

History of the Forecasters

Naive forecasts are better than the consensus WSJ forecast.

Robert Brooks and J. Brian Gray

Forecasts of future stock market prices, interest rates, and inflation rates appear on a regular basis in all the media. The government, businesses, and individuals often make decisions based on the opinions of experts and their predictions. In the absence of hard information, it would seem that expert opinion has to be a better basis for decision-making than nothing at all. Or is it?

Since 1982, the *Wall Street Journal* has published semiannual forecasts of long-term U.S. Treasury bond yields, and many articles over the years have implied there is information content in these forecasts. From 12 to 64 experts are asked to provide a forecast of long-term yields. Ostensibly, one could take the mean forecast of these experts as the current best estimate of the long-term U. S. Treasury bond yield in six months.

Exhibit 1 graphs the actual long-term U.S. Treasury bond yield, the distribution of forecasts made six months earlier in the *Wall Street Journal* by a panel of experts, and the average of these forecasts for each of the last 43 forecast periods from 1982 through 2003.

We analyze these bond yield forecasts to determine whether the consensus forecast is helpful to anyone making decisions based on this forecast. The analysis suggests it is helpful only to the extent that one should believe the opposite of the forecast change in yield.

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EXHIBIT 1

Long-Term Bond Yield—Actual and Forecasted—
June 1982–December 2003

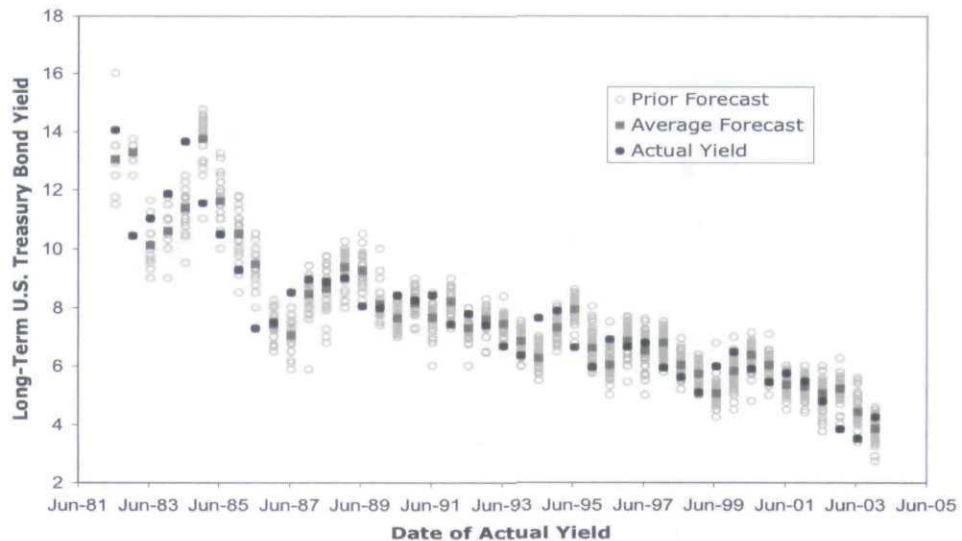
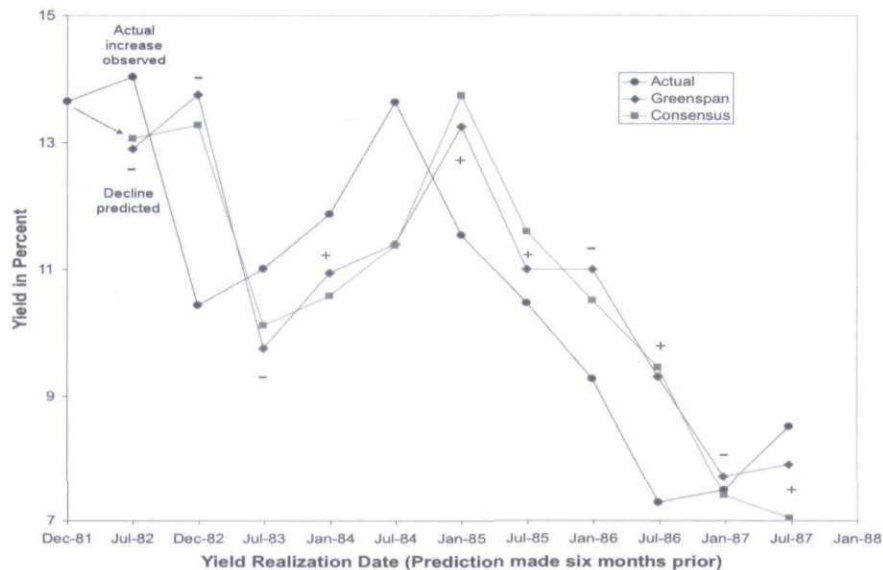


