Deriving a Discount for Lack of Control with Closed-End Fund Pricing

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From a noncontrolling investor's perspective, closed-end mutual funds serve as a unique benchmark for measuring a discount for lack of control related to closely held investment management companies. This benchmark measures the market-implied price discounts compared to a closed-end fund's net asset value. Beginning with a core understanding of the characteristics and variations of closed-end mutual funds, the rationale for market-implied valuation discounts will be presented, along with an overview of the methodology and the procedures that analysts often use to quantify a discount for lack of control using closed-end fund pricing data.

Introduction

Closed-end fund pricing has been regarded as one of the unsolved mysteries of finance.[1]

Often overlooked, closed-end funds are characterized by share price deviation from a fund's net asset value (NAV). Pricing deviations from NAV are labeled as discounts and premiums, and the rationale behind such deviations have been theorized by numerous studies to represent a variety of factors. NAV is simply defined as the market value of a fund's assets minus liabilities.

The market-implied valuation discount (or, in some cases, pricing premium) to a closed-end fund is the most applicable comparison to a closely held investment management company due to both entities serving similar purposes—to seek returns via a portfolio of assets.

However, a valuation analyst should ensure that a closed-end fund is comparable to the subject company (the company being valued) by considering the similarities of the two in terms of investment holdings and investment objectives.

Essentially, to derive an appropriate discount for lack of control (DLOC) for a closely held investment management company, a statistical analysis of comparable closed-end fund pricing data will provide a starting point. That starting point can then be adjusted, depending on quantitative and qualitative factors.

Definition of a Closed-End Fund

A closed-end fund is a pooled investment vehicle in which multiple participants invest in a single, actively managed portfolio of assets. A variation of a publicly traded mutual fund, the closed-end fund is unique in that it only offers a fixed number of common shares (a claim to a portion of the assets) at an initial public offering (the first opportunity to purchase shares of the fund).

As a result, a share of a closed-end fund purchased after the initial public offering must be purchased from another investor as opposed to from the fund itself. With open-end funds, shares are redeemed and issued on a continuous basis, whereas the shares of closed-end funds are simply transferred.

Therefore, the share price of a closed-end fund is generally dependent on the supply and demand of investors in the public market as opposed to solely the fund's NAV.

The concept of closed-end fund pricing is unique. It represents "the only situation where market valuations exist both for the assets and for the ownership claims on the returns from [the] assets."[2]

In essence, the concept of closed-end fund pricing represents the foundation for various defining elements that characterize the way closed-end funds operate, perform, and, of particular importance to valuation analysts, deviate from NAV in the form of price discounts and price premiums.

Determinants of Closed-End Fund Pricing

Typically, closed-end funds achieve higher returns at the expense of greater risk, while open-end funds provide moderate returns accompanied with moderate risk.

The concept of closed-end fund pricing uniquely positions closed-end funds to pursue higher returns through various means, as outlined below.

Diverse Investment Holdings

First, closed-end funds do not manage inflows and outflows of cash caused by redemptions and issuances, unlike open-end funds. As a result, closed-end funds can remain fully invested for long periods of time.

This unique characteristic allows for greater flexibility in regard to a closed-end fund's investment holdings and asset management style since the fund does not need to maintain cash reserves or liquidate assets for the purpose of large investor redemptions.

Due to increased flexibility relative to open-end funds, closed-end funds are capable of investing in less-liquid securities such as thinly traded municipal bonds, small company stocks, and emerging market securities.

Furthermore, closed-end funds are capable of allocating larger portions of capital to less liquid securities relative to open-end funds. An open-end fund is restricted to allocating a maximum of 15 percent of assets to less liquid securities according to the Investment Company Act of 1940.[3]

Although closed-end funds are also regulated under the Investment Company Act of 1940, closed-end funds are not subject to this restriction due to their closed-end nature. As a result, closed-end funds are well positioned to seek returns from less liquid and overlooked securities.

Generally, closed-end funds are classified as either equity or debt funds. However, unique closed-end funds exist such as options arbitrage funds, floating rate funds, and hybrid funds.

The various types of closed-end funds are presented in Exhibit 1.

Leverage

Closed-end funds commonly employ leverage to maximize returns. As of year-end 2015, approximately 65 percent of closed-end funds employed leverage as part of their investment strategy. Specifically, closed-end funds employ two classifications of leverage consisting of structural leverage and portfolio leverage.

