Table 1. Economic projections of Federal Reserve Board members and Federal Reserve Bank presidents, March 2015

Percent

Variable	Central tendency[1]				Range[2]			
	2015	2016	2017	Longer run	2015	2016	2017	Longer run
Change in real GDP	2.3 to 2.7	2.3 to 2.7	2.0 to 2.4	2.0 to 2.3	2.1 to 3.1	2.2 to 3.0	1.8 to 2.5	1.8 to 2.5
December projection	2.6 to 3.0	2.5 to 3.0	2.3 to 2.5	2.0 to 2.3	2.1 to 3.2	2.1 to 3.0	2.0 to 2.7	1.8 to 2.7
Unemployment rate	5.0 to 5.2	4.9 to 5.1	4.8 to 5.1	5.0 to 5.2	4.8 to 5.3	4.5 to 5.2	4.8 to 5.5	4.9 to 5.8
December projection	5.2 to 5.3	5.0 to 5.2	4.9 to 5.3	5.2 to 5.5	5.0 to 5.5	4.9 to 5.4	4.7 to 5.7	5.0 to 5.8
PCE inflation	0.6 to 0.8	1.7 to 1.9	1.9 to 2.0	2.0	0.6 to 1.5	1.6 to 2.4	1.7 to 2.2	2.0
December projection	1.0 to 1.6	1.7 to 2.0	1.8 to 2.0	2.0	1.0 to 2.2	1.6 to 2.1	1.8 to 2.2	2.0
Core PCE inflation[3]	1.3 to 1.4	1.5 to 1.9	1.8 to 2.0		1.2 to 1.6	1.5 to 2.4	1.7 to 2.2	
December projection	1.5 to 1.8	1.7 to 2.0	1.8 to 2.0		1.5 to 2.2	1.6 to 2.1	1.8 to 2.2	

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 December projections were made in conjunction with the meeting of the Federal Open Market Committee on December 16–17, 2014.

1. The central tendency excludes the three highest and three lowest projections for each variable in each year.
2. The range for a variable in a given year includes all participants' projections, from lowest to highest, for that variable in that year.
3. Longer-run projections for core PCE inflation are not collected.

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

Central tendencies and ranges

	Central tendency	Range
Change in real GDP	2.1 to 2.4	2.0 to 2.7
PCE inflation	-0.3 to 0.0	-0.3 to 0.4
Core PCE inflation	1.1 to 1.2	1.0 to 1.3

Participants' projections

Projection	Change in real GDP	PCE inflation	Core PCE inflation
1	2.2	−0.2	1.1
2	2.0	−0.3	1.1
3	2.0	−0.3	1.1
4	2.6	0.0	1.2
5	2.7	0.2	1.2
6	2.3	−0.3	1.0
7	2.7	−0.2	1.1
8	2.2	−0.3	1.1
9	2.1	−0.3	1.1
10	2.4	0.0	1.1
11	2.4	−0.3	1.1
12	2.2	−0.3	1.2
13	2.4	−0.3	1.1
14	2.4	−0.3	1.0
15	2.4	−0.3	1.2
16	2.4	−0.1	1.3
17	2.1	0.4	1.1

* Growth and inflation are reported at annualized rates.

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

Central tendencies and ranges

	Central tendency	Range
Change in real GDP	2.6 to 3.0	2.2 to 3.5
PCE inflation	1.5 to 1.7	1.0 to 2.8
Core PCE inflation	1.4 to 1.7	1.3 to 2.0

Participants' projections

Projection	Change in real GDP	PCE inflation	Core PCE inflation
1	2.6	1.6	1.3
2	2.2	1.5	1.5
3	2.6	1.5	1.5
4	3.0	1.6	1.6
5	3.5	2.8	2.0
6	2.7	1.5	1.4
7	3.3	2.2	1.9
8	3.2	1.5	1.7
9	2.5	1.5	1.5
10	3.0	1.6	1.7
11	2.8	1.7	1.5
12	2.6	1.5	1.4
13	2.8	1.9	1.7
14	2.6	1.7	1.4
15	3.0	1.7	1.4
16	2.6	1.7	1.7
17	2.3	1.0	1.5

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

Table 2. March economic projections, 2015–17 and over the longer run (in percent)

Projection	Year	Change in real GDP	Unemployment rate	PCE inflation	Core PCE inflation	Federal funds rate
1	2015	2.4	5.2	0.7	1.2	0.38
2	2015	2.1	5.1	0.6	1.3	0.63
3	2015	2.3	5.2	0.6	1.3	0.63
4	2015	2.8	5.2	0.8	1.4	0.88
5	2015	3.1	4.8	1.5	1.6	1.38
6	2015	2.5	5.2	0.6	1.2	0.63
7	2015	3.0	5.2	1.0	1.5	1.38
8	2015	2.7	5.2	0.6	1.4	0.13
9	2015	2.3	5.2	0.6	1.3	0.63
10	2015	2.7	5.2	0.8	1.4	0.63
11	2015	2.6	5.0	0.7	1.3	0.88
12	2015	2.4	5.0	0.6	1.3	0.63
13	2015	2.6	5.3	0.8	1.4	0.88
14	2015	2.5	5.1	0.7	1.2	0.63
15	2015	2.7	5.2	0.7	1.3	0.13
16	2015	2.5	5.0	0.8	1.5	1.63
17	2015	2.2	5.3	0.7	1.3	1.13
1	2016	2.5	5.1	1.7	1.5	1.88
2	2016	2.3	4.9	1.7	1.6	1.63
3	2016	2.3	5.0	1.6	1.5	1.63
4	2016	2.7	5.1	1.8	1.7	2.13
5	2016	2.5	4.5	2.4	2.4	3.38
6	2016	2.2	5.1	1.7	1.6	1.63
7	2016	3.0	5.2	2.0	1.9	3.38
8	2016	2.5	5.0	1.7	1.8	0.38
9	2016	2.6	5.0	1.7	1.6	1.88
10	2016	2.7	5.1	1.8	1.8	1.63
11	2016	2.3	5.0	1.9	1.8	2.25
12	2016	2.5	4.8	1.7	1.7	1.63
13	2016	2.7	5.1	1.9	1.9	1.88
14	2016	2.3	4.8	1.6	1.5	1.63
15	2016	2.8	5.0	1.7	1.5	1.13
16	2016	2.3	5.0	2.0	2.0	3.75
17	2016	2.2	5.0	1.9	1.9	2.63

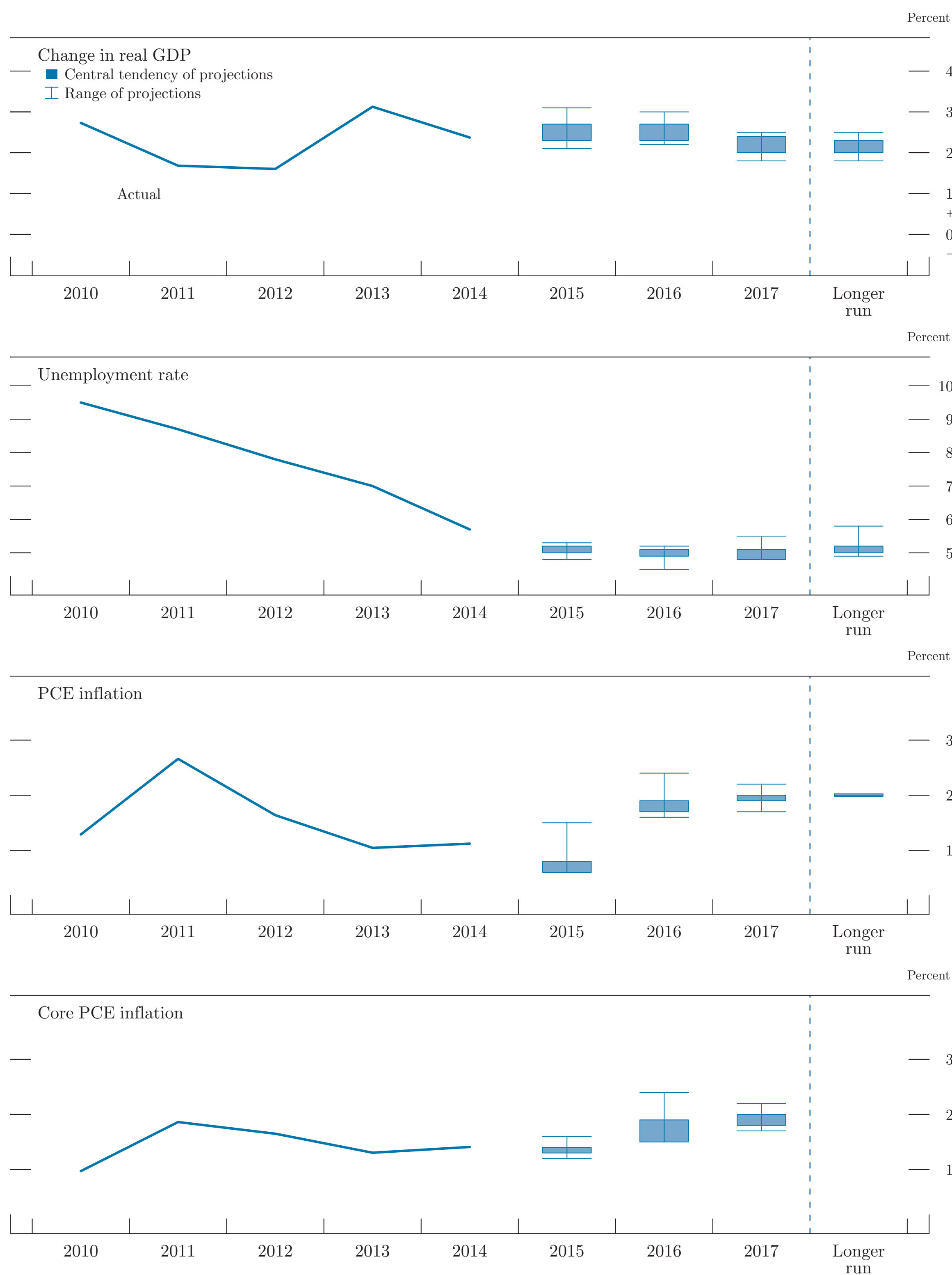
Table 2. ***(continued)***

Projection	Year	Change in real GDP	Unemployment rate	PCE inflation	Core PCE inflation	Federal funds rate
1	2017	2.2	5.0	1.8	1.8	3.38
2	2017	2.0	4.9	1.9	1.8	3.13
3	2017	2.2	4.9	1.9	1.9	2.63
4	2017	2.4	5.0	2.0	1.9	3.63
5	2017	1.8	5.3	2.2	2.2	3.88
6	2017	2.3	5.0	1.9	1.8	2.63
7	2017	2.5	5.5	2.0	2.0	3.75
8	2017	2.2	4.9	2.0	2.0	2.00
9	2017	2.2	4.8	1.9	1.9	3.13
10	2017	2.5	5.0	2.0	2.0	3.63
11	2017	2.0	5.2	2.1	2.0	3.75
12	2017	2.4	4.8	1.9	2.0	2.88
13	2017	2.3	5.1	2.0	2.0	2.88
14	2017	2.0	4.8	2.0	2.0	3.13
15	2017	2.5	4.8	1.7	1.7	2.63
16	2017	2.2	5.0	2.2	2.1	4.00
17	2017	2.0	5.0	2.0	2.0	3.13
1	LR	2.0	5.0	2.0		3.50
2	LR	2.0	5.0	2.0		3.50
3	LR	2.2	5.0	2.0		3.75
4	LR	2.4	5.2	2.0		3.75
5	LR	2.0	5.8	2.0		4.00
6	LR	1.9	5.0	2.0		3.50
7	LR	2.5	5.5	2.0		3.75
8	LR	2.0	5.0	2.0		3.00
9	LR	2.0	5.0	2.0		3.50
10	LR	2.3	5.0	2.0		4.00
11	LR	2.0	5.2	2.0		3.75
12	LR	2.5	4.9	2.0		3.50
13	LR	2.3	5.2	2.0		4.25
14	LR	2.0	5.0	2.0		3.50
15	LR	2.3	5.0	2.0		3.50
16	LR	2.2	5.2	2.0		3.75
17	LR	1.8	5.0	2.0		3.75

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

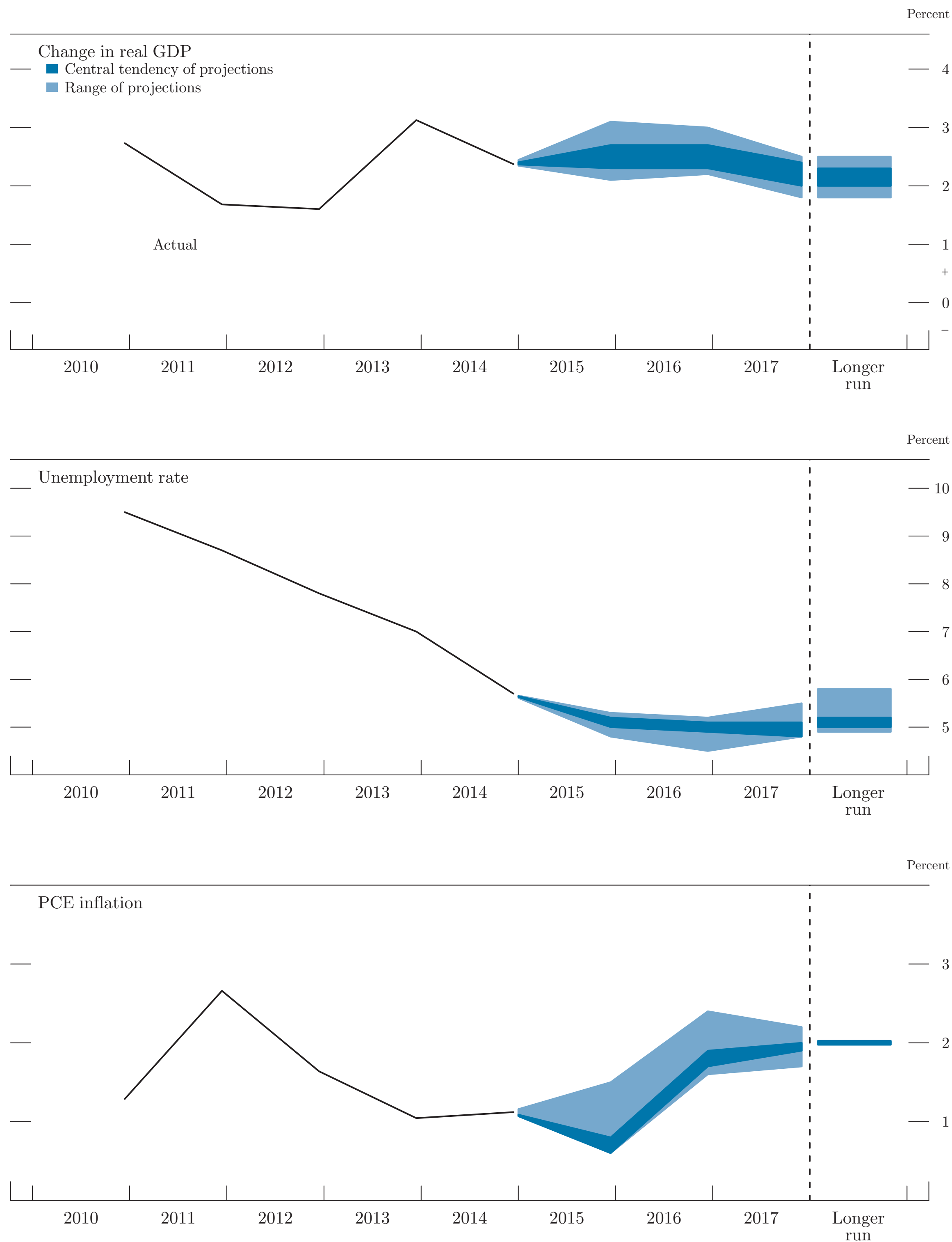
Projection	Year of first increase	Quarter of first increase	Change in real GDP	Unemployment rate	PCE inflation	Core PCE inflation
1	2015	4	2.4	5.2	0.7	1.2
2	2015	3	2.1	5.2	0.1	1.2
3	2015	3	2.1	5.3	0.1	1.3
4	2015	2	3.0	5.3	0.2	1.2
5	2015	2	3.2	5.3	0.3	1.2
6	2015	3	2.4	5.2	0.1	1.1
7	2015	2	3.2	5.4	0.1	1.2
8	2016	4	2.5	5.0	1.7	1.8
9	2015	3	2.3	5.2	0.1	1.2
10	2015	3	2.6	5.3	0.3	1.2
11	2015	2	3.0	5.3	0.4	1.2
12	2015	2	2.8	5.3	0.0	1.2
13	2015	2	3.0	5.5	0.0	1.2
14	2015	3	2.4	5.2	0.1	1.1
15	2016	1	2.8	5.2	1.1	1.4
16	2015	2	3.0	5.3	0.2	1.3
17	2015	2	2.8	5.4	0.0	1.2

