



# INVESTING IN CLOSED-END FUNDS

## ADVANTAGES & RISKS

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### INTRODUCTION

Closed-end funds have become an increasingly popular investment vehicle over the last few years. While open-end funds experienced \$30 billion in outflows last year, over 60 new closed-end funds were launched — and attracted nearly \$18 billion in net assets. That is an incredible feat considering that assets in closed-end funds are less than 3% of the assets in open-end funds.

In light of the recent popularity of closed-end funds, we thought a manual on closed-end funds, discussing their advantages and risks, would be timely. We hope the manual will serve as a review for investors who already use closed-end funds, as well as an introduction to closed-end funds for investors who are not familiar with them.

### USING CLOSED-END FUNDS IN A PORTFOLIO

Closed-end funds, like all investment vehicles, should be used in the context of the client's overall portfolio. Investors sometimes allocate a specific percentage of their portfolio to closed-end funds, treating them as if they were an asset class in themselves. A better approach is for investors first to decide on an allocation to specific asset classes — for example, 20% in municipal bonds, 10% in international stocks, and so on. Then, investors should fill those asset-class baskets with appropriate investments, such as individual securities, closed-end funds, open-end funds, or unit investment trusts.

	Net Assets (in billions)	% of Total Net Assets
Municipal Bonds	\$68.7	47%
International Equity	\$18.6	13%
Domestic Equity	\$12.7	9%
Intermediate Taxable Bonds	\$11.3	8%
High Yield Bonds	\$8.1	6%
Long-term Taxable Bonds	\$7.2	5%
Preferred Equity	\$6.7	5%
Other	\$13.5	9%
Total Net Assets	\$146.8	100%

Source: Bloomberg, Wachovia Securities (data as of 3/1/03)

The selection of the most appropriate investment tool should depend on the risk/return profile of each security and the needs of each client. As shown in the table above, municipal bonds remain by far the most popular asset class for closed-end-fund investors. However, closed-end fund investment opportunities are also available in domestic and international equity, high-yield debt, and other asset classes.

With this range of asset class alternatives, closed-end funds can provide investment solutions for a variety of portfolio needs. However, we think closed-end funds are most appropriate for relatively sophisticated investors who are willing to take added risk in exchange for greater potential returns.

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## CHARACTERISTICS

As a registered investment company, a closed-end fund is a managed pool of securities that trades on an exchange. Unlike an open-end fund, or “mutual fund,” which issues new shares continually to investors who buy shares in the fund (and redeems shares continually from investors who sell), a closed-end fund has a fixed number of shares. Thus, in order to buy or sell shares of a closed-end fund, an investor must do so on an exchange, usually the New York Stock Exchange or the American Stock Exchange. The transaction costs for closed-end funds are the same as with stocks.

**Net Asset Value vs. Price.** The net asset value (NAV) of a closed-end fund is the value of the underlying securities in the portfolio, net of any liabilities, per common share outstanding. This definition is the same for closed-end and open-end funds. But unlike its open-end cousin, the closed-end fund also has a price: the value at which it trades on an exchange, which will not necessarily be the same as its NAV. Open-end funds, by contrast, are priced at NAV plus any sales charge, if applicable.

When a closed-end fund’s price is above its NAV, the fund is said to be trading at a premium. For example, if the price is at \$12 and the net asset value is at \$10, the closed-end fund is trading at a 20% premium. If the closed-end fund is trading at \$9.50 and its net asset value is \$10, then it is trading at a 5% discount.

**Underlying Assets.** Closed-end funds invest in most types of securities: domestic and foreign securities, equity and fixed-income securities, government and corporate securities, bonds and loans, taxable and municipal bonds. Most closed-end funds are perpetual; they do not have a termination date.

