Table 1. Economic projections of Federal Reserve Board members and Federal Reserve Bank presidents, September 2014

Percent

Variable	Central tendency[1]					Range[2]				
	2014	2015	2016	2017	Longer run	2014	2015	2016	2017	Longer run
Change in real GDP	2.0 to 2.2	2.6 to 3.0	2.6 to 2.9	2.3 to 2.5	2.0 to 2.3	1.8 to 2.3	2.1 to 3.2	2.1 to 3.0	2.0 to 2.6	1.8 to 2.6
June projection	2.1 to 2.3	3.0 to 3.2	2.5 to 3.0	n.a.	2.1 to 2.3	1.9 to 2.4	2.2 to 3.6	2.2 to 3.2	n.a.	1.8 to 2.5
Unemployment rate	5.9 to 6.0	5.4 to 5.6	5.1 to 5.4	4.9 to 5.3	5.2 to 5.5	5.7 to 6.1	5.2 to 5.7	4.9 to 5.6	4.7 to 5.8	5.0 to 6.0
June projection	6.0 to 6.1	5.4 to 5.7	5.1 to 5.5	n.a.	5.2 to 5.5	5.8 to 6.2	5.2 to 5.9	5.0 to 5.6	n.a.	5.0 to 6.0
PCE inflation	1.5 to 1.7	1.6 to 1.9	1.7 to 2.0	1.9 to 2.0	2.0	1.5 to 1.8	1.5 to 2.4	1.6 to 2.1	1.7 to 2.2	2.0
June projection	1.5 to 1.7	1.5 to 2.0	1.6 to 2.0	n.a.	2.0	1.4 to 2.0	1.4 to 2.4	1.5 to 2.0	n.a.	2.0
Core PCE inflation[3]	1.5 to 1.6	1.6 to 1.9	1.8 to 2.0	1.9 to 2.0		1.5 to 1.8	1.6 to 2.4	1.7 to 2.2	1.8 to 2.2	
June projection	1.5 to 1.6	1.6 to 2.0	1.7 to 2.0	n.a.		1.4 to 1.8	1.5 to 2.4	1.6 to 2.0	n.a.	

Note: Projections of change in real gross domestic product (GDP) and projections for both measures of inflation are 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 June projections were made in conjunction with the meeting of the Federal Open Market Committee on June 17–18, 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 2014*
(in percent)

Central tendencies and ranges

	Central tendency	Range
Change in real GDP	1.2 to 1.3	1.1 to 1.3
June projection	1.0 to 1.2	0.4 to 1.4
PCE inflation	1.8	1.6 to 1.8
June projection	1.6 to 1.7	1.5 to 1.8
Core PCE inflation	1.6	1.6
June projection	1.5	1.4 to 1.6

Participants' projections

Projection	Change in real GDP	PCE inflation	Core PCE inflation
1	1.3	1.8	1.6
2	1.3	1.6	1.6
3	1.3	1.8	1.6
4	1.3	1.8	1.6
5	1.3	1.8	1.6
6	1.3	1.8	1.6
7	1.2	1.8	1.6
8	1.2	1.8	1.6
9	1.3	1.8	1.6
10	1.2	1.8	1.6
11	1.2	1.8	1.6
12	1.3	1.8	1.6
13	1.2	1.8	1.6
14	1.3	1.8	1.6
15	1.1	1.8	1.6
16	1.3	1.8	1.6
17	1.3	1.8	1.6

* Growth and inflation are reported at annualized rates.

Table 1.B. Economic projections for the second half of 2014*
(in percent)

Central tendencies and ranges

	Central tendency	Range
Change in real GDP	2.8 to 3.2	2.3 to 3.3
June projection	3.1 to 3.6	3.0 to 3.6
PCE inflation	1.2 to 1.6	1.2 to 2.0
June projection	1.3 to 1.7	1.3 to 2.2
Core PCE inflation	1.4 to 1.6	1.4 to 2.0
June projection	1.5 to 1.7	1.3 to 2.0

Participants' projections

Projection	Change in real GDP	PCE inflation	Core PCE inflation
1	3.1	1.8	1.6
2	3.1	2.0	2.0
3	3.1	1.2	1.4
4	2.3	1.4	1.6
5	3.1	1.2	1.4
6	2.5	1.2	1.4
7	3.0	1.6	1.6
8	3.0	1.6	1.6
9	2.9	1.2	1.4
10	3.2	1.2	1.6
11	3.2	1.4	1.6
12	2.7	1.2	1.4
13	2.8	1.6	1.4
14	3.3	1.4	1.6
15	3.3	1.6	1.6
16	3.1	1.2	1.4
17	3.3	1.2	1.4

* Projections for the second half of 2014 implied by participants' September projections for the first half of 2014 and for 2014 as a whole. Growth and inflation are reported at annualized rates.

Table 2. September economic projections, 2014–17 and over the longer run (in percent)

Projection	Year	Change in real GDP	Unemployment rate	PCE inflation	Core PCE inflation	Federal funds rate
1	2014	2.2	5.9	1.8	1.6	0.13
2	2014	2.2	5.7	1.8	1.8	0.88
3	2014	2.2	5.9	1.5	1.5	0.13
4	2014	1.8	5.8	1.6	1.6	0.13
5	2014	2.2	5.9	1.5	1.5	0.13
6	2014	1.9	5.9	1.5	1.5	0.13
7	2014	2.1	6.0	1.7	1.6	0.13
8	2014	2.1	5.9	1.7	1.6	0.13
9	2014	2.1	6.0	1.5	1.5	0.13
10	2014	2.2	5.9	1.5	1.6	0.13
11	2014	2.2	6.0	1.6	1.6	0.13
12	2014	2.0	5.9	1.5	1.5	0.13
13	2014	2.0	6.1	1.7	1.5	0.13
14	2014	2.3	5.9	1.6	1.6	0.13
15	2014	2.2	5.9	1.7	1.6	0.13
16	2014	2.2	5.9	1.5	1.5	0.13
17	2014	2.3	5.9	1.5	1.5	0.13
1	2015	3.0	5.4	1.9	1.9	1.88
2	2015	3.0	5.4	2.0	2.0	2.88
3	2015	2.6	5.4	1.9	1.9	1.38
4	2015	2.1	5.5	1.8	1.8	1.88
5	2015	2.7	5.4	1.5	1.6	1.13
6	2015	2.9	5.2	1.8	1.8	0.13
7	2015	3.0	5.7	2.0	2.0	1.88
8	2015	3.0	5.5	1.7	1.7	1.63
9	2015	3.0	5.6	1.6	1.6	0.13
10	2015	3.1	5.3	1.6	1.7	1.38
11	2015	3.0	5.5	1.8	1.8	0.88
12	2015	2.5	5.4	1.7	1.6	1.13
13	2015	3.2	5.6	1.8	1.7	0.88
14	2015	2.8	5.3	1.7	1.7	1.38
15	2015	3.2	5.5	2.4	2.4	1.88
16	2015	2.6	5.6	1.5	1.6	0.38
17	2015	2.9	5.6	1.7	1.7	0.88

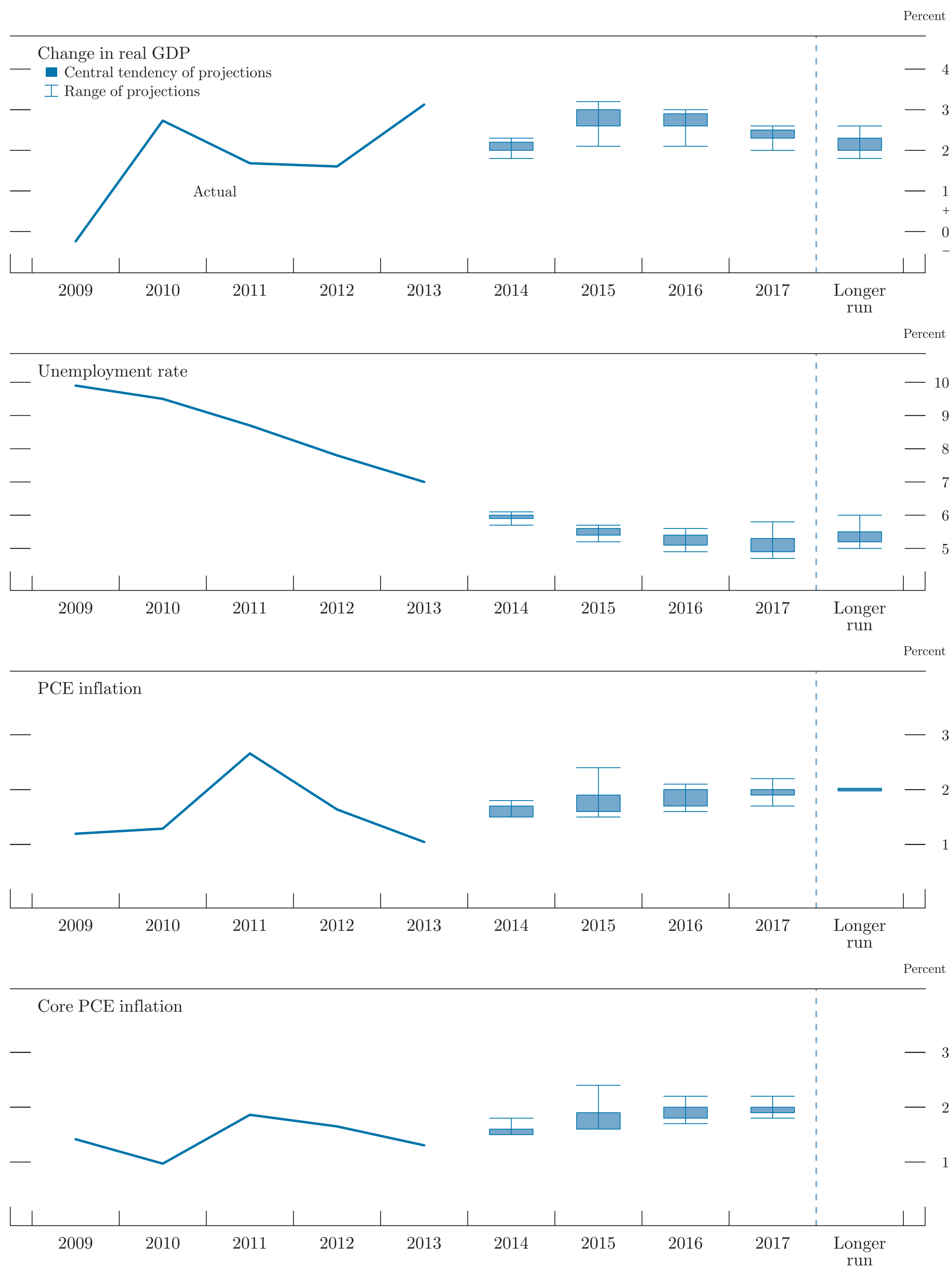
Table 2. *(continued)*

Projection	Year	Change in real GDP	Unemployment rate	PCE inflation	Core PCE inflation	Federal funds rate
1	2016	2.8	5.1	2.0	2.0	3.88
2	2016	2.6	5.3	2.0	2.0	4.00
3	2016	2.9	5.0	2.0	2.2	2.88
4	2016	2.1	5.0	2.0	2.0	3.38
5	2016	2.9	5.1	1.7	1.8	2.38
6	2016	2.7	4.9	2.0	2.0	0.38
7	2016	3.0	5.5	2.0	2.0	3.88
8	2016	3.0	5.4	2.0	2.0	3.13
9	2016	3.0	5.2	1.7	1.7	1.13
10	2016	2.7	5.2	1.8	1.9	3.00
11	2016	2.8	5.2	2.0	2.0	2.88
12	2016	2.6	5.1	1.8	1.8	2.13
13	2016	2.6	5.3	2.0	2.0	2.38
14	2016	2.8	5.2	1.9	1.9	2.63
15	2016	2.5	5.6	2.1	2.1	3.88
16	2016	2.7	5.2	1.6	1.7	1.63
17	2016	2.9	5.4	1.7	1.7	2.13
1	2017	2.3	5.1	2.1	2.1	4.38
2	2017	2.5	5.3	2.0	2.0	4.00
3	2017	2.3	4.9	2.2	2.2	3.63
4	2017	2.0	5.0	2.0	2.0	3.75
5	2017	2.3	5.0	1.8	1.9	3.13
6	2017	2.5	4.7	2.0	2.0	2.00
7	2017	2.3	5.5	2.0	2.0	4.30
8	2017	2.5	5.5	2.0	2.0	3.75
9	2017	2.5	5.1	1.9	1.9	2.63
10	2017	2.3	5.2	2.0	2.0	3.90
11	2017	2.5	5.2	2.0	2.0	3.88
12	2017	2.4	5.0	1.9	1.9	3.13
13	2017	2.0	5.3	2.0	2.0	3.38
14	2017	2.6	4.9	2.0	2.0	3.88
15	2017	2.3	5.8	2.0	2.0	4.13
16	2017	2.3	4.9	1.7	1.8	3.13
17	2017	2.3	5.0	1.7	1.8	3.38