Figure 1.A. Central tendencies and ranges of economic projections, 2015–17 and over the longer run



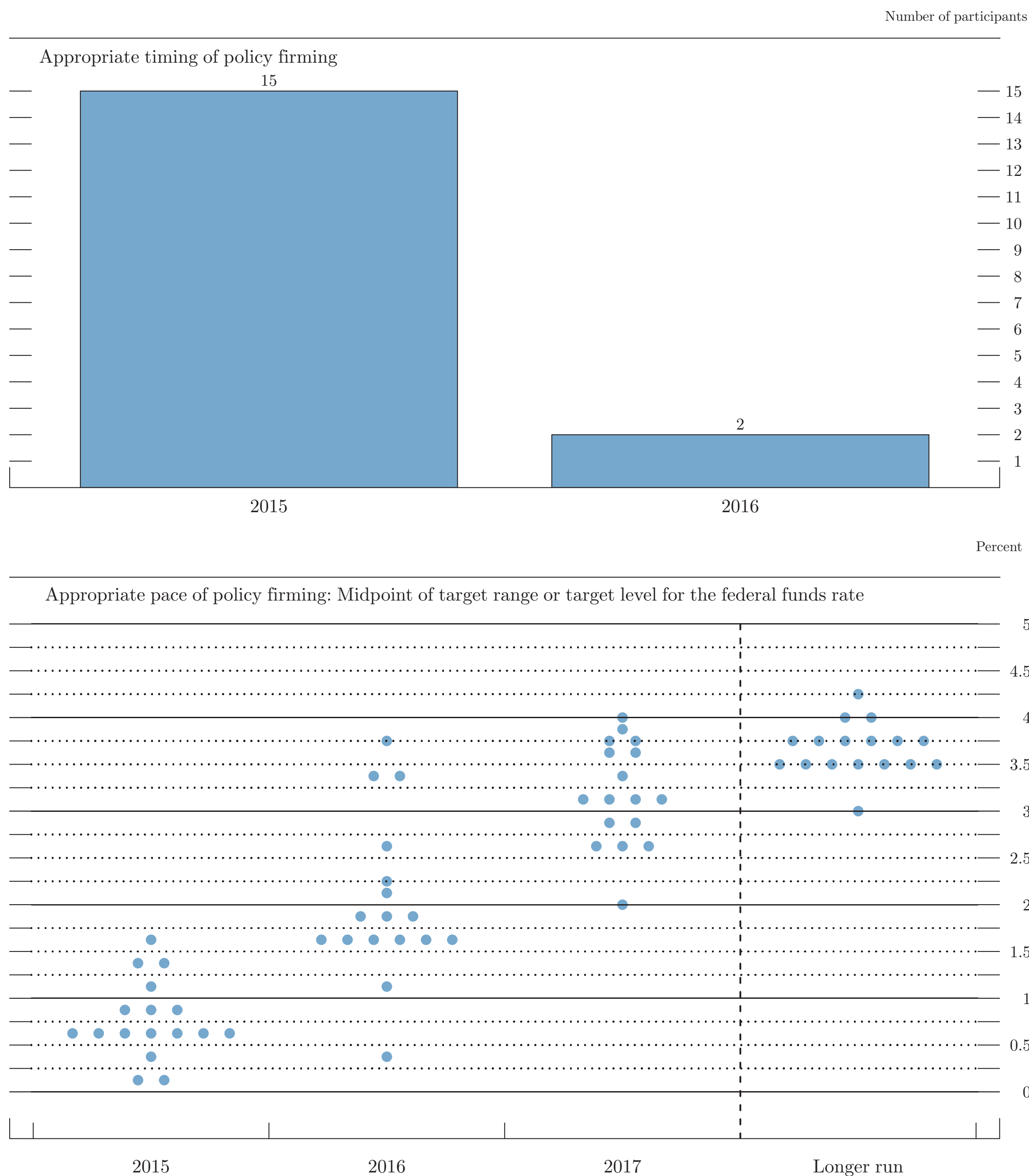
Note: Definitions of variables are in the general note to table 1. The data for the actual values of the variables are annual.

Figure 1.B. Central tendencies and ranges of economic projections, 2015–17 and over the longer run



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

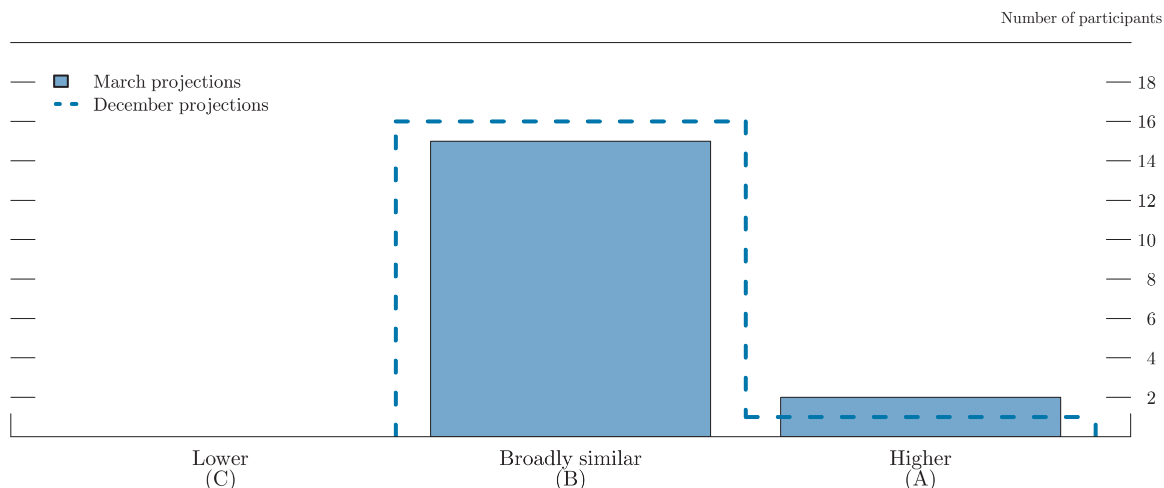
Figure 2. Overview of FOMC participants' assessments of appropriate monetary policy



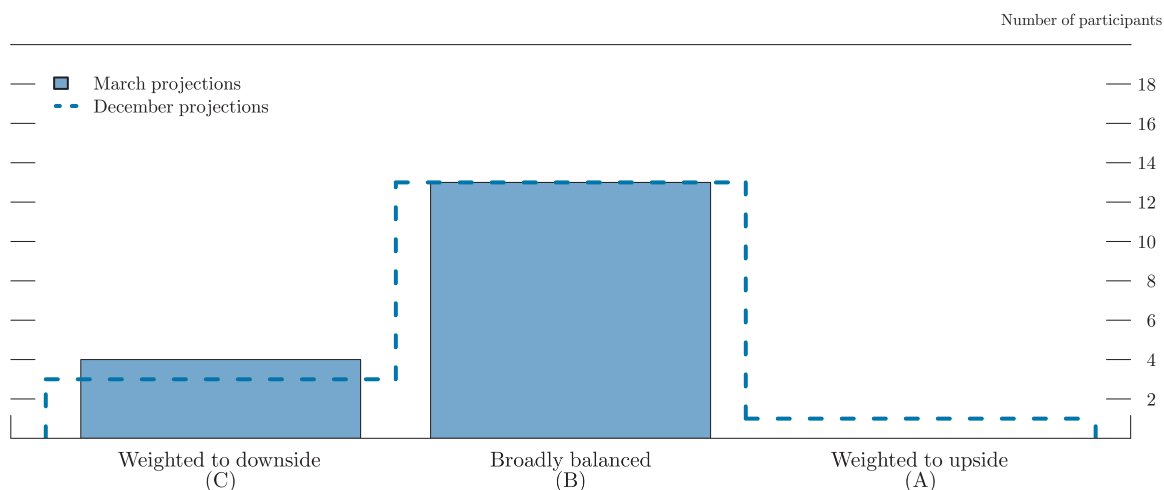
NOTE: In the upper panel, the height of each bar denotes the number of FOMC participants who judge that, under appropriate monetary policy, the first increase in the target range for the federal funds rate from its current range of 0 to 1/4 percent will occur in the specified calendar year. In December 2014, the numbers of FOMC participants who judged that the first increase in the target federal funds rate would occur in 2015, and 2016 were, respectively, 15, and 2. In the lower panel, each shaded circle indicates the value (rounded to the nearest 1/8 percentage point) of an individual participant's judgment of the midpoint of the appropriate target range for the federal funds rate or the appropriate target level for the federal funds rate at the end of the specified calendar year or over the longer run.

Figure 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.

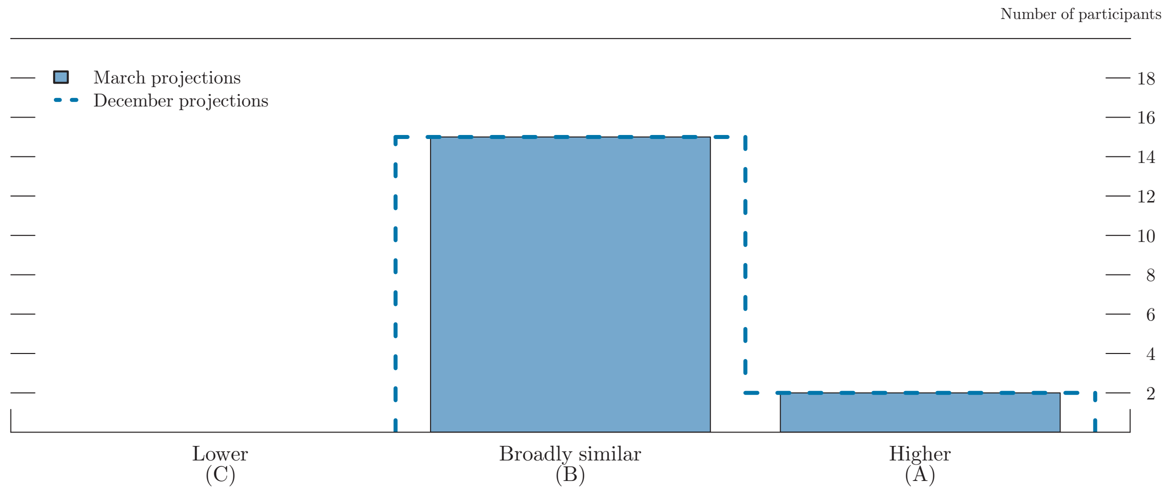


Individual responses

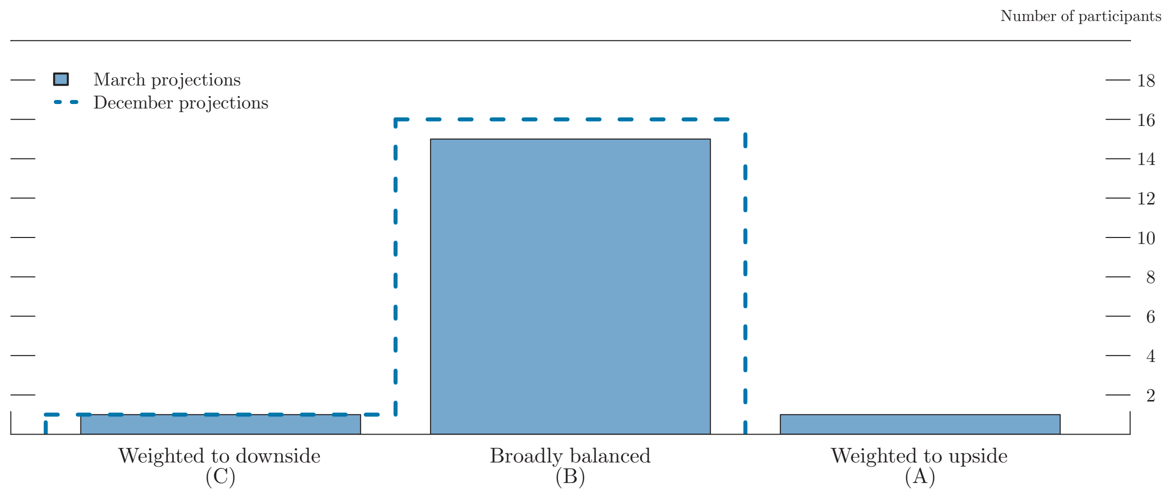
Respondent	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
2(a)	B	B	B	B	B	B	B	B	B	B	B	A	B	A	B	B	B
2(b)	C	B	B	B	B	B	B	C	C	C	B	B	B	B	B	B	B

Figure 4.B. Uncertainty and risks – Unemployment rate

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



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

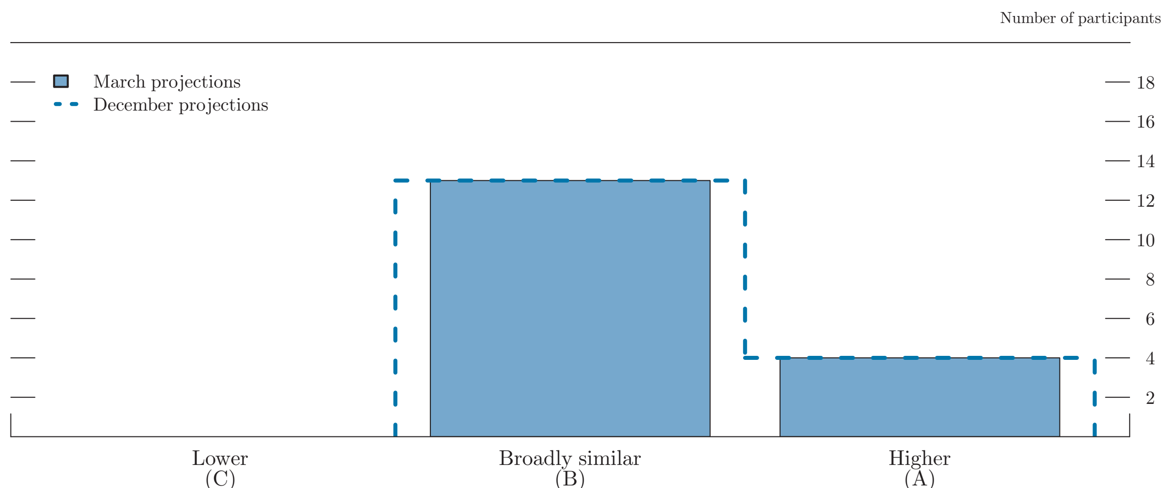


Individual responses

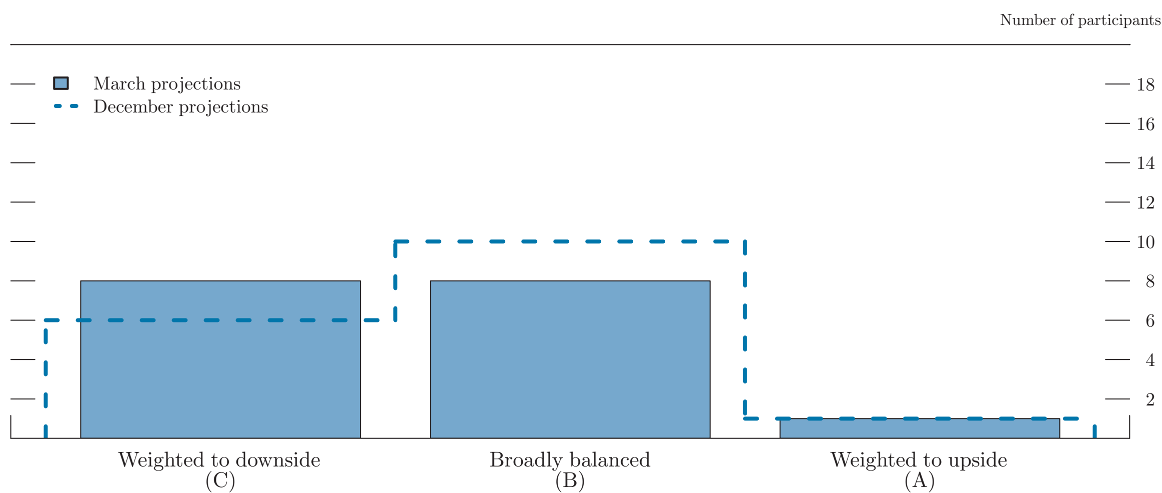
Respondent	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
2(a)	B	B	B	B	B	B	B	B	B	B	B	A	B	A	B	B	B
2(b)	B	B	B	B	B	C	B	A	B	B	B	B	B	B	B	B	B