**Taxation.** As long as a closed-end fund distributes most of the income it earns or capital gains it realizes every year, the fund should maintain its tax status as an investment company and should not pay taxes. Distributions are taxed to the shareholder according to the source of the distribution. For example, a fund may distribute \$1.00 per share, of which 80% is derived from long-term capital gains and 20% is derived from net investment income (short-term capital gains, interest income and/or corporate dividend income). A shareholder would pay taxes on \$0.80 per share at the capital-gains rate and on \$0.20 per share at the income-tax rate. Closed-end funds rarely return capital. Returns of capital are not taxed, but the shareholder’s cost basis must be adjusted by the amount of returned capital.

**Leverage.** Many closed-end funds can leverage their assets (borrow money to buy additional assets) in order to enhance their yields. Leverage also increases risk. Among other things, leveraging the assets of a closed-end fund will magnify the volatility of its net asset value, and consequently the price volatility of the fund. (See Risks — Leverage on page 4.)

## ADVANTAGES

### FUNDS VS. INDIVIDUAL SECURITIES.

Like open-end funds and other pooled investment vehicles, closed-end funds offer several advantages over investing in individual securities. One of the major advantages of closed-end funds is the diversification they provide. As diversification increases, price changes of individual securities have less impact on the value of the overall portfolio. For higher-risk asset classes like stocks or high-yield bonds, diversification can significantly reduce overall risk. Funds typically allow individual investors to achieve far better diversification than can be achieved through the purchase of individual securities.\*

Funds also can offer a more frequent and regular stream of income. The regular distribution from a closed-end fund — usually quarterly or monthly — is generally more favorable for many investors than receiving income only twice a year from an individual bond.

A fund also allows individual investors to access asset classes previously available only to institutional investors, such as certain types of preferred securities, corporate loans and mortgage loans.

Income funds have more uncertainty regarding their dividends and principal relative to an individual bond. Assuming no defaults, the income stream of a bond, for example, is known in advance. The bondholder also knows with certainty how much principal will be returned at maturity (or call date, if callable). On the other hand, dividends and principal of a fund will fluctuate with the market.

### CLOSED-END FUNDS VS. OPEN-END FUNDS.

Closed-end funds offer several advantages over open-end funds — often because closed-end funds do not continually offer and redeem shares and therefore are not confronted with unpredictable flows of cash into and out of the fund.

For example, the closed-end fund structure is especially advantageous for asset classes where buying and selling individual securities can be difficult. Open-end managers, subject to daily redemption requests, might be reluctant to purchase securities that may be difficult to sell at a fair price on short notice. Closed-end fund managers, who do not need to worry about redemptions, have more opportunity to invest in less liquid securities that offer potentially higher returns — such as high-yield bonds, certain municipal bonds, corporate loans, emerging market equity and debt, and small-capitalization stocks.\*\*

\* Diversification cannot eliminate the risk of fluctuating prices and uncertain returns.

\*\* High-yield, non-investment grade bonds are only suitable for aggressive investors willing to take greater risks, which could result in loss of principal and interest payments. Stocks of small companies are typically more volatile than stocks of larger companies. They often involve higher risks because they may lack the management expertise, financial resources, product diversification and competitive strengths to endure adverse economic conditions.

Similarly, closed-end funds are immune from inopportune cash flows. When a specific market rises, assets tend to flow into that market. The portfolio manager of an open-end fund that receives cash from investors in such a market must either buy securities at increasingly higher prices or hold more of the fund's portfolio in cash. In other words, the portfolio manager of the open-end fund may be forced to buy high — not a good pattern for the investor.

Inopportune cash flows may also result in an open-end fund's earnings dilution, which can lead to a reduction in the fund's distribution. For example, if interest rates are declining, cash flowing into an open-end fund may force the portfolio manager to invest in lower-yielding securities (or hold the new assets in cash), diluting the fund's earnings rate and potentially causing a dividend cut. In contrast, a closed-end fund's portfolio manager can manage the fund's portfolio according to market conditions and the fund's strategy, without needing to contend with flows of cash into and out of the fund.

