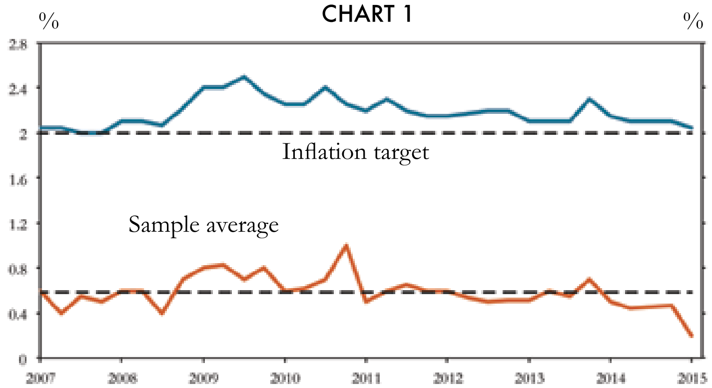
MEASURING THE FUTURE:
ARE LONGER-TERM INFLATION EXPECTATIONS STABLE?

Surveyed expectations of inflation over the past year have been stable and consistent with the Federal Open Market Committee's (FOMC) longer-term inflation objective of 2 percent. Individual participants' longer-term forecasts, however, can vary considerably and are not always aligned with this target.

In its last three statements, the FOMC emphasized the stability of survey-based measures of longer-term inflation expectations. Expectations about future inflation are important for monetary policy decisions and explaining changes in actual inflation. Using data from the Survey of Professional Forecasters, Brent Bundick, an economist, and Craig S. Hakkio, senior vice president and special advisor on economic policy, at the Federal Reserve Bank of Kansas City, examined three different concepts of stability in longer-term inflation expectations. They focused on five-year, five-year forward inflation rate, which measures the average expected inflation rate over a five year period starting five years from today. They measured inflation using the personal consumption expenditure (PCE) price index, which is the FOMC's preferred inflation measure.

CHART 1



When the FOMC announced its 2-percent longer-term inflation objective in in the first quarter of 2012, the median forecast became less volatile and gradually declined over time. Over the past year, the median has held nearly constant. By measuring stability using the survey median, **Chart 1** suggests recent longer-term inflation expectations are relatively stable compared with their eight-year history.

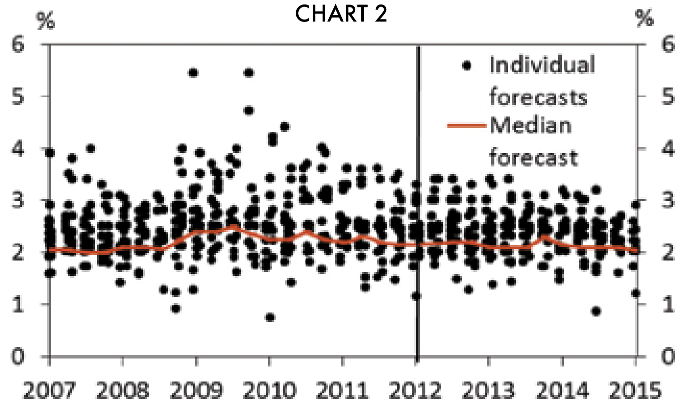
Chart 1 plots the median forecast across survey participants for the last several years. Source: Federal Reserve Bank of Philadelphia

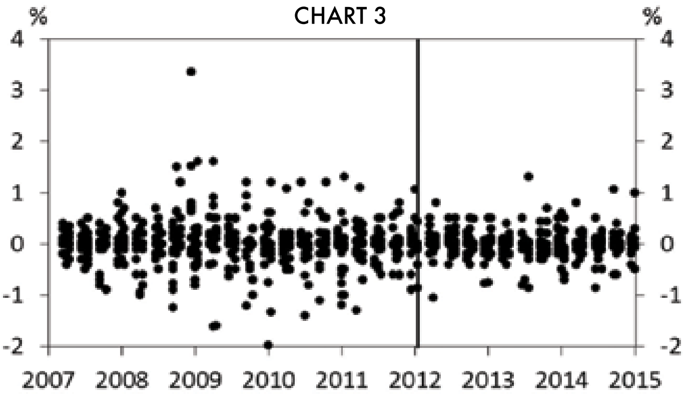
While the median measures the central tendency of forecasts, it excludes substantial information about the expectations of individual forecasters. To incorporate this information, Bundick and Hakkio considered two alternative concepts of stability for longer-term inflation expectations. The first is a measure of dispersion across forecasters and the second evaluates changes in their forecasts.