EXHIBIT 2

Actual and Greenspan Forecasts



ANALYSIS OF THE FORECASTS

Alan Greenspan, current chairman of the Board of Governors of the Federal Reserve System, was a contributing economist for the first 11 forecast periods as a representative of an economic consulting firm. We illustrate Greenspan's forecasts for the change in the long-term bond yield in Exhibit 2, along with the mean forecast of all economists on the panel.

In the 11 forecast periods, Greenspan's forecast is more accurate than the consensus (mean) forecast on five occasions, less accurate on five occasions, and roughly the same as the consensus once. Interestingly, in the first 11 forecasts, the consensus forecast is wrong in predicting the direction of the future yield change 9 times; Greenspan's predictions of the direction of change were wrong only 6 times.

Exhibit 3 illustrates the consensus prediction and the actual subsequent realization of the change in the long-

EXHIBIT 3

Consensus Prediction and Actual

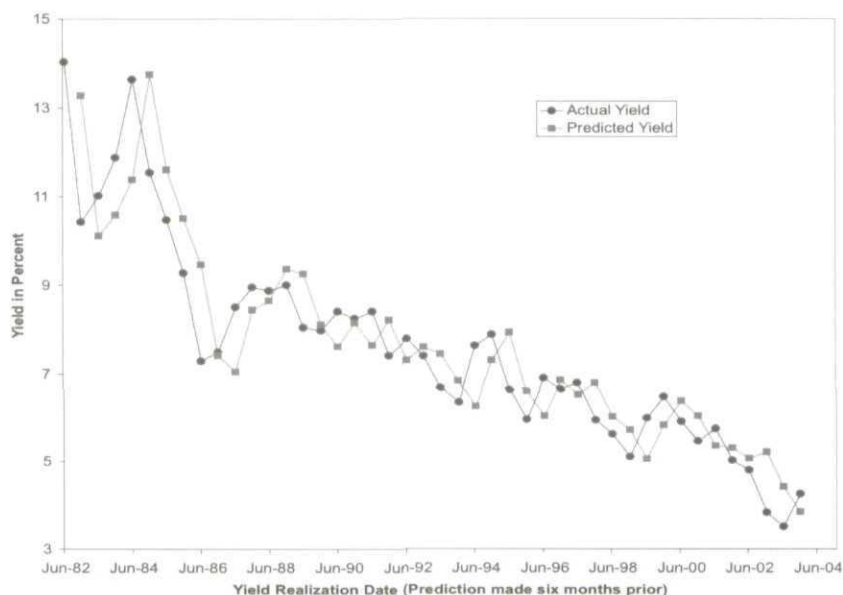
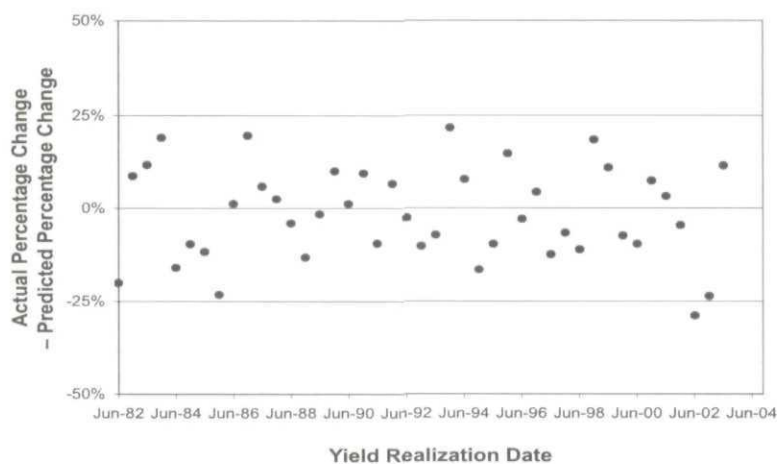


EXHIBIT 4

Forecast Error over Time



term bond rate for the entire sample period. Recently there has been dramatic overestimation of U. S. Treasury yields. Over the sample period, 65.0% of the time (28 of 43 forecasts) the consensus estimate is wrong in predicting the direction of the change. If you had randomly flipped a coin to guess the direction of the actual yield change for each of the past 43 forecast periods, you would have had a 96.7% chance of outperforming the consensus forecast in predicting the direction of the change. Clearly, the consensus forecast has not been a useful prediction (except for contrarians).