Not needing to offer shares on a continual basis means that closed-end funds typically have lower expenses. Closed-end funds are usually offered only once at their initial public offering (IPO) and are not actively marketed, unlike open-end mutual funds, and therefore generally have lower expenses. Higher fees can be a drag on a fund's long-term performance.

Finally, the fact that a closed-end fund trades on an exchange at prices different from the fund's net asset value gives investors the potential for additional returns. If a closed-end fund's underlying market rises and the fund's discount narrows or its premium widens, the price return of the closed-end fund — the actual return to the shareholder — will be greater than the fund's NAV return.

As described above, the structure of a closed-end fund poses many potential advantages over the structure of an open-end fund. However, it is crucial to understand the additional risks that are involved when investing in a closed-end fund, some of which are not present when investing in most open-end funds. For example, one of these risks is the potential volatility of a closed-end fund's price relative to the volatility of its NAV should premiums or discounts widen and narrow. Another risk is that most closed-end funds leverage their assets in the attempt to enhance their yield at the expense of increased NAV volatility. Liquidity is a risk that open-end fund investors do not need to be concerned with. The next section describes these risks, which are specific to the structure of closed-end funds, in more detail.

## RISKS

The potential for greater returns is of course accompanied by greater risks. This section describes those risks and compares the risks of closed-end funds to those of competing investment vehicles.

### PREMIUM/DISCOUNT RISK

Premium/discount risk refers to the risk that a closed-end fund's discount will widen or its premium will narrow — that its price will decline relative to its net asset value. This risk is not present for open-end funds, whose prices always equal their NAV.

Generally, demand for the type of asset class in which a closed-end fund invests will drive changes in and levels of premiums and discounts. Since, about two thirds of the assets in closed-end funds are sensitive to changes in interest rates, interest rate risk is one of two major factors that we have found triggers changes in premium/discounts. When interest rates rise, bond prices (and consequently the net asset values of income funds — municipal-bond funds, preferred-stock funds, etc.) decline. Declining bond prices may cause a closed-end fund's price to decline faster as investors sell their shares in the open market.

On the other hand, the opposite scenario also occurs. When rates fall and the net asset values of income-oriented closed-end funds rise, their prices tend to rise faster as investors buy in, resulting in narrower discounts and wider premiums.

A second factor that may contribute to changes in premium/discount without necessarily a change in net asset value is low trading volumes and liquidity in the shares of the closed-end fund. Most closed-end funds trade actively, and their shares are liquid. Some funds, however, trade less actively, and may not be very liquid. This can be an important factor in the premium/discount risk of these funds.

For example, several years ago the discount of a small single-state municipal fund suddenly widened significantly. There was no apparent explanation for the decline in price, such as an announcement of a dividend cut or other news, until it was revealed that a resident of that state had passed away and her estate was forced to sell the shares it held in the closed-end fund. Because the estate held a number of shares that was much greater than the average daily volume of the fund, the selling pressure caused the fund's price to fall and its discount to widen suddenly. The fund's low liquidity thus increased the fund's price volatility.

In summary, a fund's price and net asset value returns may differ significantly over the short term. These fluctuations can result in profits or losses for investors when selling their shares. In the long run, however, price and net asset value returns tend to converge.

## LEVERAGE

One of the most salient features that distinguish closed-end funds from other pooled investment vehicles is the ability of closed-end funds to leverage their assets (that is, use borrowed money to buy additional assets). Closed-end funds use several different methods to borrow money — issuing preferred stock, entering reverse repurchase agreements and dollar rolls, borrowing under bank lines of credit, and so on. Whatever the method of leverage, the impact on the fund is similar. Leverage can provide higher yields and potentially higher returns for closed-end fund investors, but it also increases overall risk and the volatility of the investment.

Table 1 illustrates how leverage can potentially enhance the yield of a fund. In this hypothetical example we compare two funds, the Leveraged Trust and the Unleveraged Trust. Both funds have net assets, or net shareholder equity, of \$100 million, and both are able to invest their assets at 8%. The Leveraged Trust, however, is able to borrow an additional \$50 million at a cost of 4%. Since the cost of borrowing for the Leveraged Trust is lower than the yield of its assets, the Leveraged Trust is able to yield 10% as compared to only an 8% yield for the Unleveraged Trust. That is a 25% yield enhancement created by leveraging a fund's assets!

