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The closed-end fund puzzle: Management fees and private information

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ABSTRACT

Using a multi-period partial equilibrium model, I demonstrate that a combination of management fees and a time-varying information advantage for a fund manager can account for several empirically observed characteristics of closed-end funds simultaneously. The model is consistent with the basic time-series behavior of fund discounts, accounts for the excess volatility of fund returns, explains why the management fee appears to be an insignificant determinant of discounts, and is consistent with many time-series correlations between discounts, NAV returns, and fund returns. The model also generates novel predictions regarding the relations between asset turnover, discounts, and returns.

1. Introduction

The Law of One Price is one of the most basic principles in financial economics. Simply put, it states that two portfolios with identical cash flows must have the same price. Yet at first blush, closed-end funds, which are companies that hold a portfolio of financial assets, appear to violate this fundamental rule. The shares of a closed-end fund typically trade at a price different from the value of the assets in its portfolio.

Like other companies whose shares are publicly traded, a closed-end fund undergoes an initial public offering (IPO) where it sells a fixed number of shares. In contrast to other types of managed investment vehicles such as mutual funds, however, the shares of a closed-end fund generally are

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not redeemable. Rather, investors buy and sell shares in a closed-end fund at a price determined by the market, and this price typically does not equal the net asset value (NAV) of the fund.

The source of divergence between the price of a closed-end fund and its NAV has proven to be elusive. While numerous frictions have been suggested over the years as the basis for the behavior of closed-end fund prices, I demonstrate that many salient facts about closed-end funds can be explained by a model combining two fundamental elements: (i) a time-varying information advantage for a fund manager and (ii) management fees. More specifically, I construct a multi-period partial equilibrium model in which a closed-end fund manager periodically acquires private information regarding the future performance of an underlying asset.[1] The manager exploits her time-varying information advantage to earn positive abnormal returns for the fund prior to deducting management fees. Whether the fund trades at a discount or a premium depends on the value of the manager's information in relation to the fees she collects for managing the fund.

Consistent with the predictable time-series behavior of discounts documented by Lee et al. (1990) and others, closed-end funds in my model issue at a premium when the expected benefit from the manager's information advantage outweighs the cost of the management fees. After the manager's private information is exploited, however, funds trade at a discount because the capitalized future management fees outweigh the expected benefits from the manager's future information advantages. The rapid emergence of a discount in my model is consistent with existing empirical studies by Weiss (1989) and Peavy (1990), who find that funds usually begin to trade at a discount within 100 days following the IPO. Additionally, the time-varying nature of the manager's information advantage leads to both cross-sectional and time-series fluctuations in discounts. Lastly, fund prices in my model converge to a fund's NAV when the fund is terminated because at that point value can no longer be created by managerial skill nor destroyed by management fees. This is consistent with empirical evidence that prices converge to NAV when funds are liquidated (Brickley and Schallheim, 1985) or reorganized into an open-end mutual fund (Brauer, 1984).

My model also accounts for the excess volatility of fund returns despite the fact that fund prices underreact to NAV returns, as reported by Pontiff (1997). Consistent with empirical observations, fund returns in the model are more volatile than NAV returns but covary negatively with changes in premiums. Excess volatility is present because the manager's ability represents a real option to time the market, and the value of that option varies with ability. Moreover, the manager's time-varying information advantage as the fundamental source of a fund's excess volatility is consistent with empirical evidence that market risk factors do not explain excess volatility.

Many of the puzzling time-series correlations between discounts, NAV returns, and fund returns can also be explained by my model. For instance, discounts in my model are persistent even though fund returns and NAV returns are not. Additionally, discounts are negatively correlated with lagged fund returns but positively correlated with future fund returns, which means that discounts anticipate future fund returns. Furthermore, contemporaneous NAV returns and fund returns are positively but imperfectly correlated, which means that something other than the value of the underlying assets affects fund prices. In my model, the fund price reflects the value of the assets and the manager's ability.

Finally, my model generates several predictions about closed-end funds. First, there is a non-monotonic relation between discounts and management fees because the size of the fee affects both the amount of wealth transferred from shareholders to managers and the incentive for managers to capitalize on information advantages, which in turn affects the value of managerial skill. Second, greater asset turnover should occur for funds with higher NAV returns and for funds that trade at a premium. This is due to the fact that premiums are associated with high levels of managerial ability, and managers are more likely to alter their exposure to underlying assets when they are better able to forecast returns. For the same reason, funds that trade at a premium should hold portfolios that have a greater exposure to underlying risk.

[1] The use of the term "private information" should be broadly construed as the ability to more accurately predict future prices. Although I do not rule out the possibility of a fund manager trading on "insider" information, a manager's information advantage could stem from, say, a skill set specially tailored to a particular economic environment. I discuss potential sources of the manager's information advantage in more detail in Section 2.