Exhibit 4 illustrates the forecast error over time. Forecast error is measured as the difference between the actual percentage change and the predicted percentage change. Informed forecasts should result in low forecast errors. There have been 20 observations above zero and 23 observations below zero. The mean forecast error is -1.64% , and the standard deviation is 12.64% . Although interest rates have generally fallen over this period, the actual decline in rates has exceeded the decline projected.

Exhibit 5 illustrates the naive prediction that today's observed yield is the best forecast of the yield observed

EXHIBIT 5

Naive Prediction and Actual

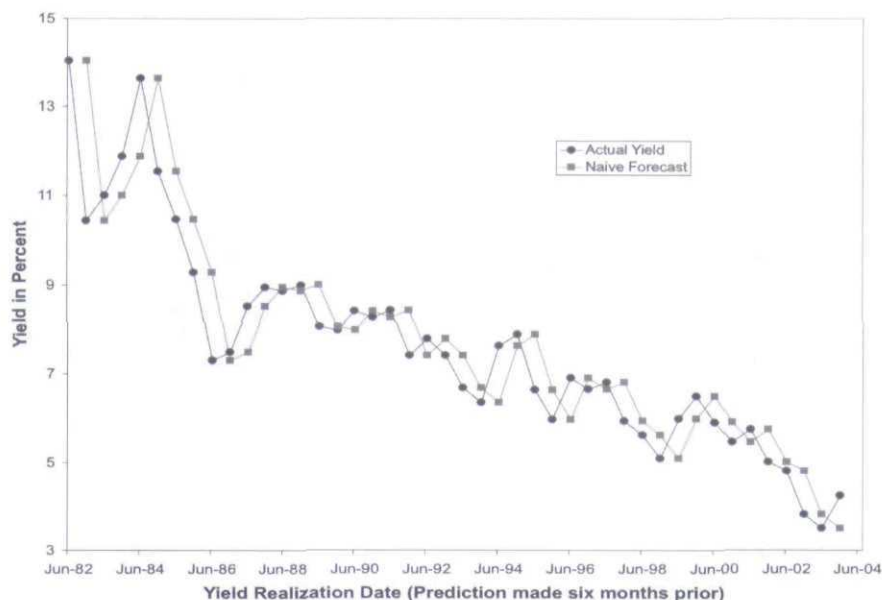
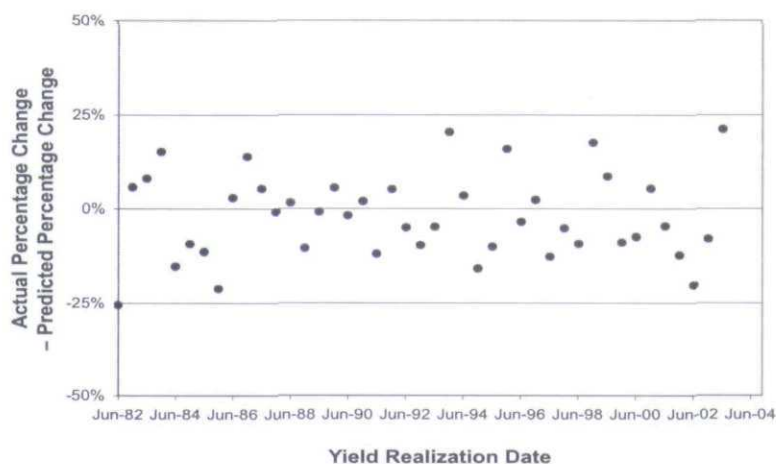


EXHIBIT 6

Sequence Plot of Naive Forecast Errors



in the future. Clearly, the naive forecast has performed better recently than the consensus economist (compare Exhibit 5 with Exhibits 3 and 4). During this period, yields rose only 42% of the time.

