

ESSAYS ON CLOSED-END FUNDS:
INTERNAL VERSUS EXTERNAL MANAGEMENT AND
INSIDER TRADING

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To my parents, Walker and Doris,

Your continued support throughout my academic quest is immeasurable.

To my wife, Mellodie,

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ESSAYS ON CLOSED-END FUNDS:
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ABSTRACT

This dissertation examines two aspects of closed-end funds (CEF). First, a limited number of these funds maintain the historical management structure of internally allocating resources to investments as opposed to hiring an advisor external to the fund to position and administer the fund. Many in the managed fund universe, such as George Clark, claim shareholders are paying an onerous performance burden by investing in funds with the external management model. While I do find the internally managed funds exhibit significantly lower expense ratios than their externally managed peers, I do not find that these lower expenses translate to lesser discounts from NAV nor do they result in any superior performance except in the longest of horizons. I conclude that claims of an onerous tax inherent in the external management model to be erroneous.

Second, a portion of trading profit from insider trading has been ascribed to an omniscience of firm prospects. Due to a known portfolio of assets and little proprietary knowledge, closed-end funds provide a very stable environment in which to examine insider trading. While I do find significant insider trading relative to the fund's discount, I do not find this to be evidence of any omniscience, but merely a trading strategy based on the mean-reverting nature of the fund discount. This is a trading strategy available to all investors, not merely the insiders. I conclude that some aspects of insider trading regulation and governance reform in the managed fund arena may be overly onerous.

Chapter 1

An Introduction to Closed-end Funds

1.1 Description

A closed-end fund (CEF) is a pooled investment corporation whose equity shares are listed on an exchange or traded OTC. As with most publicly traded equities, the market price of these shares is a function of supply and demand in the marketplace. The pool of fund assets is invested in financial instruments in compliance with the fund's stated investment goals. As of the end of 2003, CEF assets totaled \$214 B with 45% of this amount in domestic municipal bonds, 26% in domestic taxable bonds, 20% in domestic equity, and the balance deployed globally. The number of managed investment companies (closed- and open-end) in the United States currently exceeds the number of securities listed on the New York Stock Exchange.

I observe a number of differences and similarities between closed- and open-end funds. The major similarity is that both are pooled investment vehicles which offer liquidity and diversification to an investor at a relatively low cost. The net asset value (NAV) of a fund share is the market value of the entire fund's portfolio of securities, minus expenses and liabilities, divided by the total number of outstanding shares. The NAV changes as the total value of the underlying portfolio of securities rises or falls. The major difference between the fund types is that a CEF has a fixed pool of funds for investment while an open-end fund has a pool that varies with investor contributions and withdrawals. While there is a correlation between the value of the CEF shares and the value of the underlying pool of investments, closed-end funds are not "marked to market" as is typical of open-end mutual funds. The amount available for investment by a CEF does not depend on redemptions or

purchases by investors, because the fund does not issue redeemable securities and typically does not offer its securities for sale on an ongoing basis. Therefore, the supply of fund shares for closed-end funds is inelastic and the link of NAV to price is only indirect.¹

A closed-end fund neither needs to liquidate securities to meet investor demands for cash nor purchase securities to invest the proceeds of investor purchases. For open-end funds these events can frequently trigger additional transactions costs and tax events for investors. A closed-end fund manager can remain fully invested, minimizing cash drag on fund performance. Closed-end funds have other operational differences when compared to open-ended funds. For example, CEFs can utilize leverage in their portfolio structure and can hold a much higher percentage of their fund in illiquid assets. Since CEFs seldom issue or redeem shares at NAV and share prices are not firmly tied to the NAV, CEFs are free to trade and in fact do often trade at prices different from their NAVs. Since these shares trade in the stock market based on investor demand, the fund may trade at a price higher or lower than its NAV. For example, based on a less favorable perception of its underlying portfolio or of the market in which it trades, or a lack of investor knowledge or market recognition, a fund may trade at a share price lower than its NAV. Such a fund's shares are said to be selling at a "discount" to the NAV. A closed-end fund may attempt to increase the demand for its shares by offering a dividend reinvestment plan, engaging in tender offers or instituting a stock repurchase program. The fact that CEFs trade at prices other than NAV while investors freely buy and sell open-end funds at the NAV has been labeled the "closed-end fund puzzle."

¹ Significant inspiration for the fund description section is adapted from the Investment Company Institute website. www.ici.org/funds/inv/bro_g2_ce.html.

