extra boost to aggregate demand as a bu er against future downside shocks to activity and the asymmetric risks we see to the inflation forecast. Indeed, the continued low readings on financial market inflation compensation and survey measures of expectations suggest that we should be putting more than trivial weight on this latter risk.

Respondent 7: We have revised our estimate of the longer-run normal value of the federal funds rate further down, from 3.25 to 3.0 percent. The revision stems from the fact that current estimates of the natural rate of interest continue to remain at low levels.

Respondent 8: My projection for the federal funds rate is informed by a simple policy rule with a gradual rise in the short-run equilibrium rate, similar to that used in the current Tealbook. I lowered my federal funds rate path taking into account a 25 basis point reduction in the long-run value of the federal funds rate and elevated uncertainty regarding the underlying pace of potential GDP growth. My estimate of the longer-run value of the federal funds rate was reduced primarily in response to my lower assumed growth rate of potential GDP.

Respondent 9: The trajectory of my forecast is similar to my March forecast but I have flattened my policy path somewhat. I project that growth will be slightly above my estimate of the longer run trend. I believe that the economy is basically at our goal of full employment. While certain measures of underemployment, like the number of part-time workers who would rather work full-time, remain at higher levels than before the recession, I believe that targeted programs rather than monetary policy would be more effective in addressing those issues. I expect growth to be strong enough to lead to further gains in employment and declines in the unemployment rate, although I expect the pace of improvement in both to slow. In this scenario, labor compensation measures will eventually firm, in line with anecdotal reports of increasing wage pressures across a range of skill groups. I expect

the effects on inflation of previous declines in oil prices and the strengthening of the dollar to fade over time; the recent rebound in oil prices has put upward pressure on headline inflation. I expect inflation expectations to remain reasonably stable, but am monitoring the recent softer readings. Reasonably stable inflation expectations coupled with continued improvement in labor markets and ongoing economic growth make me reasonably confident that inflation will move back to our goal of 2 percent over the medium run. I project this to be by the end of 2017.

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. Given the outlook, I believe it will be appropriate for the FOMC to move rates up gradually throughout the forecast horizon, with the federal funds rate at the end of 2018 near, but not quite back to, its longer-run level of 3.25 percent. Forestalling rate increases for too long for fear of risks to and uncertainty around the outlook increases the risks to financial stability and has the potential to require sharper rate increases in the future, which poses risks to the outlook.

Respondent 10: At least so long as growth remains no better than slightly above trend and inflation is not fairly convincingly moving towards 2% a key consideration in determining the appropriate path of monetary policy remains the asymmetric nature of the Committee's range of policy instruments. The nearly certain need for resort to unconventional policy instruments in the event that an adverse shock were to threaten the continued moderation expansion – or in the event growth decelerates significantly even in the absence of such a shock – argues strongly for maintaining current levels of accommodation so as to increase, even if only marginally, the economy's resilience to such a shock. With an external environment that is still somewhat disinflationary, with more downside than upside risks to growth abroad, with very accommodative monetary policies in most other mature economies, and with the resulting risk of another period of dollar strengthening as rates in the U.S. rise, considerable caution is warranted.

The very disappointing May jobs report, though potentially an anomaly, is an additional reason for caution. Even if subsequent reports reveal a steadier pace of job growth and improvement in other labor market indicators, the May report at the least suggests that the labor market is not roaring ahead, and that there would be ample time to react in a measured way if and as further tightening leads to the prospect of inflation rising above target in a non-transitory fashion.

Respondent 11: Several factors continue to inform my judgment that, given the conditions of my baseline forecast, the federal funds rate should rise only gradually and will likely need to remain well below its longer-run value for a number of years. First, monetary policy needs to remain accommodative for some time longer in order to promote further labor market improvement. Such improvement is desirable not only because some slack still remains – importantly, I view the May decline in the unemployment rate as likely to be reversed in coming reports – but also to speed the return to 2 percent inflation. Second, the neutral federal funds rate is quite low at the moment but I anticipate that it will rise over time as various headwinds slowly fade and QE-related downward pressure on term premiums ebbs. (The fading of headwinds is assumed to occur more slowly in my current projection than it did in March.) And third, given that our ability to provide accommodation in the event of a downturn is currently much less than our ability to tighten should conditions turn out to unexpectedly strong, it is appropriate to proceed cautiously when tightening.

Respondent 12: 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. In my view a gradual path of the funds rate promotes economic and financial stability.

Respondent 13: We think all variables have essentially converged to a regime characterized by low productivity growth and a low real interest rate on short-term government debt. Because there are multiple possible medium term outcomes, we cannot provide a single set of longer-run projections.

Respondent 14: I believe that it is risky to keep the real funds rate well below zero with the unemployment rate below the natural rate, real GDP growing at potential, and inflation increasing. Also, we need to begin to reduce the size of our balance sheet in the very near future.

Respondent 15: The neutral rate is currently very low, and I expect it to rise only gradually to a longer-run level that is also quite low by historical standards. In addition, downside risks to activity and inflation make the appropriate policy path lower over the medium term than it would be if risks were balanced.

In response to extremely weak readings on productivity growth in recent years, I lowered my estimate of the longer-run level of the federal funds rate by 25 basis points.

Respondent 16: The labor market is essentially at full employment according to various measures of slack. Labor markets will continue to tighten over the next year–with the unemployment rate falling well below its natural rate–before gradually returning to full employment. On inflation, transitory factors have influenced previous inflation readings. Since then, there has been some firming in underlying price pressures. I expect inflation to rise gradually and reach our 2 percent objective by the end of 2017, and to overshoot by one-tenth during 2018, before falling back to 2 percent in 2019. Underpinning this path is my view that the economy will continue to improve, causing it to run slightly above its potential. Overshooting in unemployment and output, paired with fading effects from the dollar appreciation and a drop in oil prices will push inflation up over the next year.

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.

My fed funds path through the end of 2016 remains flatter than some simple rules would suggest. This is based on the following: The economy continues to face headwinds in 2016, including weak growth abroad, and lingering effects of the recent appreciation of the dollar. In addition, I have revised down my estimate of the economy's potential growth rate, which I expect to be lower in the long run. These factors continue to depress both the short- and the long-term equilibrium real interest rate.

Respondent 17: The crucial factors behind our assessment of the appropriate path for monetary policy are the current state of the economy, our central economic outlook, and our balance of risks around the central outlook. The pace of normalization also will depend on how overall financial conditions respond to our policy actions.

Currently, despite some firming in our inflation outlook, the still-significant uncertainty surrounding the outlook, the continued downside risks to the outlook, and a lower projected path of the short-term neutral rate all point to a slightly more gradual pace of normalization than in our March submission in order to support our modal economic projections.

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 1/4 - 1 1/2%, and 2 – 2 1/4% respectively; the projected ranges for 2017 and 2018 are each 25bps below the corresponding ranges in our March submission. We believe this slight downward adjustment of the policy path is necessary to provide some additional insurance against the restraining forces on the U.S. economy as well as to account for the uncertainty about the neutral rate. Importantly, a flatter policy path is an appropriate response to the loosening of the policy stance in the advanced foreign economies in order to prevent an appreciation of the dollar that would unduly tighten financial conditions. Easier monetary policy globally, coupled with higher commodity prices, suggests a somewhat faster convergence of inflation to objective, which we see as appropriate.

Another factor informing our assessment of the appropriate policy path is our estimate of the equilibrium real short-term interest rate over the longer run (r*), which is now in the range of 1/2 - 2 1/2%. We have lowered the upper part of the range by 50 bps because of more evidence of greater risk aversion and a desire for higher savings globally, which suggests that it is very unlikely that the equilibrium real short-term rate could be as high as 3% over the next 5-6 years. Adding the objective for inflation (2%) gives our estimated range for the nominal equilibrium rate as 2 1/2 - 4 1/2%. We assess that the equilibrium rate is likely to be in the lower half of the latter range due to the combination of subdued global growth and low longer-term sovereign yields over the last few years that we expect to continue. These factors lead to our point estimate of 3% in the response to question 3(a).

