

Responses to Survey of Primary Dealers

Markets Group, Federal Reserve Bank of New York

March 2015

Responses to Survey of Primary Dealers

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For most questions, median responses across dealers, along with the 25th and 75th percentiles, are reported. For questions that ask respondents to give a probability distribution, the average response across dealers for each potential outcome is reported.¹ Brief summaries of the comments received in free response form are also provided.

Responses were received from 22 primary dealers. Except where noted, all 22 dealers responded to each question. In some cases, dealers may not have provided forecasts extending to the same time horizon as requested in the survey. In these instances, the number of respondents who answered all parts of the question is indicated.

Monetary Policy Expectations

1. a) **Provide below your expectations for changes, if any, to the language referencing each of the following topics in the March FOMC statement. Limit your responses to changes you consider most likely.**

Current economic conditions and the economic outlook:

Several dealers expected no significant changes to the language in the FOMC statement. Several dealers expected the statement to reflect a slightly less optimistic tone with regards to current economic conditions and the outlook for economic growth. Several dealers expected the statement would make note of further improvement in the labor market. Several dealers anticipated that the statement would reference the upward move in market-implied inflation compensation measures.

Communication on the Committee's policy of reinvesting principal payments on Treasury and agency securities:

Most dealers noted their expectation that there would be no significant change to the Committee's policy of reinvesting Treasury and agency securities.

Communication on the expected path of policy rates and forward guidance on the target federal funds rate:

Most dealers expected that the Committee would remove or modify the "patient" language in the March statement. Some dealers expected the FOMC to emphasize that the path of monetary policy is data dependent. Several dealers expected the Committee to communicate that the initial policy tightening is going to be determined on a meeting-by-meeting basis.

**Other:
(3 responses)**

Dealers did not provide substantial commentary in this section.

- b) **What are your expectations for the release of FOMC participants' economic projections in the advance materials of the Summary of Economic Projections (SEP)?**

Some dealers anticipated that FOMC participants' economic projections would reflect lower forecasts for the unemployment rate in 2015 and 2016. Several dealers expected that participants' forecasts for headline and core

¹Answers may not sum to 100 percent due to rounding.

PCE inflation for 2015 would be revised lower. Several dealers expected no significant changes to the advance materials of the SEP.

c) What are your expectations for the release of FOMC participants' year-end target federal funds rate projections in the advance materials of the Summary of Economic Projections (SEP)?

Many dealers expected the median of FOMC participants' year-end target federal funds rate projections for 2015 to decline modestly, with some of these dealers also expecting a decline in the median projection for 2016. Several dealers anticipated a minor shift down in the median federal funds rate projection for 2017 as well.

d) What are your expectations for the Chair's post-FOMC press conference?

Some dealers anticipated that if the "patient" language were removed from the statement, the Chair would emphasize that such a removal does not mean that liftoff will take place within a fixed number of subsequent FOMC meetings. Several dealers expected the Chair to note that the Committee's decision on the timing of liftoff will be data dependent.

e) How do you expect the March FOMC events to influence market perceptions of the stance of monetary policy, if at all? (1 = less accommodative, 3 = neutral, 5 = more accommodative)

| Perceived Stance of Monetary Policy | |
|-------------------------------------|---|
| 25th Pctl | 2 |
| Median | 2 |
| 75th Pctl | 3 |

Please explain:

Several dealers explained their view by citing the potential for the Committee to remove or modify the "patient" language. Some dealers noted that a removal of the "patient" language from the March statement would imply a higher probability of liftoff taking place "earlier" rather than "later".

2. a) Of the possible outcomes below, provide the percent chance you attach to the timing of the first increase in the federal funds target rate or range. Also, provide your estimate for the most likely meeting for the first increase.

| | Mar. 17-18 | Apr. 28-29 | Jun. 16-17 | Jul. 28-29 | Sep. 16-17 | Oct. 27-28 | Dec. 15-16 | ≥ Jan. 2016 |
|---------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|
| Average | 0% | 2% | 31% | 9% | 27% | 7% | 12% | 11% |

Most Likely Meeting of First Increase in Target Rate or Range

| | |
|-----------|----------------|
| 25th Pctl | June 2015 |
| Median | September 2015 |
| 75th Pctl | September 2015 |

b) Provide the percent chance you attach to the target federal funds rate or range not returning to the zero lower bound during the 2 years following liftoff. Conditional on the target not returning to the zero lower bound, provide the percent chance you attach to the net change in the target rate or range in each of the two years following liftoff.