**Table 1: Leverage Enhances the Yield of a Fund**

	Leveraged Trust	Unleveraged Trust
NAV	\$10.00	\$10.00
Net Assets	\$100 million	\$100 million
Leverage (Debt)	\$50 million	None
Total Assets	\$150 million	\$100 million
Income (8%)	\$12 million*	\$8 million**
Cost of Leverage (4%)	\$2 million***	\$0
Net Income	\$10 million	\$8 million
Yield on Net Assets	10%	8%

\* 8% of \$150 million in net assets.

\*\* 8% of \$100 million in net assets.

\*\*\* 4% of \$50 million of leverage.

### Increased NAV Volatility

Leverage can have a significant impact on portfolio volatility. If the underlying market is rising, leverage can enhance a closed-end fund's price appreciation; but if the underlying market is falling, leverage can magnify the fund's losses.

Table 2 compares the changes in net asset value as the underlying market changes for three hypothetical funds: an unleveraged fund, a moderately leveraged fund (33% leverage ratio), and a highly leveraged fund (50% leverage ratio). In a bull market, the highly leveraged fund outperforms; in a bear market, the unleveraged fund outperforms.

**Table 2: Leverage Magnifies Changes the Underlying Market**

Effects of a 10% Market Decline	Unleveraged Trust	Leveraged Trust	Highly Leveraged Trust*
Shares Outstanding	10 million	10 million	10 million
Beginning Net Asset Value (NAV)	\$10.00	\$10.00	\$10.00
Net Assets	\$100 million	\$100 million	\$100 million
Leverage Ratio	0%	33%	50%
Leverage	\$0	\$50 million	\$100 million
Total Assets (Net Assets + Leverage)	\$100 million	\$150 million	\$200 million
Total Assets After a 10% Market Decline	\$90 million	\$135 million	\$180 million
Less Leverage (unchanged)	\$0	\$50 million	\$100 million
Net Assets after 10% Decline	\$90 million	\$85 million	\$80 million
Ending NAV (Net Assets/# of Shares)	\$9.00	\$8.50	\$8.00
<b>% NAV Change</b>	<b>-10%</b>	<b>-15%</b>	<b>-20%</b>

  

Effects of a 10% Market Rise	Unleveraged Trust	Leveraged Trust	Highly Leveraged Trust*
Shares Outstanding	10 million	10 million	10 million
Beginning Net Asset Value (NAV)	\$10.00	\$10.00	\$10.00
Net Assets	\$100 million	\$100 million	\$100 million
Leverage Ratio	0%	33%	50%
Leverage	\$0	\$50 million	\$100 million
Total Assets (Net Assets + Leverage)	\$100 million	\$150 million	\$200 million
Total Assets after a 10% Market Increase	\$110 million	\$165 million	\$220 million
Less Leverage (unchanged)	\$0	\$50 million	\$100 million
Net Assets after 10% Increase	\$110 million	\$115 million	\$120 million
Ending NAV (Net Assets/# of Shares)	\$11.00	\$11.50	\$12.00
<b>% NAV Change</b>	<b>10%</b>	<b>15%</b>	<b>20%</b>

\* This fund would probably need to deleverage its assets after a 10% market decline, because its leverage ratio ended up above 50% (assuming that preferred stock is used to leverage the fund's assets). The above example is hypothetical and for illustrative purposes only. This example is not representative of any specific security, structure, or situation.

## Leverage Ratio

There is a limit on how much closed-end funds can leverage their assets. The maximum leverage ratio depends on how a closed-end fund leverages its assets — 33% if debt is used, 50% if preferred stock is used. Thus, a closed-end fund with \$100 million in net assets may borrow an additional \$50 million, so that the borrowed amount (\$50 million) is 33% of the total assets (\$150). Although the maximum is 50%, it is rare for funds that leverage their assets by issuing preferred stock to have a leverage ratio much higher than 40%.