Structural leverage is the predominant form of leverage used among closed-end funds with approximately 87 percent of leveraged funds employing structural leverage.[4]

Closed-end funds apply structural leverage through a process of issuing debt and preferred shares for the purpose of increasing the fund's portfolio assets.

On the other hand, portfolio leverage is a relatively straightforward form of leverage applied through the purchase of derivatives such as options contracts.

Exhibit 1
Closed-End Fund Classification

Equity	Fixed Income	Other
• General equity funds	• U.S. mortgage bond funds	• Floating rate funds
• Specialized equity funds	• Investment-grade bond funds	• Options arbitrage funds
• Income and preferred stock funds	• Loan participant funds	• Hybrid funds
• Convertible securities funds	• High yield bond funds	
• World equity funds	• National muni bond funds	
	• World income funds	

Closed-end fund returns are also maximized due to the uncommon amount of leverage permitted under regulations relative to open-end funds. Closed-end funds are capable of leveraging their investments by a maximum of three-to-one (or 33 percent) according to Securities and Exchange Commission (SEC) regulations.[5]

The ability to leverage allows a portfolio manager greater flexibility, as leverage allows one to potentially borrow (i.e., lever) at rates lower than the yield of a particular investment.

For example, a real estate investor may purchase a house (an illiquid asset) with a mortgage (leverage) with the purpose of deriving rental income that yields a higher rate than the interest on the loan.

As straightforward as the concept may be, a potential caveat exists as a general rule of thumb: applying leverage to an investment increases the potential for greater returns, while also increasing the potential for greater losses and increased price volatility.

Overall, due to the flexible operating nature of closed-end funds relative to their open-end counterparts, a greater variety of investment objectives are feasible and easily accessible within the range of closed-end funds available.

Given a closed-end fund's ability to leverage its investments and its flexibility to seek returns from less liquid securities, actively managed closed-end funds are more advantageously positioned to achieve high returns (with regard to increased risk) relative to most actively managed open-end funds.

Figure 1 compares the number of closed-end funds that employ structural leverage to the number of closed-end funds that employ portfolio leverage.

Performance

When analyzing the performance of a closed-end fund, more than just the fund's yield on assets must be considered. A closed-end fund's distributions—income distributed to shareholders on a monthly or quarterly basis—should be accounted for, along with the fund's current market price.

As of year-end 2015, 69 percent of closed-end funds issued distributions to shareholders primarily consisting of interest income and dividend payouts.[6] Generally, distributions are sourced from the return of shareholder capital, realized capital gains, and income in the form of interest and dividends.

A proper measure of performance for a closed-end fund would be to measure its total return in regard to the change in:

1. the market price of the fund,
2. yield to NAV, and
3. fund distributions for a given time period.

This concept is presented in Figure 2.

Figure 1
Number of Closed-End Funds Over Time
Structural Leverage versus Portfolio Leverage

