

A primer on Closed-End Fund arbitrage

Introduction to Closed-End Funds

A closed-end fund (CEF) is a vehicle that collects funds via issuance of shares once and, thereafter, keeps its number of shares fixed. Therefore, after the initial fundraising, no additional capital flows into the fund, unless the CEF's management specifically decides to raise new funds by issuing new shares, thereby also increasing their number. A CEF can either be unlisted or publicly traded (listed). Listed CEFs raise capital via an IPO (or consequent secondary offerings), after which their shares can be freely traded on the stock exchanges they are listed at. CEF structures are mostly used by investment firms that actively manage the invested funds according to their predefined investment strategy. Conversely, open-ended funds (OEFs) allow for constant capital inflow in the form of selling shares to investors and buying back shares from the market if investors wish to sell. OEF structures are commonly used by most mutual funds and exchange-traded funds (ETFs), which often passively follow indexes. Due to not having to redeem the shares at the investors' will, closed-end funds do not need to hold large amounts of cash, allowing them to act more flexibly and invest a larger part of the capital they raised. Additionally, CEFs often leverage their investments, exposing the fund to greater potential return while taking on more risk. Keeping the fund closed "secures" those (implicitly, i.e., also by derivatives) leveraged positions, as redeeming investors' shares at will and without notice might lead to having to close positions prematurely. This allows CEF managers to focus on the portfolio's long-term performance, without having to worry about redeeming shares or investing new cash. Moreover, not having to retain income (realized capital gains, dividends, or interest income) to meet redemptions, leads to the CEF's ability to pay out larger dividends to shareholders.

Both open-ended funds as well as publicly traded closed-end funds disclose their NAV on a daily basis, usually after the major US stock exchanges have closed. While open-ended funds' shares are priced at the exact net asset value (NAV) per share (assets less liabilities, divided by the number of shares outstanding) of their holdings, closed-end funds' shares are priced intra-day according to supply and demand in the market. This is because OEFs, unlike closed-end funds, do not trade on the secondary market, and their shares can only be bought and sold (at NAV) directly from or to the fund. Therefore, even though the market price of a CEF strongly depends on the NAV of the fund's holdings, it is not indexed to it. As a consequence, CEFs may trade at a premium or a discount to their NAV, often due to the market's confidence in the closed-ended funds' managers, or the lack of it. Moreover, high management fees can cause a NAV discount. Further reasons for a NAV discount include but are not limited to, the following. First, lack of awareness or popularity: some CEFs may not be as well-known or popular among investors as other types of investments, leading to lower demand and thus a discount. Second, lower than expected dividends: if the fund pays out lower dividends than expected (or dividends lower than a certain benchmark with a similar risk-return profile), investors may sell their shares, leading to a drop in share price and potentially a discount to NAV. Third, illiquidity of the CEF's holdings: some CEFs invest in less liquid assets, making it harder to value the fund accurately, which can lead to discounts. Fourth, leverage risks: funds that use leverage may be seen as riskier, particularly in volatile or rising interest rate environments. This can lead them to trade at discounts to NAV in such environments. Reasons for a CEF's shares trading close to par include instead, but are not limited to, the following. First, investor education and awareness: effective communication and marketing by the fund managers can lead to better understanding and more efficient valuation by the market. Second, transparent and liquid investments: funds that invest in well-understood, liquid markets may have share prices that more closely track the NAV.

CEFs' shares more often trade at a discount than at a premium to NAV. This is mainly due to the relatively high fees charged by CEFs, which the investor would not face when replicating the fund's portfolio. If a CEF's shares trade at a premium to NAV, however, this is a sign of strong confidence in the management team to produce

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superior returns, often due to exceptional track records and the popularity of the investment managers. Further reasons for CEFs' trading at a premium to NAV may be among the following. First, unique investment opportunities: CEFs often invest in niche or specialized markets. If these areas are expected to perform well, demand can surge. This especially applies to markets that have high entry barriers and portfolios that are difficult to replicate, which can lead to a NAV premium. Second, consistent and higher than expected dividends: if dividend pay-outs are consistent and reliable as well as higher than expected (or higher than a certain benchmark with a similar risk-return profile), CEFs may trade at a premium to NAV. Third, limited share availability: since CEFs have a fixed number of shares, scarcity can lead to premiums, especially for sought-after funds. Fourth, leverage utilization: if used successfully and in a favourable environment (i.e., low interest rates and low market volatility), leverage can enhance returns, making some investors willing to pay more than NAV for the potential of higher gains.

