

FRBSF ECONOMIC LETTER

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On Forecasting Future Monetary Policy: Has Forward-Looking Language Mattered?

Today the Federal Open Market Committee (FOMC) is a good deal more transparent about its policy actions and deliberations than it was only 15 years ago. As then-Governor Bernanke said in his 2004 speech, “Central Bank Talk and Monetary Policy”:

This increase in transparency is highly welcome, for many reasons. Perhaps most important, as public servants whose decisions affect the lives of every citizen, central bankers have a responsibility to provide the public as much explanation of those decisions as possible, so long as doing so does not compromise the decisionmaking process itself.

In that speech, he went on to say,

...to the extent that central bank talk provides useful guidance to markets about the likely future path of short-term interest rates, policymakers will exert greater influence over the longer-term interest rates that most matter for spending decisions. At the same time, expanding the information available to financial-market participants improves the efficiency and accuracy of asset pricing. Both of these factors enhance the effectiveness and precision of monetary policy.

“Central bank talk” takes many forms, including Congressional testimony, speeches, articles, and interviews. What seem particularly important for forecasters of future monetary policy, that is, of the future federal funds rate, are the FOMC statements, which are released at the conclusion of each meeting and which enunciate the monetary policy decision, and the subsequent releases of the minutes of the FOMC meeting.

This *Economic Letter* reviews the changes in the content of the FOMC statements over the past several years and examines how the accuracy of market forecasts of monetary policy has evolved. The analysis complements prior research showing that, as the FOMC took steps to foster greater transparency, the accuracy of the fed funds futures market in predicting future fed funds rates has improved. In recent years, the level of precision improved further as forward-looking language was included in the FOMC statements.

Federal funds futures market

The overnight federal funds rate is a key instrument used by the Federal Reserve to conduct monetary policy. In the federal funds market, depository institutions lend their excess reserves at the Fed to each other. The FOMC sets the federal funds rate target and directs the New York Fed to engage in open market operations to adjust the supply of reserves so as to achieve the target. With this direct link between the federal funds rate and monetary policy, the federal funds futures market provides a window to the market’s expectation about future monetary policy. The 30-day fed funds futures contracts, which are traded at the Chicago Board of Trade, allow investors to lock in today the federal funds rate in the future. Each \$5 million contract is cash settled against the average daily effective overnight fed funds rate for the delivery month, as reported by the New York Fed. While the contracts can go up to the first 24 consecutive calendar months out, those most actively traded are between the current-month contract and the ones about six months out, beyond which they become quite illiquid. Recently, the Chicago Board of Trade introduced binary options on the target fed funds rate which directly let investors take positions on all possible outcomes of future regularly scheduled FOMC meetings; however, because this market is fairly new and currently has far less trading activity than the fed funds futures market, it provides insufficient data at this time to test its predictive power.

Traders in the market buy or sell fed funds futures based on their assessment of what the fed funds rate will be in a particular month in the future. Thus, the market-clearing prices of the futures represent the market consensus of the expected future fed funds rate plus a risk premium. This *Letter* focuses on the forecasting performance of the one-month and six-month fed funds futures. It uses the observed implied rate and so abstracts from the risk premium, which should be quite small for such short horizons. On each trading day during the study period, the one-month (six-month) forecast errors are computed by comparing the implied one-month (six-month)-ahead fed funds rate from the futures contracts to the realized monthly average target rate one month (six months) hence. The futures are settled using the effective fed funds rates, and since these rates are very close to the target

funds rates in practice, they provide essentially the same results.

