International Review of Economics and Finance 18 (2009) 624–630

Contents lists available at ScienceDirect

International Review of Economics and Finance

journal homepage: www.elsevier.com/locate/iref

Forecasting in efficient bond markets: Do experts know better?

Hamid Baghestani *

Department of Economics, School of Business and Management, American University of Sharjah, P.O. Box 26666, Sharjah, United Arab Emirates

ARTICLE INFO

Article history:
Received 4 January 2008
Received in revised form 13 July 2008
Accepted 28 October 2008
Available online 9 November 2008

JEL classification:
E32
E37
E43

Keywords:
Blue Chip
Term structure
Bond market efficiency
Rationality
Directional accuracy

ABSTRACT

Term structure theory suggests that bond rates in efficient markets approximately follow a random walk. We show that the random walk forecasts of 10-year U.S. Treasury and Moody's Aaa corporate bond rates for 1988–2005 are generally unbiased. Blue Chip forecasts, however, are both biased and inferior to random walk forecasts. Both models produce unbiased forecasts of the default spread, with the random walk again outperforming the Blue Chip. In addition, Blue Chip fails to accurately predict directional change. Emphasizing that the success of the random walk model is theoretically expected, we discuss why experts fail to beat random walk predictions.

1. Introduction

It is commonly believed that asset returns such as interest rates are inherently difficult to forecast. Many studies have made use of advanced methods to forecast bond rates but often failed to beat a simple random walk.[1] In fact, under the pure expectations hypothesis with a time-invariant term premium, term structure theory suggests that bond rates approximately follow a random walk (Pesando, 1979). Random walk behavior indicates that such rates rapidly and fully reflect all relevant information so that future rate changes deviate from zero only in response to unanticipated events.

As opposed to random walk (and, in general, time-series) forecasts, the survey data have the flexibility of incorporating useful qualitative information. Existing studies evaluating professional forecasts often assume that (i) experts generate their forecasts under a symmetric loss function, and (ii) they report their true forecasts to the survey. In forecasting bond rates, the first assumption may seem reasonable since, to a typical client, the cost (loss) of an over-prediction is, perhaps, the same as the cost (loss) of an under-prediction. The reasonability of the second assumption, however, may not be as straightforward. For instance, experts who have more information than that available in the market (and are able to use it to make money) are reluctant to reveal their true forecast. Experts who have less information may report a forecast that is heavily influenced by the consensus forecast.

Against this background, we ask whether the Blue Chip panel of experts can beat the random walk forecasts of bond rates and the default spread. In answering this question, we first examine the accuracy of the random walk forecasts of Moody's Aaa corporate bond rate (CBR) and the 10-year U.S. Treasury bond rate (TBR). For the forecasts made in the first quarter of 1988 through the fourth quarter of 2005, our findings indicate that these forecasts are unbiased for forecast horizons of up to three quarters ahead. Second, we examine the accuracy of Blue Chip consensus forecasts of the CBR and TBR. These forecasts are found to be

* Tel.: +971 6 515 2529; fax: +971 6 515 2550.
E-mail address: baghesta@msn.com.

[1] See Fauvel, Paquete, and Zimmermann (1999) for a literature review of major methods used in forecasting interest rates.

1059-0560/$ – see front matter © 2008 Elsevier Inc. All rights reserved.
doi:10.1016/j.iref.2008.10.007

biased and inferior to those of the random walk. Such evidence is in line with Kolb and Stekler (1996) and Brooks and Gray (2004) who show that consensus forecasts of 30-year U.S. Treasury rates from the *Wall Street Journal* (*WSJ*) survey fail to outperform naïve random walk forecasts. Third, we examine the accuracy of random walk and Blue Chip forecasts of the default spread (CBR minus TBR). These forecasts are all unbiased, but, again, random walk outperforms Blue Chip. We further examine Blue Chip directional forecast accuracy. In line with the unfavorable findings of Greer (1999, 2003) for the *WSJ* survey forecasts, Blue Chip fails to accurately predict the direction of change in the CBR, TBR, and default spread.

The format of this study is as follows: The next section describes both Blue Chip and random walk forecasts. Section 3 presents the methodology and empirical results. Section 4 concludes by discussing our findings in light of term structure theory in an efficient bond market.