We assume that reinvestment continues until economic and financial conditions indicate that the exit from the effective 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 2018.

Forecast Narratives

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

Respondent 1: My projections envision the U.S. economy making a successful transition from above-trend growth to sustainable growth. Such transitions have always been difficult, and given greater international connectedness, divergent and uncertain global economic trends promise to make the current transition more than usually challenging for Federal Reserve policymakers.

Because of the lags in inflation's response to the real economy, and in the response of the real economy to monetary policy, it is essential that the process of removing policy accommodation begin before full employment and price stability are fully achieved. The main difficulty will be accurately assessing the degree of accommodation implied by a given funds-rate path.

Respondent 2: The improvement in secondary measures of labor market slack we had seen earlier has slowed. Because room remains to further reduce slack, inflation continues to run low and it is likely to be several years before it returns to target. The continued low level of inflation, the benefits to the economy of allowing further improvement in the labor market, weakness in foreign economies, and potential risks to the US economy from international policy divergence all suggest a gradual approach to normalizing the stance of monetary policy.

Respondent 3: Weak global demand, weak business fixed investment, and low productivity growth should all mean that GDP growth will continue to remain close to 2 percent over the forecast horizon. While I do not believe that momentum in employment growth has sharply decelerated, the recent monthly employment reports have generated increased uncertainty about what trend employment growth and underlying demand will be going forward.

Respondent 4: Belief that the real economy, and expected technical progress, will do better as we approach our policy targets.

Respondent 5: I expect output growth to accelerate from the below-trend pace over the last two quarters as the headwinds that have been depressing growth recede, Over the medium term, output grows at close to my longer-run trend pace of 2.2 percent. I do not take much signal from the recent weak labor market data and expect that employment growth will rebound and the unemployment rate will edge down as the labor force participation rate declines further. Headline inflation has been held down by falling energy prices, but as oil prices stabilize and dollar appreciation wanes, inflation will rise and run at a pace close to the Committee's 2 percent target in 2017 and 2018. With inflation and output growth running near my longer-term trends, monetary policy becomes less accommodative over the forecast horizon, and the federal funds rate reaches 2.9 percent by the end of 2018.

Respondent 6: Accommodative monetary policy, stable financial conditions, a healthy labor market, and improved household and business balance sheets should allow for solid consumer-led growth in domestic private demand. In addition, we assume little change in the dollar going forward, and so project that the drag from net exports will wane as we move through the projection period.

The factors supporting activity are sufficient to generate growth moderately above potential over the next three years. We assume that resource gaps will be closed by late this year; although the unemployment rate has already fallen a bit below our estimate of the current natural rate, we think it will take a bit longer to close the gaps we still see remaining in some other labor market indicators. We assume growth will be strong enough to push the unemployment rate down to 4.5 percent by the

end of the projection period, about a quarter percentage point below our estimate of the natural rate then.

As it has for some time, our forecast for rising inflation relies on reductions (and some overshooting) in resource slack, stabilization of the dollar, some upward movement in energy prices, and a lift from inflationary expectations firmly established at 2 percent. All but the latter seem to be in train now. We assume that a quite shallow path for policy normalization and a strongly communicated commitment to a symmetric 2 percent inflation target will solidify inflation expectations and allow them to assert an upward pull on actual inflation. If this does not occur, then we do not see the upward force from other factors as being adequate to bring inflation close to target over the forecast period.

As to sources of uncertainty, international developments, their influence on financial markets, and the spillovers to household and business confidence are likely to cloud the forecast for growth for some time to come. With regard to inflation, discerning the linkages between Fed policy (including communications), inflation expectations, and actual inflation are key uncertainties. Risks to the forecasts were discussed in the risks and uncertainty section.

Respondent 7: Information about economic activity so far this year has been somewhat mixed, with labor market and spending data providing conflicting signals. The conflicting signals could be due to the presence of residual seasonality in the GDP series, which works in the direction of understating growth in the first quarter of the calendar year, and overstating it in the remaining quarters. Still, abstracting from potential issues with the quarterly pattern of GDP growth as currently reported by the BEA, the pace of economic activity appears to be roughly in line with expectations, with growth modestly above potential. Monthly gains in payrolls have declined somewhat recently, but on average remain above our estimate of trend growth in the labor force. Fundamentals for consumption are favorable, and recent data are consistent with household spending stepping up noticeably from the rather subdued pace witnessed earlier this year. Business investment has been disappointing, but the recent decline in corporate bond spreads after the increase seen in 2015 and earlier this year should support modest additions to capital going forward. The global economy remains a source of potential weakness, with the possibility of a sharper slowdown in China and the risks associated with the U.K. referendum later this month on staying or leaving the European Union. Nevertheless, foreign GDP growth so far this year has been in line with expectations.

With the stance of monetary policy remaining accommodative, we continue to project growth slightly above potential over the forecast horizon. This pace of growth should yield further declines in the unemployment rate. In our baseline forecast, the cyclical improvement in labor force participation coupled with a gradual removal of policy accommodation generate only a modest overshooting of full employment by the end of 2018. The possibility that the unemployment rate will fall by more than what we are currently envisioning is of particular concern. Past experience suggests that the more the economy overshoots full employment, the higher the likelihood that the economy will fall into a recession as monetary policy tightens. While monetary policy should probe for better labor market outcomes, the potential costs of this strategy should not be ignored. The projected path for the federal funds rate in this forecast provides the opportunity to probe in a cautious manner, but a faster pace of tightening will be required should labor market pressures build more rapidly than expected. With the unemployment rate projected to stay close to its natural level, inflation eventually reaches 2 percent.

We view the risks to the growth outlook as roughly balanced. As already mentioned, downside risks emanating from abroad are still present. The expected tightening of U.S. monetary policy could also entail a stronger dollar than what we are currently envisioning. On the upside, the increase in the pace of growth of final sales to domestic purchasers could signal a stronger-than-expected acceleration in activity. On the inflation side, while continue to see risks associated with the possibility that long-run inflation expectations are anchored at a level below the 2 percent target, we take the recent progress towards the inflation target as signaling that the risks around the inflation outlook are becoming more balanced.

Respondent 8: My outlook consists of modest above-trend growth over the next few years, a further, small reduction of labor market slack, and inflation that converges to target by the end of next year.

Growth over the medium term is primarily driven by a sustained pace of consumption growth and a strengthening in investment growth. The growth of domestic demand is supported by continued firming in the labor market and growth of household income.

The risks to my growth outlook remain weighted to the downside. My current outlook is predicated on moderately stronger growth in business fixed investment, an assumption somewhat at odds with recent trends. A recent slowing in jobs growth and a softening in corporate profits also point to more near-term weakness in the growth outlook than I am currently projecting.

The risks to my inflation outlook are also tilted to the downside, owing mostly to the potential for slower growth in the economy.

Respondent 9: The fundamentals supporting the expansion remain favorable, including highly accommodative monetary policy, household balance sheets that have improved greatly since the recession, continued improvement in labor markets, and low oil prices. Consistent with the data, business contacts report further tightening in labor markets, more widespread difficulties in finding qualified workers, and some increased wage pressures across a range of skill groups and occupations. While global growth prospects remain subdued, monetary policy globally is highly accommodative, which should promote stronger growth and higher inflation rates abroad. Overall, I expect growth to be at or slightly above trend in the U.S., which will support further improvement in labor markets. With the labor market already near full employment, I expect a slowing in the pace of labor market gains compared to last year and earlier this year. By the end of 2018, I project that the economy will be near its steady state.

Inflation rates have been gradually moving up as the effects of past declines in oil and commodity prices, and appreciation of the dollar, work themselves through. This path is consistent with what the FOMC has been expecting. I continue to monitor inflation expectations, especially in light of the recent softer readings. At this point, I judge inflation expectations as reasonably anchored. If this continues, then continued output growth and improvement in labor markets, and stabilizing oil prices and the dollar, are consistent with inflation moving back to the 2 percent longer-run objective by the end of 2017. As the expansion continues and labor markets continue to improve, I expect wage growth will pick up as well; anecdotal information suggests this is beginning to occur.