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

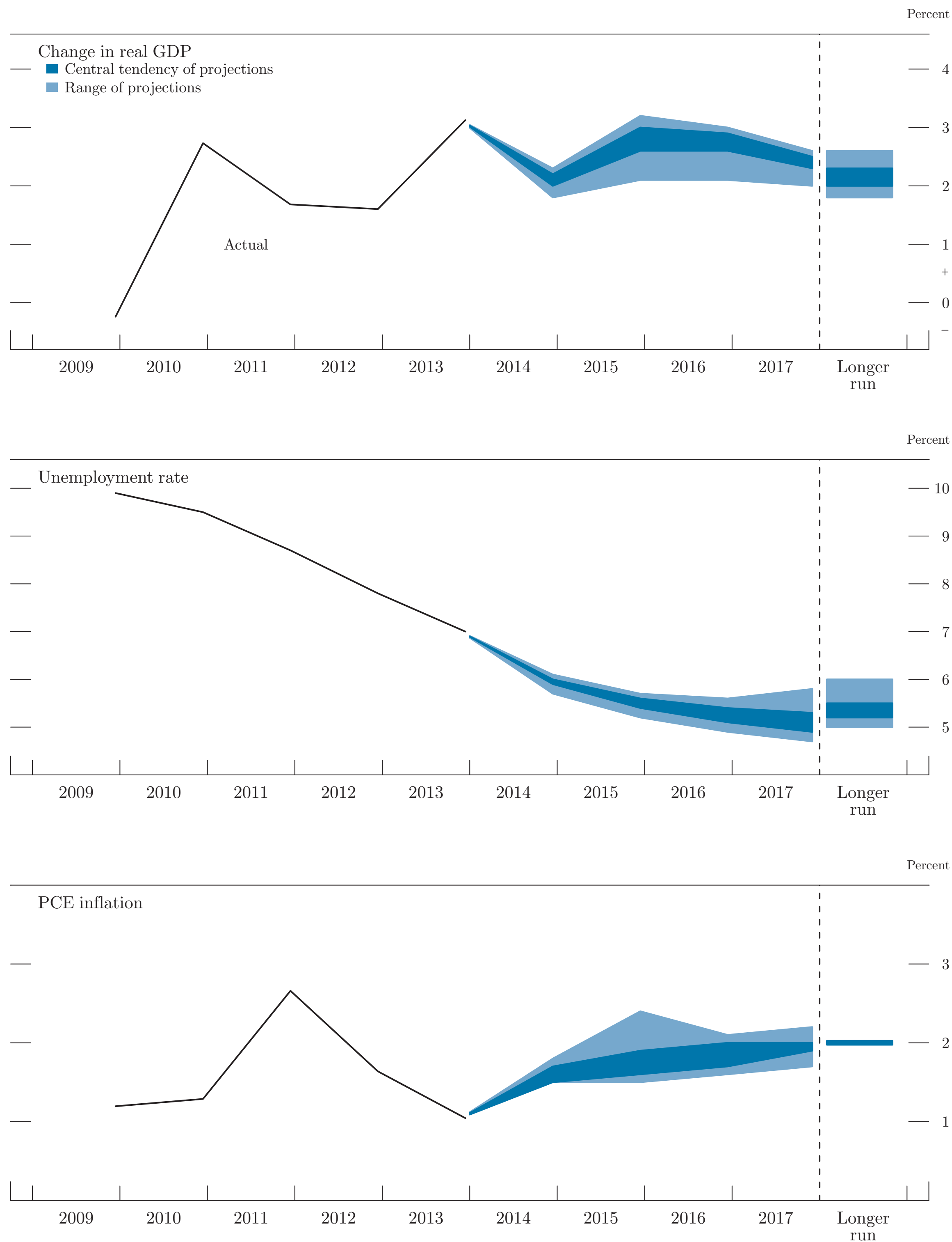
Projection	Year	Change in real GDP	Unemployment rate	PCE inflation	Core PCE inflation	Federal funds rate
1	LR	2.3	5.5	2.0		3.75
2	LR	2.4	5.5	2.0		4.00
3	LR	2.0	5.2	2.0		3.75
4	LR	1.8	5.5	2.0		3.75
5	LR	2.0	5.2	2.0		3.50
6	LR	2.0	5.0	2.0		3.25
7	LR	2.3	5.5	2.0		4.30
8	LR	2.5	5.5	2.0		3.75
9	LR	2.3	5.2	2.0		3.75
10	LR	2.1	5.2	2.0		3.90
11	LR	2.3	5.2	2.0		4.00
12	LR	2.2	5.2	2.0		3.88
13	LR	2.0	5.3	2.0		3.50
14	LR	2.6	5.1	2.0		4.00
15	LR	2.3	6.0	2.0		4.25
16	LR	2.0	5.2	2.0		3.75
17	LR	2.0	5.4	2.0		3.50

Figure 1.A. Central tendencies and ranges of economic projections, 2014–17 and over the longer run



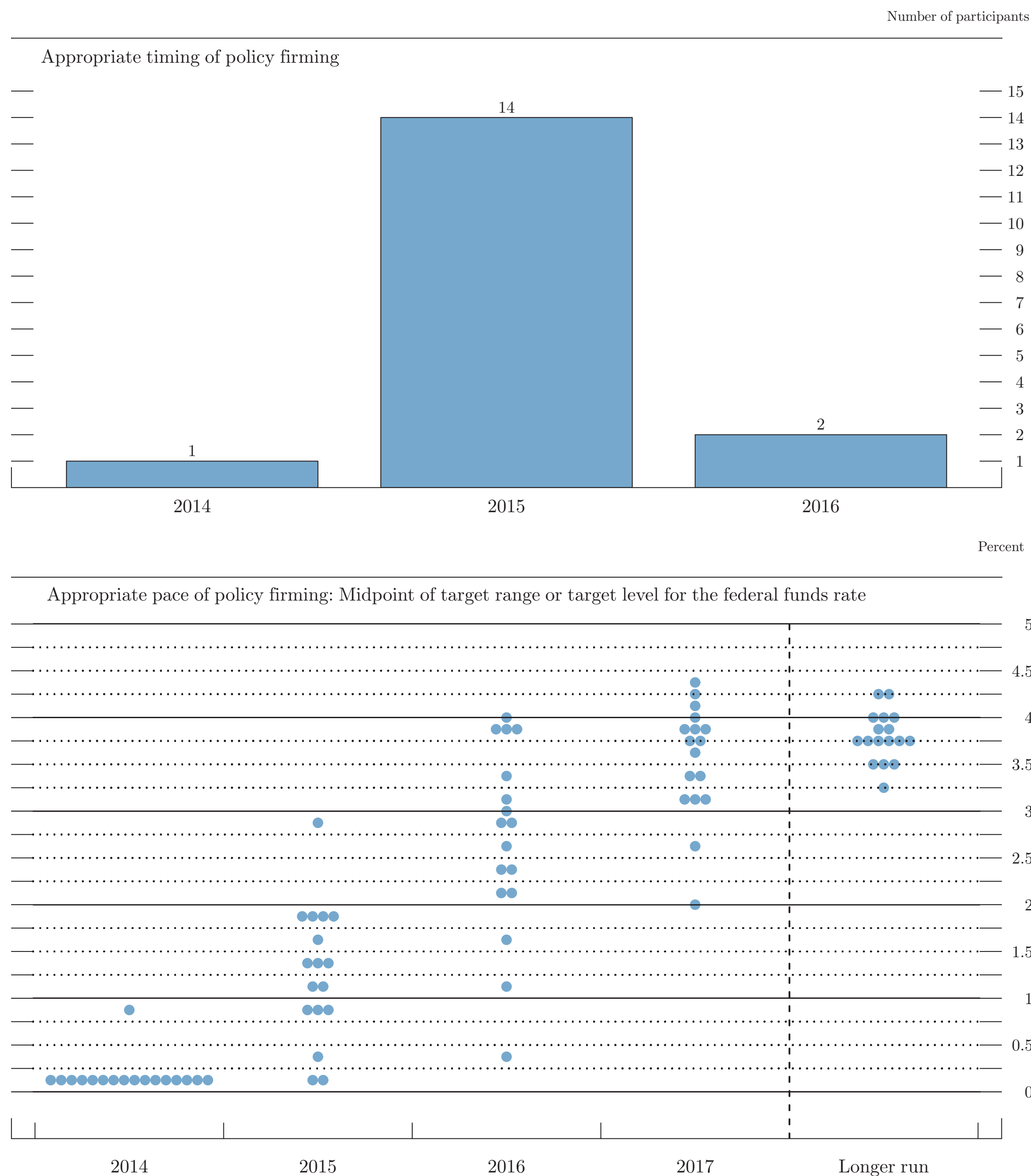
NOTE: Definitions of variables are in the general note to table 1. The data for the actual values of the variables are annual.

Figure 1.B. Central tendencies and ranges of economic projections, 2014–17 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.

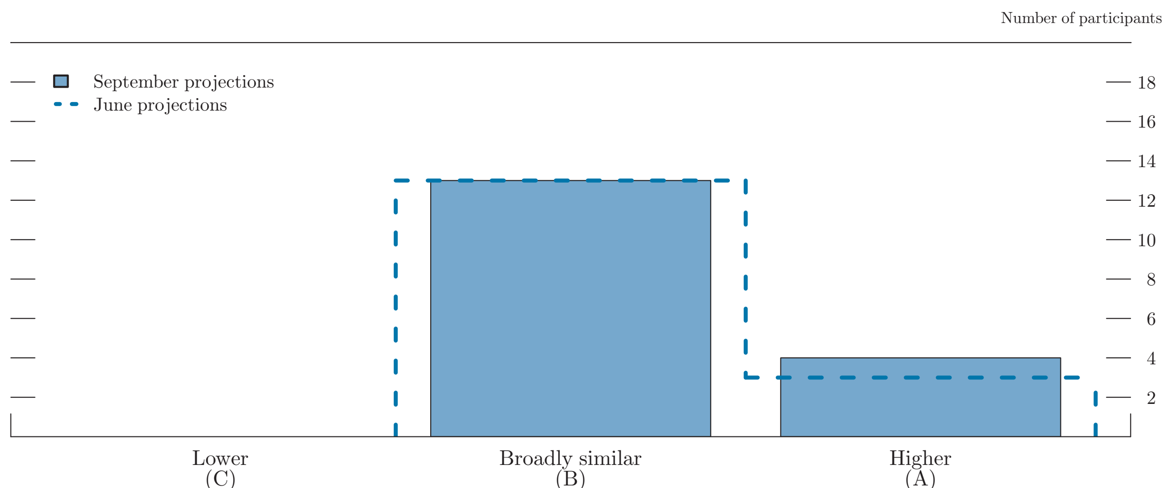
Figure 2. Overview of FOMC participants' assessments of appropriate monetary policy



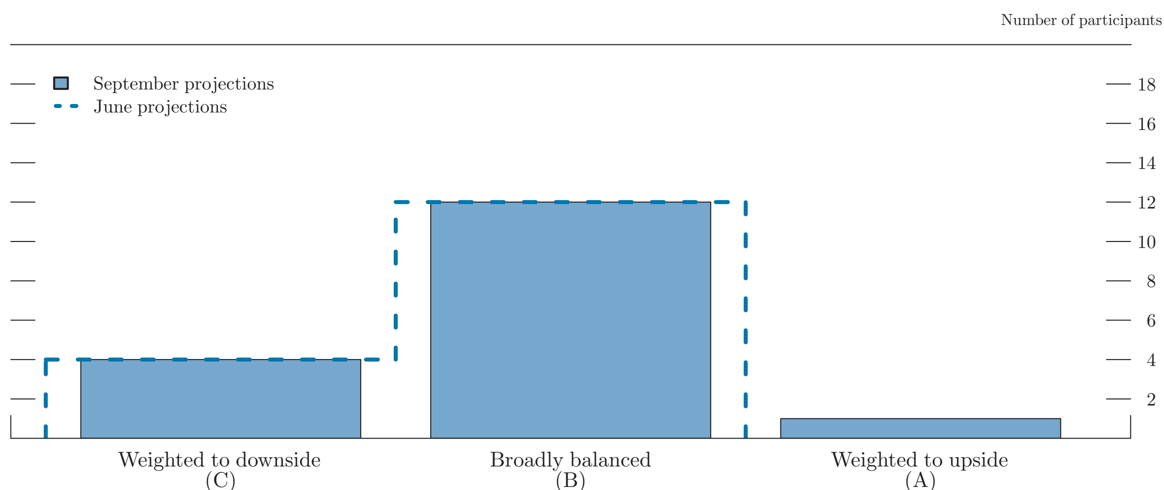
Note: In the upper panel, the height of each bar denotes the number of FOMC participants who judge that, under appropriate monetary policy, the first increase in the target range for the federal funds rate from its current range of 0 to 1/4 percent will occur in the specified calendar year. In June 2014, the numbers of FOMC participants who judged that the first increase in the target federal funds rate would occur in 2014, 2015, and 2016 were, respectively, 1, 12, and 3. 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.