**Probability of Not Returning to
ZLB within 2 Years Following
Liftoff**

| | |
|-----------|-----|
| 25th Pctl | 80% |
| Median | 83% |
| 75th Pctl | 85% |

First Year Following Liftoff*

| | 0 - 50 basis points | 51 - 100 basis points | 101 - 150 basis points | 151 - 200 basis points | >200 basis points |
|---------|------------------------------------|--------------------------------------|---------------------------------------|---------------------------------------|-------------------------------------|
| Average | 12% | 33% | 30% | 19% | 5% |

*Conditional on not returning to ZLB

Second Year Following Liftoff*

| | 0 - 50 basis points | 51 - 100 basis points | 101 - 150 basis points | 151 - 200 basis points | >200 basis points |
|---------|------------------------------------|--------------------------------------|---------------------------------------|---------------------------------------|-------------------------------------|
| Average | 9% | 24% | 27% | 25% | 15% |

*Conditional on not returning to ZLB

- c) Provide your estimate of the most likely outcome (i.e., the mode) for the target federal funds rate or range, as applicable, immediately following the FOMC meetings and at the end of each quarter or half-year period below. If you expect a range, please provide both the top and bottom of the range in the specified fields below. If you expect a target rate, provide your response in the "Target rate" field only.

| | Top of Target Range | | | | | | | | | | | | | | |
|----------------|---------------------|--------------|---------------|---------------|--------------------|------------------|-------------------|------------|------------|------------|------------|------------|------------|------------|------------|
| | March 17-18 | Apr 28-29 | June 16-17 | July 28-29 | September 16-17 | October 27-28 | December 15-16 | 2016 Q1 | 2016 Q2 | 2016 Q3 | 2016 Q4 | 2017 H1 | 2017 H2 | 2018 H1 | 2018 H2 |
| 25th Pctl | 0.25% | 0.25% | 0.25% | 0.25% | 0.50% | 0.50% | 0.75% | 1.00% | 1.25% | 1.50% | 1.75% | 2.25% | 2.75% | 3.25% | 3.25% |
| Median | 0.25% | 0.25% | 0.25% | 0.25% | 0.50% | 0.63% | 0.75% | 1.00% | 1.25% | 1.50% | 2.00% | 2.63% | 3.25% | 3.50% | 3.50% |
| 75th Pctl | 0.25% | 0.25% | 0.50% | 0.50% | 0.75% | 0.75% | 1.00% | 1.50% | 1.75% | 2.25% | 2.50% | 3.00% | 3.50% | 3.75% | 4.00% |
| # of Responses | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 19 | 19 | 19 | 19 | 14 | 14 | 14 | 14 |

| | Bottom of Target Range | | | | | | | | | | | | | | |
|----------------|------------------------|--------------|---------------|---------------|--------------------|------------------|-------------------|------------|------------|------------|------------|------------|------------|------------|------------|
| | March 17-18 | Apr 28-29 | June 16-17 | July 28-29 | September 16-17 | October 27-28 | December 15-16 | 2016 Q1 | 2016 Q2 | 2016 Q3 | 2016 Q4 | 2017 H1 | 2017 H2 | 2018 H1 | 2018 H2 |
| 25th Pctl | 0.00% | 0.00% | 0.00% | 0.00% | 0.25% | 0.25% | 0.50% | 0.75% | 1.00% | 1.25% | 1.50% | 2.00% | 2.50% | 3.00% | 3.00% |
| Median | 0.00% | 0.00% | 0.00% | 0.00% | 0.25% | 0.38% | 0.50% | 0.75% | 1.00% | 1.25% | 1.75% | 2.38% | 3.00% | 3.25% | 3.25% |
| 75th Pctl | 0.00% | 0.00% | 0.25% | 0.25% | 0.50% | 0.50% | 0.75% | 1.25% | 1.50% | 2.00% | 2.25% | 2.75% | 3.25% | 3.50% | 3.75% |
| # of Responses | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 19 | 19 | 19 | 19 | 14 | 14 | 14 | 14 |