1.2 The History and Life-cycle of Closed-end Funds

Pooled investments have been in existence throughout time, but Abraham van Ketwich is credited with forming the first closed-end investment company, the *Eendragt Maakt Magt* established in Holland in 1774. His aim was to provide small investors an opportunity to diversify². Once fully subscribed, open market purchase of the shares would be the only way an investor could participate. Investors were promised a dividend of four percent, with adjustments depending on the investment income of the portfolio. In addition to this “target distribution policy”, the fund also had the equivalent of a prospectus, a statement of investment policy, a board of directors, and a custodian. Historians cite either the New York Stock Trust (1889) or the Boston Personal Property Trust (1893) as the first U.S. closed-end fund. The Massachusetts Investors Trust (1924) is usually credited as the first open-end, continuous issue and redemption, U.S. fund. Subsequently, this open-end style of capitalization became the dominant form of investment company organization.

CEF shares have a life and structure similar to traditional corporate equity. An IPO raises the funds for investment, shares are traded in the secondary market, additional funds may be raised through additional equity or rights offerings, and “delisting” can occur through open-ending or liquidation of the assets. A fund is structured with a board of directors whose major function is to contract with and monitor an investment advisor selected to manage the investments of the fund.

² See Rouwenhorst (2004).

1.2.1 Birth of a Fund

Closed-end funds are offered to the public through a traditional initial public offering (IPO) process. While IPOs of industrial firms are often significantly underpriced at offering relative to subsequent open-market trading, CEF IPOs are usually issued at a premium of up to 10% above asset values, reflecting underwriting fees and start-up costs. This premium above net asset value declines only modestly for a short period of time, most likely due to underwriter support. Subsequently, the premium declines substantially until the “traditional” closed-end fund discount remains. Weiss Hanley, Lee and Seguin (1996) find an average five-month CEF IPO return of -12.6% as opposed to +18% for a typical industrial IPO. For diversified equity funds, Peavy (1990) finds an insignificant initial return (days 2-20) of -3% and a highly significant follow-on return (days 21-100) of -20%. The discount/premium is volatile over time and across funds. At liquidation, or open ending, prices converge to NAV³. Hot and cold markets typify the issuance of shares. For example, in the eighteen months after January 1986 (and prior to the market crash of October 1987), forty-six domestic closed-end funds raised \$11 billion through IPOs, more than doubling the total market value of all closed-end funds in existence prior to that time.

Upon initial organization, the fund provides to its investors a statement of investment policies and objectives. This statement contractually outlines the kinds of assets in which the fund will invest, the risks to be taken, and the fund’s planned use of leverage. Essentially, this document outlines the rules of the game.

³ See Brauer (1984) or Brickley and Schallheim (1985).

1.2.2 The Mid-life

Similar to most any other corporation, CEF shareholders elect a board of directors which provides oversight of the fund operations. In order to offer some assurance that board members are financially independent of the fund, a majority of the board must be non-officers or non-advisors to the fund. Additionally, brokers may not constitute a majority of the board. The major function of the board is to contract with an investment advisor to manage the day-to-day operation of the funds assets. Some funds are managed internally (one of the topics of this effort), but most CEF advisors are external to the fund.

Return on an investment in a closed-end fund contains three components:

1. Share price change, which is a function of the change in the fund's underlying portfolio and any change in the discount (or premium) of the price from the NAV,
2. cash dividends paid by the fund, and
3. any capital gains distributed to fund shareholders.

A CEF can avoid paying U.S. income taxes by distributing substantially all of its dividend income (90%) and all net capital gain income to its shareholders. This avoids triple taxation (taxation of the firms held in the CEF's portfolio, taxation of the fund, and taxation of the shareholder). In effect, the CEF exists as a financial intermediary allowing investors to pool their investments without having to pay an extra layer of taxes on the pool.

A closed-end fund incurs operating expenses which are paid from the corpus of the fund. These expenses would include costs associated with fund portfolio management, fund business operations, custody of the fund's assets, and shareholder services. These operating expenses are paid from fund assets before making any distributions to investors.

With open-end funds poised to redeem or issue shares at the request of shareholders, these funds maintain a non-insignificant level of cash. This cash offers a considerably lesser expected return than the balance of portfolio investments and leads to open-end funds suffering a higher level of cash “drag” than closed-end funds. Additionally, open-end funds typically have a mandate to grow the fund and often exhibit a shorter investment horizon to attract new investment. On the other hand, closed-end funds, with a fixed investment pool, claim to take advantage of longer term inefficiencies that an open-end fund might not consider available. Some managers claim open-ending may lead to a higher expense ratio. Open-end funds can neither utilize leverage nor hold a significant portion of their portfolio in illiquid assets, denying the manager the ability to capitalize on potential market inefficiencies.⁴

1.2.3 Termination

Funds may cease to exist as a closed-end entity in one of several ways:

1. liquidation of the fund assets and return of cash to shareholders,
2. conversion of the fund to open end mutual organization, or
3. merger of the fund into another fund (usually an open-end fund).