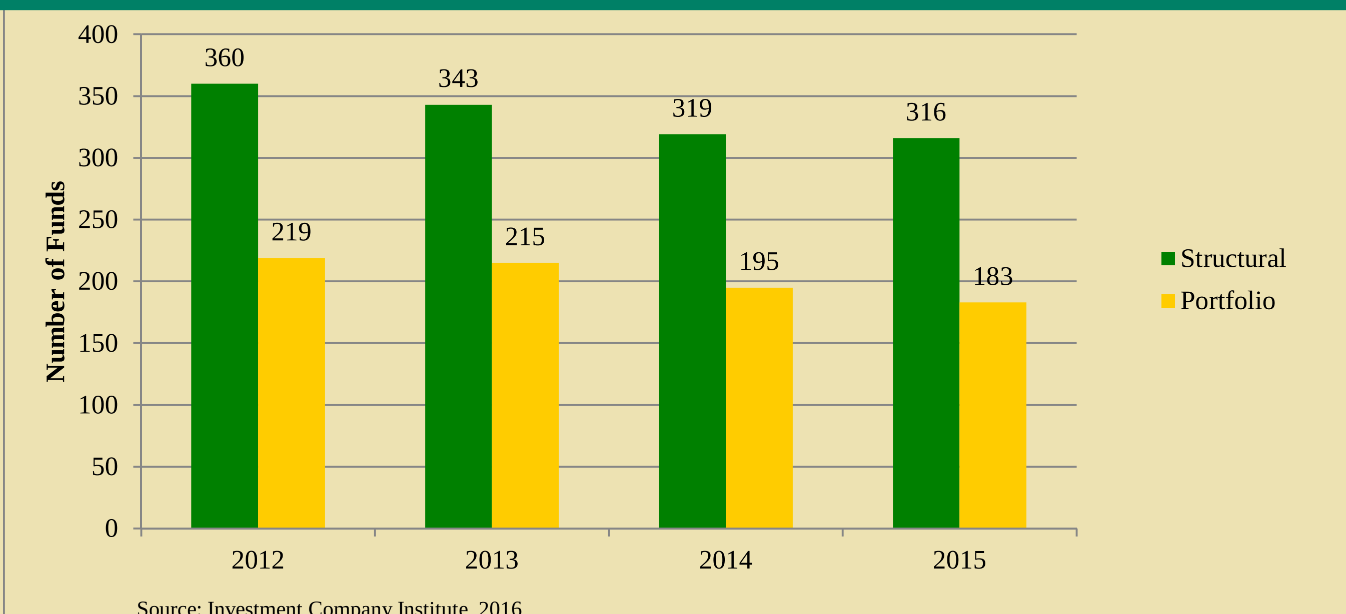
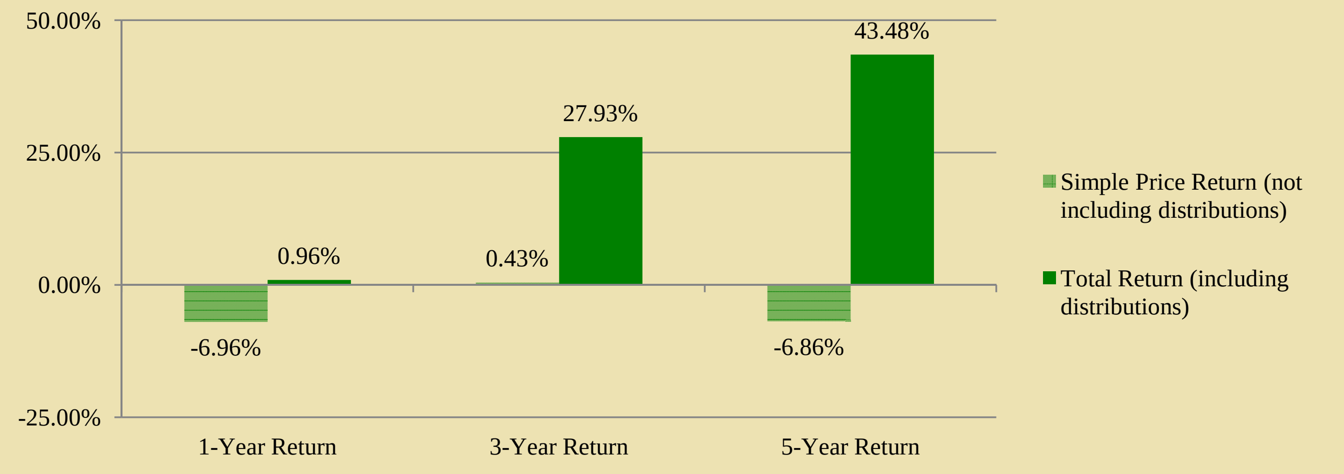


Figure 2
Closed-End Funds
Simple Price Return versus Total Return as of Fiscal Year-End 2015



Source: Equity CEFs, BlackRock 2016

According to the Investment Company Institute, total assets of closed-end funds have decreased within the past 10 years. Between 2005 and 2015, total assets have ranged between $184 billion and $312 billion, with asset levels still below the prerecession high of $312 billion.

A partial reason for lackluster growth in assets of closed-end funds is due to stricter regulations regarding leverage following the financial crisis.

This concept is presented in Figure 3.

Additionally, the Investment Company Institute outlines four factors that have contributed to the poor growth of closed-end fund assets:

> First, continued widespread discounts on existing closed-end funds has created an environment in which it is difficult for fund sponsors to launch new closed-end funds. Second, several closed-end funds have repurchased shares through tender offers over the past few years. . . . Third, a few closed-end funds have liquidated each year and others have converted into open-end mutual funds or ETFs. Finally, closed-end fund preferred share assets have declined since the financial crisis of 2008.[7]

Price Premiums and Price Discounts

Because the share price of a closed-end fund is predominantly determined by supply and demand of market participants, a price discount or price premium to a fund's NAV is a common characteristic among closed-end funds.

A price discount is defined by a share price that is below the fund NAV, and a price premium is defined as a share price above the fund NAV.

Price discounts and price premiums are typically explained by a multitude of factors that affect investor perception and, thereby, investor demand.