| | Target Rate | | | | | | | | | | | | | | |
|----------------|----------------|--------------|---------------|---------------|--------------------|------------------|-------------------|------------|------------|------------|------------|------------|------------|------------|------------|
| | March 17-18 | Apr 28-29 | June 16-17 | July 28-29 | September 16-17 | October 27-28 | December 15-16 | 2016 Q1 | 2016 Q2 | 2016 Q3 | 2016 Q4 | 2017 H1 | 2017 H2 | 2018 H1 | 2018 H2 |
| 25th Pctl | | | | | | | | 0.50% | 0.75% | 1.00% | 1.25% | 2.25% | 2.50% | 2.50% | 2.50% |
| Median | | | | | | | | 1.00% | 1.25% | 1.50% | 1.75% | 2.25% | 2.63% | 2.75% | 2.88% |
| 75th Pctl | | | | | | | | 1.50% | 1.75% | 2.25% | 2.50% | 2.50% | 2.75% | 3.25% | 3.25% |
| # of Responses | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 3 | 3 | 6 | 6 | 6 | 6 |

- d) In addition, provide your estimate of the longer-run target federal funds rate and your expectation for the average federal funds rate over the next 10 years.

| | Longer Run | 10-yr Average FF Rate |
|-----------|------------|-----------------------|
| 25th Pctl | 3.25% | 2.50% |
| Median | 3.50% | 2.80% |
| 75th Pctl | 3.75% | 3.40% |

- e) Of the possible outcomes below, please indicate the percent chance you attach to the target federal funds rate or range falling in each of the following ranges at the end of 2015, 2016, and 2017. If you expect a target range for federal funds please use the midpoint of the range in providing your response. (21 complete responses)

| | | Year-End 2015 | | | | | | |
|---------|--|---------------|--------------|--------------|--------------|--------------|--------------|--------|
| | | 0.00 - 0.25% | 0.26 - 0.50% | 0.51 - 1.00% | 1.01 - 1.50% | 1.51 - 2.00% | 2.01 - 2.50% | ≥2.51% |
| Average | | 14% | 24% | 42% | 16% | 3% | 1% | 0% |

| | | Year-End 2016 | | | | | | |
|---------|--|---------------|--------------|--------------|--------------|--------------|--------------|--------|
| | | ≤0.50% | 0.51 - 1.00% | 1.01 - 1.50% | 1.51 - 2.00% | 2.01 - 2.50% | 2.51 - 3.00% | ≥3.01% |
| Average | | 5% | 8% | 20% | 25% | 24% | 15% | 4% |

| | | Year-End 2017 | | | | | | |
|---------|--|---------------|--------------|--------------|--------------|--------------|--------------|--------|
| | | ≤2.00% | 2.01 - 2.50% | 2.51 - 3.00% | 3.01 - 3.50% | 3.51 - 4.00% | 4.01 - 4.50% | ≥4.51% |
| Average | | 13% | 20% | 22% | 22% | 12% | 8% | 2% |

If you changed your expectations for the most likely timing of liftoff and/or the most likely path of the target rate or range since the last time the questions were asked, explain the factors that motivated you to make the change(s):

Most dealers noted that their expectations had not changed since the prior survey, or did not provide substantial commentary.

3. Of the possible outcomes below, provide the percent chance you attach to the 10-year Treasury yield falling in each of the following ranges at the end of 2015 and 2016.

| | | Year-End 2015 | | | | | | |
|---------|--|---------------|-------------|-------------|-------------|-------------|-------------|--------|
| | | ≤1.50% | 1.51- 2.00% | 2.01- 2.50% | 2.51- 3.00% | 3.01- 3.50% | 3.51- 4.00% | >4.00% |
| Average | | 6% | 15% | 30% | 30% | 12% | 4% | 2% |

| | | Year-End 2016 | | | | | | |
|---------|--|---------------|-------------|-------------|-------------|-------------|-------------|--------|
| | | ≤2.50% | 2.51- 3.00% | 3.01- 3.50% | 3.51- 4.00% | 4.01- 4.50% | 4.51- 5.00% | >5.00% |
| Average | | 18% | 31% | 28% | 14% | 6% | 2% | 1% |

If you changed your expectations since the last time the question was asked, explain the factors that motivated you to make the change(s).