Exhibit 6 illustrates the naive forecast error and the actual percentage change (because the predicted percentage change is zero). There have been 18 observations above zero and 25 observations below zero. The mean forecast error is -2.11% , and the standard deviation is 11.27% . The naive standard deviation is 11% lower than the consensus estimate ($1 - 0.1127/0.1264$), indicating the naive forecast is superior.

Economic decisions based on the naive forecast would have resulted in less error. There do appear to have been more surprise declines in yields than increases in yield.

Exhibit 7 is a scatterplot of the actual percentage yield change versus the forecast percentage yield change. The negative relationship is statistically insignificant. Clearly, consensus forecasts are often wrong, with 28 observations in quadrants 2 and 4 (forecast yield falls and actual yield rises, or forecast yield rises and actual yield falls) and only 15 observations in quadrants 1 and 3 (forecast yield rises and actual yield rises, or forecast yield falls and actual yield falls).

EXHIBIT 7

Scatterplot of Actual versus Forecast Percentage Change in Yield

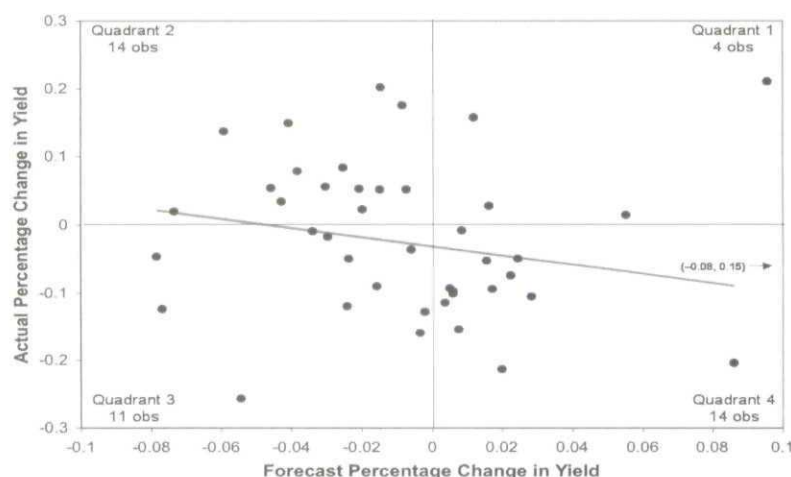


EXHIBIT 8

Predicted, Actual, and Maximum and Minimum Percentage Change

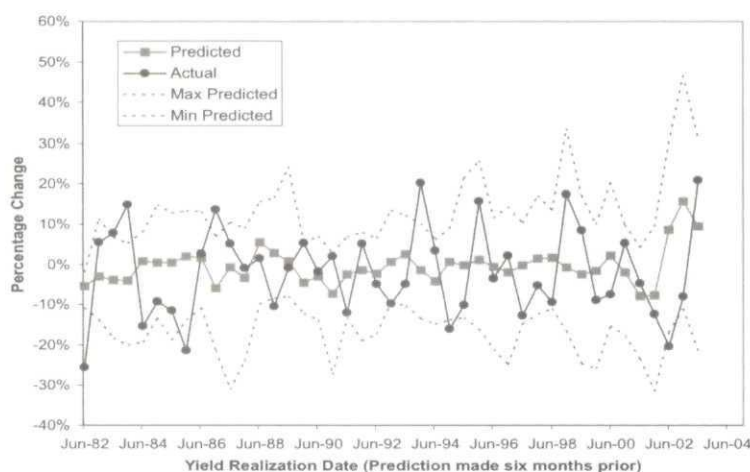


Exhibit 8 illustrates the consensus predicted change along with the actual subsequent change and the maximum and minimum forecast values. Clearly, the actual percentage change is much more volatile than the consensus percentage change. This result would be expected, because the consensus percentage change is an average of economist estimates of the actual percentage change.

The maximum and minimum predicted changes are not very far apart. For example, the lowest forecast made in January 2003 is for 4.00% at a time the yield was 3.82%. Not a single economist forecasted a decline in yields. Interestingly, yields subsequently declined.

CONCLUSION

Our analysis of semiannual U.S. Treasury bond yield forecasts as presented in the *Wall Street Journal* shows that the consensus forecast is poor. Over the past 43 forecast periods, the consensus estimate of the yield change has been wrong in direction 65% of the time. A naive forecast of the current yield results in an 11% reduction in the standard deviation of forecast error. The consensus estimate is beneficial only from a contrarian viewpoint.

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