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The Behavior of U.S. Short-Term Interest Rates Since October, 1979: Discussion

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DISCUSSION

ROGER CRAINE*: The Clarida-Friedman paper asks an interesting and important question—are interest rates too high? or should I buy bonds on margin? The answer they get is yes interest rates are too high, but they're not quite sure why, so don't use a margin account.

Causal empirical evidence indicates interest rates are high by historical standards. Clarida and Friedman point out that the nominal and real *average* 90 day Treasury bill discount rates in the eighties exceeded the highest rates for the previous 26 years. Clearly current rates don't line up with historical values; but are they out of line given current economic conditions?

Clarida and Friedman use a six element vector autoregressive model to try to determine if interest rates are too high given the historical values of other economic variables like income, money, prices, etc. that presumably are correlated with rates.

They estimate the model through the third quarter of '79 and forecast through the middle of '83 using no post sample information. The forecast root mean squared error (RMSE) is large, 2.4%, and the model underpredicts by an average of 62 basic points.

The question is why? Let equation (1) represent the estimated model,

$$B(L)z_t = u_t, \quad (1)$$

then, the forecast errors stem from three potential sources: (1) other elements of the z vector, like deficits and money growth, deviated from their historical norms and since interest rates are correlated with these variables interest rates deviated from their norm, or (2) the omitted effects summarized in the error vector u became more volatile so the system is "noisier" but the underprediction is insignificant, or (3) the structure changed or was misspecified so the sample dynamic correlation ($B(L)$) is invalid in the post-sample period.

I would like to see some evidence on which of the three sources seemed most responsible for the forecasting breakdown. A dynamic simulation of the interest rate equation conditional on the realization of remaining elements of z gives some indication of source (1). A dynamic simulation of the vector system conditional on lagged values gives a (poor but qualitative) indicator of source (2). Finally the (RMSE) from alternative forecasting specifications, such as a random walk, that do not rely on sample period dynamic correlations given an indicator of source (3).

Clarida and Friedman instead use a Kalman filtering technique to incorporate

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post-sample information in the interest rate forecasts from a single variable or a linear combination of variables. They find the biggest improvement comes from the combination of real money and real income. Their technique was not designed to answer which of the three sources was most important, and it convolutes the effects. However, any post-sample information given the population parameters reduces the RMSE of the forecast, unless the structure changes. It seems clear from their results that given the sample period correlations more information is not necessarily better than less, and linear combinations do better than unrestricted entires.

I interpret this as loose evidence of a different post-sample parametric structure. Interest rates seem too high given the sample period relationships, but the world may have changed so be careful.