Several dealers noted that their expectations had not materially changed since the last survey.

- b) The 10-year Treasury yield increased 29 basis points between January 27 and March 4. Please decompose this change into changes in the market's expected average real policy rate, expected average inflation rate, and the market-implied nominal term premium. Please ensure that your sum matches the change.
(21 complete responses)

| | Change in Market's Expected Average Real Policy Rate | Change in Market's Expected Average Inflation Rate | Change in Market- Implied Nominal Term Premium |
|---------|--|--|--|
| Average | 8 | 11 | 12 |

Please explain which factor or factors motivated your decomposition.

Some dealers cited a higher term premium when decomposing the change in the 10-year Treasury yield. Some dealers explained that their decomposition was driven by higher inflation compensation measures or an increase in expected inflation. Several dealers cited a stronger labor market or growth outlook. Several dealers noted that their decomposition was driven by market expectations for less accommodative monetary policy in the U.S.

4. a) Please describe any modifications to the "patient" language in the FOMC statement you expect prior to liftoff, including what modifications would be made and when it would be modified or removed.

Most dealers noted that they expected the "patient" language to be removed or modified in the March FOMC statement. Some dealers noted that when the "patient" language is removed or modified, they anticipate that the Committee will communicate increased emphasis on data dependency. Several dealers expected that in the event of a removal of or modification to the "patient" language the Committee would include language that the timing of liftoff is dependent on "reasonable confidence" in economic data.

Conditional on the Committee first modifying or removing the "patient" language, over the potential outcomes below please provide the percent chance you attach to the Committee first increasing the federal funds rate or range, expressed in terms of the number of FOMC meetings relative to the meeting at which the Committee modifies or removes "patient."

| | Liftoff relative to modification or removal of "patient": | | | | | |
|---------|---|------------|-------------|-------------|-------------|--------------|
| | ≤ 0 meetings | +1 meeting | +2 meetings | +3 meetings | +4 meetings | >+4 meetings |
| Average | 0% | 4% | 39% | 12% | 26% | 20% |

- b) Conditional on the "patient" language being modified or removed at the time(s) and in the way(s) you consider most likely, how do you expect this to impact financial conditions?
(21 complete responses)

Many dealers expected a modest tightening of financial conditions when the "patient" language is modified or removed. Several dealers expected no significant change to financial conditions.

5. a) Provide the percent chance you attach to the unemployment rate falling within the following ranges at the time of the first increase in the target federal funds rate or range.

| | < 5.5% | 5.5 - 5.9% | 6.0 - 6.5% | > 6.5% |
|---------|--------|---------------|---------------|--------|
| Average | 75% | 23% | 2% | 0% |

b) Provide the percent chance you attach to inflation between 1 and 2 years ahead falling within the following ranges at the time of the first increase in the target federal funds rate or range.

| | < 1.25% | 1.25 - 1.74% | 1.75 - 2.24% | 2.25 - 2.74% | ≥ 2.75% |
|---------|---------|--------------|--------------|--------------|---------|
| Average | 8% | 28% | 45% | 16% | 4% |

c) Provide your estimate for the most likely value of the following indicators at the time of the first increase in the target federal funds rate or range. When specifying values below, where appropriate, provide your estimate consistent with the last published value prior to the announcement of liftoff. For reference, the level of total U.S. employees on nonfarm payrolls for January, seasonally adjusted, was 140.8 million. For your calculations, please take into account the February data to be released on March 6. (21 complete responses)

| | Unemployment Rate | Labor Force Participation Rate | Total NFP* | 12-Month Change in Average Hourly Earnings | Core 12-Month PCE Inflation | Headline 12-Month PCE Inflation | Inflation Between 1 and 2 Years Ahead |
|-----------|-------------------|--------------------------------|------------|--|-----------------------------|---------------------------------|---------------------------------------|
| 25th Pctl | 5.2% | 62.8% | 141.8 | 2.2% | 1.2% | 0.2% | 1.9% |
| Median | 5.3% | 62.8% | 142.0 | 2.3% | 1.3% | 0.4% | 2.0% |
| 75th Pctl | 5.4% | 62.9% | 142.6 | 2.5% | 1.4% | 1.0% | 2.0% |