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 10: My baseline expectations have slipped just a bit since the March SEP – now I would characterize that baseline expectation as for growth right around trend for this year and next, with somewhat slower improvement in labor markets. The more significant issue is around risks, which I now find even more weighted to the downside. Putting aside any potential risk from Brexit, external risks seem still moderately to the downside, though less in the next quarter or two than thereafter. The change is in my assessment of domestic risks, which in the March SEP I had regarded as roughly balanced. While I continue to believe there are some upside domestic risks, recent developments in the labor market and with business investment suggest that there is some increased possibility of more slowing of growth than in my baseline forecast.

Respondent 11: 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 2019.

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 particularly concerned by risks emanating from abroad. I am also concerned that the return to 2 percent inflation may prove to be slower than I anticipate, reflecting several risks–the potential for further dollar appreciation and declines in oil prices if global growth worsens; the possibility that long-run inflation expectations may be starting to slip; and the possibility that labor market slack is somewhat greater than I estimate.

Respondent 12: My forecast for real GDP growth is characterized by above-trend growth in 2017 and 2018. Real GDP growth is supported by income growth from rising employment and wages, past gains in household wealth, and accommodative financing conditions. Growth is likely to slow over time as the economy operates at full capacity. I see the unemployment gap as essentially closed after the rapid reduction in economic slack in the past few years. My inflation outlook projects an inflation rate near 2 percent from 2016 onwards, an acceleration from the inflation rate in 2015 that reflects improving labor market conditions and the dissipating effects of past dollar appreciation and lower energy prices.

I view uncertainty surrounding my projection of the unemployment rate as higher than levels of uncertainty over the past 20 years, primarily due to the unusual volatility in the labor force participation rate. I also view uncertainty around my projection of the PCE inflation rate as higher than levels of uncertainty over the past 20 years, reflecting the volatility in oil prices in recent years.

I see the risks to economic growth, inflation, and unemployment as broadly balanced. Downside risks for real GDP growth, stemming from concerns about corporate profits and the pace of growth of productivity and the labor force, are roughly offset by the strength of households' balance sheets, rising wages, consumer confidence, and the strength of residential investment, which represent upside risks for consumer spending and housing activity. Regarding inflation risks, while the potential for slippage of longer-run inflation expectations is a downside risk, an economy operating at full employment with near-zero interest rates and the potential for faster-than-expected wage growth are upside risks.

Respondent 13: This forecast departs from previous forecasts by adopting a regime-based conception of medium and long-term outcomes for the U.S. economy. In our conception, there are multiple such regimes, and we appear to have converged to one of them. The current regime is viewed as persistent, and so we see no reason to forecast an exit from the current regime over the forecast horizon. Monetary policy is regime-dependent, and can be viewed as optimal given the current regime. Longer term, the economy may visit some of the other regimes, such as ones associated with higher productivity growth, a higher real return to short-term government debt, or recession. If the economy transitions to any of these states, all variables may be affected and, in particular, the optimal, regime-dependent policy rate would require adjustment. However, we have no way of predicting when these transitions may occur, and so we forecast that we will remain in the current regime over the forecast horizon.

Respondent 14: Real GDP per worker has risen by slightly less than 1 percent annually over the last 10 years; my projection is for slightly faster growth in the medium term. Population growth for ages 16 to 64 is projected to be 0.5 percent annually. These supply-side factors yield longer-term growth of 1 3/4 percent per year. Strong consumer spending and residential investment, along with modest growth in business investment, result in growth being slightly faster than trend in 2016 and 2017.

Respondent 15: N/A

Respondent 16: Recovery from the housing collapse and financial crisis has been a slow process. Nonetheless, much of the healing process has already taken place. The ongoing improvement in financial conditions is supportive of a healthy pace of consumer spending growth. Ongoing declines in unemployment and broader strength in the labor market, including some pick up in wage and disposable income growth should support solid consumption growth going forward.

The strong relative performance of the U.S. economy over the past year, the subsequent monetary easing in Europe and elsewhere, and the depreciation of the renminbi resulted in a sharp appreciation of the dollar last year. This appreciation has been a drag on net exports and GDP growth. In recent months, the dollar appreciation has subsided, which should mitigate that source of drag to GDP growth. In addition, financial market volatility over the past year has calmed with equities growing in recent months and interest rate spreads falling.

In this environment, I expect the economic recovery to proceed at a moderate pace. Output and unemployment gaps were essentially closed by the end of 2015. With substantial monetary stimulus still at play, I expect these aggregate indicators to overshoot in the coming year, before reverting back to potential in 2019. This overshooting, along with the dissipating effects from falling energy prices and a rising dollar should lead to faster inflation over the next year. Inflation reaches the FOMC's 2 percent target by the end of 2017 and slightly exceeds it in 2018. Well-anchored inflation expectations and a fed funds rate above its long-run value by the end of 2018 will bring the economy back to full employment in 2019 and push inflation back down to our objective of 2 percent.

Respondent 17: Despite the disappointing May employment report, we have kept our modal forecast essentially unchanged from that in March. In many respects, the underlying fundamentals have improved since March. Growth of real disposable income has been quite strong and equity values are near the highs of May 2015. Credit spreads have returned close to the levels of last August. The broad trade-weighted dollar is off its peak from early in the year, and the adverse impact of dollar appreciation that began in mid-2014 is likely waning. Indeed, we are projecting a modest increase of real exports in 2016Q2 following declines over the past two quarters. Beyond these improved financial conditions, household and business balance sheets are in good shape, fiscal policy is slightly stimulative, and monetary policy is still very accommodative.

From around 1.6% (annual rate) over 2016H1, we see real GDP growth of around 2 1/2% over 2016H2. This results in growth of 2.1% (Q4/Q4) for 2016, the same as the March projection. The main engine of growth will continue to be consumer spending, which we expect to increase 2 3/4% (annual rate) over 2016H2, essentially the same as the past 1 1/2 years. The personal saving rate is expected to remain essentially unchanged around 5 1/2%.

We anticipate some modest bounce back in business fixed investment over 2016H2 after its recent weakness. Oil prices (WTI) have firmed to around $50 per barrel. Some weekly surveys suggest that the active rig count has finally hit a bottom. In addition, we expect the inventory correction to be over by 2016H2, which should help firm manufacturing production and lead to some increase in the capacity utilization rate. The net export growth contribution is expected to remain significantly negative (around -0.5 percentage points), despite resumed growth of exports, due to faster growth of imports as the domestic inventory correction comes to an end.

Finally, the housing sector should provide some impetus to growth: despite the loss of upward momentum over the past six months, housing starts are likely on a gradual upward trend, particularly given the low level of inventories and continued low mortgage rates. In addition, spending on improvements to the existing housing stock has been growing strongly since mid-2015.

The roughly 2% growth predicted for 2016 is slightly above our estimate of the economy's potential growth rate–around 1 3/4%. However, we expect productivity growth to pick up from its recent very

low levels, and so the unemployment rate is expected to remain near its May level over the rest of 2016.

Projected oil prices through the end of 2017 are higher in this submission than in March. However, the bulk of that revision is in the very near term, and we still anticipate a gradual increase over 2016H2 and 2017. As a result, the rate of increase of the overall PCE deflator in 2016 has been boosted to 1.4% (Q4/Q4) from 1.0% in March. The projected core PCE inflation also has been raised to 1.7% (Q4/Q4) from 1.5% in March.

For 2017 we expect growth of real GDP to slow to around our estimate of potential growth due to a combination of the aging of the business cycle and the moderate tightening of financial conditions associated with further normalization of monetary policy. The unemployment rate is expected to remain close to our estimate of its longer-run normal rate. Underlying that path, we assume a slight rise in the labor force participation rate over 2016-17. Productivity growth is assumed to be somewhat below our estimate of its longer term trend (1% to 1 1/4%): consequently, we project a gradual rise in the compensation share of national income and a gradual decline in the corporate profit share. Core PCE inflation is expected to edge gradually higher, reaching 1.9% for all of 2017, reflecting reduced slack, relatively stable energy prices, a declining impulse from past dollar appreciation, and well-anchored inflation expectations. With economic slack largely dissipated and inflation near objective by the end of 2017, real growth, unemployment, and inflation are anticipated to remain near their longer-run levels in 2018.