Some funds have even written into their guidelines a trigger event which can force termination. While this process can allow an investor access to almost full value of the NAV, it is not necessarily a universally positive event. Frequently managers and even some shareholders resist this process for self-serving reasons.

⁴ For a more complete description of closed-end versus open-end fund characteristics please refer to Anderson and Born (1992) or Anderson and Born (2002).

Some closed-end funds may periodically consider conversion to open-end status, which would permit shareholders to redeem their shares at close to the NAV. Most of what we know of open-ending is based on the work of Brauer (1984) and Brickley and Schallheim (1985)⁵. They demonstrate open-ending eliminates most of the discount and the positive abnormal return of from 10% to 15% is captured by shareholders.

Since these two early efforts, there has been further speculation as to the characteristics of the share price to NAV convergence. Brauer (1988) models the probability of open ending and believes a profitable trading strategy may be the result of open-ending incentives not being instantly reflected in prices. De Long, Shleifer, Summers and Waldman (1990) believe conversion of the fund will negate the noise-trader-sentiment component of the discount. Barclay, Holderness and Pontiff (1993) speculate that blockholders might align with management to resist open-ending. A deeper discount might induce shareholders to take a stronger position on open-ending, but this could be thwarted by management and other shareholders. Deaves and Krinsky (1994) model the discount and find the incentive for open-ending increases as future performance worsens. They posit that this is a function of the negative relationship between managerial contribution and discounts.

More recently there have been two attempts to reexamine the findings of Brauer (1984) and Brickley and Schallheim (1985). Kadapakkam, Misra and Yildirim (2005) find the discount does not just disappear after the announcement of open-ending. The announcement returns reduce the discount from an average of 10% down to 6%. The existence of a discount remaining after the announcement seems inconsistent with market efficiency. One week before the liquidating event, even though open-ending is a virtual

⁵ See Draper (1989) for similar research on U.K. CEFs.

certainty, they still find discounts of about 3%.⁶ Akhigbe, Madura and Tucker (2005) examine the characteristics of funds that open-end and find larger, more highly discounted, more volatile funds are more likely to become open-ended. They also find that valuation effects for the period leading to the announcement are insignificant.

1.2.4 Regulation

CEFs are generally regulated by The Securities Exchange Act of 1934, the Investment Advisors Act of 1940, and the Investment Company Act of 1940 as amended in 1950. The SEC is the enforcement agency. The Acts require the fund to distribute 90% of income, dividends, and interest plus 100% of the capital gains as a limit on non-investment activity. For tax purposes, this maintains the fund's status as a "passive conduit." The Acts limit any one holding in the portfolio to 5% of fund assets, restrict ownership of any firm to less than 10% of the shares of the firm, and include other holding thresholds to prevent a fund from becoming merely a vehicle to control other firms.

Prior to The Investment Company Act of 1940, closed-end funds outnumbered the open-end variety. Many of the closed-end funds during the depression of the 1930s were highly leveraged and experienced severe losses. Following the Act, open-ended funds became more common.

1.3 The CEF Puzzle

The fact that two valuation metrics of the same portfolio, NAV and share price, often differ appears to be a violation of the law of one price. Our current financial models fail to

⁶ I find only one example of an open-ending process not being completed. In this case the fund abandoned the open end process to be absorbed into another open-end fund.

completely explain many of the observations made of closed-end funds. Lee, Shleifer and Thaler (1990) (henceforth LST) outline four distinct anomalies:

1. New funds appear on the market at a premium and move rapidly to a discount.
2. Closed-end funds usually trade at discounts relative to their net asset values.
3. Discounts are subject to wide variation, both over time and across funds.
4. When closed-end funds are terminated prices converge to net asset value.

The discipline of finance has collectively labeled these apparent anomalies the “closed-end fund puzzle.”

Closed-end funds routinely trade at a discount to the market value of their portfolio (NAV). For example, the average equity fund as of February 2001 traded at a nearly 11% discount to net asset value⁷. This discount does not remain stable over time. During the 1970s the average discount was from 30% to 40% (including the now-defunct dual-purpose funds). Yet by the mid 1980s this discount had almost disappeared, precipitating the aforementioned 1986 “hot” issue period. For the period 1953-1959 two of the funds I examine, Tri Continental and General American, had ranges for their discounts of 17% to 48% and 3% to 20% respectively⁸. While these figures are nearly fifty years old, they are not atypical of any period of more recent history. Not only does the discount vary, but it also is mean reverting. Pontiff (1995) reports that the primary source of returns to fund trading strategies is the mean-reverting nature of discounts.

What can explain this apparent disconnect between price and value? Early researchers such as Pratt (1966) and Thompson (1978) believe a lack of transparency to be the primary cause of this discount. More recently many researchers have attempted to

⁷ See Anderson and Born (2002)

⁸ See Anderson and Born (1992)