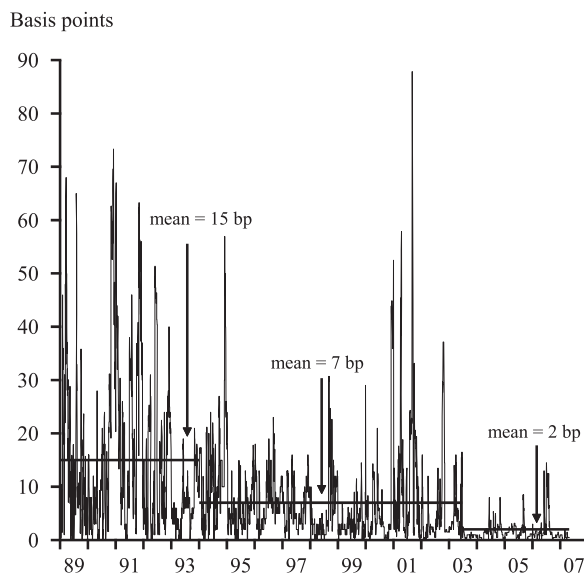
Policy statements and predictability of policy: One month ahead

In February 1994, the Federal Reserve began issuing press releases announcing changes in the fed funds rate target following the FOMC meetings, and, over time, their contents have evolved. For example, since 1999, they have included descriptions of the state of the economy and the rationale for the policy action; since 2000, they have included the “balance of risks” to the outlook section; and since 2002 they have included the votes of individual FOMC members and preferred policy choices of any dissenters.

Swanson (2006) examined the period from the late 1980s to around 2003 and showed that the steps towards greater transparency were accompanied by improvements in private sector forecasts. Using daily data, I computed the absolute forecast errors for one-month-ahead fed funds futures contracts from 1989 to the present, which are plotted in Figure 1, and the results are consistent with those of Swanson. The errors clearly exhibit a downward trend (abstracting from the three spikes in January, April, and September of 2001 when the FOMC reduced the funds rate target at three unscheduled meetings). The mean one-month absolute forecast error was 15 basis points from 1989 through 1993, and it declined to 7 basis points from 1994 to mid-2003, a 53% improvement in forecast precision.

In mid-2003, an important development in FOMC communications occurred. The statement following the June 24–25 meeting, when the FOMC decided to lower the funds rate target to 1%, included explicit language about future monetary policy. Expressing concern that “the probability, though minor, of an unwelcome substantial fall in inflation exceeds that of a pickup in inflation from its already low level,” the statement noted that this concern was “likely to predominate for the foreseeable future.” These words signaled that because of the concern about the possibility of deflation, the funds rate would likely stay at this historical low for a while. The next FOMC statement, released on August 12, 2003, reaffirmed the point: “...policy accommodation can be maintained for a *considerable period*” [italics here and below added by author]. The “considerable period” language was kept in the FOMC statements until December 2003, when it changed to “*patient* in removing its policy accommodation.” Following the May 2004 meeting, despite no change in policy, the statement dropped the “patient” language and replaced it with “... policy accommodation can be removed at a *pace that is likely to be measured*.” This was widely interpreted as signaling a tightening of 25 basis points at the next meeting, which was in June, and, as ex-

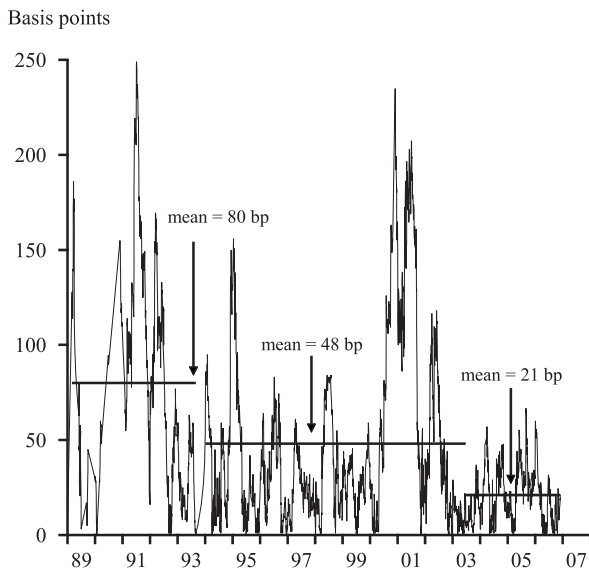
Figure 1
Absolute error of one-month-ahead fed funds futures in forecasting future fed funds rate