Figure 4.C. Uncertainty and risks – PCE inflation

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



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

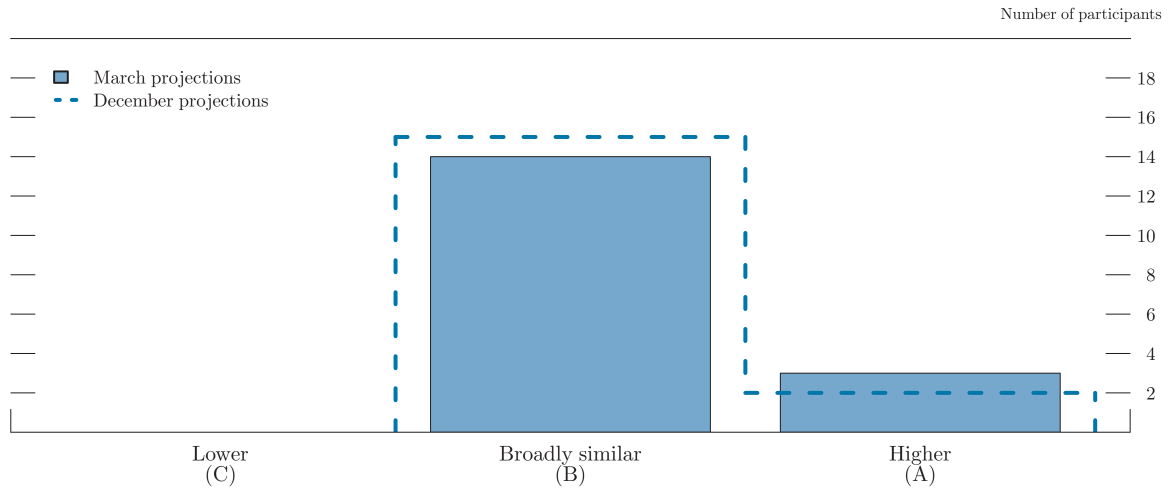


Individual responses

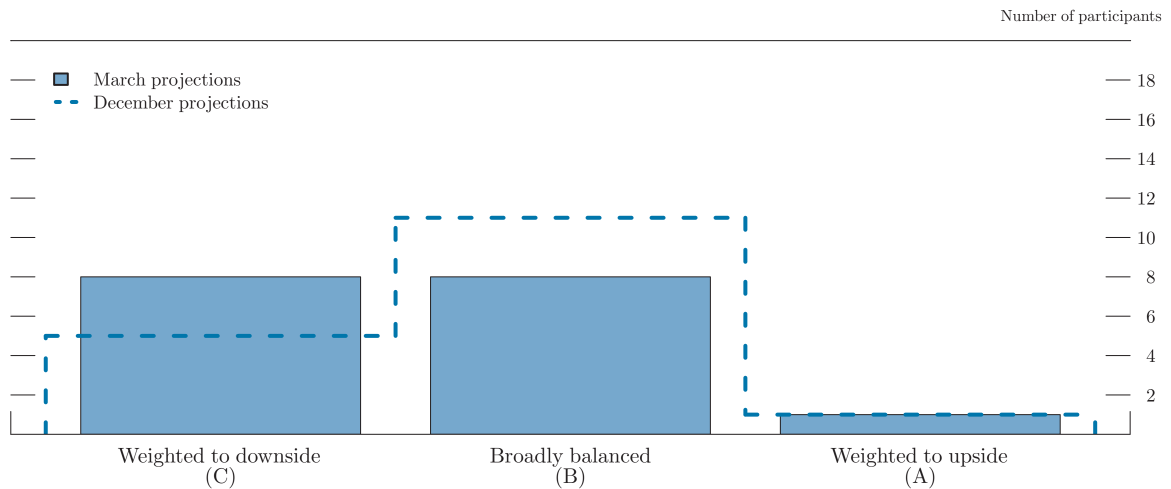
Respondent	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
2(a)	B	B	A	A	B	B	B	A	B	A	B	B	B	B	B	B	B
2(b)	B	C	C	A	B	C	B	C	C	C	B	B	C	B	C	B	B

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	A	B	B	B	A	B	A	B	B	B	B	B	B	B
2(b)	B	C	C	A	B	C	B	C	C	C	B	B	C	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: N/A

Respondent 2: N/A

Respondent 3: N/A

Respondent 4: I anticipate that the economy will converge to its longer run growth and inflation targets by the end of 2017.

Respondent 5: All measures converge in 2018, somewhat shorter than 5-6 years. Prior to reaching their long-run values, I expect real GDP growth to fall below its long-run value of 2% and the unemployment rate to decline further below its long-run value of 5.8%. I also expect the inflation measures to overshoot 2%.

Respondent 6: Convergence to the mandated goals is expected to occur over the 2017-18 period.

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

Respondent 8: It will be shorter under appropriate monetary policy, in part because the FOMC will take appropriate steps to help return the underlying rate of inflation to 2%. My assessment of appropriate monetary policy puts little weight on interest rate smoothing.

Respondent 9: N/A

Respondent 10: No comment.

Respondent 11: N/A

Respondent 12: Very hard to know, given that we will converge –if at all– to a stochastic steady state.

Respondent 13: I anticipate that convergence of real GDP growth and inflation will take less than 5 years. Specifically, I expect real GDP growth to slow to its longer-run rate by 2017 and inflation to rise to close to 2 percent in 2016. I expect the unemployment rate will hit its longer-run level in 2016, fall below it by the end of 2016 and in 2017, before moving back to its longer-run level.

Respondent 14: We continue to assume that the economy's potential growth rate is within a range around 2% and maintain a point estimate of 2%. We currently assess that a reasonable range for the longer-run unemployment rate is 4% to 6%, and we have maintained our point estimate of 5%. We expect the unemployment rate to reach its longer-run level in 2016Q1, and for it to fall slightly below that level later in 2016, which would be consistent with the implications of some of our scenario analysis of labor flows as well as our analysis of unemployment behavior in recent long expansions.

We assume that long-term inflation expectations will continue to be anchored at levels consistent with the FOMC longer-run objective (2% for the PCE deflator and around 2.5% for the CPI, based on the longer-term average of the difference between CPI and PCE inflation). Under these conditions and with the resource gap anticipated to dissipate over the forecast horizon (the unemployment gap may not provide an accurate measure of the resource gap at this time), we expect inflation as measured by the PCE deflator to be about 2% in 2017 and thereafter.

As indicated in our projections, we anticipate that under appropriate monetary policy and no further shocks, the convergence process should be largely completed in 2017.

Respondent 15: We revised down our estimates of the natural rate of unemployment in light of new analysis highlighting changes in the composition of the labor force towards groups with lower average unemployment rates. We also reduced our long-run equilibrium funds rate estimate to better reflect increased global savings tendencies.

Respondent 16: I expect the unemployment rate to reach its longer-run sustainable level during the first half of 2015, and then to fall past that level. Smooth convergence to the natural rate from below will require deft maneuvering and a good deal of luck, and is unlikely to be achieved until 2018. I expect core inflation to reach 2 percent in 2016, to overshoot somewhat in 2017, and not converge back to target until 2019.

Respondent 17: I formerly submitted 5.5 percent as my projection for the longer-run unemployment rate, thinking of that concept as corresponding to a longer-run average unemployment rate. On further reflection, I think it makes more sense to think that in the absence of shocks and under appropriate monetary policy, the unemployment rate would converge to a rate corresponding to rates typically seen in the late stages of business cycle expansions. This reflects a sense that shocks that tend to necessitate sectoral reallocation and thus temporarily raise the unemployment rate are more frequent than shocks that reduce the unemployment rate.

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: N/A

Respondent 3: The recent volatility in oil prices and the uncertainty about the reponse of oil demand and oil supply to the recent drop in oil prices going forward imply a higher-than-usual amount of uncertainty around energy prices and PCE inflation.

Respondent 4: It remains the case that the extraordinary monetary policy in place and uncertainties surrounding the future path of policy, including the timing of the exit from accommodative policy, contribute to uncertainty around my inflation forecast.

Respondent 5: N/A

Respondent 6: N/A

Respondent 7: N/A

Respondent 8: N/A

Respondent 9: N/A

Respondent 10: Oil price futures appear to be particularly volatile at the moment, increasing the uncertainty around my headline PCE projections. I also judge the uncertainty surrounding my core PCE inflation projection as "higher." This is largely due to recent movements in measures of inflation compensation and uncertainty regarding how inflation expectations are reacting to a prolonged period of below-target core inflation readings.

Respondent 11: Uncertainty about my projection for economic activity is similar to its average level over the past 20 years, which, of course, is a period that was characterized by considerable turmoil. Inflation remains anchored by quite stable longer-run inflation expectations at the FOMC's stated goal of 2 percent. Inflation expectations have now been well anchored for about 20 years, so I see the magnitude of the uncertainty around the inflation outlook as consistent with that over the past 20 years.

Respondent 12: N/A

Respondent 13: N/A

Respondent 14: 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 width of these intervals have narrowed some since the December SEP, as the recent developments generally have been consistent with the central forecast. Nevertheless, the probability intervals for the real activity forecasts are still wider than the SEP standard, in part because of the still-extraordinary economic and financial environment, including the policy rate in the U.S. remaining constrained by its effective lower bound and the negative rates seen in a number of areas in Europe. The possible net impact on real activity of the recent decline in oil prices and of continuing dollar appreciation is not yet clear, contributing to the uncertainty. In contrast, the forecast intervals for core PCE inflation appear broadly consistent with the SEP standard, taking rough account for the differences between forecast errors for overall consumer inflation and core PCE inflation.

Respondent 15: N/A

Respondent 16: N/A

Respondent 17: N/A

Uncertainty and Risks (continued)

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

Respondent 1: N/A

Respondent 2: N/A

Respondent 3: Recent oil and commodity price declines, a higher dollar, limited wage pressures, and weak foreign aggregate demand have reduced inflation to low levels recently. Over the medium term, I expect the effects of dollar appreciation to wane, and wage pressures to increase as resource utilization rise. But there are risks that these factors continue to weigh on prices longer than I expect, and that the dollar strengthens further. In this low inflation environment, inflation expectations may start to decline.

Respondent 4: I view the risks to inflation as weighted to the upside over the medium term and longer run. Longer-term inflation risks reflect uncertainty about the timing and efficacy of the Fed's withdrawal of accommodation. The risks to output growth and unemployment are balanced.

Respondent 5: N/A

Respondent 6: N/A

Respondent 7: The risks to my projections are broadly balanced. Weakness abroad is a downside risk to my forecast. Further weakening in the economies of key trading partners may have a larger effect on U.S. export growth than I am forecasting. But central banks in foreign economies have been adding accommodation, which should help stimulate global demand.

Oil prices are low, which should be a net positive for spending. The U.S. labor market is showing solid gains, which will support household spending. The combination of these factors alongside highly accommodative monetary policy raises the possibility that the U.S. economy may be poised for faster growth than I am currently projecting.

Inflation risks are balanced. The weakness in first-quarter inflation readings reflects the oil-price shock and some limited pass-through to core inflation, which I expect to be transitory. Oil prices have begun to stabilize.

Survey-based measures of inflation expectations have been relatively stable. I take less signal for inflation expectations from the measures of inflation compensation based on asset prices because changes in the latter may be reflecting liquidity effects rather than changes in inflation expectations. If a broader-based downward drift in inflation expectations were to materialize, it would be a downward risk to my inflation projection. On the other hand, too slow a withdrawal of monetary policy accommodation has the potential to create upside risks to inflation over the medium run.

Respondent 8: Because of the zero lower bound, and the perceived costs associated with asset purchases, It is hard for the FOMC to respond effectively to low inflation and low growth outcomes. This means that these outcomes are more likely to occur.

Respondent 9: Although I see the distribution of shocks to aggregate demand as reasonably balanced, I still view the balance of risks to GDP growth as somewhat weighted to the downside due to the constraints that limit the ability of monetary policy to offset negative shocks to demand at the zero lower bound. I see the risks to unemployment as balanced, with the risk of higher unemployment due to the constraints imposed by the zero lower bound offset by the risk that productivity may continue to grow more slowly than anticipated, as it has done over the past few years. For some time now both wage and price inflation have been running below the levels I had anticipated, and reductions in energy prices and increases in the dollar are likely to put further downward pressure on consumer prices in coming months. In addition, market-based measures of expected inflation remain at an unusually low level, although I attribute much of the decline since last summer to special factors. While I view these developments as largely transitory, they do suggest that low inflation could prove to be more persistent than I expect, creating risks to inflation I consider to be weighted to the downside.

Respondent 10: No comments.

Respondent 11: Risks to economic activity appear balanced. Recent data point to slower GDP growth this quarter and last, but some of that softness likely is due to temporary factors such as adverse weather. Overall, most indicators suggest steady improvements in economic conditions going forward. Most of the remaining headwinds continue to abate. Indeed, with diminishing headwinds, upside scenarios involving a virtuous cycle of economic activity become more plausible.

The zero lower bound does somewhat constrain our ability to respond to adverse shocks. However, this constraint no longer appears quantitatively important, especially in light of the apparent effectiveness of forward guidance and LSAPs. Moreover, normalization of monetary policy means that the zero lower bound will be less relevant over the forecast horizon.

Inflation risks are also balanced. The recent low readings on headline and core PCE inflation raise the possibility that inflation could remain below target for some time. On the other side, the steady diminution of labor market slack increases the odds of building wage pressures feeding through to more inflation in the near-term.

Respondent 12: N/A

Respondent 13: The risks to the outlook for PCE inflation and core PCE inflation are weighted to the downside as a result of the recent shifts in energy prices and foreign exchange rates.

Respondent 14: Quantitative judgment based on the difference between the central projection and the expected value from the FRBNY forecast distribution. Under our appropriate policy stance, the risks to the inflation outlook are roughly balanced, as has been the case in recent SEPs: even though the decline in market-based inflation compensation and declines in a number of commodity prices indicate notable downside risks, these risks are offset by the possibility of a faster-than-anticipated depletion of resource slack as well as the possibility of greater supply-side constraints. The risks to the real activity outlook also are roughly balanced over our forecast horizon. The broad balance reflects two opposing forces evident in the contrasting tone of recent data–relatively strong labor market data and relatively weak expenditure data. One force is the possibility that the sluggish growth through much of this expansion has come from more persistent structural factors rather than from various headwinds that are expected to abate in our central forecast–a possibility consistent with the weaker expenditure data. The other force is the possibility that the economy has greater underlying strength than anticipated in our projection–a possibility consistent with the stronger labor market data. Beyond those forces, other risks include the impacts of the recent oil price decline and continuing dollar appreciation on U.S. activity and inflation; the low inflation data and continued weakness in many parts of the world, which could leave the U.S. and world economies more susceptible to negative

shocks; and the constraints that monetary policy faces under the effective lower bound in a number of major economies.