Forecast Narratives (continued)

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

Respondent 1: I've adjusted the within-year timing of 2016 GDP growth without changing average growth for the year. I've modestly increased my 2016 core-PCE inflation projection based on stronger-than-expected recent monthly data. My views on policy are shaped by the backdrop of secular concerns regarding overcapacity outside the U.S., high ratios of debt to GDP, the long-term nature and difficulty of China's transition to a more service and consumer-based economy, and aging demographics in advanced economies. I have somewhat hardened my view that these issues will continue to be transmitted through bouts of tighter financial conditions. Accordingly, the funds-rate path that I regard as most likely to be appropriate is slightly lower than before.

Respondent 2: Incoming data caused me to mark down GDP growth in 2016 and near-term inflation has run a bit higher than I expected. Because of the recent declines in the labor force participation rate, I continue to expect workers to be drawn back into the workforce, but at a slightly lower rate.

Respondent 3: My forecast is essentially unchanged since the previous SEP. With momentum appearing to have slowed to some extent in the labor market, I have slightly marked down the policy path needed to support the economy, and I have also slightly marked down my expected long-run level of appropriate monetary policy rates.

Respondent 4: Forecasts for key variables are little changed but monetary policy required to be easier to attain that result.

Respondent 5: My forecast for 2016 has lower output growth and higher inflation than last time based on the data released since the March SEP. As well, I have a somewhat more gradual pace of normalization based on incoming data that has been weaker than I expected.

Respondent 6: First-quarter growth was a percentage point weaker than we were expecting in March. We were particularly surprised by the sizable decline in business capital spending. We assume that the first-quarter weakness will largely be transitory; indeed, we read the limited second-quarter data as consistent with a rebound in consumer spending and a small gain in BFI. Supporting this recovery, financial market conditions (credit spreads, market volatility) have improved since March, apparently in part due to the FOMC's communication of a less restrictive policy path through the change in the SEP policy projections between December and March. We are concerned by the surprising weakness in the May labor market report. At this point, we are discounting the signal from these data to some degree, in part because our business contacts are not reporting a marked softening in the labor market. In the end, we did not change our forecast for GDP growth over the remainder of this year, and the 1/4 percentage point downward revision from March to our 2016 Q4-toQ4 GDP forecasts is entirely reflective of our first-quarter miss. We have edged down our forecasts for GDP growth in 2017 and 2018 by a tenth in each year, to 2.2 percent. This reflects some small adjustments to potential output growth we made in response to the MFP data released at the end of March.

With regard to prices, the incoming data on core PCE inflation were broadly in line with our expectations. Indeed, with core inflation up to 1.6 percent year-over-year and signs that tighter labor markets are feeding into higher compensation growth and unit labor costs, we believe we are starting to see some of the dynamics that will gradually move inflation back to target. However, the failure of financial market inflation compensation and survey measures of inflation expectations to solidify during a period of higher actual inflation highlighted the downside risks to the inflation forecast and

argued in favor of an adjustment to our policy assumptions. To convince markets of our resolve to reach a symmetric 2 percent inflation target–and thus insure an upward pull on actual inflation from expectations–we believe the Committee needs to communicate a somewhat more accommodative policy path than it did in March. The uncertainty generated by the May labor market report was a second factor supporting a less aggressive path for policy. Accordingly, in our current projection we essentially have one fewer rate increase in each of 2016, 2017 and 2018 than we did in March. With this policy path, we believe we will be able to reach the same core inflation forecast as we had in our last SEP, with core reaching 1.9 percent by the end of the projection period. The rise in energy prices since March led us to revise our projection for total inflation in 2016 up 0.2 percentage point to 1.4 percent; we left our projections for total inflation in 2017 and 2018 at our last SEP submission (1.7 and 1.9 percent, respectively).

Respondent 7: Changes to real outlook have been minor. The projected path for the unemployment rate has been revised down marginally. Interest rates have been lower than expected, but their impact on activity is being offset by a downward revision to the equilibrium federal funds rate. Such a revision also implies that the projected path of the federal funds rate is on a somewhat lower trajectory than previously envisioned. The inflation outlook has not changed materially.

Respondent 8: I lowered my unemployment rate projection 0.2 percentage point over the forecast horizon and have adjusted my assumption for the natural rate of unemployment by a similar amount.

I lowered my growth forecast by 0.2 percentage point in 2017 and 0.1 percentage point over the longer-term mostly in response to an assumption of slower productivity growth.

My PCE inflation and core inflation projections are unchanged from March.

Respondent 9: My modal forecast is generally little changed since March, however, the policy path associated with my forecast incorporates a slightly more gradual pace of rate increases. I continue to view the risks around my forecast as broadly balanced.

I modestly reduced my forecast for growth in 2016 to account for the weak first quarter, but the trajectory remains the same: I expect growth to be slightly above trend this year and next, which will support continued growth in payrolls, albeit at a slower pace than last year. I view inflation as being on a gradual upward trajectory toward our 2 percent objective.

I continue to believe a gradual upward path for the federal funds rate is appropriate monetary policy, which balances the risks to the forecast and takes into account uncertainty around the forecast. My slightly shallower path compared to my March projection recognizes the slightly weaker growth forecast for 2016.

Respondent 10: See answer to 4(a).

Respondent 11: My outlook for real activity and inflation is little changed from last time, but I anticipate that the return to full employment and 2 percent inflation over the next couple of years will require a slightly lower path for the federal funds rate.

Respondent 12: I have revised down my forecast for real GDP growth in the first half of 2016 based on the incoming data. I have also reduced my forecast for real GDP growth in 2017 modestly, though I continue to expect above-trend growth.

Respondent 13: The forecast here represents a conceptual change relative to previous forecasts. Medium and longer-term outcomes for the economy are viewed as regimes. There are multiple possible regimes, but no concept of a single, long-run steady state. Optimal monetary policy is regime-dependent. It is a good time to begin thinking in terms of regimes because output growth, inflation,

and unemployment are all arguably close to values that are likely to persist over the forecast horizon. Numerically, forecast values are close to previous submissions for output growth, unemployment, and inflation, but the concept of regime-dependent monetary policy means that the implied policy rate path is flat.

Respondent 14: In response to recent data on business investment and payroll employment, I have lowered my real GDP forecast slightly. In response to the latest inflation data, I have raised my forecast for inflation this year slightly.

Respondent 15: N/A

Respondent 16: Since March, I have reduced my unemployment path, largely reflecting incoming data. I now expect the unemployment rate to bottom out at 4-1/2 percent by the end of this year before gradually rising back to its 5 percent natural rate over subsequent years. I discount the weak GDP data for Q1 because of residual seasonality, but weakness in business investment spending and construction activity led me to lower my projection of GDP growth for 2016. With continuing disappointment about productivity growth, I have also lowered potential growth in both the near- and the longer-term.

My inflation projection is slightly higher owing to firmer data, higher energy prices and my expectation of some overshooting for unemployment and GDP. As a result, my projection of core inflation is one-tenth higher for 2016, 2017 and 2018.

Respondent 17: Our macroeconomic projections relative to those of March are broadly unchanged. Real GDP growth is anticipated to be the same as in the March SEP projections for the whole forecast horizon. For 2016, there has been a shift in the composition of GDP growth: relative to March, we now see a significantly slower growth of fixed investment spending, which is offset by a smaller projected drag from net exports. There are no significant changes in the composition in subsequent years. Overall and core inflation at near-term horizons are slightly higher reflecting the rebound in oil prices since the March FOMC meeting; however, we see little change in the factors behind our medium-term inflation projection. As in March, convergence of inflation to the longer-term objective is expected by 2018. As noted and explained in the response to 3(b), we judge that a lower path of the policy rate is necessary to support these projections.