*In millions

d) Provide your forecast for the expected levels of the following indicators at the time periods provided below. If you expect a target range, please enter the range. If you do not believe a particular tool will be used during one or more of the time periods below, please enter "N/A".* (21 complete responses)

| | One Quarter Prior to Liftoff | | | | | | |
|-----------|------------------------------|------------------------------------|------------------------------|--------------|---------------|----------------------------------|-----------------------|
| | IOER Rate | Target Federal Funds Rate or Range | Federal Funds Effective Rate | O/N RRP Rate | 3M LIBOR Rate | Overnight Treasury GCF Repo Rate | O/N RRP Usage (\$ bn) |
| 25th Pctl | 0.25% | 0.13% | 0.12% | 0.05% | 0.25% | 0.09% | 150 |
| Median | 0.25% | 0.13% | 0.12% | 0.05% | 0.27% | 0.13% | 150 |
| 75th Pctl | 0.25% | 0.13% | 0.13% | 0.05% | 0.30% | 0.15% | 175 |

| | Immediately Following Liftoff | | | | | | |
|-----------|-------------------------------|------------------------------------|------------------------------|--------------|---------------|----------------------------------|-----------------------|
| | IOER Rate | Target Federal Funds Rate or Range | Federal Funds Effective Rate | O/N RRP Rate | 3M LIBOR Rate | Overnight Treasury GCF Repo Rate | O/N RRP Usage (\$ bn) |
| 25th Pctl | 0.50% | 0.38% | 0.30% | 0.25% | 0.50% | 0.30% | 162.5 |
| Median | 0.50% | 0.38% | 0.35% | 0.25% | 0.55% | 0.34% | 275 |
| 75th Pctl | 0.50% | 0.38% | 0.38% | 0.30% | 0.62% | 0.38% | 450 |

| | 1 Year Following Liftoff | | | | | | |
|-----------|--------------------------|------------------------------------|------------------------------|--------------|---------------|----------------------------------|-----------------------|
| | IOER Rate | Target Federal Funds Rate or Range | Federal Funds Effective Rate | O/N RRP Rate | 3M LIBOR Rate | Overnight Treasury GCF Repo Rate | O/N RRP Usage (\$ bn) |
| 25th Pctl | 1.50% | 1.38% | 1.25% | 1.25% | 1.45% | 1.30% | 150 |
| Median | 1.50% | 1.38% | 1.39% | 1.30% | 1.63% | 1.40% | 275 |
| 75th Pctl | 2.00% | 1.88% | 1.83% | 1.75% | 2.15% | 1.80% | 450 |

3 Years Following Liftoff

| | IOER Rate | Target Federal Funds Rate or Range | Federal Funds Effective Rate | O/N RRP Rate | 3M LIBOR Rate | Overnight Treasury GCF Repo Rate | O/N RRP Usage (\$ bn) |
|-----------|------------------|---|-------------------------------------|---------------------|----------------------|---|------------------------------|
| 25th Pctl | 3.25% | 3.00% | 3.00% | 3.00% | 3.06% | 3.03% | 50 |
| Median | 3.50% | 3.25% | 3.25% | 3.25% | 3.45% | 3.35% | 162.5 |
| 75th Pctl | 3.75% | 3.63% | 3.50% | 3.55% | 3.90% | 3.50% | 300 |

**For dealers that submitted ranges, midpoints of the ranges are used.*

Please note how you expect the Committee's approach to policy normalization to evolve over time. Additionally, comment on any changes you expect over time in the relative levels of money market rates and the expected amount of O/N RRP usage.

(21 responses)

Some dealers noted their expectation for increased usage of overnight RRP's in the normalization process.

- 6. Provide your estimate of the most likely quarter and year during which the FOMC will first cease reinvesting some or all payments of principal on Treasuries and/or agency debt and MBS. In addition, please provide your expectation for the timing, in months, relative to the first increase in the target rate or range. If you do not expect the FOMC to cease reinvestments for either or both asset classes during the process of policy normalization, please leave the fields blank. Please ensure your signs are correct.**