Respondent 15: We think the risks to the growth and unemployment forecasts are roughly in balance. On the downside, the international growth outlook could deteriorate or the dollar appreciation could have greater impact on net exports. Moreover, restrictive credit conditions could place greater than expected constraints on the recovery in residential investment. On the up side, improved household sector fundamentals (notably, gains in wealth, the better job market, and lower energy prices) and business sentiment suggest that we could see a more pronounced "virtuous circle" dynamic.

The factors that could place greater downward pressure on our inflation forecast continue to outnumber those that might push it up more than expected. First, international developments including the rise in the value of the dollar could put greater downward pressure on import prices than we expect. Moreover, our forecast of inflation picking up to just under 2 percent by the end of the projection period depends heavily on an upward pull from inflation expectations supported by the FOMC's credible commitment to a symmetric 2 percent inflation target. For some time we have noted the risk that this upward force may not be as strong as we have assumed, a risk highlighted by the downward drift in TIPS breakevens. Finally, even with a downward adjustment this time, it is possible that the natural rate of unemployment is lower than we've assumed, implying an extra margin of slack.

Respondent 16: N/A

Respondent 17: N/A

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

3(c). Please describe the key factors informing your judgments regarding the appropriate path of the federal funds rate. If, in your projections for any year in the projection period, the unemployment rate for that year is close to or below your projection for its longer-run normal level and inflation for that year is close to or above 2 percent, and your assessment of the appropriate level of the federal funds rate for that year is still significantly below your assessment of its longer-run normal value, please describe the factor or factors that you anticipate will make the lower-than-normal funds rate appropriate. If you have reduced your estimate of the longer-run normal value of the federal funds rate since the previous SEP, please indicate the factor or factors accounting for the change. You may include any other comments on appropriate monetary policy as well.

Respondent 1: Compared to my December projection, I moved back one quarter my anticipated liftoff date. My background reasoning remains the same – that inflation will not be at, or moving any more than gradually toward, 2 percent, but that financial stability considerations – in the context of steady growth and improvement in the labor market – will warrant a rate increase. The move back from September to December is motivated by a combination of the more tepid nature of recent data, a stronger dollar, and concern with the disinflationary forces at work throughout much of the world. These factors together carry some risk of further downward pressure on inflation, which remains well below the FOMC's stated target, or of a negative impact on growth.

Respondent 2: In my forecast, the unemployment rate will be at or below my 5.0% estimate of the natural rate by about the end of 2015 and through 2017. In my view, that is appropriate because inflation remains well below target and because of uncertainty about the natural rate.

I reduced my estimate of the equilibrium real rate from 1.75% to 1.5%, and therefore reduced my estimate of the long run nominal federal funds rate from 3.75% to 3.5%. There are many reasons, including the longer term trend to ever lower rates, higher global saving, greater risk aversion, slower growth and lower investment.

Respondent 3: Although we have seen continued improvement in aggregate unemployment, and the fall in oil prices has helped to boost the U.S. consumer, the aftereffects of the crisis continue to restrain housing, and domestic investment remains subdued. Going forward, the significant appreciation of the currency is likely to act as a considerable restraint both on real activity through net exports and on core inflation through core import prices. These effects are likely to fade only slowly. As a result, monetary policy may need to remain accommodative for longer to move employment and inflation in particular back to target levels.

Respondent 4: My appropriate path for policy has the Committee starting to raise the funds rate in 2015Q2 as the economy continues to strengthen and inflation moves toward target. My path for the funds rate is within the range of prescriptions given by the monetary policy rules enumerated in the Tealbook and has the funds rate gradually rising over the forecast horizon to reach its long-run level of 3.75 percent in early 2018.

Respondent 5: I reduced my long-run federal funds rate to 4.0% from 4.25%. This change reflects a reduction in my estimate of long-run real GDP growth to 2.0% from 2.3%.

Respondent 6: The longer-run neutral value of the federal funds rate has been reduced from 3.75 percent to 3.5 percent, to reflect in part a downward revision to the longer-run estimate of the growth of potential GDP. At the time of liftoff, the unemployment rate is two-tenths of one percentage point above its longer-run normal level, and inflation is running well below target. After liftoff, the removal of policy accommodation is gradual. The gradual removal of accommodation allows monetary policy to probe for the possibility of lower equilibrium levels of the unemployment rate and/or the equilibrium real rate of interest.

Respondent 7: I continue to see underlying strength in the economy and labor markets. While some of the data that inform near-term GDP have started the year on a soft note, I believe this softness will prove to be due to temporary factors such as the severe weather and port disruptions. The labor market has made considerable, sustained progress toward our goal of full employment, and I expect further gains to be made. The actual unemployment rate in February was already at or near many estimates of its longer-run level and underemployment has been steadily declining. The recent decline in oil prices will hold headline inflation down in the near term. But as oil prices stabilize and the economy continues to expand, I anticipate that inflation will move higher. I continue to project a gradual rise in inflation over the forecast horizon to the Committee's 2 percent longer-run goal by late 2016 or early 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. I project that the economy will be at full employment this year and that in 2015Q2 projected inflation between one and two years ahead will reach the Committee's goal of 2 percent. Thus, I believe it will be appropriate for the FOMC to begin raising the fed funds rate in 2015Q2. Note that a change in statement language at the March meeting would make this liftoff date consistent with our forward guidance.

After liftoff, I project the fed funds rate will rise gradually over the rest of 2015, similar to a path suggested by a Taylor 1999 rule with inertia. As the expansion strengthens, I believe it will likely be appropriate to raise interest rates at a slightly more rapid pace, described by a somewhat less inertial Taylor 1999 rule.

As a result of delaying liftoff until mid-2015 and the inertia in my monetary policy rule, I project that the federal funds rate target will be slightly below its longer-run normal level at the end of 2016, despite the fact that unemployment and inflation are both near their longer-run levels.

Consistent with recent Committee discussions, I believe it will be appropriate to initially target a 25 basis point range for the federal funds rate, with IOER at the top of the range and other tools – including ON RRPs – preventing the funds rate from trading below the bottom end of the range. Depending on our experiences with these tools and our ability to control the federal funds rate, this target range may persist for some time.

Respondent 8: The data suggest that there has been a sharp fall in the natural real rate of interest since 2007. We remain below maximum employment and below target inflation, even though the market real rate of interest (over any horizon) is much lower than in 2007. This means that the neutral real rate of interest – consistent with target inflation and maximum employment – has fallen by even more.

There are many reasons for this change in the neutral real rate of nterest – but the main point is that the change is likely to unwind over time – but only slowly and only partially. This judgment is borne out by the real yield curve, which is upward sloping (roughly 20 basis points over the next five years, and rising to somewhat over 1% from 2025 to 2035). Note that this real yield curve is roughly

consistent with inflation break-evens of around 2%, which suggests that these market interest rates are reflective too of what's happening with the neutral real rate of interest.

Put another way: I see the intercept term in the Taylor Rule as being a stochastic process with a lot of persistence. That intercept term is very low, and is likely to return to its long-run value only slowly.

I have also taken on board the staff's downward revision of the underlying rate of inflation, as well as the staff's view that overshooting of the unemployment rate below its natural rate will be helpful to bring inflation back to 2 percent. Given the low inflation outlook, I believe it would be appropriate to reinstate some kind of asset purchase program.

I have reduced my estimate of the longer-run normal value of the federal funds rate since the previous SEP because longer-term nominal market interest rates have fallen even further in the last six months.

Respondent 9: My path for the federal funds rate, both before and after liftoff from the zero bound, is shaped by my expectation that the headwinds that have been holding back the recovery since the financial crisis will continue to exert a restraining, albeit abating, influence on aggregate demand for several years to come. In addition, inflation has been running well below our 2% longer-run objective, and I expect it to move only gradually back to 2%. To promote the attainment of our maximum employment and price stability objectives over the medium term I see it as necessary to pursue an accommodative policy throughout the forecast period. In part, my assessment that the appropriate pace of policy normalization should be gradual is based on my assessment that we initially will need to proceed cautiously until we are confident that inflation is really moving back to target. In addition, I would assess the equilibrium real funds rate at present to be substantially below my estimate of its longer run normal level of around 1.5%, and to move only some way back toward this level over the forecast period. I do not expect it to fully return to its longer-run normal level even by the end of 2017. This reflects factors such as (i) ongoing balance sheet repair by households and limited access to mortgage credit, which prevent households from taking advantage of very low interest rates to the same extent they would if their balance sheets had not been impaired; and (ii) weak real activity abroad (both actual and feared) that has put upward pressure on the dollar and is likely to continue to restrict U.S. next exports for some time. My estimates of the longer-run normal level of the nominal and real federal funds rate are unchanged at 3.5% and 1.5%, respectively, and are the same as the staff's newly revised estimates. In 201 7, my forecast for the unemployment rate falls two-tenths below my estimate of its long-run natural rate, with inflation at 1.9 percent just below our target. I view this modest undershoot as helpful in return inflation more quickly to our 2 percent objective, and therefore appropriate.

Respondent 10: My outlook has liftoff for the federal funds rate in September 2015 (to a range of 25-50 basis points), followed by 25 basis point increases at every other meeting through 2016. The trajectory steepens to 25 basis point increases at every meeting in 2017, nearing its appropriate long-run value by the end of the year.

Respondent 11: Output and unemployment gaps continue to decline. I expect these gaps to close by the end of this year or early next year. In addition, my outlook for inflation through the end of 2016 is below our 2 percent objective. This situation continues to call for very accommodative monetary policy. Appropriate policy in this case is to delay liftoff from the zero lower bound until the middle of 2015. My judgment on appropriate policy is generally informed by looking at simple rules that adjust for the zero lower bound, as well as by my expectations of, and uncertainty about, the costs and benefits of continuing unconventional actions.

Following liftoff, my fed funds path through the end of 2016 remains flatter than some simple rules would suggest. In my projection, the reasons include the following:

- Although the unemployment rate by the middle of 2015 is essentially at its long-run natural rate, broader measures of slack (including the share of long-term unemployment) take a bit longer to return to normal, reflecting the dynamics of the labor market.
- Some headwinds remain in 2016, such as constraints on credit availability for small businesses and foreign economic activity. These continue to reduce the equilibrium real interest rate relative to its long-run value.
- In an environment in which short-term rates have been near zero for almost seven years, there are potentially some modest benefits to having an earlier liftoff but then a more gradual rate path than might normally be called for. These benefits include managing expectations and minimizing the potential for disruptions to global financial markets.

Respondent 12: (i) Recent growth data and forecasts have caused me to reduce my estimate of future growth.

(ii) I've become more convinced to go early and gradual.

Respondent 13: My judgment regarding the appropriate path of the federal funds rate is predicated on promoting sustainable long-run economic growth and price stability. My forecast calls for the unemployment rate to be near its longer-run level and inflation close to 2 percent in early 2016. Given uncertainty about how the economy will respond to the removal of accommodation after a prolonged period of near-zero rates, I view increases in the funds rate should be gradual to see how the economy responds. Adjustments should be data dependent, but the gradual approach to normalizing policy results in a funds rate below my estimate of its longer-run level in 2016 and 2017.

Respondent 14: The crucial factors behind our assessment of the appropriate path for monetary policy and the FFR are the current state of the economy, our central economic outlook, and our balance of risks around the central outlook. As such, we believe it is important to communciate clearly to the public that these factors will dictate the path of the policy stance. The changes along these dimensions were sufficient to lead to some changes in our assessment of the appropriate path for the FFR.

Based on our modal outlook and assuming that long-term inflation expectations remain anchored, we anticipate that the target range for the FFR will remain at its current level until September 2015, one quarter later than in the December SEP. This change was a close call as lifting off in June or September would have only a small impact on the appropriate path for policy under our modal outlook. Given that inflation likely will be well below the FOMC's objective at both dates, we believe that the later date for liftoff would provide a greater benefit in securing greater confidence at the time of liftoff that inflation over the medium term will be moving toward 2% and reducing the risk of a return to the zero lower bound. Nevertheless, it is important to communicate to the public that the decision about the timing of liftoff will be dependent upon the data and the FOMC's assessment of the outlook and risks rather than a particular calendar date.

However, a more important factor in determining the stance of policy as we approach normalization will be the pace of rate increases following liftoff. In general, this pace will depend upon our assessment of economic conditions and the outlook, longer-term inflation expectations, and the response of overall financial conditions to policy tightening. Currently, the low levels of inflation and longer-term inflation compensation, the uncertainty surrounding the outlook of inflation moving toward 2%, and the uncertainty about the level of the equilibrium real FFR [discussed further below] all point to a more gradual pace during the early stages of normalization than we anticipated in the December SEP. Therefore, we have moved down our assessment of the appropriate path such that the target FFR ranges at the end of 2015 and the end of 2016 will be 1/2 - 3/4% and 1 3/4 - 2% respectively. We thus do not expect that the FFR will reach our estimate of its longer-run normal rate until 2018. We believe that this gradual path is necessary to provide insurance against the various restraining forces still faced

by the U.S. economy (including those stemming from global economic and financial developments) and to address the uncertainty about the equilibrium real FFR, which in turn will help ensure the achievement of the FOMC's objectives over the longer run. Moreover, in current circumstances–very low inflation and unemployment near our estimate of its longer-run normal level–unemployment is most likely to fall below its longer-run normal level under appropriate policy, thus providing more insurance against the risk of being caught in a low inflation trap. In fact, our modal forecast has the unemployment rate falling below our 5% estimate of the longer-run normal rate.

Another factor informing our assessment of the appropriate path for the target FFR is our estimate of the equilibrium real short-term interest rate. We have previously assumed that in normal times this rate is in the range of 1% - 3%; however, the protracted period of low global interest rates and uncertainty about the equilibrium real rate have led us to widen the range to 1/2 - 3%. Adding the objective for inflation (2%) then gives our estimated range for nominal equilibrium rate as 2.5 - 5.0%. We continue to assess that the equilibrium rate is more likely to be in the lower half of that range because of the behavior of nominal and real Treasury yields and productivity growth since the end of the recession; therefore, we have maintained our point estimate of 3 1/2%, as seen in the response to question 3(a).

We would also note that we assume that reinvestment continues until economic and financial conditions indicate that the exit from the zero lower bound appears to be sustainable and the risks of a reversion are deemed to be negligible. Based on our modal outlook, we expect those conditions to occur sometime in the first half of 2016.

Respondent 15: We continue to believe it is appropriate that the Committee strongly demonstrate its commitment to a symmetric 2 percent inflation target with highly accommodative policy. Our preferred way of doing this is for the FOMC to be clear that it will delay liftoff until labor market recovery is closer to completion (as measured by a broad array of indicators) and we can be confident that the medium-term outlook for inflation is at least at 2 percent. We assume that the first rate increase will occur in March of 2016; at that time, our outlook has inflation one to two years ahead running just a little below 2 percent. We expect by then that the downward effects of energy prices will have dissipated and core inflation will have clearly moved higher. After liftoff, we believe it will be appropriate for the path of rate increases to be quite shallow, at least initially. This would give the Committee time to assess the economy's performance under less accommodative financial conditions and to observe whether inflation is continuing to move up to target. We feel that a 2016 lift off date and a shallow path for rate increases is appropriate policy from a risk management perspective, as we view the costs of a retreat back to the zero lower bound as much greater than those of inflation running modestly above 2 percent for a couple of years if demand is unexpectedly strong. This policy path results in the federal funds rate at the end of 2017 still being nearly a percentage point below our assumption for the long-run neutral rate even though our forecasts for unemployment and inflation are near their long-run policy goals.

Respondent 16: History teaches that the best way to prolong an economic expansion is to ease off the accelerator while the unemployment rate is still above its sustainable level. This approach was successful in the 1960s, the 1980s and, again, in the 1990s. Unfortunately, it's too late to apply the same approach in the current expansion. The earliest feasible liftoff date is now June, by which time the economy will already have reached my estimate of full employment. With slack eliminated, inflation will rebound quickly as soon as oil prices and the dollar stabilize, and I expect to see 2 percent inflation in 2016. To limit the overshoot in unemployment and inflation, it will be necessary to remove accommodation more quickly than I would have preferred. I assume that the Committee moves to a neutral policy stance by the end of next year, and a bit beyond a neutral stance in 2017. It is not the case in my projection that the funds rate is below my assessment of its longer-run normal level at the point where inflation reaches 2 percent and the unemployment rate is "close to or below"

my projection for its longer-run normal level.