pected, the FOMC did raise the funds rate target by 25 basis points to 1.25%; and it continued to raise the target by 25 basis points at each of the next 16 meetings to 5.25%. During this tightening phase, the “measured pace” language was used in the FOMC statements from June 2004 to November 2005, a total of 12 consecutive times. As the FOMC approached the end of this tightening campaign, the language in the FOMC statements started to change, from “some further measured policy firming *is likely to be needed*” (December 2005) to “some further policy firming *may yet be needed*” (May 2006). After the last tightening, in June 2006, the statement said that “any additional firming that may be needed ... will depend on ... incoming information.” Note that after the March 2007 meeting, despite no change in policy, the small change in the FOMC statement from “any additional firming” to “further policy adjustments” was enough to be interpreted as perhaps signaling a shift to a more neutral posture and resulted in strong, immediate market reactions, although, as the statement clearly noted, “the Committee’s predominant policy concern remains the risk that inflation will fail to moderate as expected.” The amount of attention market participants pay to FOMC communications to infer future policy actions is noteworthy.

The inclusion of forward-looking language in FOMC communications apparently helped market participants form their expectations about future monetary policy more precisely, at least in the near term (Yellen 2006). As Figure 1 shows, the one-month mean absolute forecast error declined to only 2 basis points from June 2003 to the present, even though the target funds rate stayed at a historical low for more than one year and then was raised by exactly 25 basis points

Figure 2
Absolute error of six-month-ahead fed funds futures
in forecasting future fed funds rate



17 consecutive times. This is a 71% improvement in forecast precision over the 1994 to mid-2003 period. Overall, the evidence suggests that, on average, the one-month federal funds futures contract was quite accurate in predicting the one-month-ahead target federal funds rate, and the already fairly high level of precision improved further when the FOMC used forward-looking language in its statements. (Note that the FOMC had briefly experimented with using forward-looking language by announcing the policy “tilt” from May 1999 to December 1999.)

Evidence on predictability: Six months ahead

As Figure 2 shows, the daily six-month absolute forecast errors are much bigger than the one-month forecast errors, which is not surprising, since the precision of the forecast is expected to decline with the length of the forecast horizon. However, as with the one-month forecast errors, the six-month forecast errors also exhibit a downward trend (again abstracting from the spikes in 2001 that were associated with policy changes at unscheduled FOMC meetings). Before 1994, the six-month mean absolute forecast error was 80 basis points. From 1994 to mid-2003, it declined to 48 basis points, a 40% improvement in forecast precision over the pre-1994 period.

Since mid-2003, when the FOMC first included forward-looking language, the six-month mean absolute forecast error has declined further to 21 basis points, a 56% improvement in forecast precision over

the prior period. This evidence suggests that the FOMC communication policy since mid-2003 not only improves the private sector’s forecast of monetary policy at the next FOMC meeting but also its forecast of policy about four meetings ahead. However, attributing the improvement in forecast precision entirely to FOMC communication may require some robustness checks that are beyond the scope of this *Letter*. For example, if the economy is more stable and easier to forecast, then so is future monetary policy. Thus, more research into these issues is needed to sort out what contributes to the advances in the predictability of future monetary policy.

Conclusions

This *Letter* examined the accuracy of the federal funds futures contracts in predicting future federal funds rates. Consistent with prior research findings, the fed funds futures forecast errors are found to decline over time in general as the FOMC took steps towards greater transparency, suggesting that the predictability of future monetary policy has improved over time. In particular, since mid-2003, the FOMC statements have included forward-looking language, and the precision of the fed funds futures in forecasting future fed funds rates has improved further. This evidence suggests that the greater transparency did matter in improving the precision of the private sector’s forecast of future monetary policy. However, a more thorough understanding of this relationship requires analyzing a significantly longer time span that includes shifts in the stance of policy.

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