Forecast Narratives (continued)

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

Respondent 1: There are several notable differences. First, I see the unemployment rate overshooting the longer-run sustainable unemployment rate by less than is projected in the Tealbook. Allowing the unemployment rate to fall 0.7 percentage points below the natural rate would risk the buildup of dangerous imbalances. Second, because I am relatively conservative in my views on the appropriate path for the unemployment rate, I project somewhat slower 2017 and 2018 GDP growth than does the Tealbook. Finally, I see a more rapid return to our 2-percent inflation objective than does the Tealbook. In my view, the longer-term inflation expectations relevant to wage and price setting remain anchored at 2 percent.

Respondent 2: My forecast for economic activity and inflation is broadly similar to the Tealbook except that I believe the improving labor market will continue to draw workers back into the labor force, leading to more progress on the labor force participation rate than the unemployment rate. This would lead to less upward movement for wages and prices if monetary policy were to follow the path assumed in the Tealbook. Removing monetary policy more gradually, as in my projection, would produce a path for inflation similar to the Tealbook.

Respondent 3: I expect the unemployment rate to fall further this year than in the Teal Book, as I do not expect the unemployment rate to bounce back up from its May reading and expect employment in the household survey to run higher than is implicit in the staff forecast. I continue to expect inflation in 2018 to be close to 2 percent, slightly higher than in the Teal Book.

Respondent 4: None.

Respondent 5: NA

Respondent 6: Our Federal Funds path is 20 bps below the Tealbook in 2016 and about 35 bps below in 2017 and 2018.

Our projection for GDP growth is nearly identical to the Tealbook over the forecast period. However, our assumptions about potential output growth over the last few years, as well as over the projection period, are somewhat higher. Furthermore, we see the natural rate of unemployment trending down from 5 percent today to 4.8 percent at the end of 2018, in contrast to the Tealbook's constant 5 percent assumption. We also think that the gap today between actual and trend labor force participation is somewhat larger and that it will not close until the unemployment rate is further below the natural rate. Taken together, this means our forecast for activity does not overshoot potential output to as great of a degree as in the Tealbook. Nonetheless, our outlook for inflation is similar, as we feel our more accommodative path for monetary policy will be successful at buoying inflationary expectations, firming the inflationary attractor and therefore providing a larger boost to actual inflation.

Respondent 7: The Tealbook's estimate of the natural rate of unemployment, at 5.0 percent, is higher than our estimate, which currently stands at 4.7 percent. The Tealbook forecast implies a more pronounced overshooting of full employment than our forecast.

Respondent 8: There are no important differences between my economic forecast and the Tealbook.

Respondent 9: As in the Tealbook, I expect that the economy will grow at a moderate pace, the labor market will continue to improve, and inflation will gradually return to our 2 percent longer-term objective. My outlook for the real economy is generally similar to Tealbook's forecast, but I see somewhat greater inflationary pressures than in the Tealbook, with inflation returning to 2 percent by the end of 2017 compared with 2020 in the Tealbook. As a result, I believe it will be appropriate to have a somewhat steeper path for the federal funds rate compared with the Tealbook.

Respondent 10: No significant differences for this year. However, I do not anticipate the pickup in growth throughout 2017 that is included in the current Tealbook forecast.

Respondent 11: The Tealbook implicitly assumes that the underlying strength of the economy will improve somewhat faster than I anticipate, resulting in a larger decline in the unemployment rate and a steeper trajectory for the real funds rate (although the latter is much less pronounced than it was in March). In addition, the Tealbook assumes a higher estimate of the natural rate of unemployment and a lower estimate of long-run inflation expectations.

Respondent 12: The contour of my projected path for real GDP growth in 2016-2018 is similar to that of Tealbook. My projected path for the unemployment rate is similar, though I do not see it as low as the Tealbook in 2018 because I expect employment growth to slow in the next two years due to demographic factors. My forecast for PCE inflation is approximately 3/4 percentage point higher than Tealbook's projection in 2016 and 1/4 percentage point higher in 2017 and 2018. My forecast for core PCE inflation exceeds that of Tealbook by approximately 1/2 percentage point in 2016 and 2017 and by about 1/4 in 2018. 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 13: The Tealbook forecast is in many ways similar but incorporates the idea of a longer-run steady sate to which the economy is converging. Monetary policy has to be set appropriately as the economy transitions toward the longer-run steady state. This tends to imply an upward-sloping policy rate path. The regime conception used here, in contrast, views monetary policy as regime-dependent, and the current regime is viewed as persistent. It is acknowledged that the economy may visit other regimes in the future, and that this may change policy, but switches to those regimes cannot be forecasted. This suggests a flat path for the policy rate over the forecast horizon.

Respondent 14: I do not believe that core inflation will fall in the second half as is projected in the Tealbook. Also, I do not expect a surge in real GDP growth in 2017.

Respondent 15: N/A

Respondent 16: The Tealbook projects a more substantial and protracted overshooting of full employment, with the unemployment rate declining to 4.3 percent at the end of 2018, and with inflation returning to the 2 percent target only very gradually. In my projection, there is a modest overshooting of unemployment, output and inflation in 2018, and those gaps close in 2019. I see the unemployment rate bottoming out at 4.5 percent in late 2016.The gradual removal of policy accommodation tightens financial conditions over time and slows growth to below potential in 2017 and 2018, respectively. This pushes up the unemployment rate to 4.7 percent by the end of 2018. Finally, the persistent overshoot of full employment, combined with firmer price pressures, pushes inflation back to 2 percent by the end of 2017, with a slight overshoot of the FOMC target in 2018.

Respondent 17: As in the March SEP, there are some notable differences between the Tealbook forecast and our projections for the key SEP variables. In part, these differences reflect divergences in some of the underlying assumptions in the two forecasts that influence the dynamics in the projections.

The two forecasts for real GDP growth in 2016 are similar, but the Tealbook projects a significantly faster growth in 2017 and 2018 than in our outlook. Furthermore, based on its assessment of potential GDP growth, which is below our assumption for 2016-18, the Tealbook path of real GDP leads to a notably positive output gap by 2017-18. Our assessment is that the output gap is not positive at that time.

A major component behind the differences between the real GDP growth projections in 2017-18 is consumption. The Tealbook forecast has higher real PCE growth than in our projection in those years, a long-standing difference between the two forecasts, which likely reflects a stronger wealth effects in the Tealbook forecast. Another component behind the differences is net exports, which the Tealbook expects to be a somewhat smaller drag on GDP growth than in our forecast: the difference primarily is in imports.

Another notable difference is the underlying assumptions on the longer-run natural rate of unemployment: the Tealbook assumption of 5.0% is above our assumption of 4.8%. Combined with our growth projections, we anticipate that unemployment will be near its natural rate; in contrast, the Tealbook projects that unemployment significantly undershoots the longer-run natural rate. This pattern is the counterpart of the positive output gap that arises in the Tealbook forecast but not in our projections.