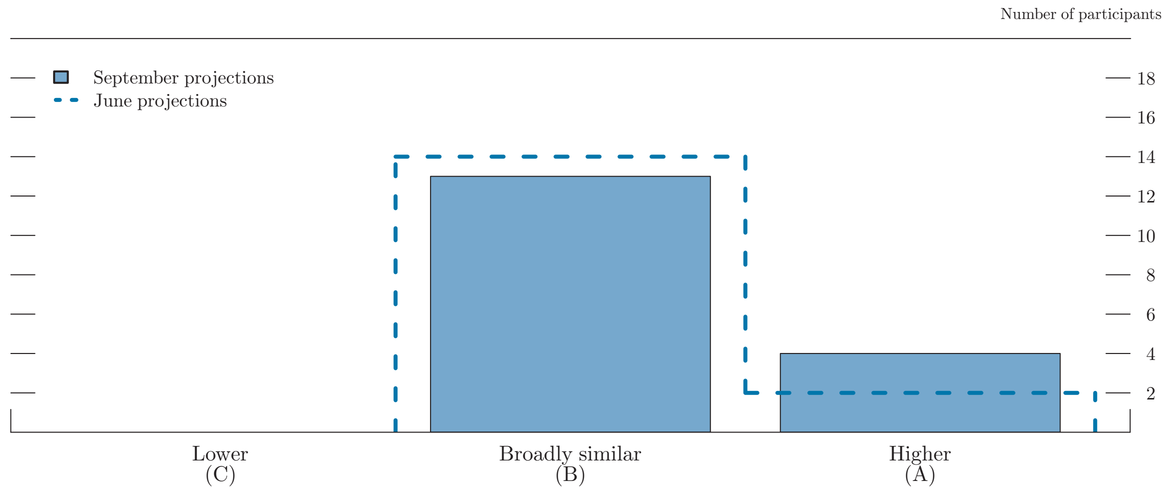


Individual responses

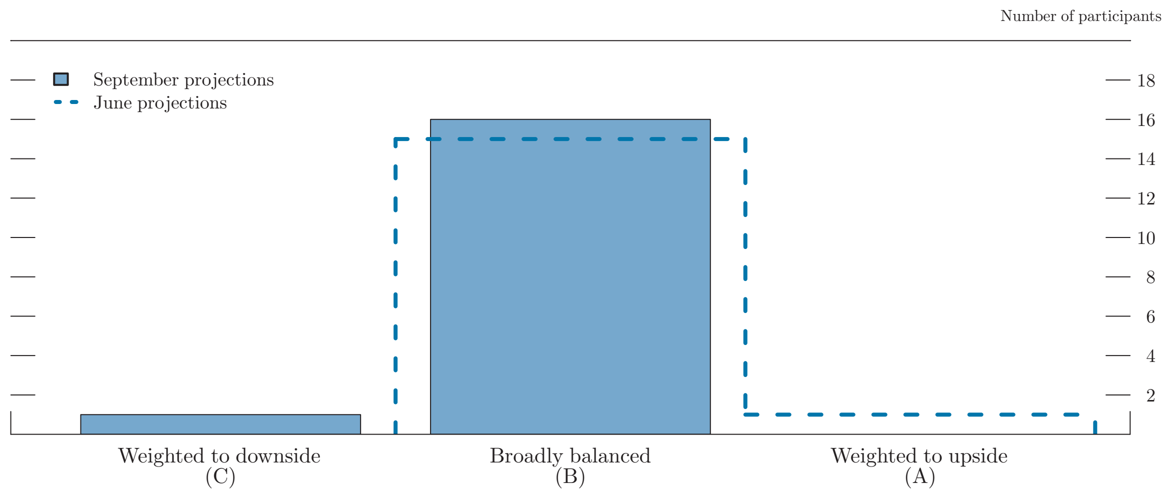
Respondent	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
2(a)	B	B	B	B	B	A	B	B	B	B	B	A	A	A	B	B	B
2(b)	B	B	B	B	C	B	B	B	B	B	B	C	B	A	B	C	C

Figure 4.B. Uncertainty and risks – Unemployment rate

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



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

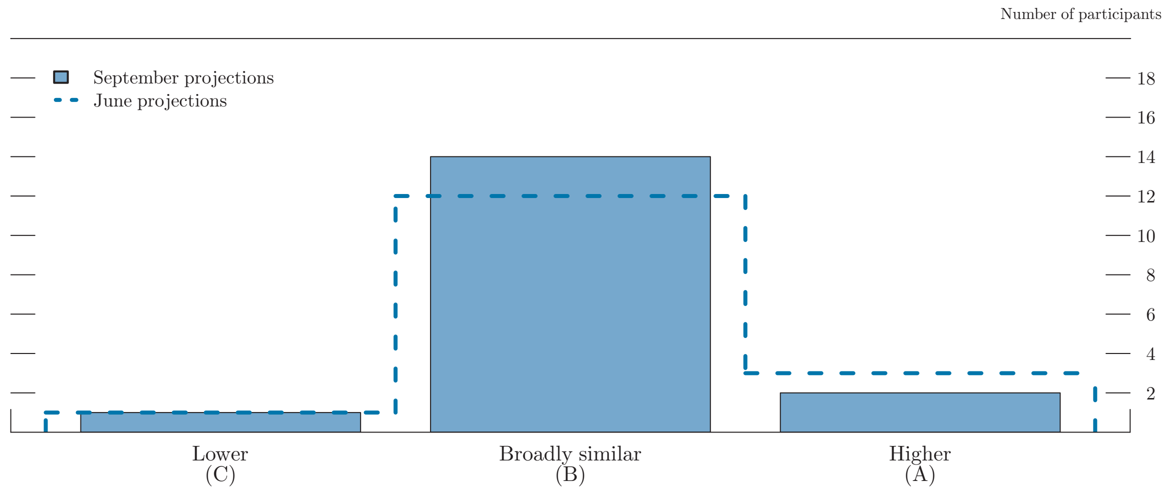


Individual responses

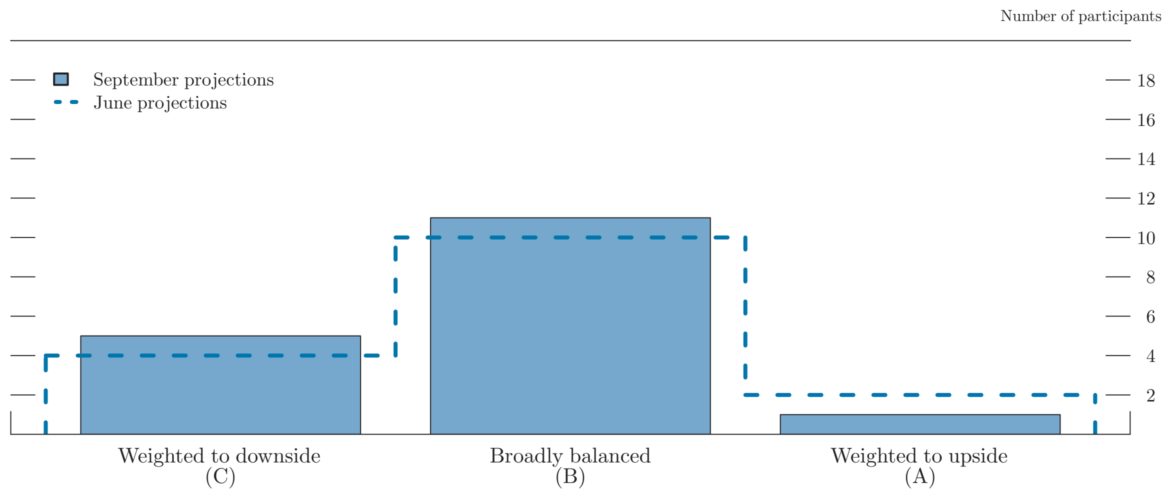
Respondent	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
2(a)	B	B	B	B	B	A	B	B	B	B	B	A	A	A	B	B	B
2(b)	B	B	B	B	B	B	B	B	B	B	B	B	B	C	B	B	B

Figure 4.C. Uncertainty and risks – PCE inflation

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



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

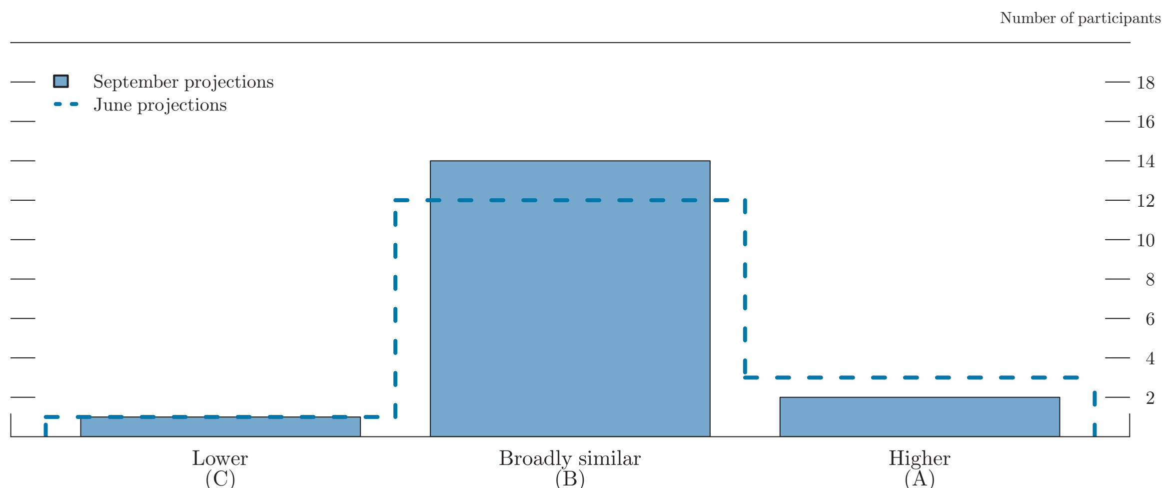


Individual responses

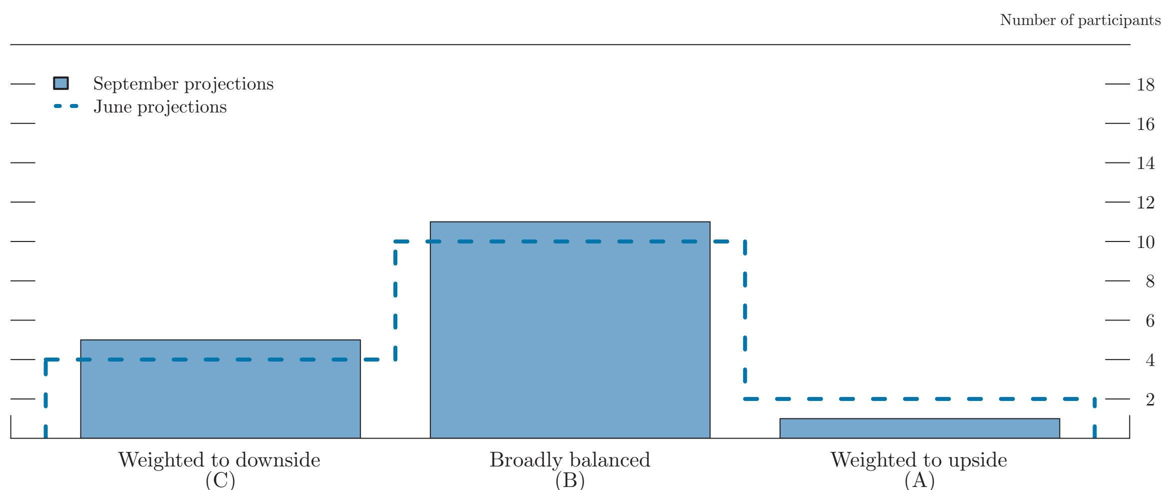
Respondent	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
2(a)	B	A	B	C	B	A	B	B	B	B	B	B	B	B	B	B	B
2(b)	B	A	C	B	C	C	B	B	C	B	B	B	B	B	B	C	B

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	A	B	C	B	A	B	B	B	B	B	B	B	B	B	B	B
2(b)	B	A	C	B	C	C	B	B	C	B	B	B	B	B	B	C	B

Longer-run Projections

1(c). If you anticipate that the convergence process will take SHORTER OR LONGER than about five or six years, please indicate below your best estimate of the duration of the convergence process. You may also include below any other explanatory comments that you think would be helpful.

Respondent 1: I expect the unemployment rate to reach its longer-run sustainable level by 2015:Q4, and to fall past that level in 2016. Inflation will likely reach its mandate-consistent level by 2016:Q4 or perhaps sooner, and rise above that level in 2017. It will take skilled policymaking and a considerable measure of good luck to ease the unemployment rate back up and inflation back down without triggering a recession. Full convergence on both sides of the dual mandate could well take five or six years.

Respondent 2: The convergence process may be somewhat shorter than 5-6 years.

Respondent 3: N/A

Respondent 4: Long-run values are achieved in 2018 or beyond.

Respondent 5: N/A

Respondent 6: It will be shorter under appropriate monetary policy, in part because the FOMC will take appropriate steps to return the underlying rate of inflation to 2%, as described in Deb Lindner's June 2014 memo. My assessment of appropriate monetary policy puts no weight on interest rate smoothing.

Respondent 7: I anticipate that convergence will take less than 5 years. Specifically, my forecast calls for inflation to rise to 2 percent in 2015. I expect the unemployment gap to be nearly closed in 2015 and the unemployment rate to reach its longer-run level in the following year. By 2017 I expect real GDP growth to slow to its longer-run rate.

Respondent 8: At this point, convergence is likely within three years.

Respondent 9: N/A

Respondent 10: N/A

Respondent 11: N/A

Respondent 12: N/A

Respondent 13: In our typical re-assessment of our long-run assumptions following the annual revisions of GDP and production, our analysis indicated that the economy's potential growth rate was within a range around 2%; consequently, we have lowered our point estimate to 2% from the previous estimate of about 2 1/4%. Based on our interpretation of the recent literature and some previous in-house analysis, we are currently maintaining that a reasonable range for the longer-run unemployment rate is 4 1/2% to 6%, with a point estimate of about 5 1/4% (rounded to 5.3% above); however, some

of our more recent analysis indicates a higher probability that the estimate could be somewhat lower, and we plan to do further analysis and to re-assess this assumption on a more frequent basis than has been our typical procedure. We expect the unemployment rate to reach its longer-run level and the output gap to be small in late 2016, but some of our recent scenario analysis of labor flows as well as our analysis of recent long expansions suggests that there is a significant probability that the unemployment rate could fall to around 5% by the end of 2016.

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 output gap anticipated to shrink over the coming years, we expect inflation as measured by the PCE deflator to be about 2% in 2016 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 by the end of 2016.

Respondent 14: N/A

Respondent 15: I anticipate a shorter convergence process for real GDP growth and for PCE inflation. Real GDP growth and PCE inflation will converge to their long-run values in 2017. As part of its convergence process, I anticipate that inflation will exceed 2 percent in 2015 and 2016. Meanwhile, I foresee the convergence of the unemployment rate to take roughly 5 years. Given my long-run projection of 6%, the unemployment rate will be less than its long-run value in Q4/2014 and remain below until 2018.

Respondent 16: Convergence to the longer-run level of the unemployment rate is expected to occur in the second half of 2016. Inflation is projected to reach the 2 percent objective in 2019.

Respondent 17: N/A

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: It remains the case that the effect of 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 3: N/A

Respondent 4: Inflation expectations have probably become more firmly anchored as a result of the FOMC's consensus statements, and uncertainty is accordingly lower that before January, 2012.

Respondent 5: N/A

Respondent 6: N/A

Respondent 7: N/A

Respondent 8: NA.

Respondent 9: We think the uncertainty surrounding the growth projection has diminished somewhat since the June SEP; nonetheless, on balance, we still judge the uncertainty over the forecast as broadly similar to the levels of uncertainty over the past 20 years.