Respondent 17: I still believe that data in April will warrant raising interest rates. Trend growth in consumer spending has increased, labor market conditions have improved significantly, and a variety of policy rate benchmarks indicate higher real interest rates. I would favor waiting until June to raise rates, however, in order to avoid undermining the credibility of our January statement and our Chair's characterization of the meaning of the word "patient."

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 expectation is for a continued path of moderate recover as labor markets continue to improve and fiscal headwinds disappear. Recent weakness in PCE and industrial production numbers suggest, as reflected in the change in Tealbook projections, some modest weakening of near-term prospects. Difficult as it is to pin down the amont of slack in labor markets – what with the somewhat conflicting trends of strong job growth and weak wage growth – it seems to me on balance that some slack remains and, in any case, that wages are unlikely to move up more than moderately in the next several quarters. Global developments are again worrisome.

Respondent 2: N/A

Respondent 3: The gradual fading of the aftereffects of the global financial crisis in the U.S., developments abroad, levels of resource utilization, and inflation expectations are the key factors shaping my central economic outlook. In addition to the aftereffects of the financial crisis on domestic activity, the depressing effect of the elevated dollar on next exports and core inflation will exert restraint on the progression of employment and inflation to target levels. In this environment, accommodative monetary policy remains necessary to move to maximum employment consistent with price stability and 2 percent inflation, assuming inflation expectations remain well anchored. The main risks to this central economic outlook stem from developments abroad, in particular the tightening of financial conditions and restraint on aggregate demand associated with a considerable and persistent strengthening of the dollar.

Respondent 4: I expect the pace of output growth over the medium term to be somewhat above my longer term trend of 2.4 percent as the headwinds that have been holding down growth recede further. With fairly modest headline growth over the next three years, I anticipate that the unemployment rate will fall to 5 percent in 2017, which is slightly below my longer term trend. With appropriate monetary policy firming, I do not anticipate that the unemployment rate will move much below the natural rate in 2017. I anticipate that headline inflation will be held down some in early 2015 by the recent fall in oil prices. By 2017, headline and core inflation are near target. Inflation stays anchored around my target of 2 percent in response to tighter monetary policy than that anticipated in the Tealbook.

Respondent 5: My view is that our lift-off, when it occurs, will be tardy. This tardiness is shaping my forecasts of the overshooting of inflation and the undershooting of unemployment.

Respondent 6: Incoming data on real economic activity has been below expectations. The rapid dollar appreciation has led to a larger drag from net exports to GDP growth than previously thought. Adverse weather may also have been playing a transitory role. Labor market improvements, however, have continued at a solid pace. The disconnect between the spending and the labor market data is being partly reconciled in the current outlook by assuming a somewhat slower pace of potential GDP growth. This revision is accompanied by a downward revision to the short-run equilibrium real rate of interest, which is now estimated at 1.5 percent. On the price side, core PCE inflation has continued to be running below expectations. Given the current level of the unemployment rate, we have taken signal from the lack of inflationary pressures by lowering our estimate of the equilibrium rate of unemployment from 5.2 to 5.0 percent. Such a revision is also consistent with changes in the age and education distributions of the labor force.

The broad contours of the outlook have not changed materially. Steady improvements in the labor market are restoring consumer confidence and should lead to continued gains in consumer spending. This in turn should raise businesses' confidence about the sustainability of the recovery and generate more capital expenditures. We expect that the labor market improvements will ultimately translate into a faster pace of household formation and residential investment growth. Still, residential investment has been disappointing so far and more robust gains in housing remain a forecast at this point. Overall, the projected pace of growth over the course of 2015-17 is modestly above potential, with activity restrained by the dollar appreciation. As the economy approaches full employment, we expect a more pronounced cyclical rebound in labor force participation, which should bring the relationship between GDP growth and the unemployment rate more in line with historical norms. As a result, we project a gradual decline in the unemployment rate, with the unemployment rate reaching the 5 percent equilibrium level by 2017. At that time, core PCE inflation is still expected to run somewhat below target. In a context of growth modestly above potential and little inflationary pressures, monetary policy can afford to be patient when removing accommodation. The gradual removal of accommodation in our baseline outlook gives monetary policy the opportunity to probe for lower equilibrium levels of the unemployment rate and/or the equilibrium real rate of interest than we are currently assuming. It also provides room for a faster but disciplined pace of tightening should inflationary pressures materialize more rapidly than expected.

The risks to the growth outlook are becoming more balanced, even if it is still the case that policy may not provide an adequate offset in the case of an adverse scenario. The unemployment rate has declined so far more than we had expected, and there is a risk that this pattern will persist over the forecast horizon. We continue to view the risks to the inflation outlook as skewed to the downside, as we factor in the possibility that the equilibrium unemployment rate is lower than 5 percent and that long-run inflation expectations are currently anchored at a level below target.

Respondent 7: Fundamentals supporting the expansion remain favorable, including highly accommodative monetary policy, improving household balance sheets, strengthening labor markets and lower oil prices that support consumer spending, easing fiscal headwinds, and further relaxation of tight credit conditions. I anticipate that recent softness in some of the incoming monthly data will prove to be transitory. Foreign central banks are adding accommodation, which should promote stronger growth and higher inflation rates abroad. My business contacts are optimistic, and a near majority reported recently expanding staffing levels. Overall, I see these forces contributing to above-trend growth and some further improvement in labor markets. By the end of 2017, I project that the economy will essentially be at its steady state.

The year-over-year headline PCE inflation rate is likely to remain low in the near term due to the impact of the oil price shock, but I anticipate very low inflation readings to prove transitory as oil prices stabilize. Core inflation has edged down due in part to some pass-through of lower oil prices and import prices but I expect it to stabilize and rise over the forecast horizon. In my judgment, inflation expectations remain anchored. The survey-based measures of inflation expectations have been relatively stable; I take less signal from measures of inflation compensation based on asset prices as these are likely reflecting changes in risk or liquidity premia rather than inflation expectations. Anchored inflation expectations along with an improving economy are consistent with inflation moving back to the 2 percent longer-run objective by late 2016 or early 2017. As inflation increases and the expansion continues, I expect wage growth to rise as well.

I view overall uncertainty as roughly comparable to historical norms of the last 20 years. As described above, while there are a number of risks to my outlook, I view them as broadly balanced for both the real economy and inflation.

Respondent 8: There is a risk of a premature tightening of monetary policy that would degrade our performance on inflation.

Respondent 9: After a bit of near-term weakness, I expect GDP growth to settle in at roughly 2 1/2 percent through 2016, before slowing toward its longer-run normal value. In my projection, the unemployment rate continues to decline, reaching its longer-run normal value by late 2016, and inflation moves slowly back toward the Committee's 2 percent longer-run objective. Key factors propelling this continued expansion are: monetary policy that remains quite accommodative for some time; a further easing of credit constraints and the continued repair of household balance sheets; lower energy prices and the resulting boost to real income; and even a modest impetus from mildly expansionary fiscal policy. In addition, aggregate activity should be supported by a favorable self-reinforcing dynamic in which increased confidence that the economy is at last returning to normal makes firms more willing to hire and invest and households more willing to consume and buy houses. I view the acceleration in monthly payroll gains over the past year as a sign that this favorable dynamic is probably already underway. These favorable forces are, however, offset to a degree by the recent appreciation of the dollar and concerns about the foreign economic outlook, which are restraining net exports and the broader economy through spillover effects. Largely as a result, I have lowered my estimate of real GDP growth in 2015 through 2017 a bit. I have made no material changes to my assessment of supply-side conditions since December. With real GDP growing somewhat faster than its potential rate, I expect the unemployment rate will fall gradually over time and modestly undershoot its long-run rate in 2017. As slack is taken up, I anticipate that inflation will gradually move up to 2 percent (although not quite by 2017). In making this forecast, I assume that inflation expectations remain well-anchored despite the recent declines in market-based measures of inflation compensation, which I think have been temporarily depressed in part by declines in oil prices and technical factors.

Respondent 10: My outlook consists of above-trend growth over the next few years, a further reduction of labor market slack, and inflation that gradually converges to target.

Growth over the medium term is primarily driven by stronger consumption growth, supported by ongoing improvements in the labor market and a robust pace of disposable income growth, further improvement in consumer sentiment, and lower energy prices. While lower oil prices negatively impact energy-related investment, conditions remain supportive for capital investment in other sectors. Sluggish global growth and a strong dollar emerge as modest headwinds in my outlook, slowing export growth and providing some restraint to domestic industrial activity.

The risks to my growth outlook have tilted to the downside. Further dollar appreciation and weaker foreign GDP growth could restrain export growth and slow the pace of domestic industrial activity more than I assume in my baseline outlook. I am also growing increasingly concerned that the recent weak growth readings are not as transitory as I've assumed in my baseline.

The risks to my inflation outlook have also tilted to the downside. Measures of underlying inflation are markedly softer than I had expected in December. Underlying inflation appears to be well below 1.5 percent. Measures of inflation compensation, which have rebounded some, are still below their longer run averages and some professional forecasters in the SPF panel have lowered their longer-run inflation expectations. Amid slack labor market conditions, it is possible that inflation will fail to return to target over the medium term. Sharply lower energy prices and a stronger dollar may pass-through to core inflation measure to a much greater degree than I've marked into my baseline forecast.

Respondent 11: The economy is still recovering from the severe housing collapse and financial crisis. Recoveries from these types of episodes are associated with sustained weakness in aggregate demand through a variety of channels, which policy has only partially offset. Many of the associated remaining headwinds are slowly easing:

- Housing has been and continues to be a headwind. However, with household balance sheets as well as consumer credit conditions improving, I expect this to abate;

- Policy uncertainty is back to fairly normal levels.

The one headwind that is not abating is global economic weakness. The relatively strong performance of the U.S. economy compared with that of the rest of the world, and subsequent monetary easing in Europe and elsewhere, has resulted in an appreciation of the dollar. I expect this appreciation to be a drag on net exports and GDP growth. Together with continued geopolitical tensions, deteriorating global growth remains a downside risk to my forecast.

In this environment, I expect the economic recovery will proceed at a solid pace. And with substantial monetary stimulus still in play I expect output and unemployment gaps to close over the next year. In terms of inflation, continued slack in labor and goods markets and subdued commodity and import prices should keep inflation below the FOMC's 2 percent inflation target for the next couple of years. Well-anchored inflation expectations and diminishing slack eventually pull inflation back to our objective.

Respondent 12: (i) The relatively low rate of unemployment; (ii) the need to look through the temporarily very low rate of inflation; (iii) the belief that operating at the lower bound, while comfortable, is not optimal.

Respondent 13: My forecast for real GDP growth is characterized by above-trend growth of 2-1/2 percent in 2015 and 2-3/4 percent in 2016. Real GDP growth is supported by income growth from rising employment and wages, rising household wealth, accommodative financing conditions, and the ending of fiscal drag. Real GDP growth is likely to slow in 2017 as the economy operates at full capacity. As the remaining economic slack declines, I expect the unemployment gap to be closed in 2016. My inflation outlook projects a near-term decline, followed by a gradual rise in inflation coinciding with the removal of slack from the economy and the transitory effects of dollar appreciation and falling energy prices dissipating.

Respondent 14: Since the December SEP, we have seen a dichotomy in the economic data releases: labor market indicators generally have been relatively robust, but the expenditures indicators generally have been on the soft side and inflation has run further below the FOMC's objectives. Overall, we have responded to these developments by making relatively little change to our real GDP growth forecast, lowering the projected path for unemployment, and reducing the overall and core inflation forecasts.

We project growth of real GDP in 2015 and 2016 to be moderately above its potential rate. Supported by a stronger labor market, low energy prices, and higher net worth, we see real PCE growth remaining solid over the forecast horizon, although at a somewhat slower pace than in the consensus of private forecasts. The relative strength of consumption is expected to support stronger business investment growth than occurred in 2014Q4, despite weaker investment in oil exploration and drilling stemming from lower oil prices. However, these positive developments are expected to be offset by weaker net exports, as a stronger dollar leads to stronger import growth and slower export growth. In 2017, most of the resource slack is expected to be dissipated, and thus we expect growth to be near its potential rate.

With above-potential growth and a flat participation rate, we expect the unemployment rate to continue to fall to 5.1% by 2015Q4 and then to 4.8% by 2016Q4, which is modestly below our estimate of the longer-run normal unemployment rate (5%). The small undershoot of unemployment occurs under our assumption of appropriate policy because with inflation currently substantially below the FOMC's objective and unemployment relatively close to its longer-run rate, that undershoot contributes to a faster return of inflation to objective, consistent with the balanced approach. In addition, our analysis indicates that current resource slack probably is larger than that indicated by the unemployment gap. With growth at potential and the policy rate below its longer-run normal value, we anticipate that the unemployment rate will remain below 5% in 2017 before it rises back

to 5% in subsequent years. Even though we project a lower unemployment rate path, there is still notable probability that it could decline somewhat more than anticipated over the forecast horizon.

Based on oil futures markets, we anticipate that oil prices have bottomed out and will gradually rise over the forecast horizon. Thus, while the total PCE inflation is likely to be -2% (annual rate) in 2015Q1, we expect it to rise over the next two years such that it is 1 1/2 - 1 3/4% in 2016, due to declining slack, accommodative policy, and the gravitational pull of well-anchored inflation expectations. The core PCE deflator is expected to rise at about a 1 1/4% annual rate over 2015 and about 1 1/2% over 2016 as declining prices for nonpetroleum imports depress goods prices. In 2017, we expect both overall and core PCE inflation to be 2%, reflecting the dissipation of slack, continued accommodative policy, some rises in marginal costs of production, and well-anchored long-term inflation expectations that act as a gravitational force pulling inflation toward the FOMC's long-term objective.

The near-term risks to the forecast for growth appear to be reasonably well balanced. With an improving labor market and better sentiment, we could see a stronger growth of both consumer spending and housing in 2015 and 2016 than we now expect. If so, that would likely provide an additional boost to business investment spending. However, the U.S. economy may be more negatively affected by dollar appreciation than assumed in our central forecast and we may be underestimating the downside effects of reduced energy exploration and production. The risks to the inflation forecast also appear to be roughly balanced. The disinflationary effect of dollar appreciation may be stronger than we have anticipated. However, it is possible the slack may be reduced more quickly and begin to have a stronger impact on inflation than we have anticipated.

Respondent 15: Accommodative monetary policy, continued improvement in household and business balance sheets and access to credit, the diminution of fiscal restraint, and lower energy prices should allow domestic demand to gain momentum as we move through the projection period. Pent-up demand for capital goods and consumer durables should provide further impetus to growth. The sizable appreciation of the dollar will likely constrain growth in net exports.

These fundamental factors supporting activity are assumed to generate growth moderately above potential over the next 2 years. As monetary policy normalizes and cyclical dynamics run their course, growth moderates back towards potential in 2017. Our path for GDP closes resource gaps by the end of 2016. Resource slack thus is expected to exert a diminishing downward influence on inflation as we move through the projection period; furthermore, we assume inflation will be pulled up by inflation expectations. In order to achieve our inflation target, we assume policy normalization does not begin until the one- to two-year-ahead inflation outlook is clearly headed back towards 2 percent, and that, at least initially, the path for rate increases will be shallow. Given the normal inertia in the inflation process, we could well see some modest overshooting of target beyond the projection horizon.

See the description of uncertainties and risks in section 2(b) above. In addition to those factors, there is a good deal of uncertainty over how resilient the economy will be to the removal of monetary accommodative and over the potential for inflation to rise more rapidly as growth gains momentum. However, as noted in 3(c) above, we see the costs of premature rate increases substantially weighing on activity and inflation and potentially pushing us back to the zero lower bound as being much higher than those of inflation moving up more quickly than anticipated. We have set our monetary policy assumptions accordingly, with a 2016 liftoff and shallow path for rate increases, to better balance the probability weighted costs.