Although closed-end funds rarely deleverage their assets completely, sometimes they are forced to reduce leverage. This occurs when the underlying market weakens dramatically, causing the fund's total assets to decline to a level where the leverage ratio exceeds the permitted maximum. (See Table 3.) A forced reduction in leverage can lead to a dividend reduction if the closed-end fund's earnings that had been produced by the previously leveraged assets decline.

**Table 3: The Effect of a Drastic Decline in Total Assets on the Leverage Ratio**

	Initial Position	If the Underlying Market (i.e. Total Assets) <sup>1</sup> Declines by 40%
Total Assets	\$150 million	\$90 million
Leverage Amount	\$50 million	\$50 million (remains unchanged)
Net Assets	\$100 million	\$40 million
Leverage Ratio	33%	56%

Leverage ratio is above maximum allowable limit. Fund must deleverage its assets.

## Changing Short-Term Interest Rates and Dividends

Leverage costs are usually tied to short-term interest rates. As a result, when short-term rates fall, leverage costs also decline, and the dividend of a leveraged fund tends to rise. Conversely, as short rates rise, the dividend of a leveraged fund tends to fall.

Table 4 shows how changing short rates affect the yield of a leveraged fund, assuming that the initial dividend of the Leveraged Trust is \$1.00 per share. If short rates, and consequently the cost of leverage, fall to 2% from our original example of 4%, then the Leveraged Trust earns more, in this case 11%. It could then raise its dividend by 10% to \$1.10 per share. Similarly, if the cost of leverage rises to 6% from the initial 4%, then the fund's earnings rate actually falls to 9%, and the fund may need to reduce its dividend by 10% to \$0.90 per share.

<sup>1</sup> For simplicity, we assume a perfect correlation between changes in a fund's underlying market and changes in its total assets.

**Table 4: The Effects of Changes in Short Rates on Dividends**

	Rates Unchanged	Rates Rise	Rates Decline
NAV	\$10.00	\$10.00	\$10.00
Net Assets	\$100 million	\$100 million	\$100 million
Leverage	\$50 million	\$50 million	\$50 million
Total Assets	\$150 million	\$150 million	\$150 million
Net Income (8%)	\$12 million	\$12 million	\$12 million
Short Interest Rate	4%	6%	2%
Cost of Leverage	\$2 million	\$3 million	\$1 million
Net Income	\$10 million	\$9 million	\$11 million
Dividend	\$1.00	\$0.90	\$1.10
Yield on Net Assets	10%	9%	11%

## Hedging the Cost of Leverage

In light of the damaging effect of higher short rates on a closed-end fund's dividend, a few funds have chosen to fix a portion of their cost of leverage for a longer period of time. However, locking in the cost of leverage for a fixed period of time (usually from one to seven years) is costly. Typically, the longer the lock-in period, the higher the total cost of leverage. Higher leverage costs mean lower fund yields — and, all else being equal, lower dividends. The benefit of locking in the cost of leverage is that rising interest rates will no longer necessarily reduce portfolio dividends. The fund accepts a lower dividend now in exchange for less risk of having to cut the dividend in the future.

## RIGHTS OFFERINGS

Unlike open-end funds, closed-end funds have only a limited number of ways they can raise assets. The first (and often only) time a closed-end fund raises assets is during its initial public offering (IPO). After the IPO, the most common (although not widely used) method to raise assets is by issuing rights to shareholders to purchase additional shares at a subscription price lower than the shares' price. A third option is a secondary offering, which can occur only if a fund is trading at a premium, as the subscription price must be above the fund's net asset value. Because a secondary offering must be canceled if the closed-end fund's premium becomes a discount, fund managers have generally preferred the second option — issuing rights.