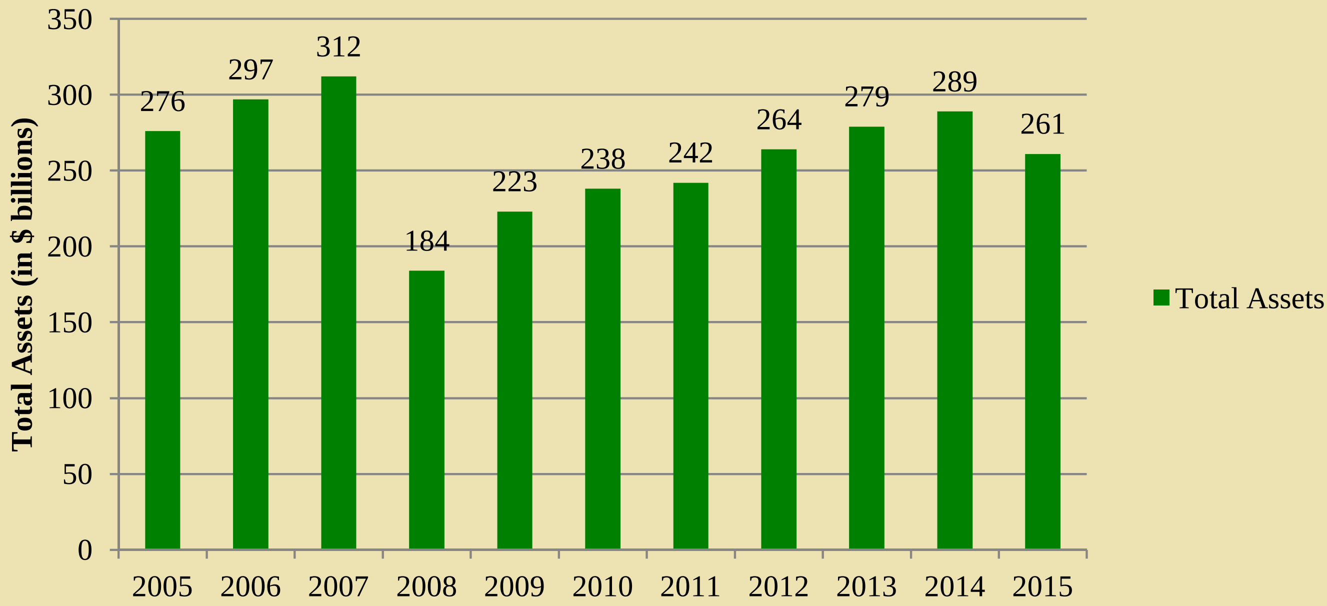
In particular, the degree to which a closed-end fund is discounted from its NAV is the subject of numerous studies that have concluded the following explanations:

1. Value and cost of management
2. Liquidity of investments and management fees
3. Tax liability associated with opening a fund
4. Fund distribution policy
5. Price volatility
6. Uncertainty relating to the size of the discount
7. Market sentiment

Of the preceding explanations, the most commonly cited explanations for discounts to closed-end funds are a fund's historical distribution policy and market sentiment.[8]

In regard to market sentiment, the discounts applied to closed-end funds are specifically influ-

Figure 3
Total Assets of Closed-End Funds



Source: Investment Company Institute 2015

enced by the investment objective and whether or not the primary investment holdings of a closed-end fund are in vogue with investors.

For example, as of fiscal year-end 2015, municipal bond securities appear to be the asset in vogue according to the Investment Company Institute, "price deviations from net asset values on domestic municipal bond closed-end funds narrowed by year-end 2015, reflecting increased investor interest in municipal securities."[9]

And, as of year-end 2015, the average discount for domestic equity closed-end funds had widened to an average of 9 percent, indicating that equities are falling slightly out of favor among investors.

Overall, the discount applied to a closed-end fund relies on the qualities of the fund itself and investor sentiment. In terms of valuation analysis, explanations of such discounts have the potential to be comparable to a closely held entity under the right circumstances.

Lack of Control and Security Valuation

One of the most important variables affecting value is the degree of control rights, if any, inherent in the interest being valued. The value associated with control depends on the ability to exercise any or all of a variety of rights typically associated with control.

As a result, the value of a noncontrolling interest is not necessarily equivalent to the pro rata percent of the value of the entire enterprise or the underlying NAV, such as the case with closed-end fund pricing.

By definition, the holder of a noncontrolling interest lacks ownership control, and has little or no voice in company affairs.