Finally, publicly traded CEFs must not be confused with publicly traded holding companies, such as Warren Buffet's Berkshire Hathaway. First, while a CEF is subject to stronger regulations, such as having to stick to its investment strategy, as defined in the investment prospectus, a holding company has more autonomy for its investments. Second, a CEF usually charges management fees (typically around 2% yearly) and performance fees (typically 15-20% of (excess) returns) to their shareholders. A holding company does not. Third, realized capital gains or interest/dividend income is taxed differently. While a CEF's income is not taxed on the fund level but only when it is distributed to shareholders, a holding company's income is taxed both on the company level and when distributing it to shareholders. Both structures' share prices, however, are not indexed to their underlying NAV and often trade at a discount or a premium to the latter.

CEF's Trading at a Discount to its NAV: Implications

On the one hand, a CEF's management team should be worried about its shares trading well below NAV mainly for reasons of reputation. Trading at a discount hinders the investment firm's ability to launch new products and raise new funds, which would lead to an increase in the investment firm's AUM and, as a consequence, fees to the management team. In addition to that, CEFs trading at a high discount to NAV are vulnerable to activist arbitrage (further elaborated below). Fund managers have at their disposal various instruments to reduce the NAV discount. First, share buy-backs: buying back shares with cash lowers the NAV and decreases the supply of floating shares. The latter leads to an increase in share price. In sum, this measure changes the difference between price per share and NAV per share by impacting both. Second, increase dividends: paying out dividends using cash lowers the NAV. On top of that, elevated (and steady) dividends lead to a smoother more favourable cash profile of the investment for shareholders. Increasing dividends also reduces the difference between price per share and NAV per share by impacting both.

On the other hand, if a CEF lowers its NAV by either buying back shares or introducing/increasing dividends, this leads the management fees, which are usually a function of the NAV, to decrease. This presents a conflict of interest commonly referred to as principal-agent problem, in which the shareholders (principals) and the managers (agents) do not follow the same interests. Even though this conflict of interest can never be ruled out, fund managers risk their reputation when obviously acting counter to the shareholders' interests. After all, a fund manager's reputation is arguably the most important asset for them to successfully raise funds.

According to signalling theory, given the information asymmetry between a CEF's shareholders and its investment managers, introducing/increasing dividends can also be seen as a signal that the management is confident about the health and future prospects of the fund, as it can produce superior returns even without retaining earnings. Moreover, it signifies the investment managers' ability to realize gains from investments. Similarly, given

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information asymmetry, buying back shares can be interpreted as a signal of the fund managers believing that the shares are undervalued (all factors considered). Additional rather “soft” measures to reduce the NAV discount from a share price side include marketing efforts to increase the fund’s popularity as well as improving communication with investors for them to gain more trust in the managers’ decision making.

How does Closed-End Fund arbitrage work in practice?

Closed-end funds exhibit therefore distinct features that render them susceptible to arbitrage strategies. As mentioned above, the price of CEF shares fluctuates based on supply and demand dynamics, often leading to shares trading at a discount compared to their NAV. This presents a clear arbitrage opportunity: investors can take a long position on the CEF while simultaneously shorting its securities or a closely correlated ETF to mitigate both idiosyncratic and market risks. Two distinct categories of investors emerge in this scenario: those who wait for the eventual convergence of the share price to the NAV, and those who undertake activist campaigns aimed at forcing the fund's managers to either convert the fund to an open-end structure or liquidate it, thus capturing the discount to the NAV in a shorter timeframe. The latter approach will be the focus of this article. Activist attacks on CEFs may involve multiple arbitrageurs, with the aim of accumulating more CEF shares and corresponding voting rights. This plays a crucial role in the probability of success of the strategy, given the fact that fund managers will mostly oppose these attempts to preserve their reputation as value-additive investors deserving of high management fees. While the ultimate goal of activist campaigns may be to force a CEF to undergo liquidation or to convert into an open-end fund, activists may also opt for a tender offer as an alternative. A tender offer involves the partial purchase of outstanding CEF shares at or near the NAV by the fund, offering a quicker resolution compared to the protracted and risky process of engaging in a proxy fight with management.

In reporting the most technical aspects of the arbitrage strategy, as well as its historical performance, we refer to the paper “Activist arbitrage: A study of open-ending attempts of closed-end funds” by Bradley, Brav, Goldstein and Jiang (2009). Published in the Journal of Financial Economics, it represents one of the most thorough analyses of this strategy, carried out on data from 1988 to 2005.

Academics found that the primary determinant making a fund susceptible to activist CEF arbitrageurs is, intuitively, the discount to its NAV. However, while deeply discounted CEFs are expected to attract more attacks due to the potential for greater profit, it has been observed that the discount may decrease if the market anticipates vulnerability to activist intervention. This phenomenon suggests that the market price in the likelihood of activist involvement. Accounting for this endogeneity of discount, the paper of Bradley (2009) found that a one percentage point increase in the observed discount is associated with a 1.07% rise in the probability of an open-ending attempt in a given year.