(21 complete responses)

| | Number of Months Relative to Liftoff | | | Most Likely Quarter and Year of End to Reinvestments | |
|-----------|---|----------------------------|-----------|---|----------------------------|
| | Treasuries | Agency Debt and MBS | | Treasuries* | Agency Debt and MBS |
| 25th Pctl | 6 | 5 | 25th Pctl | Q1 2016 | Q1 2016 |
| Median | 6 | 6 | Median | Q1 2016 | Q1 2016 |
| 75th Pctl | 12 | 7 | 75th Pctl | Q3 2016 | Q1 2016 |

**One dealer expects no end to reinvestments of Treasury securities*

Please explain your assumptions for the timing, size, and pace of redemptions and sales of securities, if applicable. Please also explain the factors behind any change in your expectations since the last time the question was asked:

(21 responses)

Some dealers noted no material changes since the last survey. Several dealers expected the timing of the end of reinvestments will be pushed out moderately in time. Several dealers noted that they do not expect sales of securities to take place. Several dealers noted that there is a possibility that reinvestments will be tapered gradually.

- 7. a) Provide your estimate of the most likely outcome for output, inflation, and unemployment.**
(17 complete responses)

| | | Q4/Q4 2015 | Q4/Q4 2016 | Q4/Q4 2017 | Longer Run |
|---------------------------|-----------|---------------|---------------|---------------|---------------|
| GDP: | 25th Pctl | 2.70% | 2.50% | 2.40% | 2.00% |
| | Median | 2.80% | 2.80% | 2.60% | 2.25% |
| | 75th Pctl | 3.00% | 3.00% | 2.90% | 2.35% |
| Core PCE Deflator: | 25th Pctl | 1.30% | 1.80% | 1.90% | |
| | Median | 1.40% | 1.90% | 2.00% | |
| | 75th Pctl | 1.60% | 2.00% | 2.00% | |
| Headline PCE Deflator: | 25th Pctl | 0.80% | 1.80% | 2.00% | 2.00% |
| | Median | 1.05% | 1.90% | 2.10% | 2.00% |
| | 75th Pctl | 1.40% | 2.20% | 2.20% | 2.00% |
| Unemployment Rate*: | 25th Pctl | 5.00% | 4.60% | 4.70% | 5.00% |
| | Median | 5.20% | 4.85% | 4.80% | 5.20% |
| | 75th Pctl | 5.20% | 5.00% | 5.20% | 5.50% |

*Average level of the unemployment rate over Q4.

- b) How would you characterize the overall balance of U.S. economic data over the intermeeting period? (5= significantly stronger than expected, 3= neutral/mixed, 1= significantly weaker than expected).

**Characterization of Balance
of U.S. Economic Data over
Intermeeting Period**

| | |
|-----------|---|
| 25th Pctl | 2 |
| Median | 3 |
| 75th Pctl | 3 |

How do you think market participants' outlook for the U.S. economy has changed over the intermeeting period? Which factor or factors were most important in altering this outlook?

Some dealers cited strong labor market data as an important factor explaining changes to market participants' outlook. Several dealers noted that they think market participants have revised down their near term growth outlook for the U.S. economy due to weather and/or West-Coast port disruptions.

8. a) For the outcomes below, provide the percent chance you attach to the annual average CPI inflation rate from March 1, 2015 - February 28, 2019. Please also provide your point estimate for the most likely outcome.

| | ≤1.00% | 1.01- 1.50% | 1.51- 2.00% | 2.01- 2.50% | 2.51- 3.0% | ≥3.01% |
|---------|--------|----------------|----------------|----------------|---------------|--------|
| Average | 4% | 13% | 32% | 32% | 14% | 6% |

Point estimate for most likely outcome:

| | Most Likely Outcome |
|-----------|------------------------|
| 25th Pctl | 1.90% |
| Median | 2.00% |
| 75th Pctl | 2.20% |

b) For the outcomes below, provide the percent chance you attach to the annual average CPI inflation rate from March 1, 2020 - February 29, 2024. Please also provide your point estimate for the most likely outcome.

| | ≤1.00% | 1.01-1.50% | 1.51-2.00% | 2.01-2.50% | 2.51-3.00% | ≥3.01% |
|---------|--------|------------|------------|------------|------------|--------|
| Average | 3% | 9% | 25% | 38% | 18% | 7% |

Point estimate for most likely outcome:

| | Most Likely Outcome |
|-----------|---------------------|
| 25th Pctl | 2.00% |
| Median | 2.20% |
| 75th Pctl | 2.40% |

c) By how much has your point estimate for the five-year annual average CPI inflation rate, five years forward, changed since July 2014, and which factors were most important in changing your expectations?
(21 complete responses)

| | Change in Forecast (bps) |
|-----------|--------------------------|
| 25th Pctl | -10 |
| Median | 0 |
| 75th Pctl | 0 |

Most important factors:

Dealers did not provide substantial commentary in this section.