Respondent 10: 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 11: N/A

Respondent 12: N/A

Respondent 13: 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. These intervals have narrowed modestly from those at the time of the June SEP, principally reflecting that the annual revision of GDP did not lead to a substantial change in our assessment of economic developments over the past few years (the other data releases and developments since June were mixed with only modest net effects on the width of the forecast distribution intervals). Although still wide, 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. The probability intervals for the real activity forecasts are still relatively wide in part because of the still-extraordinary economic and financial environment, including the policy rate remaining constrained by its effective lower bound.

Respondent 14: N/A

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: I view the risks to inflation as weighted to the upside over the medium 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 3: N/A

Respondent 4: N/A

Respondent 5: 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 inflation has been running below the level I had anticipated. While some of the factors that have held inflation down appear to be transitory, low inflation may prove more persistent, creating risks to inflation I consider to be weighted to the downside.

Respondent 6: It is hard for the FOMC to respond effectively to low inflation outcomes, which means that they are more likely to occur.

Respondent 7: N/A

Respondent 8: I see the risks to my projections as being broadly balanced. Geopolitical tensions create downside risks to growth via reduced exports and lower confidence, but these could be offset by flight-to-quality flows that put downward pressure on longer-term interest rates. Potential supply disruptions of key energy commodities could pose upside risks to prices.

Domestically, if recent subdued readings on residential investment point to something more fundamental, my forecast may be overestimating growth. However, the upbeat tone from my business contacts raises the possibility that my forecast could be underestimating growth.

Given uncertainties surrounding the withdrawal of policy accommodation, there are some upside risks to my inflation forecast over the medium and longer run. In the nearer term, the continued low readings on inflation suggest some downside risk to inflation, but as noted above, geopolitical tensions raise the possibility of higher oil prices, some of which could passthrough to inflation.

Respondent 9: We think the risks to the forecast for growth and unemployment are roughly in balance. On the downside, restrictive credit conditions are weighing on housing, and they may hold back the recovery in residential investment more than we think. The international sector presents another downside risk. On the up side, improved household sector fundamentals (notably, gains in wealth and the better job market) and the steady improvement in the sentiment of our business contacts suggest that we could see a more pronounced "virtuous cyclical" dynamic than we are projecting.

The factors that could hold down inflation continue to outnumber those arguing for accelerating prices. The recent softer monthly data are a reminder that there currently is not a great deal of upward momentum in inflation. Neither the data nor our business anecdotes point to any meaningful cost pressures or pricing power. There are no inflationary pressures coming from abroad; indeed, exchange rate movements could put some downward pressure on import prices. Finally, 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 and credible FOMC communications about its 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.

Respondent 10: Risks to economic activity appear balanced. The economy has rebounded from its transitory first-quarter contraction, and 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.

Inflation risks are also balanced.

Respondent 11: N/A

Respondent 12: N/A

Respondent 13: 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. Also as has been the case in the past couple of SEPs, the risks to the real activity outlook are roughly balanced over medium-term horizons, as indicated in the summary of our judgment; however, at the longer horizons, the risks are still modestly skewed to the downside. The broad balance over the medium term reflects two opposing forces. One is the possibility that the sluggish growth during this expansion has come from more persistent structural factors rather than from various headwinds that are expected to abate in our central forecast. The other is the possibility that the economy has greater underlying strength than anticipated in our projection. Beyond these forces, geopolitical risks, such as those recently emanating from Ukraine and the Middle East, could have significant adverse effects on the global economy and pose risks to the U.S. economy. Other concerns include the impact of the recent (and possible future) dollar appreciation on U.S. activity and inflation; the low inflation data in many parts of the world as well as continued weakness in the euro area, 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 14: N/A

Respondent 15: N/A

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 projections 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: I'm convinced that following the 1999 Taylor rule with inertia (as is assumed in the Tealbook baseline) would be a mistake. The rule too often causes the unemployment rate to substantially overshoot its long-run sustainable level. We have demonstrated that we are unlikely to be able to reverse such overshooting without triggering a full-blown recession. (Any number of FRB/US simulations will not convince me otherwise; without meaning any disrespect, I am hard over on this one.) History teaches, instead, that the best way to prolong an expansion is to tap on the brakes while the unemployment rate is still above its sustainable level. This approach was successful in the 1960s, the 1980s and, again, in the 1990s.

Without inertia, the 1993 and 1999 Taylor rules both call for early and rapid funds-rate increases: They say that policy is currently quite far from where it ought to be. This is so even if one makes reasonable allowance for a temporarily low neutral real interest rate. It is so even if one builds some "history dependence" into the rules, by making policy depend on lagged deviations of inflation from target as well as current and near-term expected deviations.

Given my projections for the unemployment rate and inflation, non-inertial rules prescribe a "near-normal" funds rate by the end of 2015. However, it's my judgment that the rapid increases required to reach a 3.75-percent funds rate in that time frame would be seen as a major and unwarranted departure from past Fed behavior, would spook investors, and would harm financial intermediaries. A reasonable compromise is a series of 1/4-point rate hikes beginning in March, 2015, that would bring the policy rate up to its rule-prescribed level by the end of 2016. At that point, the unemployment rate is likely to be below the natural rate, but only modestly so. Subsequently, continued low unemployment and the threat of above-target inflation mandate that the funds rate overshoot its long-run level.

I'm not entirely comfortable with this compromise approach, as it might easily suggest to investors that the post-liftoff time path of policy is preset. (It is not the rate path itself that would be preset, of course, but the speed with which the gap between current policy and the rule-prescribed policy is closed.) However, I'm even more uncomfortable with the notion (advanced in some of the memos distributed for this meeting) that we can delay liftoff without ill effect if we promise aggressive tightening down the road. Investors will pay attention to the "delay liftoff" part of the message and discount the promise of aggressive future action. With markets unprepared for rapid rate hikes, it will, indeed, in the end prove difficult to follow through on the earlier commitment.

Respondent 2: My assumed appropriate path of monetary policy has the asset purchase program ending in 2014Q4 and the Committee needing to start raising the funds rate in 2014Q4 as the economy continues to strengthen. The economy is modestly above steady state by the end of 2015 with inflation returning to 2 percent, output growth near 3 percent, and the unemployment rate at 5.3 percent. 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 4 percent by the end of 2016.

Respondent 3: At year end 2015 and 2016, my projections show unemployment at near baseline levels of 5.4% and 4.9%, respectively – near or a bit below the highly uncertain natural rate. I assume that inflation is moderately more responsive to slack than the baseline suggests at these levels of resource utilization, which leads me to assume the "higher inflation" path for inflation, given the baseline forecast for output. In light of the higher path for inflation, I assume a somewhat steeper path of the federal funds rate, which is nearly at the longer run estimated rate (3.75%) by year end 2017.

Respondent 4: I believe that in March 2015 labor markets will have improved significantly, and inflation will be above 1.6 percent and increasing. Consequently, I believe we will want to begin raising policy rates to prevent an excessive rise in inflation.

Respondent 5: 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 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 a highly accommodative policy. 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 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; (ii) a continuing, albeit diminishing, high supply of savings, especially from emerging economies; (iii) fiscal policy that for several more years makes a smaller contribution to growth than its historical norm; and (iv) a temporarily decreased growth rate of potential GDP and associated weak growth of household incomes and income expectations. My estimate of the longer-run normal level of the nominal (and real) federal funds rate of 3.5% (and 1.5%) are consistent with estimates from the staff's three factor model. This estimate likely reflects some pessimism about the prospects for longer-run growth, consistent, for example, with current Laubach-Williams estimates of trend GDP growth.

Respondent 6: 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 interest – but the main point is 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 zero over the next five years, and rising to just over 1% from 2024 to 2034). 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 described in Deb Lindner's June 2014 memo, as well as the staff's view expressed in that memo that overshooting of the unemployment rate below its natural rate will be needed to bring inflation back up to 2 percent.

Respondent 7: My forecast calls for inflation of 2 percent and the unemployment rate near its longer-run level by the end of 2015. My assessment of the appropriate federal funds rate is 1.88 percent at the end of 2015, 3.88 percent at the end of 2016, and 4.30 percent at the end of 2017, reflecting my desire to raise the federal funds rate at a gradual pace after lift-off.

Respondent 8: The labor market has made considerable progress toward our goal of full employment and I expect steady progress to that goal to continue. I project inflation will gradually increase over the forecast horizon and reach the Committee's 2 percent longer-run goal by the end of 2016. I believe appropriate monetary policy should reflect actual and projected progress toward the Committee's goals. Given the improvement in labor markets, a key condition will be when projected inflation between one and two years ahead reaches the Committee's goal of 2 percent. I am growing more confident that we are nearing such a point in time and I believe it will be appropriate for the FOMC to begin raising the fed funds rate in 2015Q1. Consistent with the Committee's forward guidance, 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 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 early 2015 and the inertia in my monetary policy rule, the federal funds rate target would be 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, we may need to target a range rather than a point target for some time.

Respondent 9: The factors that shaped our views about appropriate policy in the June SEP continue to be operative in the current submission. These still call for an early 2016 liftoff in the policy rate.

We continue to believe it is appropriate that the Committee strongly communicate its commitment to highly accommodative policy and a symmetric 2 percent inflation target. Our preferred way of doing so is for the FOMC to be clear that as long as the one- to two-year-ahead inflation outlook is below 2 percent, we will delay liftoff until labor markets have regained their full health as measured by a broad array of indicators. We assume that the first rate increase will occur sometime in early 2016; at that time, the unemployment rate is projected to be only two or three tenths above our 5.2 percent estimate for the natural rate and our outlook for inflation 2 years ahead will just be reaching 2.0 percent. We believe it will be appropriate for the path of rate increases to be quite shallow, at least through the initial stages of the normalization process. This would allow the Committee time to assess how the economy is performing under less accommodative financial conditions and to insure that inflation will actually make it to target. We feel this lift off date and shallow path for rate increases is appropriate policy from a risk management perspective, as we view the odds–and the costs–of slipping back into the zero lower bound as outweighing those of inflation running modestly above 2 percent for a couple

of years once the real side of the economy has returned to full employment. We feel our rate path better balances probability weighted costs; it also results in the federal funds rate at the end of 2017 still being roughly 1 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 10: Output and unemployment gaps have declined over time but are still sizeable. Moreover, my outlook for inflation through the end of 2016 is below our 2 percent objective. This situation calls for very accommodative monetary policy. Appropriate policy calls for delaying 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 end of 2016 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 have not fully abated by 2016, such as credit availability for small businesses. These continue to modestly 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 11: My outlook has liftoff for the federal funds rate in September 2015 (to a range of 25-50 basis points) and 25 basis point increases at each subsequent meeting before reaching a range consistent with its appropriate longer run value in mid-2017.

I do not expect the funds rate to be at its appropriate longer-run value in 2016. Despite a convergence of the U-3 unemployment rate to its longer-run level, I expect that residual slack in the labor market will still be evident.

Respondent 12: N/A

Respondent 13: 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 a modest change 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 still anticipate that the target range for the FFR will remain at its current level until mid-2015 or a little before. The pace of renormalization of the target FFR following the period of near zero policy rates will then depend upon our assessment of economic conditions and the outlook, longer-term inflation expectations, and the response of overall financial conditions to policy tightening. Our current assessment of these factors is that the pace of tightening could be around 150 bps over the first four quarters of the normalization process, and that the target FFR range at the end of 2016 will be around 2 1/4 - 2 1/2%, somewhat higher than our projection in the June SEP, reflecting our assessment that the FOMC have greater confidence in its central forecast and policy strategy in 2016, and can thus proceed with normalization a little faster. Nevertheless, we still expect that the pace of normalization will probably be slow compared to the pace of the 2004-06 policy tightening as a means

to provide insurance against the various restraining forces still faced by the U.S. economy, especially in the housing market, which in turn will help achieve the FOMC's objectives over the longer run. We thus continue to anticipate it will be appropriate to maintain the FFR below our estimate of its longer-run level through 2016, but we expect the top of the target range at the end of 2017 to be equal to our estimate of the longer-run FFR.

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 assume that in normal times this rate is in the range of 1% - 3%; adding the objective for inflation (2%) then gives our estimated range for nominal equilibrium rate as 3.0 - 5.0%. The reduction of our potential GDP growth estimate raises the possibility of some reduction in that range. However, because we already had assessed that the equilibrium rate was 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, we have maintained the point estimate of the past several SEPs, as seen in the response to question 3(a). Given the greater uncertainty about that estimate because of our assessment of lower potential GDP growth, we plan to undertake further analysis and re-assessment of this estimate.

Although we do not expect the need to deploy additional tools to provide accommodation in our modal outlook, we believe it is still important for the FOMC to be prepared to employ all of its tools to offset any downside risks to the outlook that may be realized.

Respondent 14: Inflation and growth

Respondent 15: By early 2015, the unemployment and inflation rates will be close to their long-run values. Identical to my last projection, lift-off should occur in Q1/2015.

Respondent 16: Liftoff of the federal funds rate from the zero-lower-bound occurs in the third quarter of 2015. This is when the economy is expected to be within one year from reaching full employment. With inflation well below target and only a modest acceleration in the pace of economic activity, the removal of policy accommodation occurs very gradually at first. The federal funds rate is then raised at a faster pace once the economy reaches full employment.

Respondent 17: N/A

Appropriate Monetary Policy – Balance Sheet

3(d)&(e). Does your view of the appropriate path of the Federal Reserve's balance sheet, other than the projected timing for implementing the FOMC's exit strategy, differ materially from that assumed by the staff in the Tealbook? Note that the September Tealbook baseline assumes that asset purchases will conclude by the end of October, leaving the cumulative amount of purchases under the current program at close to $1.5 trillion. If yes, please specify in what ways (either qualitatively, or if you prefer, quantitatively).

	YES	NO
September survey	3	14
June survey	5	11

Respondent 1: Yes
I think it appropriate to make a seamless transition from our current program of scaling back net new asset purchases to a program of scaling back reinvestment of the proceeds from maturing assets. Reinvestment purchases might initially be reduced by a small amount—$10 billion, perhaps. The intent is to put the balance sheet on a predictable, gradually-declining path not in any way tied to funds-rate liftoff.