A rights offering can involve either transferable or non-transferable rights. If the rights are transferable, shareholders may sell their rights on the market. Shareholders who sell their rights lose their right to participate and purchase additional shares below the market price. When rights are transferable, arbitrageurs often try to eliminate any inefficiency between the price of the closed-end fund's common shares and the rights (by selling the more expensive instrument and buying the cheaper one). This usually leads to greater volatility in the share price of the closed-end fund during its rights offering.

When new shares are issued at a subscription price below the fund's NAV, the NAV is reduced. Table 5 describes the dilutive effect of a rights offering on a closed-end fund's net asset value. The dilution will be greater if the ratio is high (2:1 or 1:1) and/or the subscription price is low (at a bigger discount to NAV.)

**Table 5: Net Asset Value Dilution During a Typical Rights Offering<sup>2</sup>**

Initial Net Asset Value	\$10.00
Current Price	\$9.00
Pre-Offering Discount	10%
Ratio	3:1 (one right per existing share, and three rights will buy one new share)
Subscription Price	\$8.10 (the lower of 90% of price or NAV at the end of the subscription period)
NAV adjusted for the rights offering <sup>3</sup>	\$9.53
Price if Previous Discount Remains	\$8.57
Price Change Due to Rights Offering	-4.8%

There are several reasons why a closed-end fund issues rights.

- Management wants to reduce the fund's overall expense ratio. Additional assets would allow the fund to spread its fixed expenses over a larger pool of assets, reducing the expense ratio. (The costs of the rights offering, however, may actually temporarily increase the expense ratio.)
- Management may think it is timely to add new assets to the portfolio — if, for example, it believes the fund's underlying market is undervalued.
- The fund may need to raise additional assets in order to invest them in higher-yielding securities than are currently held in the portfolio. Increasing the earnings yield of a fund minimizes the risk that the fund will need to reduce its dividend.
- Management may want to replenish a fund's assets following a distribution of capital gains.

Some investors have criticized rights offerings as coercive. Indeed, rights offerings do force shareholders to act — either to participate in the rights offering or to sell their shares

<sup>2</sup> We assume the closed-end fund's underlying market remained stable and the changes in net asset value and price occur solely due to the rights offering.

<sup>3</sup> For simplicity's sake we are ignoring any expenses associated with offering the rights, which would tend to increase the net asset value dilution.

<sup>4</sup> If shareholders do not act upon a rights offering, the shareholder's investment will only suffer the negative effect of a rights offering — NAV dilution — without benefiting from buying the shares lower or at least selling the rights (if they are transferable).

<sup>5</sup> Duration is the weighted average maturity of all income flows from a bond, from purchase through final maturity.

to minimize dilution if they prefer not to participate.<sup>4</sup> The price of a closed-end fund tends to decline during a rights offering in anticipation of the resulting NAV dilution.

### LIMITED INFORMATION

Unlike open-end funds, closed-end funds do not offer shares continuously. A closed-end fund issues a prospectus only at its initial public offering. After that, the fund is required to publish semi-annual and annual reports. Some more shareholder-friendly managers also publish quarterly reports and more frequent updates online.

Unfortunately, key information that would describe a closed-end fund often is not provided in an annual or semi-annual report. For example, annual reports for some high-yield closed-end funds do not provide a simple table with information on the credit quality of the high-yield bonds in the portfolio. In addition, too many interest-rate-sensitive funds do not provide duration data, which would indicate how sensitive the portfolio is to interest rates.<sup>5</sup> (See "Risks of a Closed-end Fund's Underlying Assets — Interest-Rate Risk" below.) Furthermore, most leveraged closed-end funds publish duration figures that do not include the effect of leverage.

On the other hand, some fund companies do a much better job of providing timely and informative data on their funds. Fortunately, more and more fund companies are introducing Web sites or improving the information they make available online.