9. a) What percent chance do you attach to the U.S. economy currently being in a recession?
 b) What percent chance do you attach to the U.S. economy being in a recession in 6 months?
 c) What percent chance do you attach to the U.S. economy being in a recession sometime over the next 3 years?

| | Currently in NBER Recession | NBER Recession in 6 Months | NBER Recession in 3 Years |
|-----------|-----------------------------|----------------------------|---------------------------|
| 25th Pctl | 0% | 5% | 20% |
| Median | 3% | 10% | 25% |
| 75th Pctl | 5% | 12% | 30% |

Appendix: Updates to the Survey

Updated as of March 23, 2015

Following the March FOMC Meeting (March 17-18), primary dealers were asked to update their responses to questions 2 (parts a, c, and e) and 5 (parts a and b).

2. a) Of the possible outcomes below, provide the percent chance you attach to the timing of the first increase in the federal funds target rate or range. Also, provide your estimate for the most likely meeting for the first increase.

| | Apr. 28-29 | Jun. 16-17 | Jul. 28-29 | Sep. 16-17 | Oct. 27-28 | Dec. 15-16 | ≥ Jan. 2016 |
|---------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|
| Average | 1% | 21% | 8% | 31% | 8% | 17% | 13% |

| | Most Likely Meeting of First Increase in Target Rate or Range |
|-----------|---|
| 25th Pctl | September 2015 |
| Median | September 2015 |
| 75th Pctl | September 2015 |

- c) Provide your estimate of the most likely outcome (i.e., the mode) for the target federal funds rate or range, as applicable, immediately following the FOMC meetings and at the end of each quarter or half-year period below. If you expect a range, please provide both the top and bottom of the range in the specified fields below. If you expect a target rate, provide your response in the "Target rate" field only.

| | Top of Target Range | | | | | | | | | | | | | |
|----------------|---------------------|---------------|---------------|--------------------|------------------|-------------------|------------|------------|------------|------------|------------|------------|------------|------------|
| | Apr 28-29 | June 16-17 | July 28-29 | September 16-17 | October 27-28 | December 15-16 | 2016 Q1 | 2016 Q2 | 2016 Q3 | 2016 Q4 | 2017 H1 | 2017 H2 | 2018 H1 | 2018 H2 |
| 25th Pctl | 0.25% | 0.25% | 0.25% | 0.50% | 0.50% | 0.75% | 1.00% | 1.25% | 1.50% | 1.75% | 2.00% | 2.50% | 3.00% | 3.00% |
| Median | 0.25% | 0.25% | 0.25% | 0.50% | 0.50% | 0.75% | 1.00% | 1.25% | 1.50% | 2.00% | 2.50% | 3.00% | 3.50% | 3.50% |
| 75th Pctl | 0.25% | 0.25% | 0.25% | 0.50% | 0.75% | 0.75% | 1.00% | 1.25% | 1.75% | 2.25% | 3.00% | 3.25% | 3.75% | 4.00% |
| # of Responses | 22 | 22 | 22 | 22 | 22 | 22 | 19 | 18 | 18 | 18 | 13 | 13 | 13 | 13 |

| | Bottom of Target Range | | | | | | | | | | | | | |
|----------------|------------------------|---------------|---------------|--------------------|------------------|-------------------|------------|------------|------------|------------|------------|------------|------------|------------|
| | Apr 28-29 | June 16-17 | July 28-29 | September 16-17 | October 27-28 | December 15-16 | 2016 Q1 | 2016 Q2 | 2016 Q3 | 2016 Q4 | 2017 H1 | 2017 H2 | 2018 H1 | 2018 H2 |
| 25th Pctl | 0.00% | 0.00% | 0.00% | 0.25% | 0.25% | 0.50% | 0.75% | 1.00% | 1.25% | 1.50% | 2.00% | 2.50% | 2.75% | 3.00% |
| Median | 0.00% | 0.00% | 0.00% | 0.25% | 0.25% | 0.50% | 0.75% | 1.00% | 1.25% | 1.75% | 2.25% | 2.75% | 3.25% | 3.25% |
| 75th Pctl | 0.00% | 0.00% | 0.00% | 0.25% | 0.50% | 0.50% | 0.75% | 1.25% | 1.50% | 2.00% | 2.75% | 3.00% | 3.50% | 3.75% |
| # of Responses | 22 | 22 | 22 | 22 | 22 | 22 | 19 | 18 | 18 | 18 | 13 | 13 | 13 | 13 |

