Journal of Empirical Finance 16 (2009) 55–69

Contents lists available at ScienceDirect

Journal of Empirical Finance

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

Timing the investment grade securities market: Evidence from high quality bond funds ☆

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ARTICLE INFO

Article history:
Received 25 October 2006
Received in revised form 13 August 2007
Accepted 26 June 2008
Available online 2 July 2008

JEL classification:
G20
G23
G11

Keywords:
Portfolio evaluation
Fixed income funds
Market timing

ABSTRACT

We examine the ability of bond fund managers to shift assets between bonds and cash and across bonds of different maturities in order to capture the changes in their relative returns. As measured by estimated changes in portfolio allocations, we find strong evidence of perverse market timing ability between cash and investment grade securities, and our results indicate additional perverse timing across the bond maturity spectrum. Results are robust to an alternative performance metric. We present evidence that the survival of the majority of these funds despite their negative performance may reflect the value investors place on the portfolio diversification benefits of holding these funds.

1. Introduction

There is an extensive academic literature on the market timing ability of equity and hybrid mutual funds. Yet no published work has examined the timing ability of fixed income funds despite the fact that these funds have come to play a major part in many investors' portfolios, especially given the bear market in stocks that occurred during the early part of this decade.[1] According to data provided by Morningstar, the number of domestic nonmunicipal bond funds has grown by 210% (from 813 to 2517) over the ten year period covering 1994–2003.[2] At the end of 2003, the total amount of assets under management in these funds was just under $800 billion. Often, as individuals near retirement, investment experts suggest that investors shift a substantial portion of their portfolio into bond funds.

☆ This paper is a substantial revision of our earlier work entitled "Maturity Based Timing Skill: An Examination of High Quality Bond Funds." We are grateful for comments from Edwin Elton, Wayne Ferson, Martin Gruber, Phyllis Keys, Javier Rodriguez, and an anonymous referee. We also thank seminar participants at Georgetown University, the University of Delaware, and the Washington Area Finance Association Conference for their suggestions. Comer acknowledges financial support from the Leo I. Higdon Jr. Endowment Fund from the Georgetown McDonough School of Business.

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[1] To the best of our knowledge, the only other studies that address bond fund timing ability are working papers by Chen, Ferson, and Peters (2005) and Comer (2005). Chen et al. examine timing skill with respect to factors related to bond returns. Comer focuses on sector timing skill. Both use extensions of the Treynor and Mazuy (1966) model.

[2] These numbers include all mutual funds classified by Morningstar as having one of the following portfolio objectives: adjustable rate mortgage, convertible bond, general corporate, high quality corporate, high yield corporate, general government, government mortgage, government treasury, or multi-sector bond.

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doi:10.1016/j.jempfin.2008.06.005

Examining the timing ability of bond funds is of particular interest from an academic viewpoint. First, the majority of studies indicate that institutional money managers lack forecasting skill. However, a small but growing literature (e.g. Chance and Hemler, 2001; Bollen and Busse, 2001, 2004; Glassman and Riddick, 2006; Chen, 2005; Comer, 2006) suggest that various groups of managers have more market timing skill than previously believed, specifically when high frequency data and appropriate extensions of traditional timing models are employed. Of interest is whether bond fund managers share this forecasting skill. Second, studies by Blake, Elton, and Gruber (1993) and Ferson, Kisgen, and Henry (2006) indicate that various groups of bond funds underperform their relative indices on a risk adjusted basis. Thus, if the active management of bond fund managers is providing value to investors, the contribution is more likely to be reflected through timing ability rather than asset selection skill.

Various methods of measuring timing ability have been developed. Unfortunately, there is a lack of available bond data to implement holdings based measures of skill pioneered by Grinblatt and Titman (1989).[3] Thus, we infer timing skill from the funds' return series. The unique feature of our study is that we rely on the quadratic programming technique pioneered by Sharpe (1992) nested within the framework of the Henriksson and Merton (1981) models. Blake, Elton, and Gruber (1993) were the first to illustrate that Sharpe's methodology could be used to infer the investment policy of groups of bond funds, but the use of this technique to examine the performance and forecasting skill of money managers has been mostly confined to the hedge fund literature.

