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Missing the marks? Dispersion in corporate bond valuations across mutual funds ☆

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ABSTRACT

We study the dispersion of month-end valuations placed on identical corporate bonds by different mutual funds. Such dispersion is related to bond-specific characteristics associated with liquidity and market volatility. The Trade Reporting and Compliance Engine (TRACE) could have contributed to the general decline in dispersion over our sample period, though other factors most likely played roles. Further tests reveal marking patterns to be consistent with returns smoothing behavior by managers. Funds with ambiguous marking policies and those holding "hard-to-mark" bonds appear more prone to smooth reported returns. From a regulatory perspective, we see little downside to requiring funds to explicitly state their marking standards.

1. Introduction

How hard is it to mark illiquid securities for position valuation purposes? The issue of marking accuracy by banks, hedge funds, and mutual funds became a focal point for company boards, regulators and the financial press during the credit crisis that began in August 2007. The Securities and Exchange Commission (SEC) is actively examining how institutional investors "value their hard-to-value" securities.[3] Two investment advisers recently settled charges of negligent mispricing of certain mortgage-backed bonds and high-yield municipal bonds in

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[3] As reported in a *Financial Times* article (Wilcox, 2009) and a *Wall Street Journal* article (Pulliam, Smith, and Siconolfi, 2007).

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their respective mutual funds in ways that caused artificially high prices for their funds' shares.[4] This paper offers direct insights into important aspects of pricing securities for position valuation purposes by examining the dispersion of month-end valuations simultaneously placed on identical US corporate bonds by an important set of traders, the managers of US bond mutual funds.

We first examine the cross-fund pricing dispersion of individual bonds. Marking corporate bonds is hard. After controlling for differences related to choice of marking standards, we show that pricing dispersion is related to bond-specific characteristics typically associated with market liquidity. Specifically, cross-fund pricing dispersion is higher for lower credit quality bonds, longer maturity bonds, and smaller-size issues. Price dispersion for individual bonds also increases during periods when bond market return volatility is high.

We next study the time series of bond price dispersion. Bond price dispersion declined during our sample period. A decline in price dispersion over the entire sample period would be consistent with a number of explanations. During this same time period, the Financial Industry Regulatory Authority (FINRA) Trade Reporting and Compliance Engine (TRACE) for collecting and disseminating corporate bond transaction details expanded. Some evidence shows that the declines in price dispersion were faster during the six months after the TRACE expansions. However, the declines were gradual, and no evidence exists that the directly affected bonds dropped more rapidly.

Finally, we investigate whether bond mutual funds strategically mark bonds to smooth reported returns. Returns smoothing involves marking positions such that the net asset value (NAV) is set above or below the true value of fund shares, resulting in wealth transfers across existing, new, and redeeming fund investors. Moreover, returns smoothing distorts a fund's risk-return profile, such as its Sharpe ratio, perhaps leading investors to make suboptimal allocation decisions.

Like their hedge fund brethren, mutual fund managers compete with each other to attract new fund inflows on the basis of risk-adjusted performance statistics. Thus, all mutual fund managers have an incentive to smooth returns. However, while the motive to smooth returns exists, the means and opportunity for mutual fund managers to engage in discretionary returns management could be significantly more limited than those of unregulated hedge fund managers. One important constraint is SEC oversight of mutual funds regarding marking policies, especially with respect to adherence to each fund's statements to investors about how it marks securities. While the majority of funds explicitly describe their security marking practices in their prospectuses (such as the use of bid prices or the midpoint of bid and ask price indications contributed by professional bond pricing services), some funds provide only ambiguous statements (such as a practice of marking debt securities at fair value). Managers of funds concentrating on US Treasury bond investments have little scope to shade their marks. However, corporate bond fund managers could have substantial room to adjust prices of their illiquid, thinly traded securities upward or downward to smooth returns.

We present two sets of tests of returns smoothing behavior. Our first tests focus on the individual bond marks. The results reveal that the probability of observing a high mark is larger when a fund reports a return that under-performs the index. The results also show that the probability of observing a low mark is larger when a fund reports a return that outperforms the index. These patterns in the individual bond marks are consistent with returns smoothing.

Our second tests of returns smoothing behavior focus directly on the fund returns themselves. Our study is the first to provide returns smoothing evidence using direct holdings-based estimates of delegated portfolio managers' true economic returns. To date, researchers have focused on hedge fund reported returns. Lacking access to individual hedge fund holdings, Getmansky, Lo, and Makarov (2004) rely heavily on econometric techniques to make indirect inferences about the relation between reported and true economic returns of hedge funds. They find significant serial correlation in hedge fund returns and suggest that their findings could be driven either by problems in valuing illiquid assets or by discretionary returns management. Empirically distinguishing between the illiquidity and discretionary returns management explanations using only reported returns data could be difficult. Bollen and Pool (2008, 2009) make inferences using reported returns and find evidence consistent with hedge funds actively delaying or avoiding the reporting of small losses. Adding to the literature on returns management by delegated portfolio managers, our paper uses actual portfolio holdings data and develops direct tests to distinguish between the illiquidity and return smoothing explanations.

We develop a holdings-based custom benchmark to study fund performance using common bond marks that allows for a direct test of returns smoothing behavior. Our estimates for a variant of the Getmansky, Lo, and Makarov (2004) model imply that the idiosyncratic part of a fund's reported return moves in the opposite direction of the contemporaneous true economic return. This is consistent with returns smoothing. The quantitative importance of such smoothing is larger for funds that we classify as ambiguous markers. In addition, the quantitative impact of such smoothing is larger for funds holding portfolios of hard-to-mark bonds. Such funds have greater leeway in marking bonds up or down because the wider range of marks by other funds makes it easier to justify one's own marking choice as reasonable. Taken altogether, these results suggest that managers of funds that lack an explicitly stated marking policy (i.e., have the means) and hold portfolios of bonds that have the widest marking uncertainty (i.e., have the opportunity) are most prone to smoothing reported fund returns.

The remainder of the paper is organized as follows. Section 2 provides a review of the related literature and

[4] See the SEC's actions versus Evergreen Investment Management Company, LLC and Evergreen Investment Services, Inc. (http://www.sec.gov/litigation/admin/2009/34-60059.pdf) and Heartland Advisors, Inc. (http://www.sec.gov/litigation/admin/2008/33-8884.pdf).