Respondent 2: Yes
I anticipate following the Commitee's normalization principles, but because my funds rate path is steeper than in the Tealbook, I anticipate that we would reduce the size of the balance sheet more quickly than in the Tealbook over the forecast horizon.

Respondent 3: No
N/A

Respondent 4: Yes
I believe we should immediately cease reinvestment of funds from maturing mortgage-backed securities. Moreover, I believe we should begin a program of selling long-term assets later next year.

Respondent 5: No
N/A

Respondent 6: No
N/A

Respondent 7: No
N/A

Respondent 8: No
N/A

Respondent 9: No
N/A

Respondent 10: No
N/A

Respondent 11: No
N/A

Respondent 12: No
N/A

Respondent 13: No
As in the Tealbook, we expect under our central scenario another measured reduction in the pace of purchases at this meeting, and for the purchase program to conclude after the October meeting, with cumulative purchases totaling about $1.5 trillion.

We still 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 around the time at which the top of the FFR range reaches 1.00%, which would be near the end of 2015. The timing of the end of reinvestment in our modal scenario is reasonably close to that in the balance sheet projections shown in Tealbook B. We continue to believe that there is a significant signaling effect about the timing of the end of reinvestment such that adopting a strategy of waiting to halt reinvestment will reduce appreciably the risk of an unwarranted pulling forward of the expected lift-off date and tightening in financial conditions that would ultimately jeopardize a smooth take-off of interest rates. Consequently, waiting to end reinvestment until after normalization has started will provide some insurance that the take-off will take hold.

More generally, in our view the balance sheet remains a significant part of the overall stance of policy, and consequently also requires continued guidance about its evolution. Even though the bar should be set rather high to promote an active role for balance sheet policy as normalization proceeds, its ability to affect term premia and financial conditions to support achieving the FOMC objectives should not be overlooked or dismissed a priori.

Respondent 14: No
N/A

Respondent 15: No
N/A

Respondent 16: No
N/A

Respondent 17: No
N/A

Forecast Narratives

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

Respondent 1: Important underlying factors include the continued healing of household finances, a recent notable decline in investment-grade corporate bond premia, and some fading of fiscal uncertainty, all of which will feed into a rebound of business investment. Energy and industrial raw materials prices remain tame.

In combination with highly accommodative monetary policy, these factors have moved us from a "two-steps forward, one-step back" economy to a "three-steps forward, one-step back" economy. We can expect to see occasional weak reports and occasional weak quarters, but the economy is on a firmer footing now than it was a year ago, despite geopolitical risks. Labor-market slack continues to diminish, and chances are good that we will be at or very near most analysts' estimates of full employment by the end of next year.

On the inflation front, research which suggests that the unemployment rate has lost its usefulness as an indicator of near-term wage and price pressures is not compelling. The modest increase that we've seen in wage inflation so far in this recovery is completely consistent with past experience. We can expect significantly faster wage increases as the unemployment rate moves down. Trimmed-mean PCE inflation–which captures medium-term headline inflation trends better than conventional core PCE inflation–responds to changes in the unemployment rate as well as to the level of unemployment. Thanks partly to this effect, my inflation projection rises to 2 percent by 2016, and above 2 percent thereafter.

To limit the overshooting of unemployment and inflation to manageable levels, it is necessary that we achieve a neutral policy stance by the end of 2016. The only way to do this without one or more 50-basis-point hikes is to start raising the policy rate in the first quarter of 2015.

Respondent 2: I expect the pace of output growth to accelerate to 3 percent in the second half of 2014 as the headwinds that have been holding down growth recede The pace of growth then runs somewhat above my estimate of the longer-run trend

rate of 2.4 percent over 2015 and 2016 before returning to trend in 2017. With a moderate pace of growth over the forecast horizon, the labor market recovery remains gradual – I expect the unemployment rate to move down to about 5.4 percent by the end of 2015, essentially reaching my estimate of the natural rate of unemployment. I anticipate that

headline inflation will rise gradually to 1.8 percent in 2014 and then run at 2 percent pace over 2015 to 2017. Inflation stays anchored around my target of 2 percent in response to tighter monetary policy than that anticipated in the Tealbook.

In my view, the substantial liquidity that is now in the financial system continues to imply a risk that inflation will

rapidly accelerate to unacceptable levels and that inflation expectations may become unanchored. To ward off

these developments, the FOMC will need to commence a steady tightening of monetary policy by ending asset

purchases in 2014Q3 and then beginning to raise rates in 2014Q4.

Respondent 3: N/A

Respondent 4: Population growth in the 16-64 age group is likely to be 0.5 percent or less each year. Real GDP per employee has risen at less than a 1 percent annual rate over the last 3 years and is unlikely to change dramatically over the forecast period. Therefore my estimate of the medium-term

trend in real GDP is about 1 3/4 percent, which is well below what we have experienced in the past. Real GDP growth is likely to converge toward that trend over the forecast horizon.

Respondent 5: After a strong bounceback in GDP in the second quarter from its first-quarter decline, I expect GDP growth to settle in at a little below 3 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 sometime in 2016 and inflation moves slowly back toward the Committee's 2 percent longer-run objective. An accommodative monetary policy, some further easing of credit constraints, and diminishing fiscal drag will serve as important factors propelling this expansion. After strengthening substantially during the second quarter, private final demand seems to have softened a little in recent months on account of PCE spending. Going forward, I expect PCE to accelerate. Factors propelling this pickup in PCE include a strnegthening of household balance sheets due to rising house and equity prices, improving prospects for the labor market and robust auto sales driven by low interest rates, readily available credit, and an aging fleet generating substantial replacement demand. Residential investment appears to have picked up from its slowdown last fall and winter and I expect a continued moderate pace of housing starts and considerable growth in residential investment in the second half of this year. Investment in equipment and intangibles advanced at a robust pace in the second quarter and recent indicators point to continued solid growth in this category in the near term. With respec to the labor market, the two most recent employment reports showed slightly lower payroll gains compared to earlier in the year, and the unemployment rate has temporarily levelled off. Stil, payroll employment has been rising at a surprisingly robust pace over the past year given only moderate GDP growth–a pattern that leads me to project continued moderate productivity growth over the next few years. I see the current level of the unemployment rate as understating the extent of slack in the labor market because I view a porion of the decline in the labor force participation rate in recent years as cyclical and also see involuntary parttime employment as still at abnormally high levels. I anticipate some rebound, or at least a flattening out of the participation rate, and a slower decline in unemployment going forward. Inflation has been running below the Commmittee's 2% objective in spite of the fact that inflation expectations are well-anchored. In part, I believe this reflects significant remaining slack in labor and product markets. My forecast envisions a return to 2% inflation beyond the end of the forecast horizon.

Respondent 6: Like Board staff, I believe that the FOMC will have to pursue policies that lead unemployment below the natural rate if we are to successfully return inflation to 2%. A major risk to my outlook is that the FOMC will not be willing to following such policies.

Respondent 7: My forecast for real GDP growth is characterized by above-trend growth of 3 percent in the second half of 2014, in 2015, and 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. As the remaining economic slack declines, I expect the unemployment gap to be nearly closed by the end of 2015. Real GDP growth is likely to return to its longer-run rate in 2017.

The contour of my outlook for inflation is similar to June's outlook of a gradual rise in inflation. The broad-based price increases over the past several months have increased my confidence in this forecast.

Respondent 8: Growth in the first quarter was hampered by severe weather, but growth rebounded in the second quarter. The fundamentals supporting growth going forward include highly accommodative monetary policy, improving household balance sheets, strengthening labor markets that support consumer spending, easing fiscal headwinds, and further relaxation of tight credit conditions. Optimism among my business contacts is growing, with some showing an increased willingness to implement

long-shelved investment projects. Overall, I expect these forces to support growth slightly above trend and further improvements in labor markets over the next few years, with the economy reaching steady state in 2017.

While inflation is below our 2 percent goal, year-over-year PCE inflation rates have firmed since the start of the year. Stable inflation expectations and an improving economy are consistent with inflation moving back to the 2 percent longer-run objective by the end of 2016. As inflation increases, 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, risks to my outlook appear to be broadly balanced for both the real economy and inflation.

Respondent 9: The key factors shaping our forecast are the same as they have been for some time. Accommodative monetary policy, continued improvement in household and business balance sheets, and the diminution of fiscal restraint should allow domestic demand to gain momentum as we move through the projection period. Furthermore, over time, fewer households and small businesses will find themselves with limited access to traditional credit markets. Pent-up demand for capital goods and consumer durables should provide further impetus to growth.

These fundamental factors supporting activity are assumed to generate growth moderately above potential over the next 2-1/2 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 accommodation 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 rate increases substantially weighing on activity and potentially pushing us back into the zero lower bound as being much higher than the implications 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 10: 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;
- The drag from contractionary federal fiscal policy is steadily diminishing;
- The global economy is slowly improving, and a severe crisis in Europe or emerging markets looks less likely over time. Still, the durability of the European recovery is uncertain, and deflationary risks are substantial. Potential financial disruptions in emerging markets and geopolitical tensions are also concerns;
- Policy uncertainty is back to fairly normal levels.

In this environment, I expect the economic recovery will proceed at a moderate pace, which will allow us to continue to make progress on closing output and unemployment gaps over the next couple

of years. Even with substantial monetary stimulus, it will take a sustained period of above-trend growth to return the economy to full employment.

In terms of inflation, significant slack in labor and goods markets and mostly 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 11: I am holding to my previous forecast which calls for a 3 percent run-rate in output growth over the next several quarters, a further reduction of labor market slack, and inflation that gradually converges to target.

My medium-term outlook is supported by continued capital expansion, ongoing strength in the industrial sector, and a strengthening in consumer spending. Despite some recent softness in consumer spending (which appears to be at odds with more favorable fundamentals), my medium-term outlook for consumption growth reflects a more robust pace of disposable income growth amid further improvement in household wealth and consumer sentiment.

The risks to my growth outlook remain balanced. I cannot dismiss the possibility that recent weakness in consumer spending will prove to be more persistent than what I project in my baseline outlook. I am also treating the deteriorating economic prospects in the euro area as a renewed downside risk. Further weakness in the euro area could dampen prospects for US exports and could also lead to disruptions in European financial markets which could spill over into US and other financial markets. On the other hand, many major economic indicators have improved markedly and may be signaling an even faster pace of activity than I'm currently projecting in my baseline outlook.

I judge the risks around my inflation outlook as balanced. The uncertainty regarding the amount of slack in the economy suggests risks on either side of my baseline inflation projection. On the one hand, despite improvement in the unemployment rate, wage growth remains modest and alternative measures of labor market slack are still stubbornly above their pre-recession levels. On the other hand, slow labor productivity growth is suggestive of lower potential output.

Respondent 12: N/A

Respondent 13: Since the end of the recession, the U.S. economy has grown at a compound annual rate of 2.2%, which is only modestly above our revised estimate of 2% for the economy's potential growth rate. Several times in this expansion it has appeared that real growth was on the verge of breaking through the various headwinds that were restraining it; however, each time some shock or a tightening of fiscal policy has pushed the economy back to the moderate growth path.

We now appear to be again at one of those points when several economic indicators are suggesting a pickup in the growth rate of real GDP. In particular, recent high frequency data suggest that business fixed investment may finally be moving to a higher growth path, which is probably necessary for the U.S. economy to move to a higher growth path on a sustained basis.

These recent events are consistent with our long-standing narrative for the U.S. economy: the headwinds that have restrained growth over the past several years will gradually subside, allowing improved underlying fundamentals to exert themselves more forcefully. These improved fundamentals include stronger household balance sheets combined with gradually improving credit access. In addition, while mortgage underwriting standards remain quite tight, the excess supply of housing has been worked off, and both home prices and rents suggest that housing supply is not keeping pace with demand. As demonstrated by financial markets conditions and the surge of M&A activity, market participants are demonstrating a greater risk appetite. Finally, fiscal consolidation at both the federal and the state and local levels has largely run its course.

Despite these positive developments, we now expect the path of real PCE to be somewhat softer compared to projections from earlier in the year, even after accounting for the recently released Q2

QSS and August retail sales data. Over the second half of 2013 real PCE growth moved up to nearly 3% (annual rate), the highest since 2010. The personal saving rate, which had averaged 7.6% over 2012H2, had fallen to 4.4% in 2013Q4, a level consistent with the historical relationship between the personal saving rate and household net worth. However, over 2014H1 the saving rate has moved higher and is likely to reach 5.6% for 2014Q3, even as household net worth has continued to rise. The personal saving rate thus is at least 2 percentage points above what the historical relationship with household net worth would suggest. This is consistent with the view that, in the wake of the financial crisis and the sluggish recovery to date, households have higher than normal precautionary saving demand.

Another reason to dampen the projected path of real PCE is that the growth impulse from the consumer durable goods cycle is likely to soften. Sales of motor vehicles have steadily recovered from the recession's depths to an average of 17.0 million units (annual rate) over the three months ending in August. At this level, the additional upside potential to these sales is limited, and thus it seems unlikely that they can continue to grow at the 10 percent rate of the past year.

Putting it together, we now project that real GDP will grow at an annual rate of just under 3% over 2014H2, bringing the 2014 Q4/Q4 growth rate to 1.9%. We anticipate that growth will pick up a little further from the 2014H2 pace in 2015 to 3.2% (Q4/Q4), and then slow to around 2 1/2% in 2016 as rising interest rates begin to have an effect. The unemployment rate declines over that period but at a more gradual rate than over the past year, reflecting our assumptions of some cyclical improvement in productivity growth and gradual increases in the labor force participation rate and the average workweek: the unemployment rate is projected to decline to 5 1/2% in 2015Q4 and then to 5 1/4%, our estimate of the natural rate, in 2016Q4. With little remaining slack and inflation at its objective, we project that real GDP growth in 2017 will equal potential growth and the unemployment rate will remain at its natural rate.