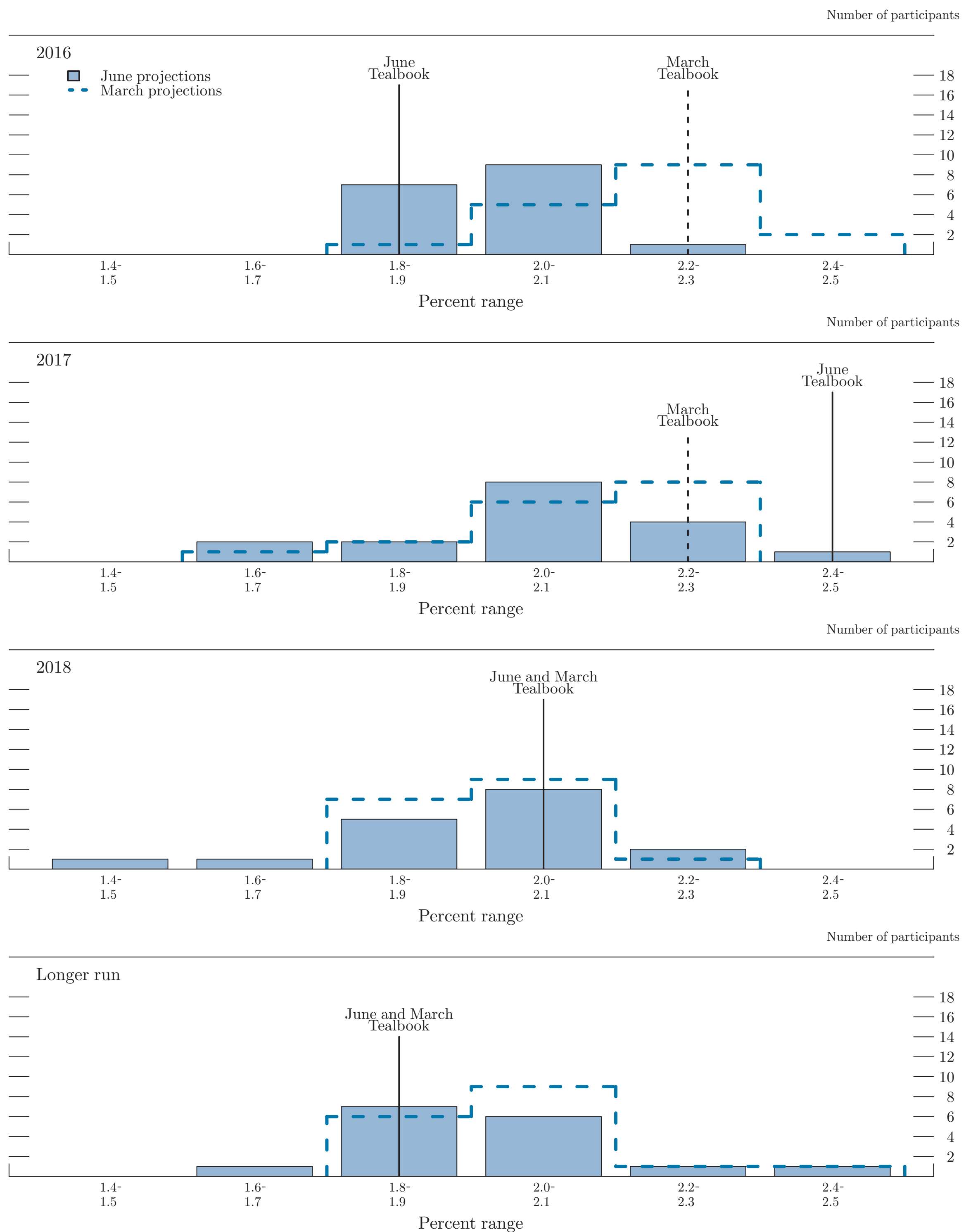
One other difference in the labor market projections concerns the paths for labor force participation: in our projection the participation rate is roughly flat through 2017 at 62.7 - 62.8% while in the Tealbook it declines gradually to 62.5% at end-2017. This difference reflects our assumption of some positive cyclical effects on participation.

For inflation, the two forecasts continue to differ on how quickly inflation reaches the 2% objective. In our projection inflation is near 2% at end-2017 whereas the Tealbook projects inflation still below 2% until 2020, despite a positive output gap and undershooting of unemployment in its projection. The considerable persistence of inflation within the Tealbook framework appears to require a prolonged period of above-potential growth (and a positive output gap) in order to induce inflation to rise toward the longer-run inflation goal. In our forecast, the faster return of inflation to its goal reflects our assumptions of less inflation persistence and 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 in the projections of real activity and unemployment, whereas the Tealbook sees uncertainty at near normal levels. This assessment reflects our view that the unusual nature of the current expansion and the difficulty in reading somewhat conflicting recent economic data, coupled with the atypical policy environment in the U.S. and abroad and the approaching British referendum raise 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 is broadly similar to that in the Tealbook, and near the SEP standard but we see risks to inflation as broadly balanced.

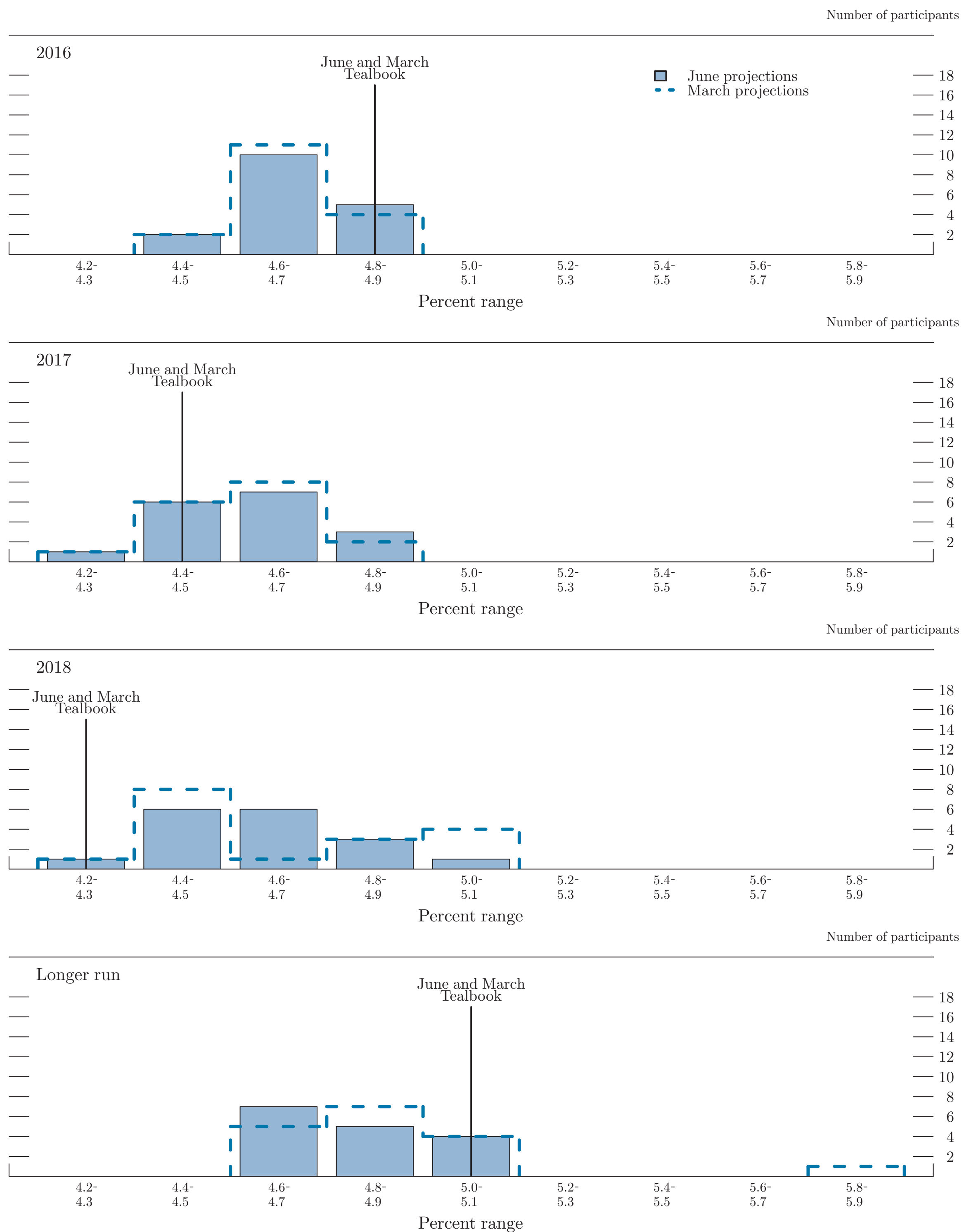
Finally, our monetary policy path is aligned with the Tealbook projection in the near term, but is significantly shallower in 2017-18. As discussed earlier in our submission, we believe that a very gradual path of normalization is necessary to support our current projections for output and inflation. Furthermore, we see it as appropriate to provide some extra insurance against a tightening of financial conditions that could result from policy normalization against a backdrop of a looser policy stance in the advanced foreign economies.