The following list provides examples of some of the more common indicia of ownership control:

- Elect directors and appoint management
- Determine management compensation and perquisites
- Set policy and change the course of business
- Acquire or liquidate assets
- Select people with whom to do business and award contracts
- Make acquisitions
- Liquidate, dissolve, sell out, or recapitalize the company
- Sell or acquire ownership interests
- Register the company's ownership interests for a public offering

- Declare and pay dividends
- Change the articles of organization, bylaws, operating agreement, and/or other transfer agreements

On the other hand, a private noncontrolling interest investment may not be totally bereft of control factors. For example, a noncontrolling investor may be in a position to cast crucial swing votes and, in some measure, influence important business policies.

A DLOC is based on comparable market investments of ownership interests, which may include the following:

1. Closed-end funds
2. Private equity and hedge fund companies
3. Oil and gas funds and master limited partnerships
4. Undeveloped land program real estate investment trusts
5. Publicly registered limited partnerships
6. Operating real estate investment trusts

In the case of deriving a DLOC for a closely held investment management company, closed-end funds represent the most comparable market investments of noncontrolling interests. A closed-end fund's ownership interests typically trade at discounts relative to the value of the fund's NAV.

This situation occurs because a noncontrolling investment interest lacks unilateral control over a company's underlying assets.

Furthermore, an implied DLOC is derived from a closed-end fund's discount to NAV, assuming the publicly traded nature of a closed-end fund drastically minimizes or eliminates any effect of (1) a discount for lack of marketability or (2) a discount for lack of liquidity.

Deriving a Discount for Lack of Control

Valuation analysts commonly use a data set of the discounts (or, in some cases, premiums) of comparable closed-end funds for the purpose of estimating a DLOC for a closely held investment management company valuation.

To estimate a discount, valuation analysts typically calculate a mean or median of comparable discount data as a basis for subjective adjustments, considering quantitative and qualitative factors.

Ultimately, the derived discount relies on an appropriate comparison and evaluation of the specific quantitative and qualitative factors of both a closed-end fund and the subject company.

Procedure 1: Data Sourcing

The first procedure in selecting an appropriate DLOC is selecting a database with the necessary closed-end fund data. There are three primary resources to consider for closed-end fund data: Bloomberg Professional, Thomson Reuters Lipper, and Barron's.

Choosing an online database is preferred for efficiency. However, online databases are expensive to license, so inputting data into an Excel spreadsheet is a more economical alternative.

An adequate source should contain the following closed-end fund data that is as of or before the valuation date:

1. A fund's NAV
2. A fund's corresponding market price
3. A fund's discount or premium to NAV

At the bare minimum, a closed-end fund's NAV and corresponding price are all that are needed as the discount or premium can be calculated by finding the difference between the NAV and the market price (the difference is typically represented as a percentage of NAV). A 12-month dividend yield may also be helpful to analyze.

Procedure 2: Investment Holdings Classification

The second procedure is to identify which closed-end fund classification is most relevant to the subject company. When selecting guideline closed-end funds, investment holdings of a closed-end fund should represent the holdings of the subject closely held investment management company in order to be considered as a comparable security to derive an appropriate DLOC.

Closed-end fund databases typically include classification and holding data; however, such data can be acquired via a closed-end fund's respective website.

Once the valuation analyst has narrowed down the selection of closed-end fund data by classification, further refinement is encouraged to ensure that the most relevant data set is used for the purpose of deriving a DLOC. To further refine a data set, an analyst should consider the specific holdings of the subject company in terms of diversification.

Next, an analyst should eliminate certain closed-end funds containing investments that may not be relevant to the subject company.

For example, if the subject interest represented a diversified domestic equity portfolio, an analyst would refine a selection of comparable data by excluding the following:

1. Sector or industry specific funds
2. Hybrid funds that invest in both equity and fixed income
3. Funds that hold abnormal amounts of cash reserves that are over 50 percent of NAV

Additionally, interval funds, a type of closed-end fund, are generally not considered in a DLOC analysis due to the fact that a majority of interval funds are not publicly traded.

Procedure 3: Calculate the Initial Discount

Upon compiling comparable closed-end fund data, an analyst should take into consideration outliers present in the data and select either the arithmetic mean or median of the comparable data as an initial discount to the subject interest.

Procedure 4: Make Adjustments

A valuation analyst should consider relevant quantitative and qualitative factors that may be used as grounds for final adjustments to the initial discount.

