Why Predict *Past* FOMC Actions?

The daily effective federal funds rate contains noise—that is, departures from the target level established by the Federal Open Market Commitee (FOMC) that reflect idiosyncratic conditions in the interbank loan market. Averaging the daily data across a month or quarter is one way to cancel most of this noise, and, for this reason, the monthly or quarterly average of the daily federal funds rate has become a widely used measure of monetary policy. The first chart on page 10 of this publication, for example, plots a quarterly average as the actual federal funds rate in a Taylor rule description of monetary policy. The monthly average is also the benchmark for payoffs in the federal funds futures market.

One often-neglected consequence of monthly averaging, however, is that any change in the target federal funds rate will affect the monthly average for two months. For example, if the FOMC raised the target by 50 basis points precisely halfway through this month, then the monthly average for this month will rise by 25 basis points relative to last month, and next month's average will also exceed this month's average by 25 basis points, all else equal. Similarly, if the FOMC raised the target by 50 basis points three-quarters of the way through this month, then the expected monthly average for the next month would rise by 37.5 basis points.

To gauge how strongly target changes in one month affect the change in the monthly average funds rate from that month to the next, I estimated two regressions of the change in the monthly average on its own lagged value. In one regression, I also included information about how the size and timing of any target change in the previous month would affect this month's average. The sample period covered January 1984 through March 2003. The accompanying chart plots the squared forecast errors from both regressions and shows how the information on target changes improves the precision of the forecasts. It is striking that when the information on last month's target change is included, the adjusted R-squared measure of fit more than doubles, from 21 percent to 44 percent.

Furthermore, the lagged change in the monthly average becomes statistically insignificant, once the information regarding the previous month's target change is included in the regression. In fact, the coefficient on the target change variable is slightly greater than (though not significantly different from) 1.0. A coefficient greater than 1 would imply that a target change in one month tends to precede an additional target change in the same direction the next month. Such a prediction would be consistent with the view that the FOMC has active and passive periods and target changes tend to be in the same direction during each active period. The bottom line is that any forecasting model of the monthly average of the federal funds rate that does not take into account known, past FOMC target changes unnecessarily handicaps itself in forecast comparisons with the federal funds futures market, where profit-motivated traders follow FOMC policy actions closely.

—Michael Dueker

Squared Forecast Errors for Monthly Average of Federal Funds Rate
(12-Month Moving Average)