Our corresponding inflation forecast is essentially unchanged from June. Core PCE inflation is expected to increase gradually over the forecast horizon and to be close to the FOMC objective in 2016. In addition to the gradual reduction of slack, the slow rise of inflation is due to rising marginal costs of production and a slowly depreciating exchange value of the dollar. Long-term inflation expectations, a key driver of the inflation process, are assumed to be well anchored over the forecast horizon, limiting the increase in inflation set in motion by these other forces.

Respondent 14: The fan charts on page 60 of Tealbook A remind one of the enormous uncertainty about forecasts even a year ahead. This allows me to put more weight on impressions I have formed of the general direction of developments, based on the past and on recent changes in key macro variables and trends.

Respondent 15: As I anticipated, the weak economic performance in Q1/2014 was temporary. I see sufficient momentum and monetary accommodation to project that unemployment and inflation will be close to their long-run values by late 2014/early 2015.

Respondent 16: After a disappointing first half, the pace of growth in economy activity is expected to accelerate in the second half of this year. This acceleration should ultimately lead to a broad-based and sustained recovery in 2015-16. While there are signs that point to some improvement in demand going forward, the strength and durability of the projected pickup in activity remains uncertain. Consumers remain cautious despite relatively healthy gains in real disposable income so far this year. The lack of availability of mortgage credit to individuals with FICO scores below 640 is disproportionately affecting younger people, and could be an important factor behind the slow pace of household formation and slow recovery in residential investment. Too, the recent disappointing news concerning euro-area growth highlights the possibility of a further appreciation of the dollar and more drag to growth from net exports.

In all, we expect that the projected acceleration in economic activity will be modest by historical standards. Support from net worth and continued improvements in the labor market should provide room for somewhat faster growth in household expenditures, even taking into account the possibility of increased risk aversion following the financial crisis. The acceleration in the investment components of demand is expected to lag, since the expansion in the availability of mortgage credit is likely to be gradual and large investment spending decisions are likely occur only once uncertainty about the sustainability of a more robust recovery has dissipated. We judge that the most recent readings of the unemployment rate are understating the extent of labor market slack. Moreover, with continued improvements in the labor market, we expect the relationship between the unemployment rate and GDP growth to revert to historical norms. For these reasons, we project a gradual decline in the unemployment rate even with the economy poised to accelerate some. By the end of 2017, the unemployment rate is expected to be somewhat below the level consistent with full employment, with inflation still running below target. In a context of growth modestly above potential and little inflationary pressures, monetary policy can afford to be patient at first when removing accommodation. Liftoff from the zero-lower-bound is expected to occur in the third quarter of 2015, once the economy is projected to be about one year away from reaching full employment. As the economy gets close to full employment, the removal of policy accommodation occurs at a faster pace.

While there are upside risks to our growth outlook, the pattern in the recovery so far has been one of growth consistently below our expectations. The possibility of Europe being mired in a long-lasting slump is also a reminder of the persistence of adverse scenarios where policy may not provide an adequate offset. As a result, we view the risks to the growth outlook as tilted slightly to the downside. In this context, the risks to the unemployment rate outlook are broadly balanced, as disappointing growth outcomes are balanced by the possibility that downside surprises to the the unemployment rate will persist. Risks to the inflation outlook are skewed to the downside, since the extent to which long-run inflation expectations can anchor inflation remains uncertain.

Respondent 17: My expectation continues to be for a path of moderate recovery as household deleveraging continues and as fiscal contraction loosens. However, the mixed data of the intermeeting period – particularly the last two jobs reports – underscore just how moderate the recovery is, and how it may still be susceptible to the fits and starts pattern observed over the last few years.

Forecast Narratives (continued)

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

Respondent 1: In June I was less optimistic about growth prospects than was the Tealbook. Board-staff projections have since moved in my direction. More generally, the economy has been evolving much as I had expected, and I have not felt compelled to make significant adjustments to any of the real-activity, inflation, or policy projections I submitted in June.

I heavily discount the August non-farm jobs report. One has to go all the way back to January-July, 1997 to find seven straight months with non-farm job increases in excess of 200K. It's hardly earthshaking to see "only" 142K jobs added in August, 2014 following six straight months of strong gains.

Respondent 2: Based on the incoming data and my projection for the pace of growth over the next 3 years I have revised down slightly my path for the unemployment rrate.

Respondent 3: N/A

Respondent 4: N/A

Respondent 5: My forecast has changed only a little since June. My projected path for the unemployment rate is essentially unchanged beyond the near-term, whereas GDP growth is slightly lower, on balance, over the forecast horizon, in light of incoming data suggesting continued slow productivity growth, and my projection for inflation is just a little higher, as I expect increasingly tight resource uitlization to support the return of inflation to our 2 percent objective.

Respondent 6: There has been little change in my forecast, except that as described above, I took on board the change in the staff's assessment of underlying inflation.

Respondent 7: The information received since June suggests a lower path of the unemployment rate in 2014 and 2015. Because of the faster-than-expected improvement in labor market conditions, the likely end of asset purchases in October, and my increased confidence in the inflation outlook that stems from the firming of recent inflation readings, I now expect an earlier time of lift-off, in March 2015, will be appropriate.

Respondent 8: My forecast is little changed from the previous SEP. Growth in the first half of this year was slightly weaker, on net, than I had anticipated, but I do not see this as carrying much signal for the outlook going forward. The unemployment rate has moved down slightly more than I anticipated in June, causing me to slightly lower the path for the unemployment rate throughout the forecast horizon. Inflation data have come in roughly as expected so I have not changed my inflation projection.

Respondent 9: Our outlook for growth in 2014 is essentially unchanged although the first half of the year looks to have been a bit stronger than we had projected while the second half is looking marginally softer. The composition of growth is different, however, as the incoming data point to less consumer spending but stronger outlays for fixed investment and inventories (for the year as a whole). We do not, however, see large implications of these changes for the projection beyond 2104. The unemployment rate has come down a touch more than we expected in June, and inflation has

been a touch higher, and we've carried these through to corresponding small changes in our outlook for the year as a whole. Our 2015 and 2016 projections for growth, labor markets, and inflation are essentially unchanged from June. We have made no material changes to our assumptions concerning policy or financial market developments.

Since June, our business contacts have become more uniformly optimistic, and we feel that the downside risks to the projection for growth have diminished since our previous SEP submission. They continue to report little or no inflationary pressures, and so have not allayed our concerns about downside risks to the inflation outlook.

Respondent 10: Since June, I have made only modest changes to the broad contours of my forecast. The economy has rebounded strongly in the second quarter and is poised to continue to grow steadily over the remainder of the year. On net, my GDP forecast for 2014 is only slightly weaker than in June. This minor downward revision is because recent data on consumer spending fell a bit short of my expectations. The overall pace of the recovery, however, remains strong enough to continue to bring the unemployment rate down.

The unemployment rate is slightly lower than what I expected in June, leading me to nudge down its projected path. I currently expect the unemployment rate to reach its longer-run value of 5.2 percent before the end of 2016. However, I expect broader measures of labor market slack to come down a bit slower than the unemployment rate.

Finally, recent data on core and overall inflation were in line with my expectations. That, in combination with the fact that my forecast for GDP has not changed substantially over the past three months, means that my outlook for inflation is essentially unchanged compared to that in June.

Respondent 11: My forecast today is essentially the same as it was in June. My growth forecast for 2014 is 2.2 percent, up 0.2 percentage points from my last submission. I have not adjusted my inflation forecast, as recent readings are, on balance, consistent with my previous projection.

Respondent 12: N/A

Respondent 13: The revisions to our GDP projections were strongly influenced by the soft PCE data so far this year: through July, real PCE has risen at a 1 1/4% annual rate this year. We thus have marked down our real PCE forecasts over the forecast horizon. This change was offset partially by a mark-up in business fixed investment, as the data we have received on this component have been somewhat stronger than we had anticipated.

Much like the Tealbook, we saw the July and August labor market reports as indicating somewhat slower improvement in labor market conditions than was observed in Q2. Combined with the slower GDP growth in 2014H2 and 2015 (and slightly stronger cyclical rebound in productivity growth), we project a somewhat slower decline in the unemployment rate through 2015.

Our revision to the estimate of potential GDP growth reflects the sizable decline in the unemployment rate over this expansion even as GDP growth has been moderate, mitigated by our assessment that part of the declines in the labor force participation rate and in the growth rate of the capital stock reflect cyclical factors. Separate analysis also indicates that there is a very high probability that the U.S. economy is in a low trend productivity growth state, which also affects our assessment of potential GDP growth.

Respondent 14: For the same reasons as the Tealbook.

Respondent 15: The weak economic growth in Q1/2014 caused small markdowns of growth for the first half of 2014 as well as for the entire year.

Respondent 16: The projected pace of growth over the forecast horizon is now slower relative to the June projection. This mainly reflects a downward revision to potential GDP growth over the period 2014-16. The expected path for the unemployment rate is more favorable, as a result of lower-than-expected unemployment rate readings so far this year. There have been no material changes to the inflation outlook.

Respondent 17: My forecast hasn't actually changed materially since June. The little burst of pretty good data and then the little burst of not-so-good data have almost evened out. I have marked down a bit my expectations for growth in the next couple of years on the assumption that growth potential is a bit lower than I had previously been assumiing.

Forecast Narratives (continued)

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

Respondent 1: 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. 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 2: My forecast calls for higher inflation and tighter monetary policy over the forecast horizon than the Tealbook.

Respondent 3: N/A

Respondent 4: The Tealbook assumes a significant acceleration in productivity growth, while I'm projecting productivity to grow at about the average rate we've seen since the recession. In addition, the Tealbook projects GDP growth substiantially above potential, whereas in my projection, growth is closer to its trend.

Respondent 5: N/A

Respondent 6: N/A

Respondent 7: The appropriate path for the federal funds rate in 2015, 2016 and 2017 in my forecast lies above the Tealbook forecast. In addition, I expect somewhat higher inflation through 2017. I also do not expect unemployment to undershoot its longer-run level.

Respondent 8: My forecasted outcomes are broadly similar to those in the Tealbook. I expect that GDP growth will proceed at an above-trend pace from 2014H2 through 2016 and that the unemployment rate will continue to decline. However, 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 the end of 2016. Compared with Tealbook, this firmer path for inflation calls for a steeper path for the funds rate.

Respondent 9: 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 2.75 percent.

Our projection for growth in 2014:H2 is a touch below the (modified) Tealbook. Our projection for growth in 2015-2017 averages about 1/4 percentage point stronger than the Tealbook. The difference essentially reflects our somewhat faster assumption for the growth rate of potential output over that period. We also do not see current tensions between a broad view of labor market indicators and GDP

being as large as the Tealbook does, and so we are comfortable with an estimate of the current output gap that is somewhat larger. Accordingly, we do not project much overshooting of potential by the end of the projection period, and while our NAIRUs are the same, our projection for the unemployment rate is a couple of tenths higher. Our projection for inflation is similar to the Tealbook.

Respondent 10: 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 assumes an overshoot of employment above full employment (that is, the unemployment rate falls significantly below the natural rate) that is not mirrored in my forecast with appropriate monetary policy.

Respondent 11: My growth and unemployment projections are not materially different from those in the Tealbook for all forecast horizons. I do not share the Board staff's assessment that inflation expectations are misaligned with the FOMC's explicit inflation objective. As such, inflation reaches 2.0 percent in my outlook by 2016.

Respondent 12: N/A

Respondent 13: The general contours of our and the Tealbook forecasts for real GDP growth are roughly similar, so the differences are more in the details. Our forecast for real GDP growth in 2015 is somewhat above that of the Tealbook. The most notable factors for this difference appear to be business fixed investment and net exports. The Tealbook projects slower growth in business fixed investment in 2015 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 assessment of potential growth. For net exports, the Tealbook appears to have imports increasing faster than in our projection, which may reflect some larger effects of dollar appreciation than in our forecast. These factors are offset partially by faster consumption growth in the Tealbook forecast, a long-standing difference with our forecast, in part reflecting stronger wealth effects in the Tealbook forecast. For 2016, real GDP growth in our projection is modestly below the Tealbook forecast: again, our consumption forecast is lower than the Tealbook's, while our investment forecast is higher.

One other difference to note in the real activity forecasts is that the path of personal saving rate in our forecast lies above that in the Tealbook forecast: we have taken on board to a greater extent the rise of the personal saving rate in the first half of this year than has the Tealbook. As we noted in 4(a), the higher saving rate can be explained through a stronger precautionary saving motive; however, it does represent an upside risk to our consumption forecast if that motive weakens along the lines of the Tealbook forecast.

More fundamental differences in the two forecasts are in the paths of the unemployment rate and inflation. Although less so than in the July Tealbook, the Tealbook forecasts that the unemployment rate will be below its natural rate assumption for a prolonged period, whereas we project the unemployment rate to fall to its natural rate and then remain there. This difference appears to reflect differing views about inflation dynamics. In the Tealbook, with the underlying inflation rate below the FOMC longer-run objective, 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–even then, inflation does not approach the goal until 2019. In our framework, with anchored inflation expectations and little slack by the end of 2016, we anticipate inflation to be essentially at the longer-run goal, and thus unemployment is not expected to fall below the natural rate. The faster return of inflation to its goal in our forecast reflects our assumptions about inflation persistence and the strength of attraction provided by anchored inflation expections.

In terms of the uncertainty and risk assessment, we see some differences between the two projections. On the real side, although we see modestly less uncertainty around the real GDP and unemployment forecasts than in June, we continue to see it as higher than normal whereas the Tealbook sees uncertainty at near normal levels. This assessment reflects our view that the unusual nature of the current expansion as well as a policy environment that is constrained by the effective lower bound leaves uncertainty about real activity above even the more elevated SEP standard associated with the 20-year window of forecast errors. As for inflation, our views on the risk assessment are now similar to those in the Tealbook after a long period where we had assessed the uncertainty as higher than normal.