A valuation analyst's judgement and ultimate determination should carefully consider the market data available and the facts of the specific case at hand before reaching a final DLOC determination.

Quantitative Factors

To further refine a comparable closed-end fund data set, specific quantitative data can be derived from a fund's prospectus such as leverage, diversification, and age of the entity.

The quantitative data that may result in an adjustment include the following:

- Asset Diversification. The greater the diversification of assets, the lower the discount, as lower business risk is associated with adequate diversification.
- Leverage as a Percentage of NAV. Higher leverage increases the DLOC given that increased leverage has the potential to increase risk and price volatility.
- Fees Charged for Management Expenses. The fees charged for management expenses may exaggerate a closed-end fund's discount or premium that may not be representative of the subject company.

Qualitative Factors

In order to arrive at a DLOC for a subject company, certain qualitative criteria are generally considered by valuation analysts as means for adjustments to the initial discount.

Relevant qualitative factors that differentiate closed-end funds from closely held investment management companies include the following:

- Closed-end fund investors can vote, by required majority or supermajority margins, to open-end or liquidate a fund, or reorganize the directors and management of a fund.

  According to Thomas J. Herzfeld Advisors, Inc., in the three-year period between mid-1997 and 2000, approximately

"A closely held investment management company that does not distribute substantially all of its income may have a greater DLOC."

170 closed-end funds were liquidated, reorganized, or open-ended. Therefore, if the subject interest is nonvoting, an additional valuation adjustment for lack of voting rights may need to be added.

- Closed-end funds are strictly regulated under the Investment Company Act of 1940 and other laws and regulations.

  Closed-end fund investors can seek regulatory action from the exchange authorities on which the fund is listed, the National Association of Securities Dealers for over-the-counter traded funds, and the SEC.

- In order to maintain favorable tax treatment, closed-end funds must distribute substantially all income to their shareholders in cash periodically during the year.

  A closely held investment management company that does not distribute substantially all of its income may have a greater DLOC.

- Many closed-end funds have so-called "lifeboat" provisions which allow the board of a fund to make tender offers to shareholders when the price to NAV discount of the closed-end fund is greater than a set percent for an extended period of time.

  This provision helps reduce any large discounts from NAV.

- Closed-end funds typically have more experienced and greater depth of management than small, closely held investment management companies, which tend to lower the implied DLOC.

- Closed-end funds typically have a much greater diversity within the portfolio of assets under management. Less diversified companies tend to have a greater DLOC.

- Company-specific risks may also tend to increase the DLOC evidenced by the public closed-end fund market. These include key management risk, historical performance, investment volatility, carried interest, and legal/regulatory issues.

Conclusion

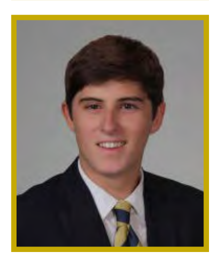
This discussion presented an overview of closed-end funds and their application in deriving a DLOC for a closely held investment management company valuation. Valuation analysts should understand the structure, management, and underlying investments of comparable closed-end funds before using such factors as a basis for a DLOC.

Comparisons from a quantitative and qualitative standpoint should be made to derive an appropriate DLOC for the subject investment interest.

In measuring a DLOC, certain closed-end funds may be removed from a guideline data set and additional risks may be added to the market-implied discount provided within the transaction data. Nevertheless, a valuation analyst's judgement and ultimate determination should carefully consider the market data available and the facts of the specific case at hand before reaching a final DLOC determination.

Notes:

1. Jack Hough, "The Mystery of Closed-End Fund Discounts," *Market Watch* (January 2012).
2. Kenneth J. Boudreaux, "Discounts and Premiums on Closed-End Mutual Funds: A Study in Valuation," *The Journal of Finance* 28, no. 2 (May 1973): 515–522.
3. "Understanding Closed-End Funds," Nuveen Securities, LLC, http://www.nuveen.com/CEF/Learn/Step2.aspx?topic=Leverage&part=2.
4. Erin Short and Rochelle Antoniewicz, "The Closed-End Fund Market, 2015," *ICI Research Perspective* 22, no. 2 (April 2016): 11–12.
5. Ibid.
6. Ibid.: 10.
7. Ibid.: 3.
8. Edwin Elton, et al., "Why Do Closed-End Bond Funds Exist? An Additional Explanation for the Growth in Domestic Closed-End Bond Funds," *Journal of Financial and Quantitative Analysis* 48, no. 2 (April 2013): 405–407.
9. Ibid.: 3.



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