Activist shareholders have two main avenues by which they can impose changes in a corporation, also in the case of CEFs. They can initiate a proxy contest, proposing an alternative slate of directors to replace the current board and gain control over the corporation. Alternatively, they can advance a shareholder proposal aimed at improving the firm's governance structure, investment strategy, or overall operations. It must be noted that complete takeovers are not an available option due to the restrictions imposed by the Investment Company Act of 1940, which prohibits investment companies from holding more than 3% of the shares of other investment companies. Unique to the context of investment funds, activist arbitrage investors may also seek to terminate the closed-end fund's advisory contract or pursue legal action if the fund resists shareholder demands excessively.

CEF managers have various measures at their disposal to mitigate the risk of being forced to open-end or liquidate their funds. The most straightforward being that of limiting the NAV discount, through the measures discussed

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above. Additionally, they can address governance issues, as empirical evidence suggests that higher managerial entrenchment can prolong the duration of the fund (i.e., limiting the impact of activist attacks). In particular, staggered board provisions have proven effective, as arbitrageurs would need to succeed in proxy fights over at least two annual elections before gaining the power to force an open-ending or liquidation attempt. Lastly, they may seek to protect themselves by making it more difficult for active investors to amass significant positions. This can be achieved through the adoption of a poison pill or by repurchasing a substantial portion of CEF's outstanding shares.

Case Study 1: Bill Ackman's Pershing Square Holding

In the arena of financial markets, the tides can turn very quickly. An interesting example is the battle between Elliott Investment Management and Bill Ackman's Pershing Square Holdings [AMS: PSH] in 2017. Ackman, known for being an activist investor and clashing with companies over control, found his firm ensnared by the tactics he typically employs. PSH, listed in Europe, is Ackman's main investing vehicle, holding about \$12.3bn of his \$15.8bn net AUM. The closed-end fund's investments consist mainly of hedging and derivatives trading and a small number of stocks (currently 10) of large public companies. The fund is low on debt and charges an annual management fee of 1.5% of assets and a performance fee of 16% of gains. Adept close-end-fund investors argue that PSH is a package consisting of stocks, minus fees, and Bill Ackman's investing skill, which allows him to change the portfolio over time. This active approach allows him to sell stocks that will go down and instead buy others that will go up. The idea is that, if you just buy his most recently disclosed portfolio, you can avoid the fees but also miss out on his investing skills. Therefore, buying the stocks that Ackman owns now is not a good substitute for buying the stocks (and derivatives, etc.) that Ackman will own over time.

However, in 2017, Elliott, led by Paul Singer, took an aggressive position in PSH and tried to force Ackman to liquidate his listed company. Elliot bought up a considerable amount of PSH stocks and simultaneously shorted the underlying securities in a strategic bet that Ackman would be compelled to liquidate. If successful, such a move would have allowed shareholders to capitalize on the difference between the NAV and the market value. PSH's anti-takeover defence consisted of buying back shares of his own company to effectively consolidate control. In what Ackman referred to as a "handshake bank" gesture, he secured a \$300m loan from JPMorgan Chase & Co. to fortify his position and stave off the potential liquidation. This skirmish is emblematic of the intensifying activist campaigns within the market for closed-end funds. PSH, with over \$14bn in assets and a 27% return in 2023, showcases the resiliency and potential for a rebound in these funds. Despite the discount to net asset value narrowing since the record levels of 2020, PSH still suffers with its persistent discount hovering around 27%.

Ackman's latest venture, Pershing Square USA, signals an enduring commitment to the structure that sustains these funds, offering retail investors a share of the action. The evolving dynamics of closed-end fund arbitrage mean that even the most renowned activists are not immune to becoming targets themselves.

Case study 2: Boaz Weinstein & Saba Capital Management against the 'investment giants'

Another exemplar of such a takeover battle is the recent conflict between hedge-fund manager Boaz Weinstein's — a veteran credit derivatives trader—Saba Capital Management and the global investment giant BlackRock [NYSE: BLK].