Chart 2 plots individual forecasts over time and reveals substantial disagreement about longer-term inflation expectations, especially during the financial crisis. Source: Federal Reserve Bank of Philadelphia

Over the last year, forecasts became less dispersed. By measuring stability with the dispersion of individual forecasts, **Chart 2** suggests inflation expectations have been more stable over the last few years.

CHART 2





The third measure of stability reflects change in individual participants' longer-term forecasts. **Chart 3** plots the changes in an individuals' five year forecast relative to their forecast last quarter. The chart suggests that forecasters revise their forecasts over time, with significant revisions during the financial crisis. Individual forecasters, however, have been less prone to adjust their longer-term forecasts over the past year, suggesting some recent stability at the individual level.

Source: Federal Reserve Bank of Kansas City

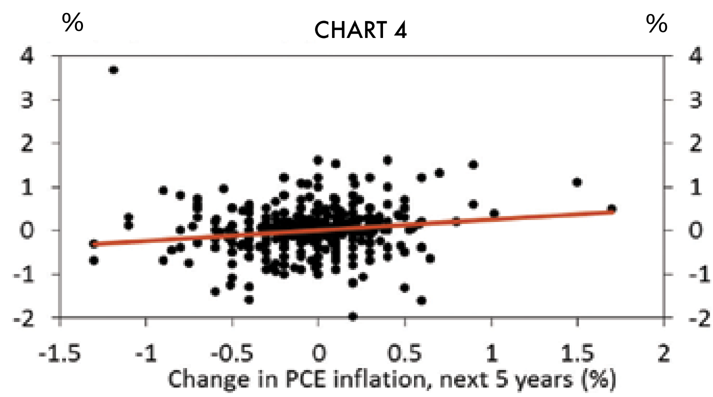
All three concepts of stability suggest that survey-based expectations of longer-term inflation remain steady and centered near the FOMC's 2-percent inflation target. However, some evidence suggests forecasts of individual survey participants are not consistently aligned with the FOMC's 2-percent goal.

First, fewer participants forecast longer-term inflation near 2 percent than Bundick and Hakkio would have expected. From the first quarter of 2012 to the second quarter of 2014, about 30 percent of participants in each survey expected five-year, five-year forward inflation from 1.9 to 2.1 percent. While the fraction rose to more than 40 percent in the last three surveys, the percentage appears somewhat low to reflect an unwavering belief that the FOMC will achieve its longer-run inflation objective.

Second, individual longer-term inflation forecasts display excess sensitivity to changes in the short-run inflation outlook. Shocks in the macroeconomy, such as changes in aggregate demand or oil prices, can cause realized inflation to fluctuate. These shocks, however, should only have a temporary effect on inflation.

The data suggest forecasters often adjust their longer-run forecasts in response to current inflation and adjust in the same direction as their short-term forecast. **Chart 4** shows the change in an individual's forecasts for the five-year, five-year forward expected inflation rate on the vertical axis and the change in their five-year expected forecast on the horizontal axis. **Chart 4** also shows the line that provides the best fit between the two variables. The fitted values are shown in red.

Source: Federal Reserve Bank of Philadelphia



Currently, headline PCE inflation has been running below the 3-percent target. As a result, the first quarter 2015 median survey expects fourth quarter 2015 headline inflation to be 1.1 percent. Although the lower level of headline inflation this year does pose some risk to the stability of longer-term expectations, the median forecast suggests inflation will run at a rate consistent with the 2-percent goal next year (specifically, 1.9 percent in 2016).

3% target

This is an adaptation of the Macro Bulletin by Brent Bundick and Craig S. Hakkio.
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