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Estimating the Monetary Policy Rule Perceived by Forecasters

By Brent Bundick

Professional forecasters perceive the FOMC's forward guidance over the last few years as largely consistent with its behavior prior to hitting the zero lower bound. While unconventional policy may have changed aspects of the FOMC's communication and conduct, the policy rule perceived by forecasters is similar before and during the zero lower bound period.

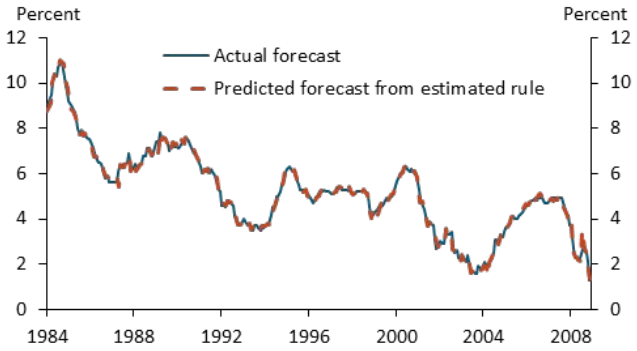
Communicating the expected future path of monetary policy to the public is inherently difficult. In communicating their actions, central banks often explain how economic conditions affect the stance of monetary policy. By outlining how policy responds to economic conditions, the central bank implicitly communicates a policy rule that guides its decisions. Professional forecasters, in turn, attempt to identify this implicit monetary policy rule.

I examine whether the policy rule perceived by professional forecasters has changed since December 2008, when the FOMC lowered the federal funds rate to its effective lower bound. Since then, policymakers have used less conventional tools such as forward guidance about future policy actions to achieve their dual mandate of stable prices and maximum employment. Did forecasters interpret the use of explicit forward guidance as a change in the central bank's implicit rule? Or did they interpret forward guidance as simply a communication device, with the bank's policy rule remaining unchanged?

To investigate how forecasters interpreted the FOMC's forward guidance, I estimate the forecaster-perceived monetary policy rules both before and during the zero lower bound period. Specifically, I examine the relationship between the Blue Chip consensus forecasts of the short-term interest rate and forecasts of inflation, the unemployment rate, and real GDP growth.

From 1984 to 2008, the estimated policy rule's predictions closely match forecasters' actual projections. Chart 1 plots the actual four-quarter-ahead Blue Chip forecasts for the short-term interest rate (blue line) and their predicted values from the estimated rule (orange line). According to the estimated rule, forecasters believed that the FOMC responded significantly to changes in inflation, unemployment, and GDP growth prior to 2008. The perceived rule is characterized by a high degree of interest rate smoothing, which implies forecasters believed the central bank would adjust interest rates slowly over time in response to changing economic conditions.

Chart 1: Four-quarter-ahead interest rate forecasts, 1984–2008

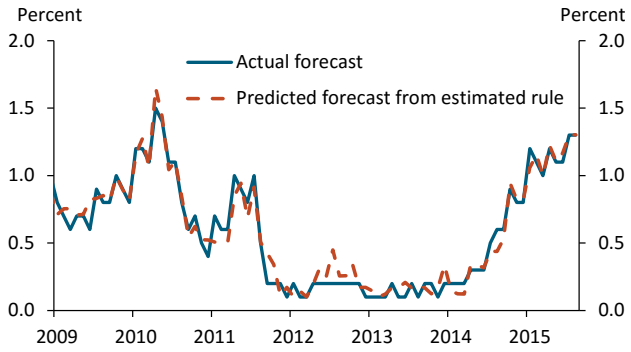


Note: Short-term interest rates are measured using the Blue Chip surveys for the three-month Treasury bill rate.
Sources: Blue Chip Economic Indicators and author's calculations.

At the end of 2008, the FOMC lowered its nominal policy rate to its effective lower bound and turned to unconventional policies such as forward guidance to help stabilize the economy. To determine whether

forward guidance changed perceptions of the FOMC's policy rule, I examine how well the estimated rule from the pre-zero lower bound period predicts interest rate forecasts over the last few years.

Chart 2: Four-quarter-ahead interest rate forecasts since 2009



Sources: Blue Chip Economic Indicators and author's calculations.

Chart 2 plots out-of-sample, four-quarter-ahead interest rate predictions from the policy rule estimated over the pre-2009 data against actual four-quarter-ahead forecasts after 2009. The out-of-sample predictions of the pre-zero lower bound rule (orange line) are surprisingly consistent with forecasters' actual projections in the zero lower bound period (blue line). Like the actual forecasts, the estimated rule predicts a large decline in expected rates in the middle of 2010 and a gradual rising of interest rate expectations beginning in 2014. The close fit of these out-of-sample predictions with their actual forecasts indicates the forecaster-perceived rule has not changed much since the end of 2008. This finding suggests the Committee's communication strategies and forward guidance over the last few years were consistent with its previous behavior.

One caveat of the analysis pertains to the role of the Federal Reserve's large-scale asset purchases. The estimated policy rule does not account for the effects of these purchases because they do not, by themselves, affect the future path of short-term interest rates. If these purchases provided additional monetary accommodation, my analysis does not capture it. The extent to which purchases provided additional accomodation, however, remains controversial. For example, Woodford and others argue that the main effect of the Federal Reserve's large-scale asset purchases was to signal support for its forward guidance.

Despite this caveat, my estimation strategy helps identify the implicit policy rule forecasters believed the FOMC would follow after the economy lifted off from the zero lower bound. Although my results cannot fully address some of the more nuanced aspects of the FOMC's implicit policy rule at the zero lower bound, the statistical evidence suggests the forecaster-perceived rule remains relatively constant.

References

Woodford, Michael. 2013. "Methods of Policy Accommodation at the Interest-Rate Lower Bound," Federal Reserve Bank of Kansas City, *The Changing Policy Landscape: 2012 Jackson Hole Symposium,* pp. 185-288.

**Brent Bundick is an economist at the Federal Reserve Bank of Kansas City. Trenton Herriford, a research associate at the bank, helped prepare the article. For more, see "Estimating the Monetary Policy Rule Perceived by Forecasters," Economic Review, fourth quarter. The views expressed are those of the author and do not necessarily reflect the positions of the Federal Reserve Bank of Kansas City or the Federal Reserve System.*