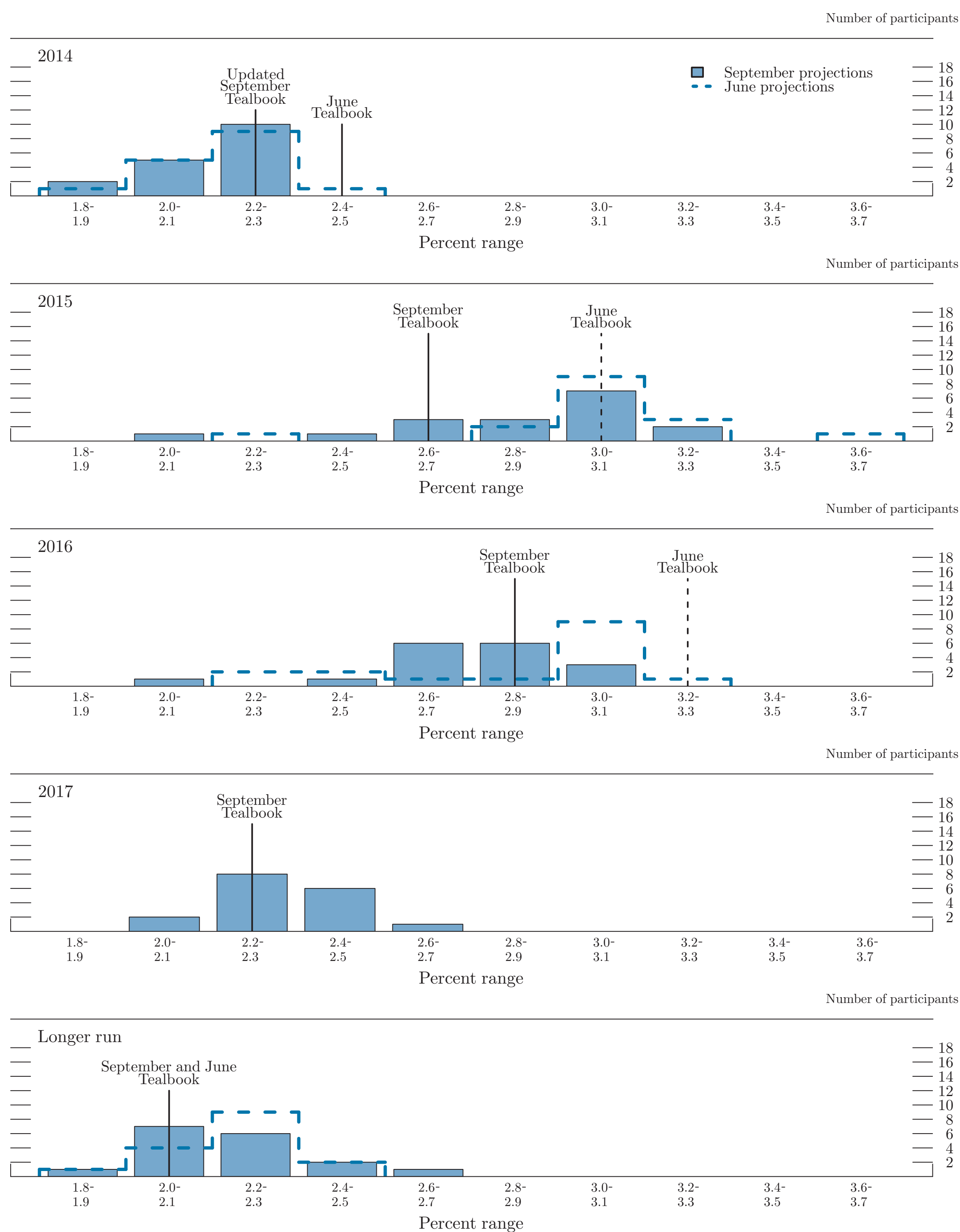
Respondent 14: No large differences.

Respondent 15: In terms of real GDP growth, the key difference involves timing. I project more growth than the Tealbook in 2015 and less growth than the Tealbook in 2016; however, total growth over the two years is quite close. In terms of unemployment, I project higher levels than the Tealbook in 2016, 2017, and the long run. In terms of inflation, I project an overshooting in 2015 and then a reduction in inflation during 2016, with convergence to 2 percent in 2017. Meanwhile, the Tealbook projects a slow return to the 2 percent inflation target in the long run.

Respondent 16: The two forecasts are similar, both on the real and the nominal side. The Tealbook forecast, however, is conditioned on a higher path of the federal funds rate over the period 2015-16. Still, by the end of 2017 the expected level of the federal funds rate in the two forecasts is about the same.

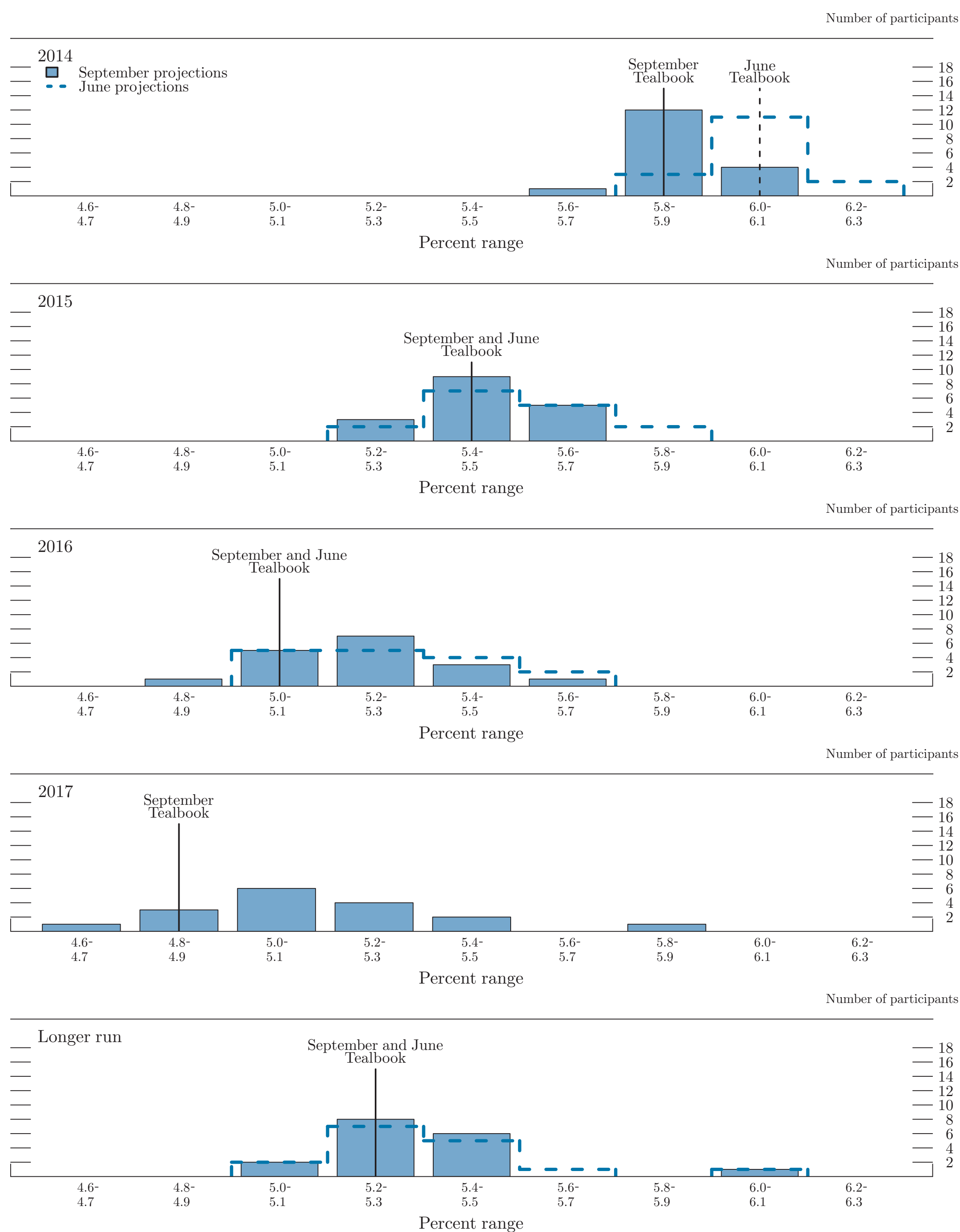
Respondent 17: No major differences – only a few tenths of a percentage point differences one way or another

Figure 3.A. Distribution of participants' projections for the change in real GDP, 2014–17 and over the longer run



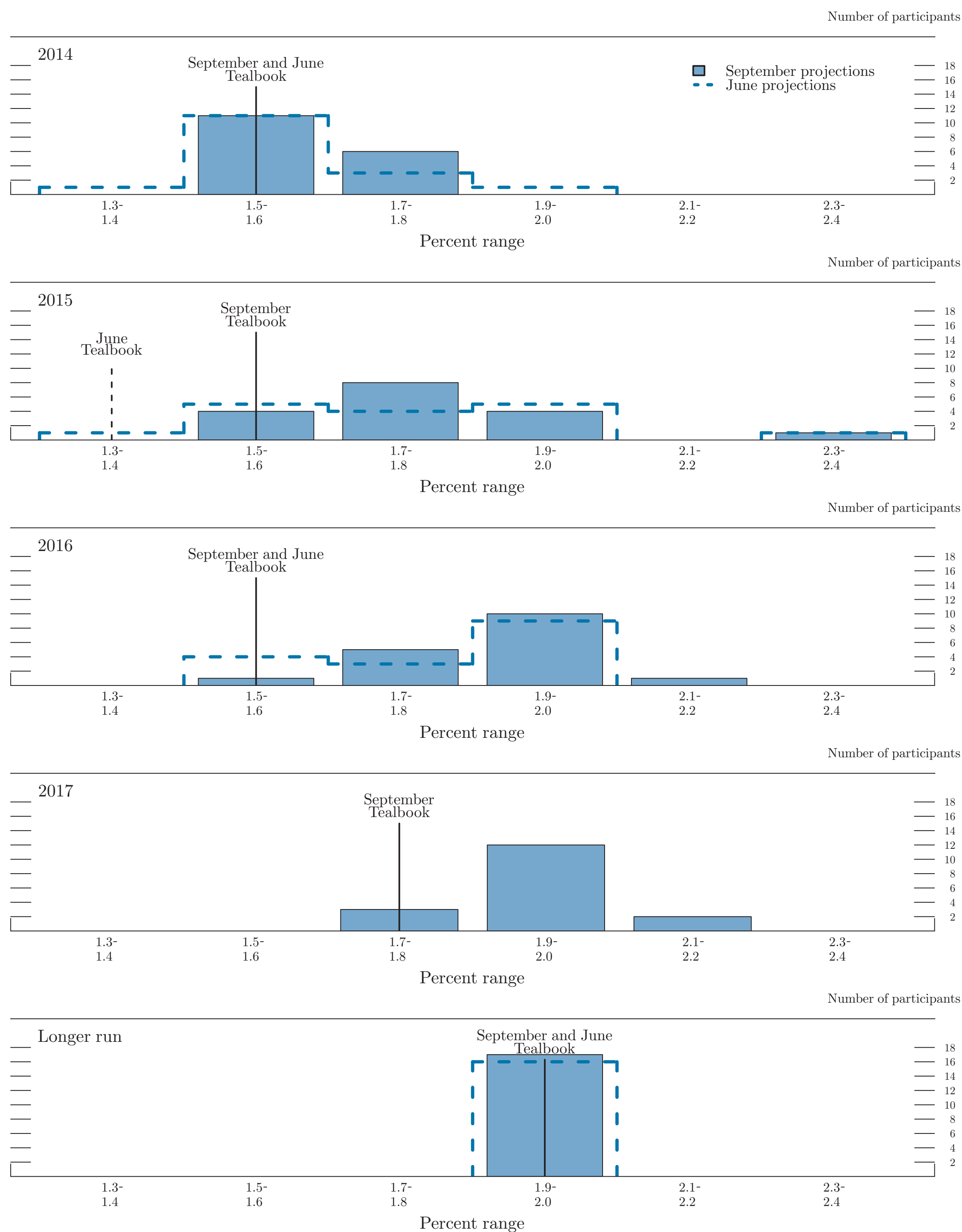
NOTE: Definitions of variables are in the general note to table 1.

Figure 3.B. Distribution of participants' projections for the unemployment rate, 2014–17 and over the longer run



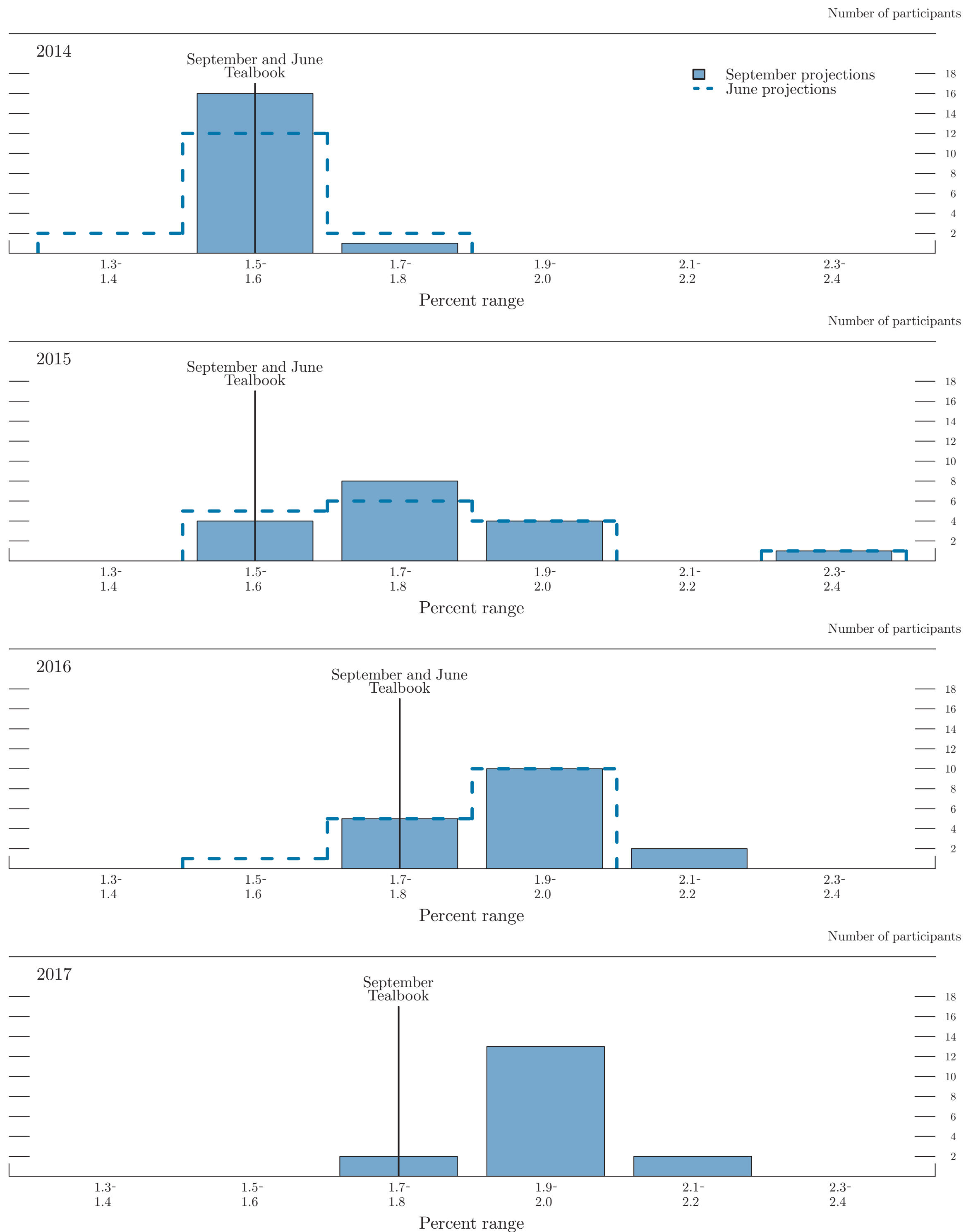
NOTE: Definitions of variables are in the general note to table 1.