### RISKS OF A CLOSED-END FUND'S UNDERLYING ASSETS

The risks related to its structure are not the only risks affecting a closed-end fund. There are also the inherent risks of the underlying assets in which a closed-end fund invests. Although a complete discussion of the risks is beyond the scope of this manual, the following sections briefly describe the key elements of these risks as they relate to closed-end funds.

#### INTEREST-RATE RISK

Many investors find the relationship between the price of a bond and interest rates counterintuitive because it is an inverse relationship: the price of a bond declines if interest rates rise, and vice versa. The explanation behind this relationship is fairly simple: When interest rates rise, new bonds are issued into the market with higher yields than older securities already trading in the market. This makes the older securities worth less to investors, and the prices of the older securities decline. The opposite occurs when rates decline: new bonds are issued into the market with lower yields than older securities. This makes the older securities worth more to investors, and their prices rise.

### The Effect of Interest-Rate Risk on a Closed-End Fund.

The longer the maturity of a bond, the greater is its interest-rate risk. An even better indication of a bond's interest-rate sensitivity is its duration. In simple terms, a bond with a 5-year duration should theoretically decline by 5% when interest rates rise by 1%, and vice versa. Thus, the average duration of the bonds in a closed-end fund's portfolio is generally the main factor in evaluating the interest-rate risk of the closed-end fund. If a closed-end fund is leveraged, it is important to adjust duration to take leverage into account, creating a more realistic statistic to evaluate the interest-rate sensitivity of the fund. Interest-rate risk is the main risk among funds that invest in government securities and investment-grade corporate bonds.

### CALL RISK

Some bonds give the issuer the right to retire (that is, redeem or "call") the bond, fully or partially, before the scheduled maturity date. The main benefit of a call feature for the issuer is that it permits the issuer to issue a new bond at a lower interest rate (if interest rates decline) to replace the higher-cost outstanding debt.

A bond's call feature creates a cash-flow uncertainty to the bondholder: will the bond's interest payments remain stable until its maturity, or will they end on the call date? Bonds are typically called when interest rates have dropped considerably since the bond was issued, because the issuer is able to refinance at a lower rate. But the bondholder is forced to reinvest at a lower rate.

To compensate bondholders for this risk, callable bonds generally have higher yields than comparable non-callable bonds. In addition, in order to entice investors to buy callable bonds, issuers often set the call price (the price at which the bond will be called) higher than the bond's par value (the difference is referred to as a call premium.)

### The Effect of Call Risk on a Closed-End Fund.

A closed-end fund with significant call risk faces the same issues as an investor holding a callable bond. As the bonds in the closed-end fund are called, the portfolio manager is forced to reinvest the proceeds at lower yields. This reduces the earnings rate of the closed-end fund, which can result in a dividend cut.

However, closed-end funds with significant call risk have shorter durations and therefore are less sensitive to interest rates. If interest rates rise, the net asset value of such a fund will decline less than that of a fund with less call risk, and vice versa.

Call risk is a major risk among closed-end funds that invest in municipal bonds. Other types of closed-end funds, such as corporate-bond and preferred funds, also experience call risk.

Mortgage-backed securities experience a similar risk — accelerated prepayment speeds. As interest rates decline, mortgagors are more likely to prepay their mortgage loans when they refinance. On the other hand, the life of a mortgage-backed security may turn out to be longer than anticipated, if prepayment rates are slower.

### CREDIT-QUALITY RISK

A bond's credit quality indicates the ability of its issuer to pay interest and principal in full and on schedule. Rating agencies such as Standard & Poor's, Moody's Investors Service, Fitch IBCA and Duff & Phelps Credit Rating assign credit-quality ratings to bonds as shown below.

CREDIT RISK	Moody's	Standard & Poor's	Duff & Phelps/ Fitch IBCA
<b>INVESTMENT GRADE</b>			
Highest quality	Aaa	AAA	AAA
High quality (very strong)	Aa	AA	AA
Upper medium grade (strong)	A	A	A
Medium grade	Baa	BBB	BBB
<b>NOT INVESTMENT GRADE</b>			
Lower medium grade (somewhat speculative)	Ba	BB	BB
Low grade (speculative)	B	B	B
Poor quality (may default)	Caa	CCC	CCC
Most speculative	Ca	CC	CC
No interest being paid or bankruptcy petition filed	C	D	C
In default	C	D	D

Source: Bond Market Association.

