

BY ROBERT J. BARRO

## HOW TO BUILD YOUR OWN FED CRYSTAL BALL



**PATTERN:**  
Greenspan's consistent decision-making means it is possible to forge a simple economic model to predict Fed behavior

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The watershed for U. S. monetary policy came in the early 1980s, when the economy faced double-digit rates of inflation. Fed Chairman Paul Volcker, supported by President Ronald Reagan, committed monetary policy to conquering inflation. Even in the face of the 1982 recession, Volcker and Reagan stuck to their guns and managed to establish a credible policy of low inflation.

By the time Alan Greenspan became Fed chairman in 1987, the U. S. economy had been performing well for many years: Growth was strong, and inflation had been much reduced. Hence, Greenspan's task was easier than that of his predecessor. He mainly had to maintain the low-inflation reputation that Volcker had established. Nevertheless, Greenspan deserves credit for carrying out this mission.

The economic basis of Greenspan's decisions has been remarkably consistent. This pattern makes it possible to build a simple model to forecast the Fed's behavior. I have constructed such a model, using data from August, 1987, to the present.

One unsurprising result is that the past inflation rate has been a prime determinant of Fed activity. The measure of inflation that matters the most is the broadest—the deflator for the gross domestic product. Other indicators of inflation—including those based on the consumer price index, producer prices, wage earnings, and gold prices—do not help to predict the Fed's actions. It is somewhat surprising that the CPI does not help to predict Fed policy, because it does help to predict inflation. But since the other measures fail to predict overall inflation, it is not surprising that the Fed does not react to them.

**STRANGE REMARKS.** My model shows that interest rates also tend to rise in response to strong employment growth, which is one indicator of a tight labor market. This seems reasonable because a higher rate of employment growth predicts a higher rate of future inflation. There is, however, no sign that "New Economy" considerations, such as higher productivity growth or fast technological change, have significantly changed how the Fed behaves.

One surprise is that a lower unemployment rate does not appear to be a predictor of inflation. Nevertheless, the Fed does tend to raise interest rates when unemployment falls. There is a little evidence that the Fed raises interest rates after a boom in the stock

market and reduces them after a decline in stock prices. The reasoning behind this behavior is unclear, as is obvious from Greenspan's occasional strange remarks about the meaning of stock prices. Anyway, the data show that rises in stock prices do not predict higher inflation.

It is mainly the labor market and inflation that count. The data reveal no systematic response of interest rates to GDP growth or to variations in U. S. dollar exchange rates with other major currencies. The lack of response to these variables seems logical because they turn out not to predict inflation.

On Nov. 15, 1999—the day before the Fed raised rates from 5.25% to 5.50%—my model predicted an interest rate of 5.38% for December. One factor that kept the forecast down was the low inflation rate in the October GDP report for the third quarter. But this effect was offset by the strong employment report in early November.

Roughly speaking, the 5.38% forecast for December meant that the probability of a rate increase to 5.50% on Nov. 16 was assessed by the model at a little over 50%. This prediction accorded reasonably well with the Chicago Board of Trade's futures market. On Nov. 15, the market predicted a federal funds rate of 5.42% for December. The market therefore assessed the probability of a rate increase to 5.50% on Nov. 16 at about two-thirds.

Just after the rate hike, the futures market predicted a rate of 5.50% for December and January. That is, the market expected no change in rates at the December Fed meeting, as well as no change in January, when no meeting is scheduled. For February, the futures rate was 5.58%, implying roughly a one-third probability of a rate increase to 5.75% at the meeting on Feb. 1-2. In contrast, my model forecasts a rate of 5.41% for February, corresponding roughly to a one-third probability of a decline in interest rates at the February meeting. The model makes this prediction because the rate hike to 5.50% on Nov. 16 was an overshooting.

The forecasting model of the Fed is now diverging significantly from the futures market. The model suggests lower rates ahead, whereas the futures market signals the opposite. Naturally, if I had strong confidence in the model, I would be going long in the futures market.