Respondent 16: Highly accommodative monetary policy, improved household finances, reduced fiscal drag, and tame commodity prices have given us a rapidly improving labor market. Wage growth has gradually increased, and is likely to rise at an increasing rate with further reductions in the unemployment rate. Faster wage gains, rapid job growth and continued low consumer energy prices will boost real household income and spending, contributing to a cycle of rising demand and employment.

Progress toward price stability is best measured by the recent history and near-term expected trajectory of a core inflation measure, such as the Dallas Fed's trimmed-mean PCE inflation gauge. Fluctuations in headline inflation in response to supply-side shocks are inevitable and, indeed, desirable. They should not be a concern as long as nominal demand is projected to remain on a track consistent, over the longer term, with our 2 percent inflation objective.

Downside risks center on a rapidly cooling Chinese property market, conflict and tensions in the Middle East and Ukraine, and the fraying of public confidence in Euro-area institutions and policies. Recent government and central-bank policy actions raise hopes that these hazards will be avoided.

Respondent 17: Population growth in prime working ages will be below 0.5 percent each year. Real GDP per employee has risen by less than 1 percent annually over the last 3 years and is not likely to accelerate dramatically over the forecast horizon. My estimate of the medium-term trend in real GDP is accordingly 1 3/4 percent, well below what we have experienced in the past. My projection for the next 3 years is that consumer spending will be robust, leading to GDP growth that is modestly above trend and to improving labor market conditions.

Forecast Narratives (continued)

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

Respondent 1: As noted above, somewhat weaker data and some deterioration in global economic environment.

Respondent 2: N/A

Respondent 3: In the near term, stronger-than-expected momentum in the labor market and still subdued wage and price inflation raise the possibility that the natural rate is lower than previously thought, which led a downward revision of the unemployment rate. The appreciation of the dollar led me to revise down GDP growth and inflation over the medium term.

Respondent 4: N/A

Respondent 5: The decline in oil prices and their likely reversal have affected my near-term inflation forecasts. My forecasts of unemployment for this year and next year have been affected by the continued improvements in labor market indicators.

Respondent 6: The GDP growth forecast is somewhat slower than in the previous projections, mainly as a result of a larger dollar appreciation. The downward revision to potential GDP growth is also playing some role. Still, the projected level of the unemployment rate by the end of 2017 is only marginally higher in the present forecast. Similarly, revisions to the medium-term outlook for inflation have been minor.

Respondent 7: The contours of my forecast are little changed from the previous SEP. I have reduced my near-term inflation forecast in light of recent inflation readings that reflect the large oil price decline. I expect the effects of the oil price decline on inflation to be transitory as oil prices stabilize. I continue to anticipate that inflation will gradually return to our target, given the underlying strength in the real economy. The unemployment rate has moved down slightly more than expected, causing me to slightly lower the path for the unemployment rate this year and next. My GDP growth projection is generally little changed.

Respondent 8: Inflation has run even lower than I had anticipated, and I have taken on board the staff's pessimism regarding the influence of the exchange value of the dollar on economic outcomes.

Respondent 9: My forecasts for unemployment, inflation, and the path of the federal funds rate have changed only a little since December, although I have reduced for forecast for real GDP growth on average in response to the weaker tone of incoming spending and production data and the apparent drag on real activity from the dollar.

Respondent 10: I have marked down my growth forecast in 2015 modestly in response to softer than expected spending data for the first quarter and a further appreciation of the dollar since the December FOMC meeting. The dollar has appreciated by roughly 5 percent since December and net exports were more of a drag on fourth quarter growth than I was anticipating. I now expect sluggish global conditions and the stronger dollar to act as modest headwinds, tamping down the outlook for export growth and industrial activity through 2016. I continue to expect the current low level

of energy prices to persist throughout the forecast horizon which will provide a boost to consumer spending over the medium term. Partly offsetting that boost is weakness in energy-related investment, which, based on oil drilling activity, fell sharply in the first quarter. I have lowered my 2015 inflation projections significantly in response to the decline in energy prices and softer readings on underlying inflation than I had expected as of the December meeting.

Although the unemployment rate has fallen close to my previous estimate of its longer-run level, this has not been accompanied by clear signals of increasing price or wage pressures. Therefore, I have lowered my estimate for the long-run unemployment rate to 5.0 percent. This adjustment more closely aligns my judgment of the amount of labor market slack with my estimate of the output gap.

Respondent 11: Since December, I have made only modest changes to the broad contours of my forecast. My forecast for GDP growth in 2015 (Q4/Q4) is slightly lower, partly in response to the recent severe weather in much of the country. I have revised down my GDP growth forecast slightly for 2016 in response to the further appreciation of the dollar since the previous SEP. Also, I have revised down slightly my forecast of the unemployment rate for 2015 and 2016 in light of the stronger employment data. With very accommodative policy I expect unemployment to undershoot the NAIRU for a period.

In addition, recent declines in commodity, energy, and import prices will put substantial downward pressure on headline inflation. Because of this, I now expect headline inflation to run more substantially below our 2 percent target over the next two years than in December. I expect these commodity, energy, and import price movements to have a much smaller effect on core inflation and to be largely offset by a somewhat greater degree of firming in wage inflation. Thus, I have made little change to my medium-term outlook for core inflation.

Respondent 12: See 3(i) and 3(ii) above.

Respondent 13: The information received since December has led me to revise down my forecasts for real GDP growth, PCE inflation, core PCE inflation, and the unemployment rate. Specifically, the downward revisions in 2015 PCE inflation and core PCE inflation reflect the transitory effects of the recent shifts in energy prices and foreign exchange rates. In addition, I have reduced my estimate of the longer-run level of the unemployment from 5.5 percent to 5.2 percent, which reduces the upward pressure on the inflation rate in 2016 and 2017.

Respondent 14: For real GDP growth, the further appreciation of the dollar has led to a larger and more persistent negative contribution from net exports in our projection. Some of those negative effects are offset by the positive effects of lower oil prices and higher net worth on personal consumption expenditures. At the same time, much of the consumption and expenditure data received since December have been soft, leading to a somewhat lower projected path of final demand in the near term. Overall, these changes have led to modestly lower real GDP growth in 2015, but little net change in 2016.

The labor market was again stronger than we expected in December, with the unemployment rate declining somewhat more than we had projected. Consequently, our projected path for the unemployment rate is below that of the December SEP, with the unemployment rate falling below our point estimate of the longer-run natural rate. With the change in the unemployment path, our projected path for the participation rate now is quite flat, which is more consistent with the recent trend in the data.

Both overall and core inflation has been running below our previous projections, leading us to lower our projected paths for both variables. The behavior of alternative measures of underlying inflation also is consistent with a lower inflation path over the next two years. In part, the lower path for inflation reflects the impacts of the further decline in energy prices and of the appreciation

of the dollar. However, despite the further fall in market-based inflation compensation through the end of January, we continue to assume that inflation expectations remain anchored at the FOMC's longer-run objective. The objectives of avoiding falling into the low inflation trap and to keep inflation expectations anchored were factors behind the changes to our projected unemployment and FFR paths under appropriate policy.

Respondent 15: As noted earlier, we revised down our assumptions for the long run unemployment and federal funds rates. In addition, recent data have caused us to revise down our growth forecast for early 2015. Our forecast for 2016 growth is also lower largely due to the higher dollar. Our path for unemployment is down from December, reflecting a lower starting point as well as our lower natural rate. We slightly reduced our forecasts of core inflation in light of recent data and made larger changes in our near term total inflation outlook to reflect the drop in energy prices.

Respondent 16: I have revised my real growth projections downward, slightly, reflecting a more realistic view of likely growth in the working-age population and my belief that most of the declines we've seen in labor-force participation are unlikely to be reversed. My unemployment projections are unchanged. The stronger dollar and lower price of oil have had a larger impact on both headline and conventional core inflation than I had anticipated last December, and I have revised my near-term inflation projections accordingly. I have made only small adjustments to my assessment of the appropriate funds-rate path.

Respondent 17: N/A

Forecast Narratives (continued)

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

Respondent 1: No major differences – only a few tenths of a percentage point one way or the other.

Respondent 2: N/A

Respondent 3: I expect greater continued movement in the dollar and greater effects of exchange rate movements on both net exports and core inflation due to lower core import prices.

Respondent 4: My forecast calls for stronger growth, somewhat higher inflation, and tighter monetary policy over the forecast horizon than the Tealbook.

Respondent 5: My forecast is for more rapid GDP growth during 2015 than in the Tealbook (3.1% vs. 2.2%) and a lower unemployment rate (4.8% vs. 5.2%). Related to unemployment, I also see the unemployment rate declining further below its long-run value before reversing course and reaching its long-run value. This long-run value of 5.8% exceeds the Tealbook forecast of 5.2%. With respect to inflation, my forecast for both headline and core measures includes an overshooting before reaching 2.0%; in contrast, the Tealbook has both inflation measures moving to 2.0% without any overshooting.

Respondent 6: The two forecasts are conditioned on broadly similar policy assumptions, and have similar outcomes both in terms of economic activity and inflation.

Respondent 7: My forecast is somewhat stronger than the March Tealbook forecast. Like the Tealbook I expect that GDP growth will proceed at an above-trend pace in 2015 and 2016 and the unemployment rate will continue to decline. (I note that my trend growth rate is higher than the Tealbook's.) My forecast calls for somewhat more inflationary pressure than the Tealbook forecast: I expect that inflation will return to our 2 percent longer-term objective by late 2016 or early 2017. Compared with Tealbook, this firmer path for inflation calls for a steeper path for the funds rate.

Respondent 8: N/A

Respondent 9: I believe that the natural rate of unemployment is a bit lower than the staff estimates, but this is a minor difference.

Respondent 10: My growth forecast now runs roughly 1/2 percentage point above the Tealbook throughout the forecast horizon, mostly due to our differing perspectives on potential GDP growth. My unemployment rate projection is identical to Tealbook's path throughout the medium term. However, I lowered my estimate for the long-run unemployment rate to 5.0 percent as I have yet to see any material wage or price pressure despite an (U-3) unemployment rate that has already fallen to 5.5 percent. My headline and core inflation forecasts run about 1/4 percentage point above the Tealbook over the forecast horizon, as it is still my view that inflation expectations remain at a target-consistent level of 2 percent.

Respondent 11: My forecast is broadly similar to the Tealbook projection. One notable difference is that the Tealbook has a much more protracted return of inflation to the FOMC's stated 2 percent objective. Also, the Tealbook has somewhat slower GDP growth in 2015 than I do, though I broadly share the Tealbook's view on GDP growth after 2015.

Respondent 12: There are no important differences.

Respondent 13: The appropriate path for the federal funds rate in 2015, 2016, and 2017 in my forecast is slightly above the Tealbook forecast. Nevertheless, I expect somewhat faster real GDP growth, somewhat lower unemployment, and somewhat higher inflation than Tealbook during the forecast horizon. In addition, since I have not fully taken on board the productivity slowdown in Tealbook, my estimate of longer-run real GDP growth is higher than Tealbook's estimate.

Respondent 14: Since December, the Tealbook forecast for real GDP growth has been reduced more than our forecast, such that real growth in the Tealbook forecast is now below that in our forecast, particularly in 2016. For that year, the major reason for the difference appears to be that the Tealbook projects a larger effect of dollar appreciation on net exports than we have, suggesting that the Tealbook has more persistent effects than in our models.

Otherwise on the real side, the differences are principally more in the details. Among such details, one long-standing difference regards business fixed investment. The Tealbook projects slower growth in business fixed investment in 2015-16 than in our forecast; the reason for this difference is not immediately clear, but it may in part reflect the Tealbook assessment that the capital stock is fairly close to levels consistent with its downwardly-revised assessment of potential growth. This factor is offset by faster consumption growth in the Tealbook forecast, another long-standing difference with our forecast, which in part reflects stronger wealth effects in the Tealbook forecast.

Because we both now project a small undershoot of the unemployment rate, our forecast relative to our estimate of the longer-run natural rate is similar to the Tealbook's forecast relative to its estimate of the longer-run rate. Therefore, the difference between the paths of the unemployment rate reflects the Tealbook's higher estimate of the longer-run rate (5 1/4%) than in our forecast (5%).

For inflation, the two forecasts are similar in 2015-16. A difference arises in 2017, where we expect inflation to be at the FOMC's objective while the Tealbook projects that inflation will not reach that level until 2019. This difference reflects differing views about inflation dynamics. In the Tealbook, with the underlying inflation rate below the FOMC longer-run objective and considerable persistence in the inflation process, a prolonged period of low unemployment (and a positive output gap) appears to be necessary to induce inflation to rise toward the longer-run inflation goal. The faster return of inflation to its goal in our forecast reflects our assumptions of less inflation persistence and of the stronger attraction provided by anchored inflation expections.

Unlike the Tealbook, we do not yet assess that the longer-run potential GDP growth rate has declined, although we are assessing this assumption more frequently than previously has been our custom.

The change in the Tealbook's assumptions about the equilibrium real FFR and the longer-run level of the nominal FFR means that the Tealbook's assumptions now match ours.

In terms of the uncertainty and risk assessment, we see some differences between the two projections. On the real side, we continue to see higher uncertainty than normal whereas the Tealbook sees uncertainty at near normal levels. This assessment reflects our view that the unusual nature of the current expansion, the atypical policy environment in the U.S. and many foreign economies, and the yet-unclear net effects of lower oil prices and of dollar appreciation leave uncertainty about real activity above the SEP standard associated with the 20-year window of forecast errors. In another contrast, we see the risks around the real activity projections as roughly balanced rather than tilted to the downside as in the Tealbook. The stronger growth in 2014H2 and the indications that private final domestic demand still has been well maintained into 2015 (despite some of the weaker expenditure data) signal a significant risk that stronger expansion dynamics have been established. Furthermore, the possibility of a positive supply shock associated with lower energy prices also offsets the negative risks cited by the Tealbook. As for inflation, although our uncertainty assessment is similar to the Tealbook, we still see the risks as roughly balanced: although the decline in longer-term inflation

compensation and low inflation in other areas of the world pose downside risks to the forecast, the possibility that slack could be dissipated more quickly than anticipated offsets those risks.

Respondent 15: We assume that the first increase in the funds rate will occur early in 2016, three quarters later than the Tealbook. Our rate of increase after liftoff is similar. Accordingly, at the end of the projection period our assumed level of the funds rate only reaches 2.63 percent.

Our projection for growth in 2015-2017 averages about 1/2 percentage point stronger than the Tealbook. Much of the difference reflects our somewhat faster assumption for the growth rate in potential output over that period. Both our forecast of actual unemployment and our estimates of its natural rate are somewhat lower than the Tealbook. Our projection for inflation is similar to the Tealbook.