2. Blue Chip and random walk forecasts

Blue Chip surveys approximately 50 economic forecasters at major U.S. banks, corporations, and consulting firms. As explained by Batchelor and Dua (1991) and Romer and Romer (2000), the survey, conducted around the beginning of each month, asks participants for their forecasts of target variables for the current quarter and for one to four quarters ahead.[2] Using the individual responses, the survey calculates and reports the consensus (median) response, published in the monthly issues of *Blue Chip Financial Forecasts* (*BCFF*). Given that the survey is conducted monthly, there exist three sets of forecasts for each quarter. For consistency, we focus on the one-, two-, three-, and four-quarter-ahead Blue Chip forecasts made in the third month of quarter t.[3] These forecasts are denoted as $\hat{Y}B_{t+f}$, with the forecast horizon $f=1$, 2, 3, and 4.

Along with the quarterly forecasts, *BCFF* also reports the latest (actual) weekly rate available at the time of the survey. For the surveys conducted in the third month of quarter t, the latest weekly rate is the one for the (approximately) third week in the second month of quarter t. We utilize these weekly rates to generate the random walk forecasts. Specifically, we start by setting the random walk forecasts for 1988.2, 1988.3, 1988.4, and 1989.1 equal to the latest weekly rate for February 1988 reported in the March 1988 issue of *BCFF*; these forecasts correspond to the one-, two-, three-, and four-quarter-ahead Blue Chip forecasts made in March 1988. The random walk forecasts for 1988.3, 1988.4, 1989.1, and 1989.2 are set equal to the latest weekly rate for May 1988 reported in the June 1988 issue of *BCFF*; these forecasts correspond to the one-, two-, three-, and four-quarter-ahead Blue Chip forecasts made in June 1988. Repeating this procedure, we finally set the random walk forecasts for 2006.1, 2006.2, 2006.3 and 2006.4 equal to the latest weekly rate for November 2005 reported in the December 2005 issue of *BCFF*; these forecasts correspond to the one-, two-, three-, and four-quarter-ahead Blue Chip forecasts made in December 2005. Therefore, the one-, two-, three-, and four-quarter-ahead random walk forecasts (denoted $\hat{Y}R_{t+f}$, with $f=1$, 2, 3, and 4) are comparable to those of the Blue Chip ($\hat{Y}B_{t+f}$) made in the third month of quarter t.

More specifically, our random walk forecasting model is

$$Y_{t+f} = Yw_t + u_{t+f}$$

where Y_{t+f} is the actual rate in quarter $t+f$, Yw_t is the latest weekly rate known at the time of the survey, and u_{t+f} is an error term due to "news" arriving between quarter t and quarter $t+f$. Thus, the random walk forecast of Y_{t+f} made in the third month of quarter t is $\hat{Y}R_{t+f} = Yw_t$.[4] The rationale for our random walk model (which sets the forecast of Y_{t+f} equal to Yw_t instead of Y_{t-1}) is provided by term structure theory which suggests that, in an efficient bond market, the optimal forecast of a bond rate is the rate most recently known at the time of the forecast (Pesando, 1979; Reichenstein, 2006).

3. Alternative forecast accuracy results

Our evaluation assumes a symmetric forecast loss function under which the Blue Chip experts aimed to produce unbiased and efficient forecasts that were of value to a user. Accordingly, we proceed with answering the following four questions:

1. Are the forecasts unbiased?
2. Can Blue Chip beat random walk forecasts?
3. Which model produces better forecasts of the default spread?
4. Are Blue Chip forecasts of value to a user?

We begin by noting that the random walk and Blue Chip forecasts of the CBR and TBR are made in the first quarter of 1988 through the fourth quarter of 2005. Therefore, the sample periods for the one-, two-, three-, and four-quarter-ahead forecasts are, respectively, 1988.2–2006.1, 1988.3–2006.2, 1988.4–2006.3, and 1989.1–2006.4, with 72 observations for each forecast horizon.

[2] The survey participants are asked to provide their quarterly forecasts as 3-month averages. The historical Blue Chip forecasts were purchased from Aspen Publishers, Inc.

[3] The conclusions of this study remain largely unchanged when we use the CBR and TBR forecasts made in the first and second months of quarter t. Further findings (not reported here) indicate that, for every forecast horizon, Blue Chip forecasts made in the third month are more accurate than the corresponding forecasts made in the first and second month of quarter t.

[4] The actual data on Moody's Aaa corporate bond and 10-year Treasury rates are available on the Federal Reserve Bank of St. Louis website. The quarterly (as well as the weekly) data are all averages of daily figures.