Figure 3.C. Distribution of participants' projections for PCE inflation, 2014–17 and over the longer run



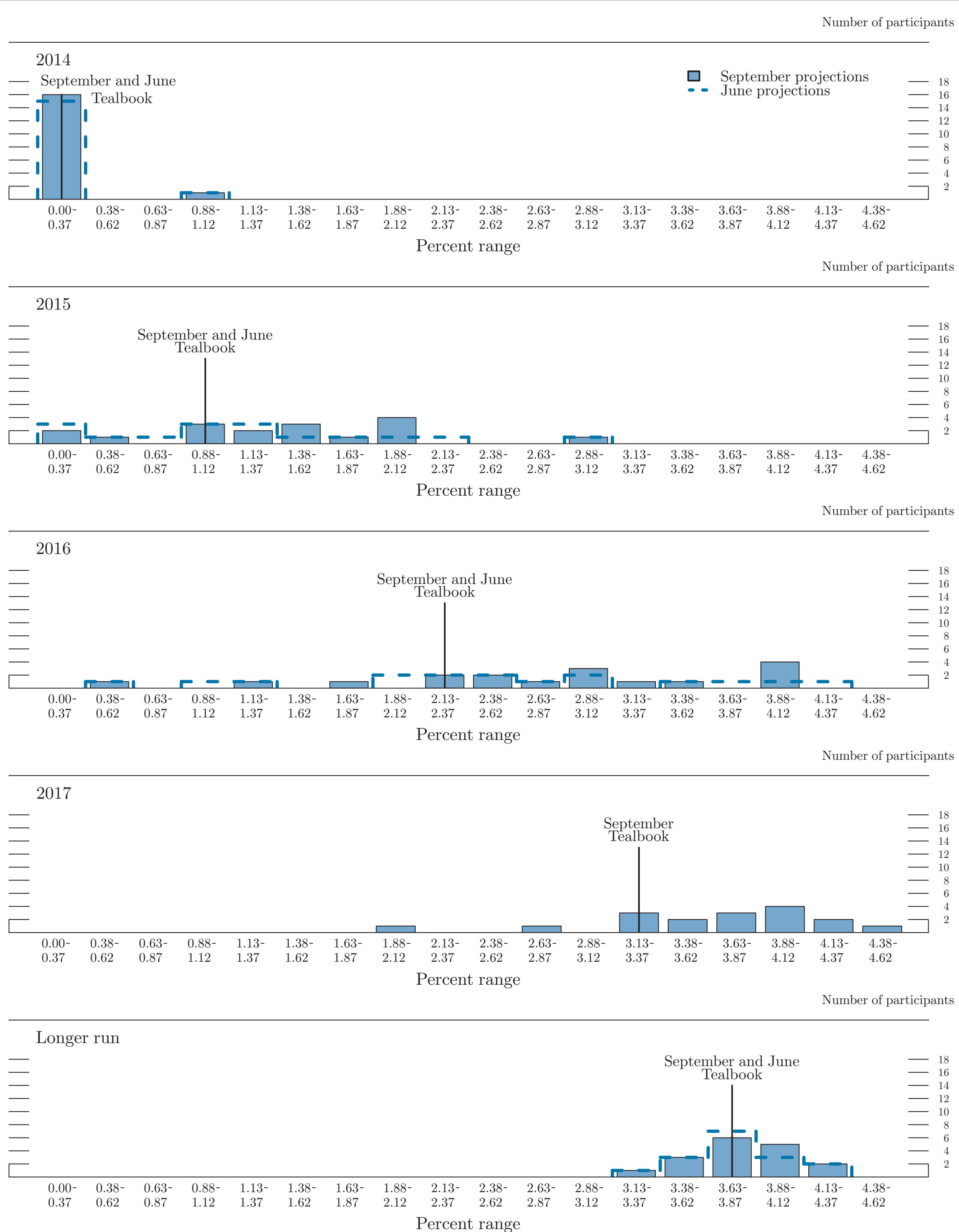
NOTE: Definitions of variables are in the general note to table 1.

Figure 3.D. Distribution of participants' projections for core PCE inflation, 2014–17



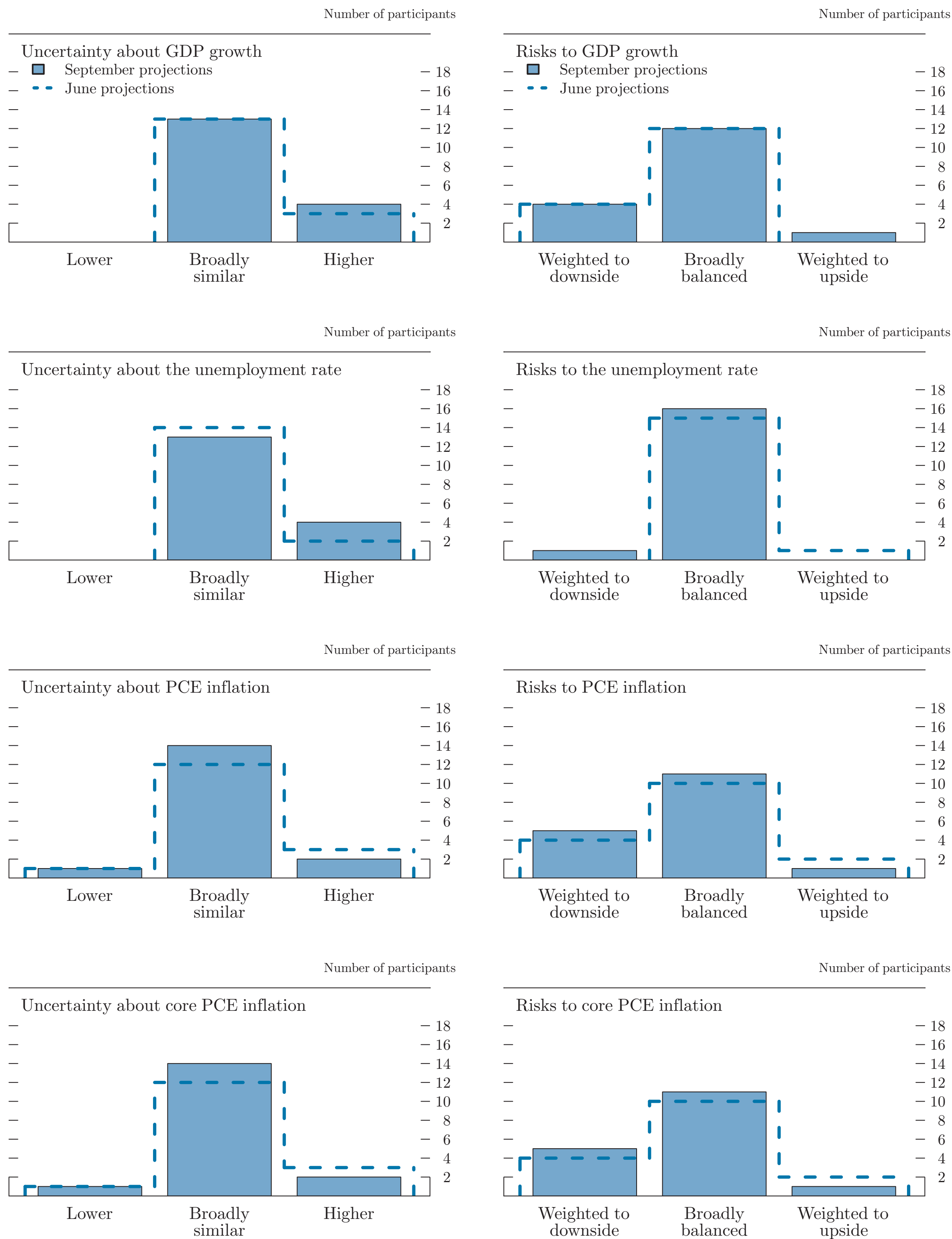
NOTE: Definitions of variables are in the general note to table 1.

Figure 3.E. Distribution of participants' projections for the target federal funds rate or midpoint of target range, 2014–17 and over the longer run



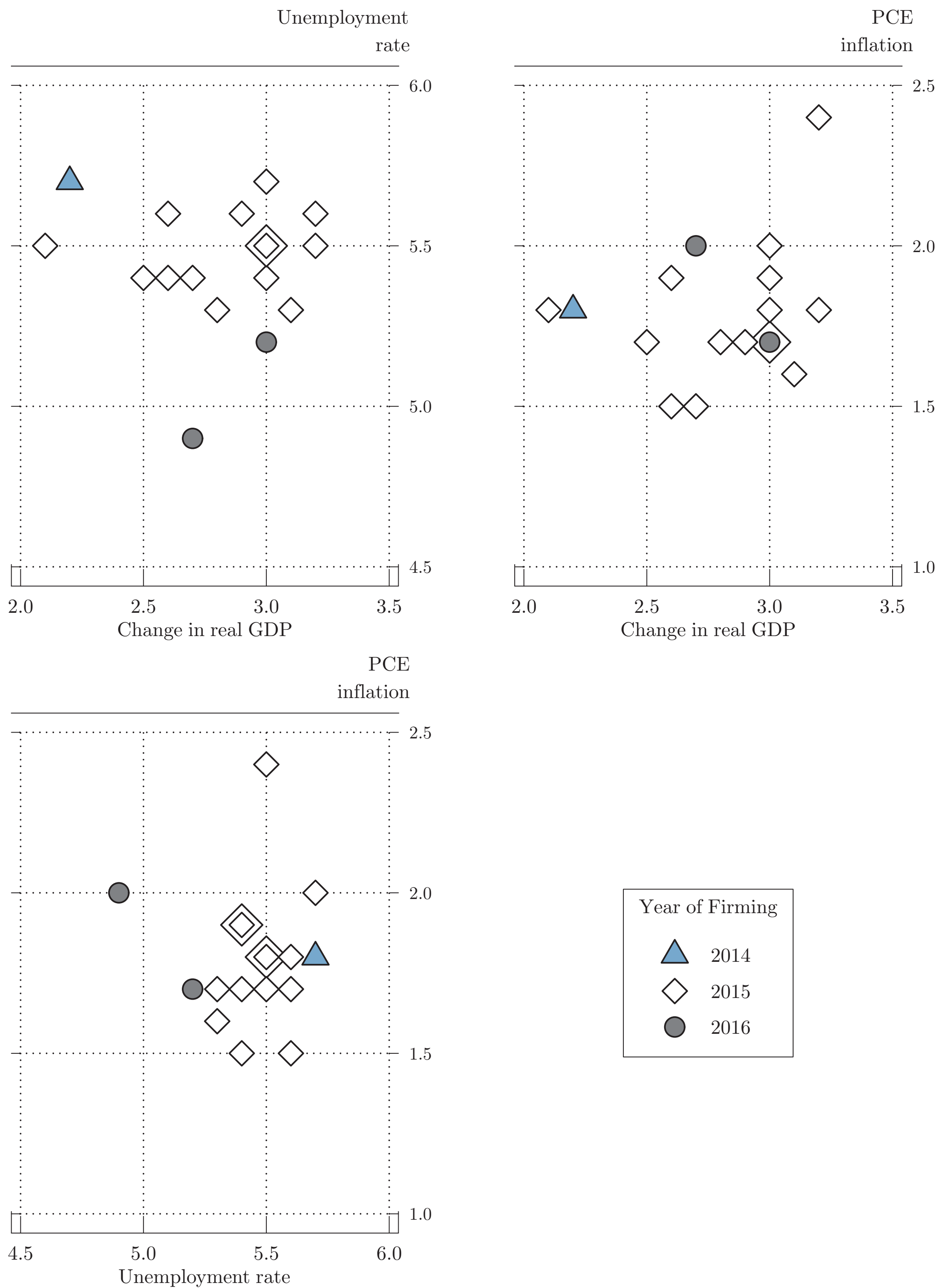
NOTE: The values shown above are for individual participants' judgments of the midpoint of the appropriate target range for the federal funds rate or the appropriate target level for the federal funds rate at the end of the specified calendar year or over the longer run.

Figure 4. Uncertainty and risks in economic projections



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

Figure 5. Scatterplots of projections in the initial year of policy firming (in percent)



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.