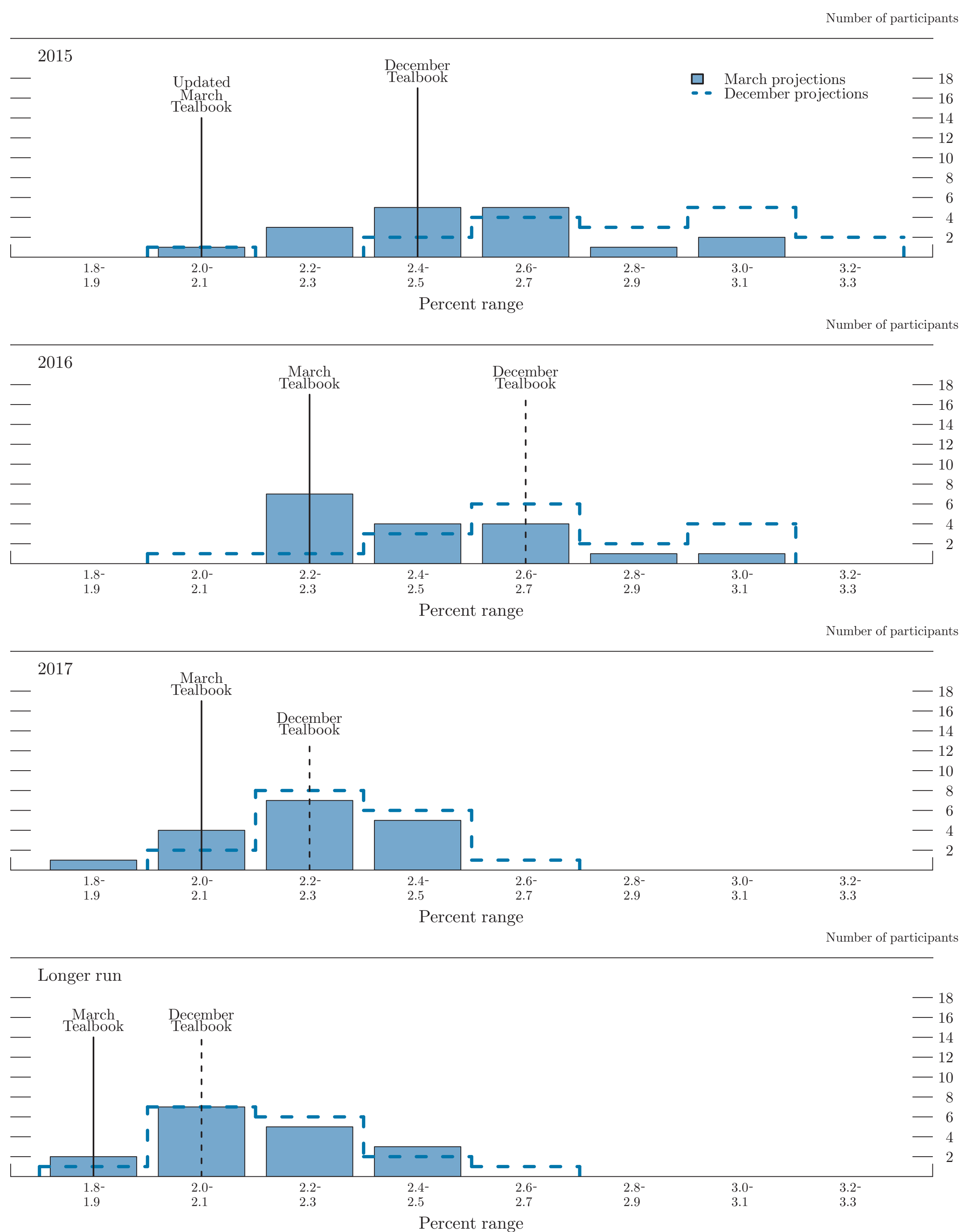
Respondent 16: I believe longer-term inflation expectations are currently well anchored at a rate consistent with the Committee's inflation objective, I'm convinced that in the near term inflation responds to changes in slack as well as the level of slack, and I prefer to use the trimmed-mean as my measure of core inflation, rather than strip out food and energy price increases. For all of these reasons, I see inflation rising farther and faster than does the Tealbook.

At the same time, I believe that increases in the unemployment rate are difficult to contain once they begin. An implication is that the risks to misestimating slack are asymmetric: It is substantially more dangerous to overestimate slack than to underestimate it.

Because I anticipate a higher inflation path than does the Tealbook, and because I see both substantially less benefit from overshooting full employment and substantially greater risk, I believe it is appropriate for monetary policy to move more rapidly to a neutral policy stance.

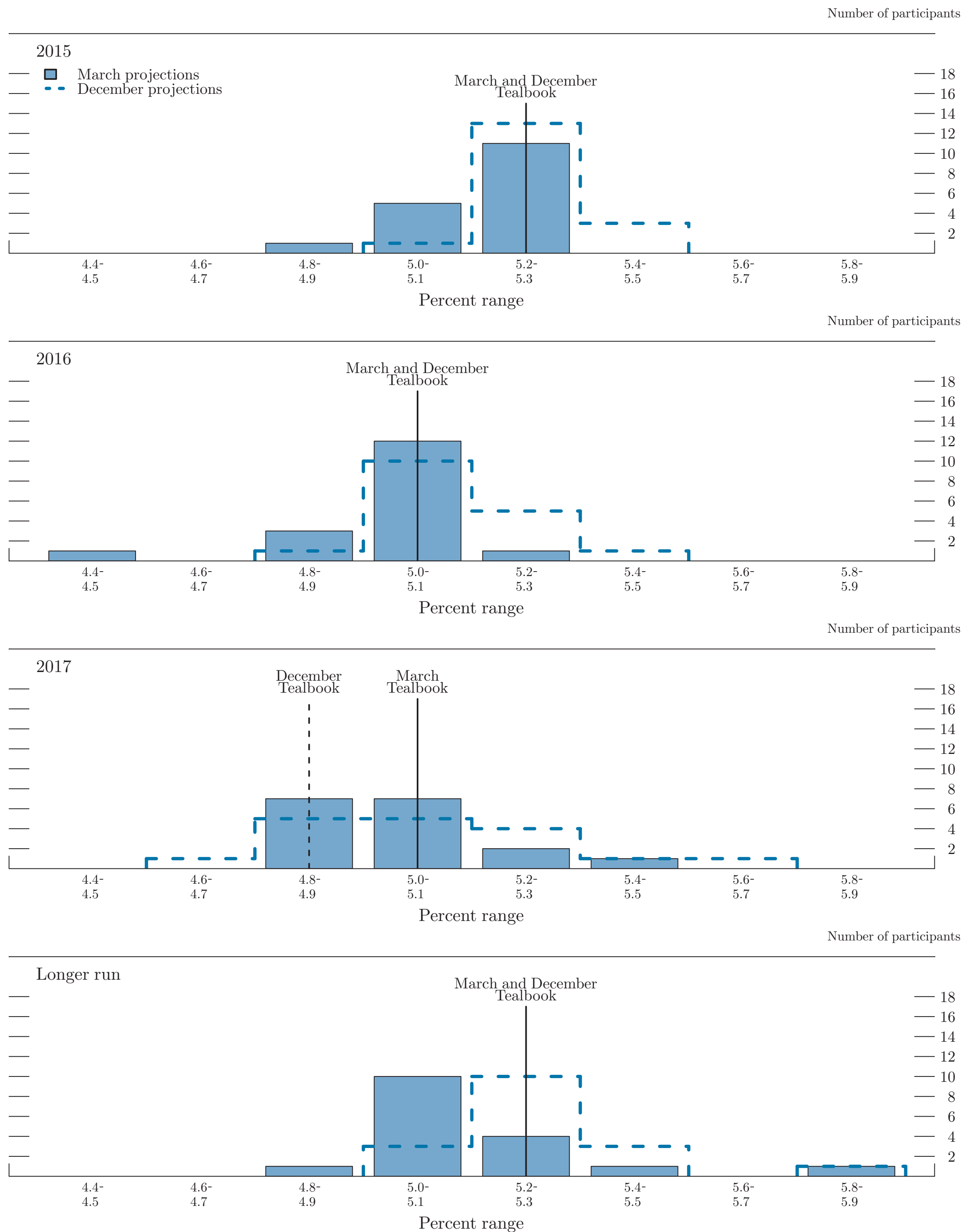
Respondent 17: Inflation is likely to move back toward 2 percent with more alacrity than in the Tealbook, and containment of inflationary pressures over time will require somewhat more rapid policy tightening.

Figure 3.A. Distribution of participants' projections for the change in real GDP, 2015–17 and over the longer run



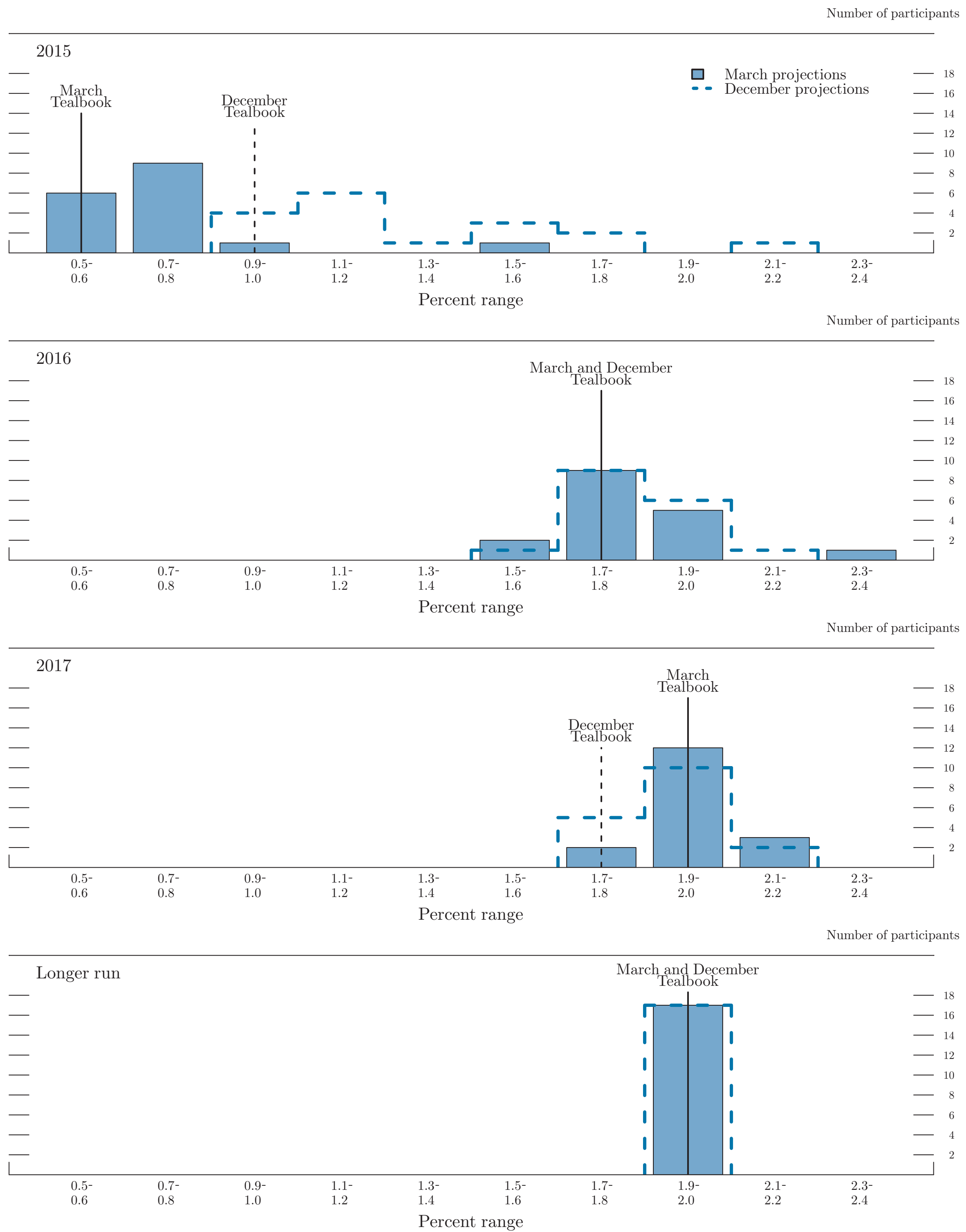
NOTE: Definitions of variables are in the general note to table 1.

Figure 3.B. Distribution of participants' projections for the unemployment rate, 2015–17 and over the longer run



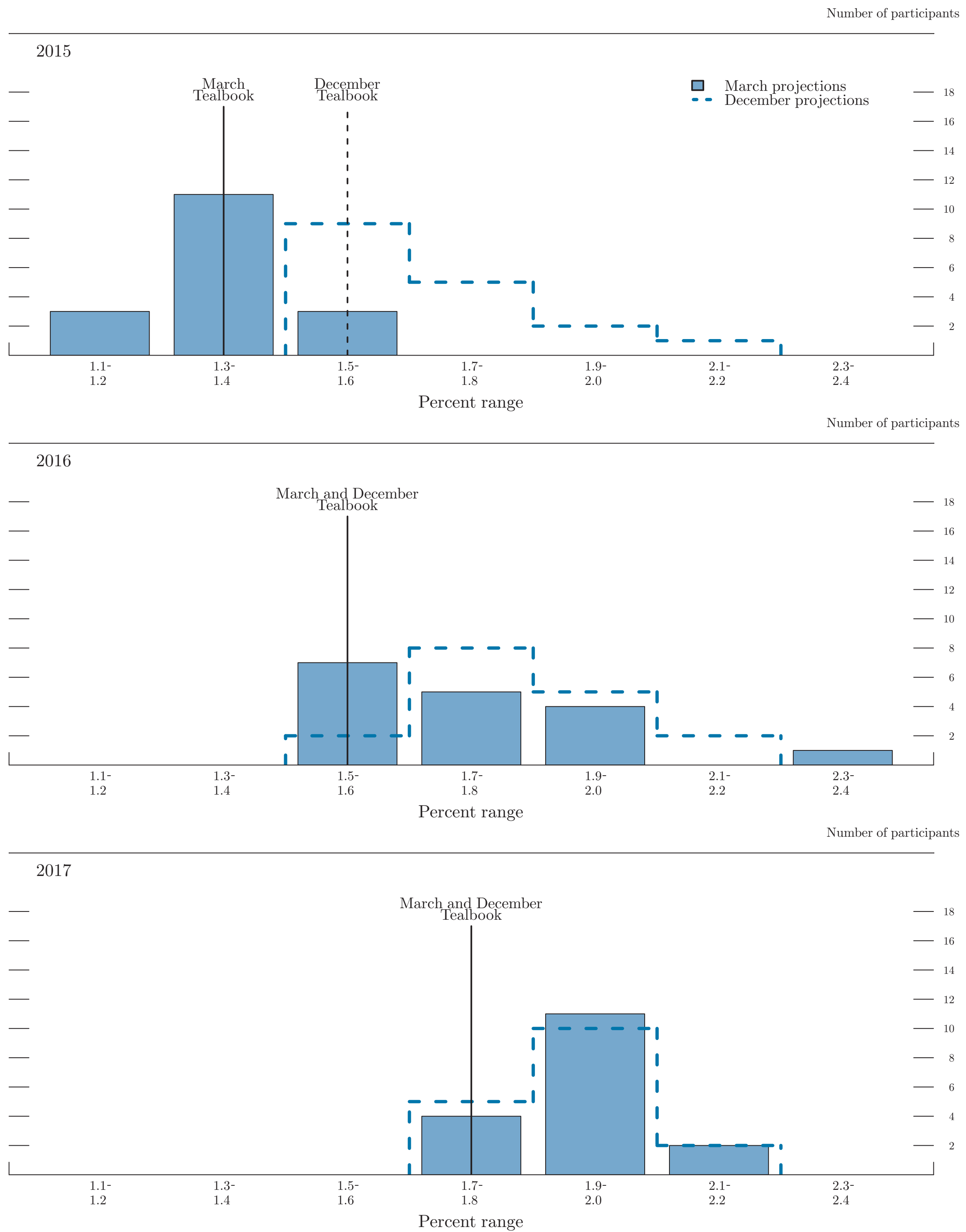
NOTE: Definitions of variables are in the general note to table 1.