Figure 3.A. Distribution of participants' projections for the change in real GDP, 2016–18 and over the longer run



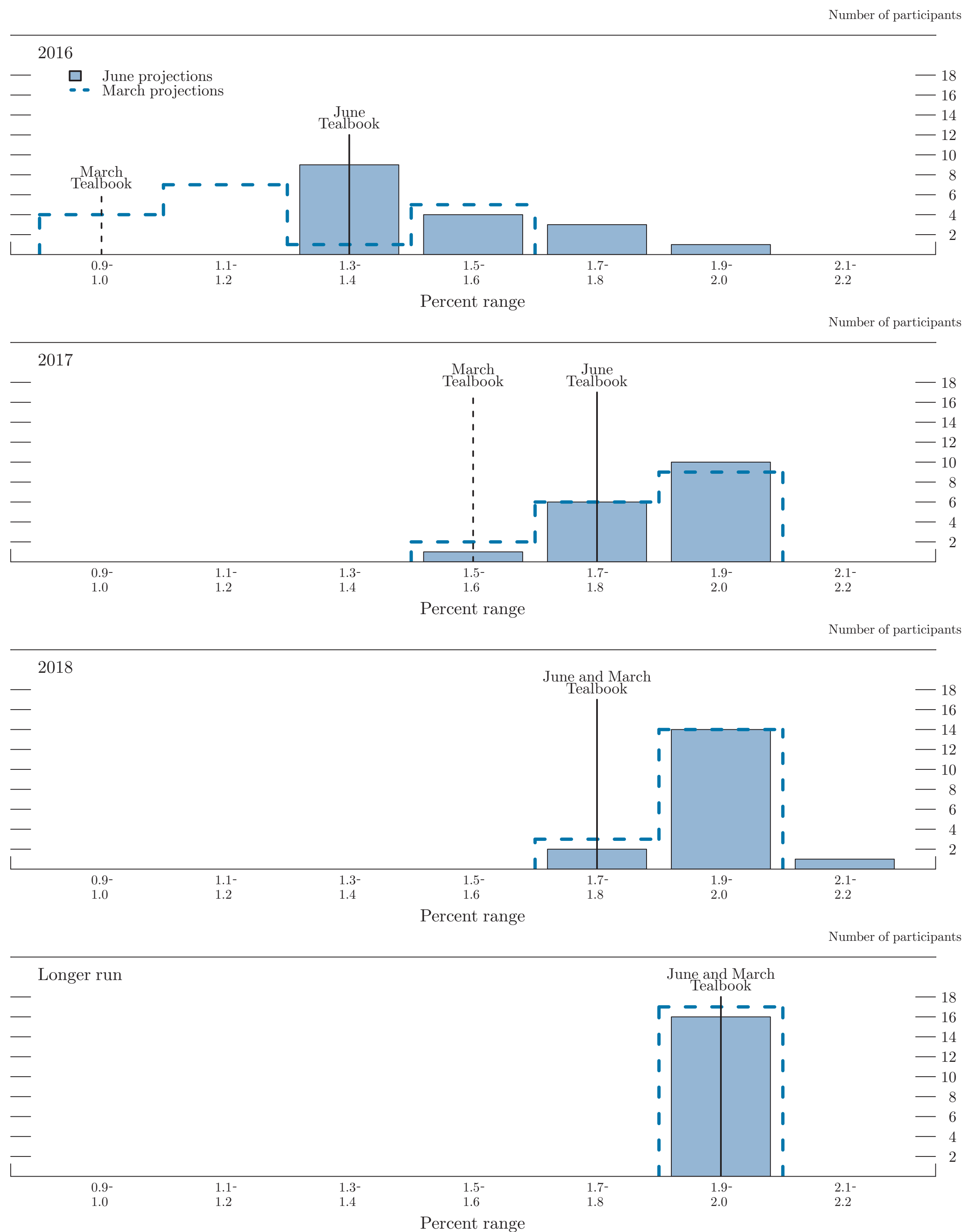
NOTE: Definitions of variables and other explanations are in the notes to table 1.

Figure 3.B. Distribution of participants' projections for the unemployment rate, 2016–18 and over the longer run



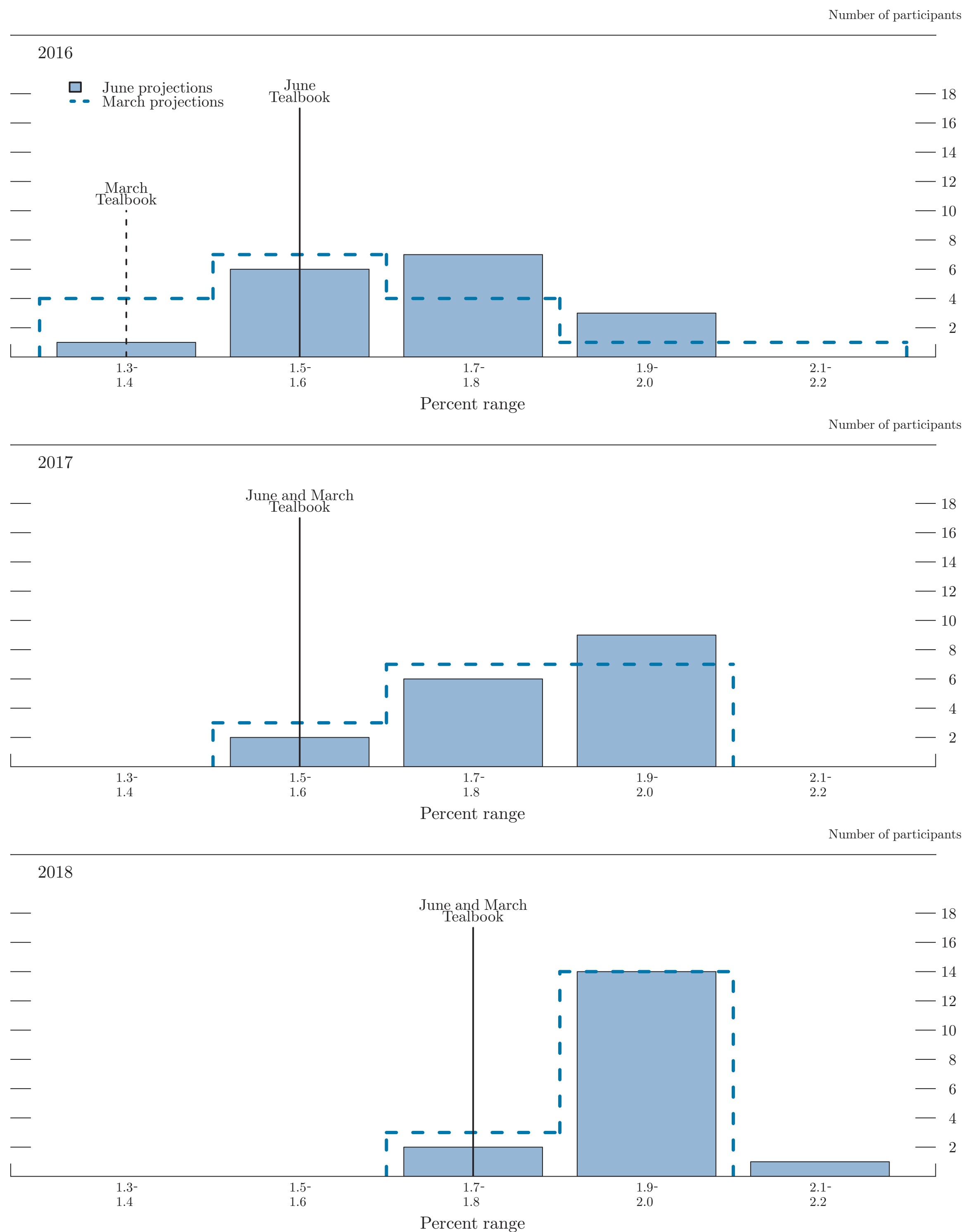
NOTE: Definitions of variables and other explanations are in the notes to table 1.