| | Target Rate | | | | | | | | | | | | | |
|----------------|--------------|---------------|---------------|--------------------|------------------|-------------------|------------|------------|------------|------------|------------|------------|------------|------------|
| | Apr 28-29 | June 16-17 | July 28-29 | September 16-17 | October 27-28 | December 15-16 | 2016 Q1 | 2016 Q2 | 2016 Q3 | 2016 Q4 | 2017 H1 | 2017 H2 | 2018 H1 | 2018 H2 |
| 25th Pctl | | | | | | | 0.50% | 1.00% | 1.25% | 1.50% | 2.25% | 2.75% | 2.75% | 2.75% |
| Median | | | | | | | 1.00% | 1.25% | 1.75% | 2.00% | 2.50% | 2.75% | 3.25% | 3.25% |
| 75th Pctl | | | | | | | 1.00% | 1.50% | 2.13% | 2.38% | 3.00% | 3.50% | 3.50% | 3.50% |
| # of Responses | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4 | 4 | 4 | 7 | 7 | 7 | 7 |

- e) Of the possible outcomes below, please indicate the percent chance you attach to the target federal funds rate or range falling in each of the following ranges at the end of 2015, 2016, and 2017. If you expect a target range for federal funds please use the midpoint of the range in providing your response.
(20 complete responses)

| Year-End 2015 | | | | | | | |
|---------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--------|
| | 0.00 - 0.25% | 0.26 - 0.50% | 0.51 - 1.00% | 1.01 - 1.50% | 1.51 - 2.00% | 2.01 - 2.50% | ≥2.51% |
| Average | 15% | 27% | 46% | 10% | 1% | 0% | 0% |

| Year-End 2016 | | | | | | | |
|---------------|--------|-----------------|-----------------|-----------------|-----------------|-----------------|--------|
| | ≤0.50% | 0.51 - 1.00% | 1.01 - 1.50% | 1.51 - 2.00% | 2.01 - 2.50% | 2.51 - 3.00% | ≥3.01% |
| Average | 5% | 9% | 22% | 27% | 24% | 10% | 2% |

| Year-End 2017 | | | | | | | |
|---------------|--------|-----------------|-----------------|-----------------|-----------------|-----------------|--------|
| | ≤2.00% | 2.01 - 2.50% | 2.51 - 3.00% | 3.01 - 3.50% | 3.51 - 4.00% | 4.01 - 4.50% | ≥4.51% |
| Average | 16% | 21% | 21% | 21% | 12% | 7% | 2% |

If you changed your expectations for the most likely timing of liftoff and/or the most likely path of the target rate or range since the last time the questions were asked, explain the factors that motivated you to make the change(s):
(13 responses)

Several dealers cited the downward revisions to the appropriate level of the target rate in the March SEP as influencing the change in their expectations. Several dealers cited the downward revision to the longer run unemployment rate in the March SEP as influencing the change.

5. a) Provide the percent chance you attach to the unemployment rate falling within the following ranges at the time of the first increase in the target federal funds rate or range.

| | < 5.5% | 5.5 - 5.9% | 6.0 - 6.5% | > 6.5% |
|---------|--------|---------------|---------------|--------|
| Average | 81% | 17% | 1% | 0% |

- b) Provide the percent chance you attach to inflation between 1 and 2 years ahead falling within the following ranges at the time of the first increase in the target federal funds rate or range.

| | < 1.25% | 1.25 - 1.74% | 1.75 - 2.24% | 2.25 - 2.74% | ≥ 2.75% |
|---------|---------|-----------------|-----------------|-----------------|---------|
| Average | 5% | 24% | 50% | 17% | 4% |