Figure 3.C. Distribution of participants' projections for PCE inflation, 2015–17 and over the longer run



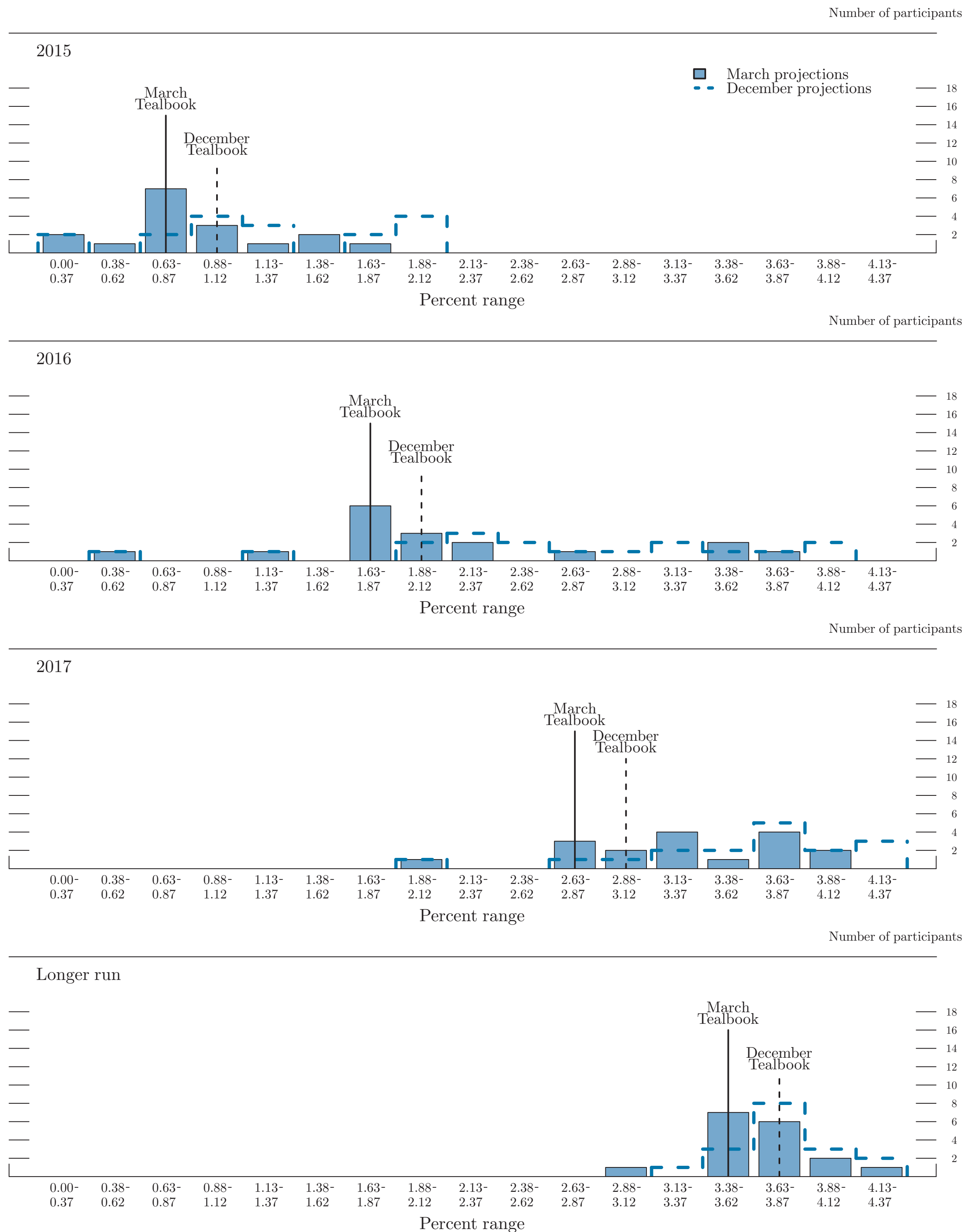
Note: Definitions of variables are in the general note to table 1.

Figure 3.D. Distribution of participants' projections for core PCE inflation, 2015–17



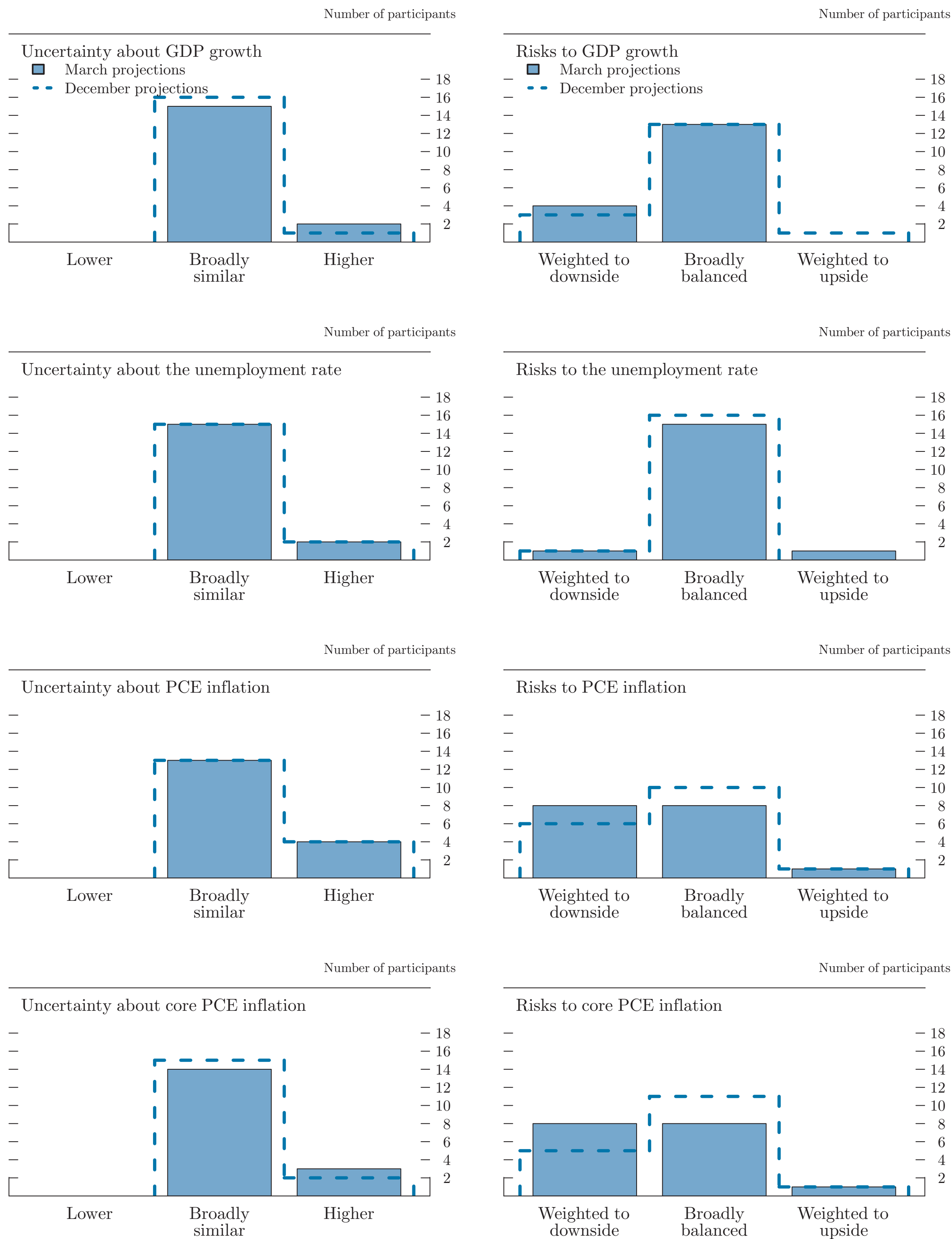
NOTE: Definitions of variables are in the general note to table 1.

Figure 3.E. Distribution of participants' judgments of the midpoint of the appropriate target range for the federal funds rate or the appropriate target level for the federal funds rate, 2015-17 and over the longer run



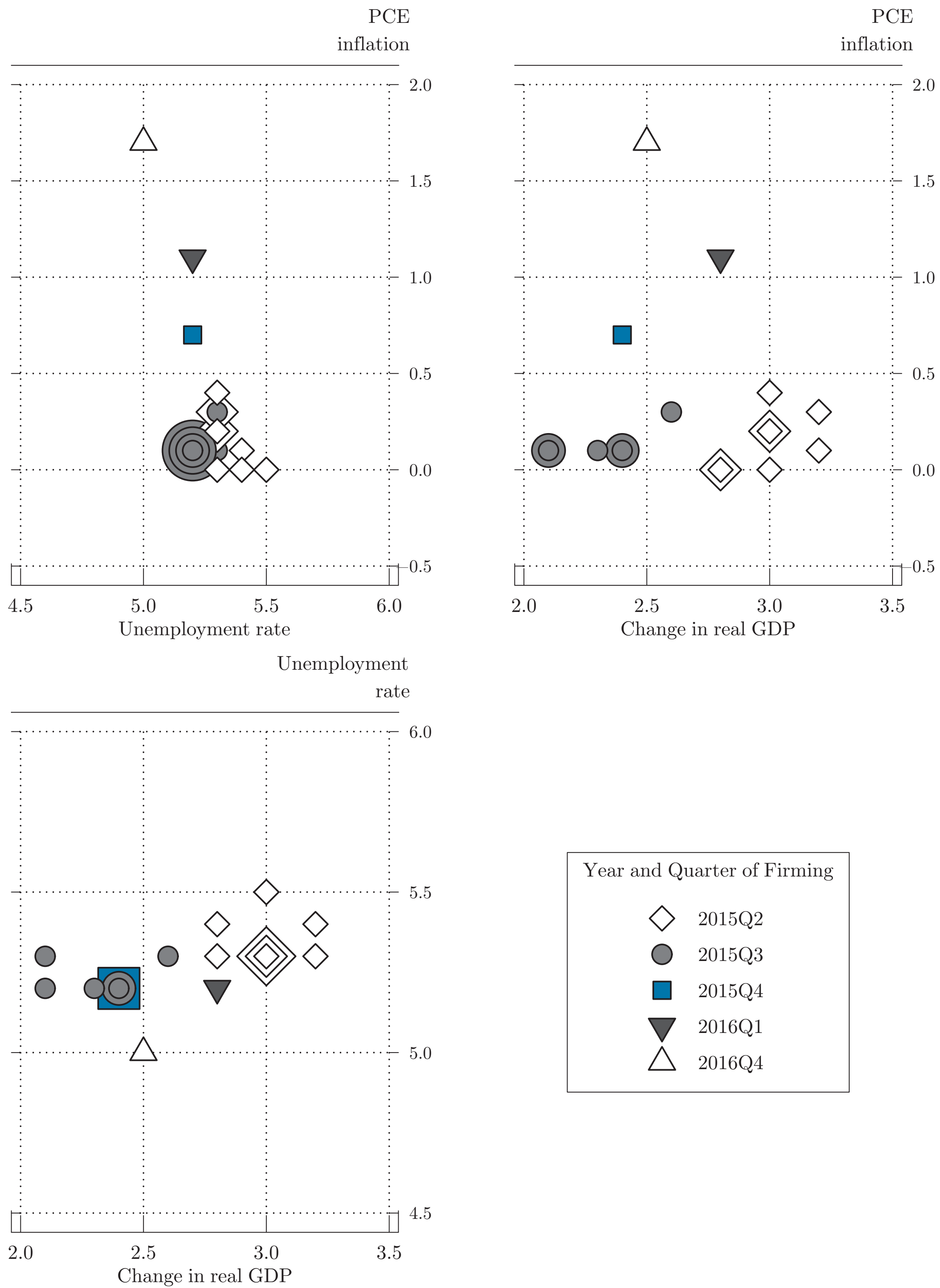
NOTE: The midpoints of the target ranges for the federal funds rate and the target levels for the federal funds rate are measured at the end of the specified calendar year or over the longer run.

Figure 4. Uncertainty and risks in economic projections



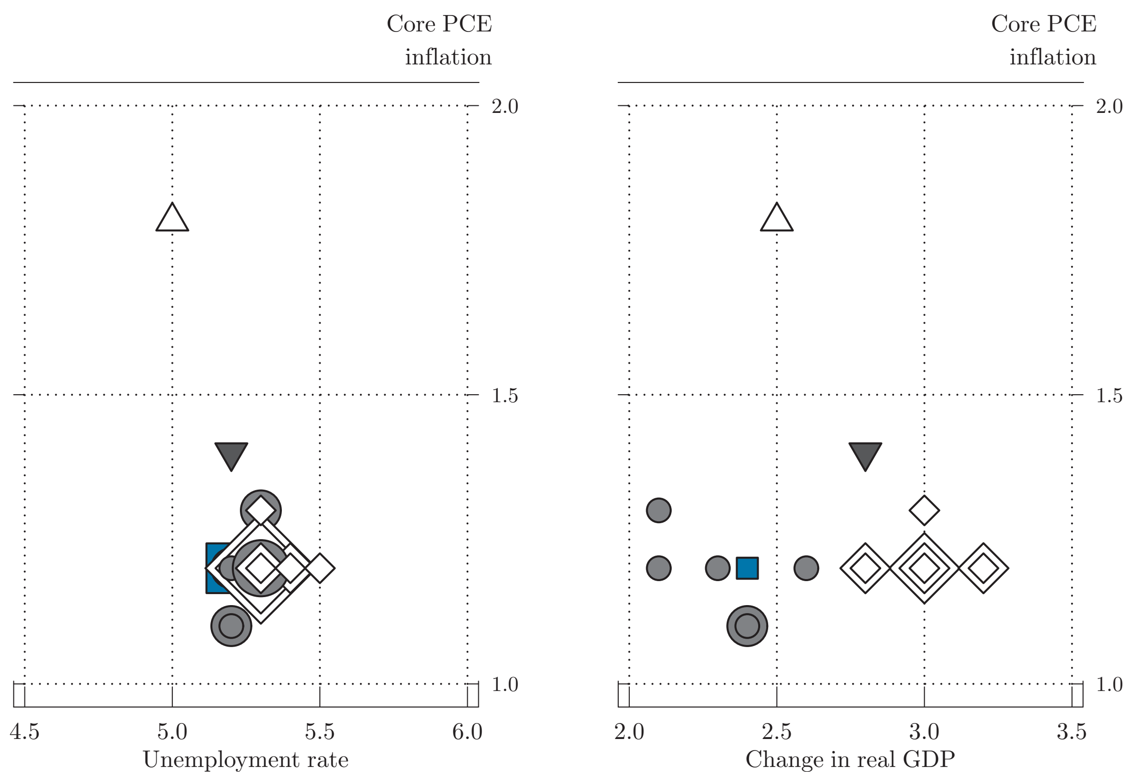
NOTE: Definitions of variables are in the general note to table 1.

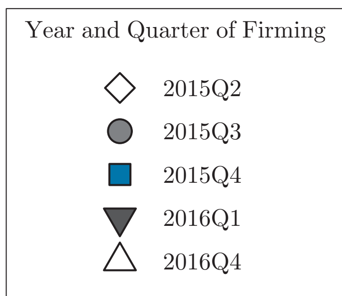
Figure 6. Projections of GDP, unemployment, and PCE inflation in the quarter of liftoff



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

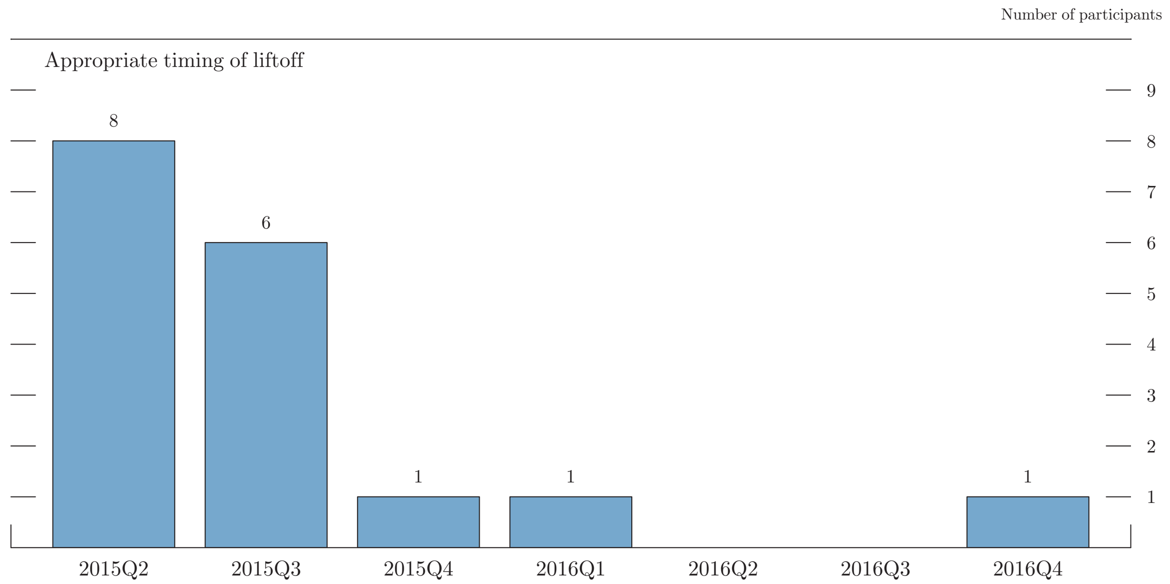
Figure 7. Projections of GDP, unemployment, and core PCE inflation in the quarter of liftoff





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

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



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