"Investment grade" bonds are rated BBB or higher by Standard & Poor's, Fitch IBCA, and Duff & Phelps, and Baa or higher by Moody's. "Speculative," "junk" or "high-yield" bonds are rated BB or lower by Standard & Poor's, Fitch IBCA and Duff & Phelps, and Ba or lower by Moody's. The issuers of high-yield bonds are commonly new companies, companies that have financial problems, and companies in particularly competitive or volatile markets. High-yield bonds are riskier, and therefore pay higher interest rates, than investment-grade bonds.

### The Effect of Credit-Quality Risk on Closed-End Funds.

Defaults of bonds held in a closed-end fund typically will cause its NAV to decline and may result in a dividend reduction. When a bond defaults, its price typically deteriorates and may fall all the way to zero. Consequently, the NAV of a closed-end fund will also deteriorate if some of the bonds it holds default. In such a case, the closed-end fund also stops accruing income from defaulted bonds. This causes the fund's earnings rate to decline, potentially leading to a dividend cut.

Credit risk is the main risk for high-yield bond funds. These funds invest in companies with lower-than-average credit quality, and therefore experience a much higher rate of defaults within their portfolios than do funds that invest in higher-quality securities. However, recent years have seen significant defaults among bonds that once carried investment-grade ratings, and some investment-grade funds experienced losses as a result. Municipal-bond funds can also carry default risks. While defaults among general-obligation municipal bonds are quite rare, lower-quality revenue bonds and other credit-sensitive municipal securities carry appreciable risks of default.

#### **RISK OF NAV EROSION**

Sometimes a portfolio manager may buy a fixed-income security at a premium to the bond's face value. The bond trades at a premium because its coupon (interest rate) is above the market rate for similar securities. If the bond's entire coupon is paid out in the fund's dividend, then over time the net asset value of the fund will decline, because the premium on the bond declines as it approaches maturity (at maturity the market price of a bond equals its face value). The declining premium lowers NAV. Thus the fund enjoyed a higher payout over the life of the bond, but at the expense of an erosion in the NAV of the portfolio. NAV erosion is most frequent among government and investment-grade corporate bond funds.

#### **EQUITY RISK**

Common stock holds the last priority in the capital structure of a company. It therefore takes the largest share of a company's risk and its accompanying volatility. Generally, stocks tend to experience higher volatility than fixed-income securities.

A number of closed-end funds invest exclusively in one sector or industry group and therefore are exposed to concentration risk. Such sector or industry closed-end funds are less diversified than general equity funds, which invest in a number of sectors and industry groups. This concentration reduces diversification, increases volatility, and results in a higher risk for the investor.

#### **RISKS OF INVESTING ABROAD**

Two of the main risks of investing abroad are currency risk and political risk.

The currency risk of investing in non-dollar-denominated securities is the risk that the relevant local currency will lose value relative to the U.S. dollar. In other words, if a U.S. investor buys a security denominated in a foreign currency and the currency weakens relative to the dollar (even though the value of the security in the local currency remains stable), the value of the security to the U.S. investor declines.

#### **The Effect of Currency Risk on a Closed-End Fund.**

The net asset value of a closed-end fund holding non-U.S.-denominated securities will decline if the local currency weakens. Furthermore, if a closed-end fund is exposed to a foreign currency and that currency weakens, the fund may need to offset its income with currency losses, possibly resulting in a return of capital to investors.

Political risk is the potential deterioration in a security's value due to changes in a country's political structure or policies, such as tax laws, expropriation of assets, or restriction in repatriation of profits.

For more information on closed-end funds and how they may fit into your portfolio, contact your Financial Advisor.



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