Saba Capital Management, a firm specialized in closed-end funds takeover, armed with a \$4.4bn, purchased up shares in three of BlackRock's closed-end funds that were trading at a discount to their net asset value. Weinstein's goal was to orchestrate a shift in these funds' strategies to narrow the NAV discount, by lobbying for governance

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changes, converting the funds to open-end portfolios, or liquidating the assets. In a bold move to advance his agenda, Weinstein launched a legal challenge against BlackRock and other asset managers over shareholder voting rights, questioning the legitimacy of control-share provisions that limit the voting power of individual investors. The outcome of this lawsuit, which was recently won by Weinstein, may have profound implications for future proxy battles since the potential elimination of a key defensive mechanism for asset managers might deter the launch of new closed-end funds due to the heightened risk of activist interventions. BlackRock, which currently operates more than 50 closed-end funds, has already employed additional defence strategies to deter proxy attacks, such as employing staggered board terms and ensuring a board can't be overhauled at a single annual meeting. At some funds, the challenger must win votes representing 50% of all shares, rather than 50% of all votes cast—a difficult standard to meet because it is common for less than half of all shares to vote.

This is only the most notable case of Weinstein's open-ending crusade, as his fund Saba Capital Management recently won another legal battle against the American asset manager Nuveen and now has its sights set on disrupting the \$240bn closed-end fund industry. Weinstein stated that fund managers are too focused on collecting fees, rather than maximizing returns for shareholders and that, if he succeeds in his efforts, it will benefit the shareholders as well. However, despite his declared noble intentions, Weinstein's actions are being met with resistance from many in the closed-end fund industry, who are fighting him in court. They refer to firms like his as "pirates" who are only interested in short-term profits at the expense of more patient investors. Nevertheless, Boaz has put a significant amount of money on the line recently. Recent data pointed out that 70% of Saba's \$5.6bn in equity assets were in closed-end fund positions as of December, which is more than twice as much in dollar terms as the same period last year.

Boaz's strategy typically involves electing new directors to the boards that oversee funds. If a closed-end fund resists the pressure by making it harder for Saba to vote in new directors, the hedge fund is willing to sue – the BlackRock case serves as an example of this. According to Bloomberg, if activists like Weinstein could eliminate the discount in every US closed-end fund trading for less than its net asset value, investors could earn approximately \$17bn.

Outlook and comment on the desirability of CEF arbitrage

Having analysed both the theoretical model of the strategy and some concrete attempts to profit from it, we questioned what the outlook for the adoption of CEF arbitrage may be. A commonly cited fact that casts doubt on the long-term effectiveness of this strategy is the persistence of CEFs trading at significant discounts. The presence of an exploitable arbitrage should theoretically eliminate such high discounts, as investors would seize these profit opportunities. However, practical limitations hinder the realization of this arbitrage strategy, including communication and coordination costs, uncertainty over lawsuit outcomes, and the need for substantial capital to acquire a significant share in the fund for the activist approach to succeed. These challenges are evident in the case studies mentioned. As of now, Weinstein's Saba Capital Management is the most exposed activist in a sector witnessing a growing number of open-ending or liquidation proposals. Saba's approach, accepting alternative liquidity solutions such as tender offers and premiums for not blocking M&A activities within the asset managers it invests in, introduces variety to the strategy and may attract further players in the future. Lastly, the legal component has become more prominent, with lawsuits serving as a common venue for activist attacks and fund defences.

Looking at the historical performance of the strategy, Bradley (2009), over the period of 1988 to 2005 the number of funds that were subject to activists' attacks increased significantly from only 3-4% in the early 1990s to around 30% in the peak years of 1999 and 2002. In addition, activists' activities often prompted fund managers to take

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actions themselves to reduce discounts. Open-ending attempts, on average (considering both successful and unsuccessful attempts), reduced the discount of targeted funds by more than 10% from a level of around 20% in the years before activists' involvement, indicating success in many cases. However, all costs incurred during these operations should be considered when computing the strategy's profits.

Lastly, this analysis prompts necessary consideration regarding the desirability of open-ending or liquidating attempts for all other shareholders in the CEF. A logical argument in favour is that they can also benefit from the convergence of the price to the fund's NAV. The discount substantially decreases after the attack and further drops in the subsequent three years. However, widespread adoption of this strategy could seriously threaten the success of Closed-End Funds, which currently serve as the primary pooled investment vehicle for retail investors seeking diversified access to less liquid asset classes. This concern is then amplified by the liquidity constraints imposed on mutual funds and the wealth standards required for investors in hedge funds or venture capital/private equity funds, which make it impossible for many to invest in them. In addition, CEF arbitrage may harm long-term retail investors through other dynamics. Portfolio securities may need to be sold at fire-sale prices to raise cash for the liquidity event demanded by arbitrageurs, or the fund may need to de-lever. The CEF may then be left with a smaller, less liquid, and harder-to-value portfolio mostly owned by small retail investors. Ultimately, the concern arises from the misalignment of investment horizons between arbitrageurs (short-term) and retail investors who are attracted by the CEF investment strategy (long-term).

TAGS: Closed-End Fund, arbitrage, Mutual Funds, Bill Ackman, NAV

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