



Forecasting with Fed Funds Futures

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The Chicago Board of Trade

As of 1988, the Chicago Board of Trade (CBOT) began to offer federal funds futures contracts. These contracts represent the average of the expected daily effective federal funds rate during the month of the contract. The effective federal funds rate is the weighted average of the rate charged among banks on overnight loans. These loans include all federal funds transactions that are reported to the Federal Reserve Bank of New York on a daily basis.

The Federal Reserve

Prior to 1994, the Federal Reserve Open Market Committee (FOMC) had been secretive when it came to mentioning any plans on the fed funds rate. However, the FOMC decided to become more public with their decisions by starting to reveal its target level for the fed funds rate. By doing so, the FOMC wanted to publicly announce their monetary policy decision and/or thoughts on economic developments.

Since 1994, the Fed continued to open their rate decisions to the public. The FOMC also began to state their bias and indicate the direction they were inclined to move rates in the near future. Now the Committee has adopted a policy to provide greater transparency by issuing, soon after every meeting, statements regarding topics of price stability and sustainable economic growth.

Pros and Cons of an Open FOMC

Market participants obviously appreciate guidance and transparency from the Fed. To make an analogy, it's like going to the doctor for a check-up. On one hand, the doctor may use complex medical jargon to describe your health. Or, your doctor might clearly explain your condition in laymen terms. Personally, I would appreciate really understanding my condition; but at the same time, I would not wish to have a complicated diagnosis impede taking actions that would maintain my health.

There has been an ongoing debate on methods of Fed's communication to the public. Some favor clarity from the Fed. On the flip side, others warn about the potential harm from Committee members making public and comprehensible announcements.

The latter argument points out that an open policy could mislead the market and hurt the economy. William Poole, President of the Federal Reserve Bank of St. Louis who believes fed funds futures accurately predicts the Fed's moves, says that the Fed isn't better at forecasting than the run-of-the-mill analysts. Therefore, it could be dangerous to put too much faith on every word from the Federal Reserve.



What the Market Participants Say Through Fed Funds Futures

Prior to each FOMC meeting, Wall Street concentrates on the probability of the Fed's next move. This figure can be calculated by applying standard probability math that can extract the likelihood of a target change implied by the fed funds futures quote. For a fundamental study conducted on this calculation, refer to "[Using the Federal Funds Futures Market to Predict Monetary Policy Actions](#)" written by Raymond E. Owens and Roy H. Webb. This article appeared in the Federal Reserve Bank of Richmond Economic Quarterly, and it covers the derivation and foundation of the equation. Other studies have been conducted on this topic and will be referenced at the end of this article.

Many experts agree on the benefits of applying probabilities to fed funds futures in order to predict the FOMC's moves. The probability model can also be applied to make forecasts. The CBOT posts contract quotes for each month for up to over a full year. Since market expectations are priced in each contract, we can determine the implied rates and test the probability of the effective fed funds rates for the respective months. By doing so, we can formulate a forecast for the fed funds rate throughout the year.

Prediction Reliability and Limitation

Studies show that the combination of a transparent Federal Reserve and predictability of the fed funds futures has made forecasting more accurate. Additionally, statistical analyses have been conducted and show that futures prices were unbiased predictors at the five percent level. This means that futures prices represent a suitable variable to accurately predict the direction of the fed funds rate changes.

There are several assumptions to the equations that one would need to consider. For one, the Fed will make moves in 25 basis point increments. Also, the equation uses futures prices, which reflects market consensus, and relying fully on it assumes that the Committee will move accordingly. The Fed has in the past surprised the markets with 50 basis point moves or no moves when the equation indicated a 25 basis point change. However, the model has been very accurate in making the right calls and represents a valuable tool.

There are other researchers that claim that fed fund futures, on average, over-predict forecasted fed funds rates. Applying the raw form of the equation could result in a biased claim that may overestimate or underestimate forecasted fed funds rates. To effectively arrive at a reliable estimate, one must make proper adjustments to obtain an appropriate estimation.

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