Sharpe's technique allows us to represent a manager's actual investment portfolio as a hypothetical portfolio of passively managed asset classes that best replicate the return series of the fund over time. Since Blake et al. (1993), there has been a substantial increase in the number and availability of bond market index return data. In Section 4 of this study, we develop index models that closely replicate individual fund performance and provide results that are consistent with the individual fund's reported investment policy. Thus, instead of inferring skill based on the convexity of fund returns relative to a benchmark factor model as done by Treynor and Mazuy (1966), we are able to provide numerical estimates of timing activity as measured by changes in fund manager allocations across various bond market conditions. We focus on two separate decisions made by the manager 1) the broad allocation between bonds and cash and 2) specific allocations across various bond maturities.

Bond fund managers can engage in timing activity in a variety of ways. In this study, we examine timing skill as measured by a manager's ability to time the investment grade securities market by shifting allocations to bonds of different maturities in order to capture changes in relative returns. Our focus on such skill is motivated by the significant differences in the returns generated by bonds of various maturities over our sample period.

A simple simulation illustrates the value of capturing differences in return across the bond maturity spectrum. We use monthly return data over the 1994–2003 time period from the Lehman 1–5 year, 5–10 year, and long (10+ year) government/credit bond indices. Suppose a manager has perfect timing ability and allocates 100% of his portfolio each month to the index with the highest return. Ignoring expenses and transaction costs, we find that the cumulative return to this strategy would be 379% compared to a −16% return for a manager who always invests 100% in the index with the lowest return. Given that it is very unlikely any manager would turn over his portfolio to such an extent, we conduct a second simulation. We assume that the manager must keep 75% of the portfolio in the 5–10 year index and can only shift 25% of his assets between the other two indices. In this case, a perfect market timer would generate a cumulative return of 151% compared to a return of 62% for a perverse timer. Clearly, the results are economically significant and are more than enough to cover the transaction costs that would be incurred.

We examine the timing ability of high quality corporate bond funds. According to the December 31, 2003 Morningstar Principia Pro CD, these funds have total net assets of $124 billion which represents approximately 17% of the total investment in the domestic nonmunicipal bond fund universe. Although this represents a subset of total bond fund investment, we focus on this group of funds because they are most likely to engage in timing activity by adjusting the average maturity of the fund. Unlike funds with a general corporate or general government classification, our sample of funds is restricted to investing the majority of its assets in investment grade issues. The main mechanism by which a manager within this group can distinguish himself is by capturing the differences in relative returns across various bond maturities rather than exploiting return differences due to credit quality.

We use Sharpe's methodology to examine whether changes in fund investment policy are consistent with the ability to positively time the investment grade securities market. Our results indicate that as a group our fund sample demonstrates statistically significant perverse timing ability as measured by higher allocations to cash when bonds of all maturities outperform Treasury bills. We compare our timing results to the results from synthetic fund samples which employ passive investment strategies. Evidence indicates that the perverse timing ability we detect is not spurious. Within the investment grade securities market, results indicate additional perverse timing across the bond maturity spectrum. Negative performance is widespread throughout the sample, and our results are robust to an alternative performance metric.

Given that 67% of our sample survives for the entire time period, our perverse timing results raises the question of the value provided to investors by high quality bond funds. Although we do not have a definitive answer to this issue, evidence from fund investor survey data, correlations between fund returns and the stock market, and the time series pattern of cash flows to the funds

[3] To the best of our knowledge, there is no source of complete bond fund portfolio holdings. The Thomson Financial/CDA Spectrum database used in the Grinblatt and Titman (1989) study does not include fixed income holdings. Some bond funds voluntarily provide portfolio data to Morningstar Principia, but the frequency and consistency of the disclosure is not constant. CRSP provides data on some bond portfolio attributes, such as average weighted maturity. But a check of this data series indicates that only 33% of our sample has a complete time series available.