Figure 3.C. Distribution of participants' projections for PCE inflation, 2016–18 and over the longer run



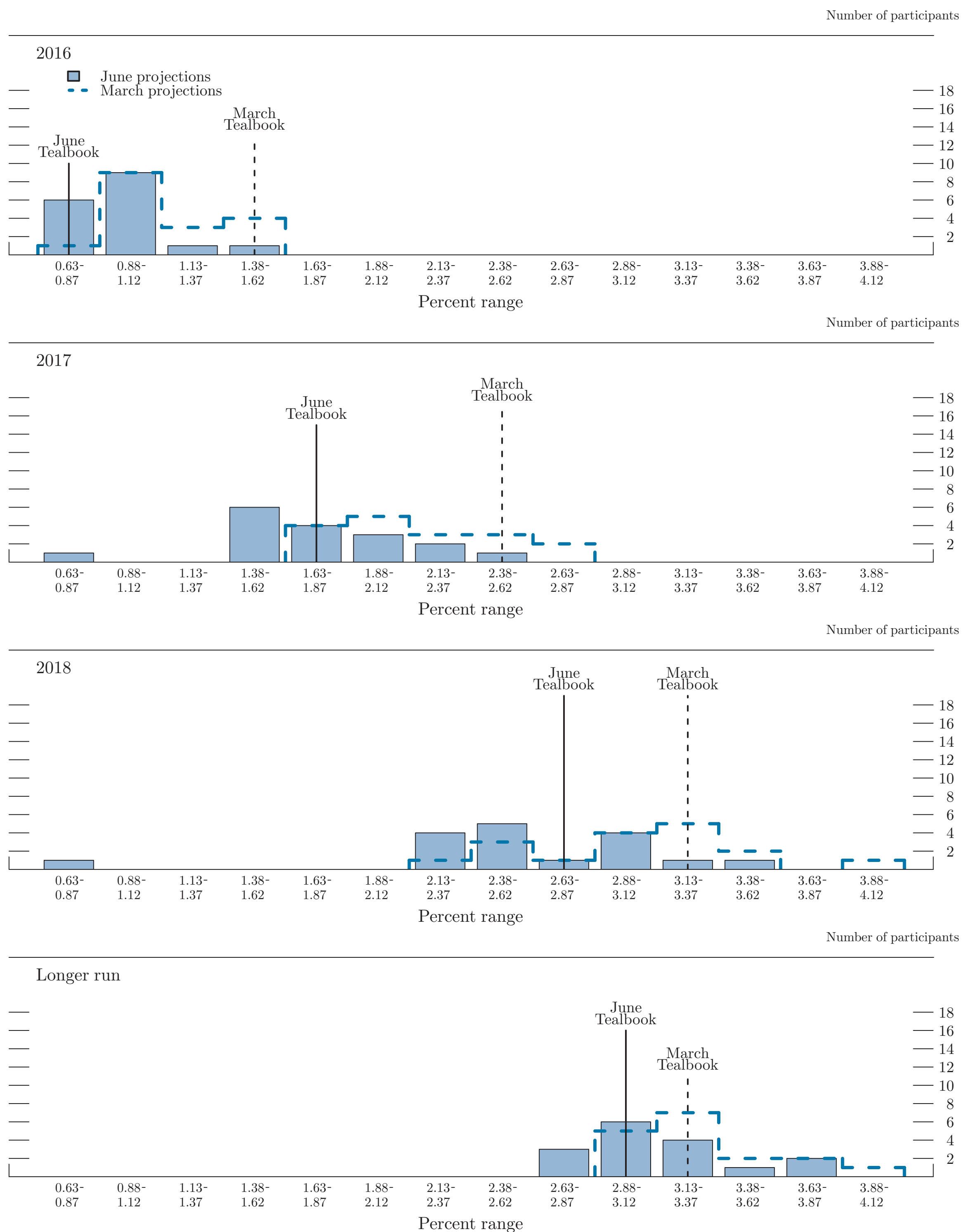
NOTE: Definitions of variables and other explanations are in the notes to table 1.

Figure 3.D. Distribution of participants' projections for core PCE inflation, 2016–18



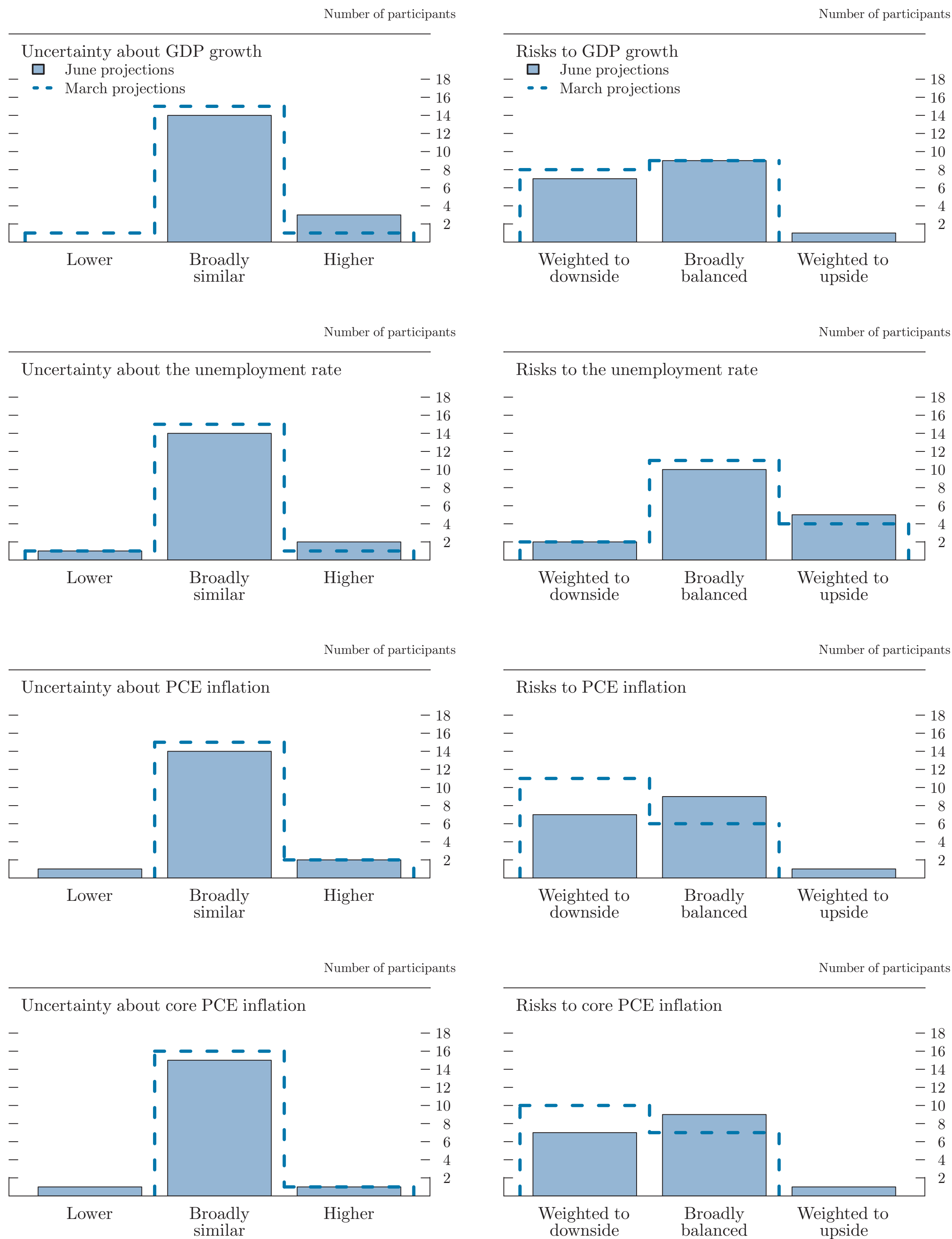
NOTE: Definitions of variables and other explanations are in the notes to table 1.

Figure 3.E. Distribution of participants' judgments of the midpoint of the appropriate target range for the federal funds rate or the appropriate target level for the federal funds rate, 2016–18 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. One participant did not submit longer-run projections.

Figure 4. Uncertainty and risks in economic projections



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