Closed-end muni funds share a popular tax-free-income theme with their open-end cousins, but they have their own wrinkles, including discounts and leveraged investing.

Fixed-Income Investing: Analyzing Closed-End Municipal Bond Funds

By Albert J. Fredman

Tax-free income is nice. But putting together a portfolio of individual bonds in the heterogeneous $1.2 trillion municipal market is not recommended, unless you're investing a substantial amount and know the ins and outs of the market. That's why open-end muni bond funds have been so popular. But with their quirky closed-end cousins, you can sometimes buy a dollar's worth of selected munis for 90 or 95 cents. Another difference is that many of the funds are leveraged. Managers borrow so that they can invest more money. The leverage can offer you a higher yield, albeit at greater risk.

Exchange-traded municipal bond funds debuted in June 1987, with the initial public offering (IPO) of Nuveen Municipal Value Fund (trading symbol: NUV). Nuveen raised $1.6 billion from its IPO, making it the largest public offering at that time. The timing couldn't have been better, and many closed-end muni offerings followed in the late 1980s and early 1990s. Their generous yields attracted investors and at year-end 1996, with total net assets at $43.26 billion, the category comprised 30% of the closed-end universe, according to Lipper Analytical Services.

Table 1 tracks the median annual total returns and median year-end premiums and discounts of the closed-end muni fund universe since inception using Lipper data. The number of funds in existence for each full calendar year also is listed. Because most of these funds are leveraged, the group fared particularly well when interest rates declined.

A surprising variety of national and state-specific funds exist. State portfolios accounted for 105 of the 204 closed-end muni funds at year-end 1996. As seen in Table 2, they cover 19 states, with California and New York having the greatest number. You also can find some high-yield and insured funds. Portfolio sizes range from assets of less than $50 million to $2 billion for Nuveen Municipal Value. The median expense ratio for the closed-end muni group is 0.75%, which is below the 0.92% median figure for their open-end counterparts, according to Lipper.

These funds will provide a monthly payment stream or, if you prefer, most will reinvest your dividends. And if the fund trades at a discount, your reinvestment price will be below its net asset value. Closed-end muni funds are relatively complex, however. Not only are they more complicated than their open-end siblings, they arguably are the most complex of the closed-end fund categories. Nevertheless, bargains can exist if you know how to spot them.

In addition to Nuveen, BlackRock, Dean Witter, Merrill Lynch, Putnam, and Van Kampen American Capital are among the major sponsors of closed-end muni funds. Nuveen, which has the largest number, merged more than two dozen of its muni portfolios with similar objectives such as those investing in a specific state. At one point, it had 84 closed-end funds versus 57 at this writing. The purpose was threefold: to reduce expenses through economies of scale, to increase trading volume thereby improving liquidity, and to create a portfolio that's easier to manage.

Municipal bonds can be an excellent diversifier for an equity portfolio, particularly in volatile stock markets. In addition, bonds are fairly attractive today given the prospects of lower returns on U.S. equities in the wake of their stellar performance since 1982.

Many people can benefit from tax-free income. Your pretax-equivalent yield will indicate what advantage (if any) a tax-exempt bond fund would have compared with a taxable bond portfolio of comparable risk. Table 3 explains how to make the calculations.

Closed-End vs. Open-End Funds

Closed-end muni funds have several distinguishing features compared to their open-end relatives:

- *They have characteristics of both a stock and a muni-bond portfolio.* They appeal to traders who like to watch for opportunities to pick up shares at a good discount and sell them at a narrower

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Table 1.
Yearly Total Returns and Year-End Premiums or Discounts of Closed-End Municipal Bond Funds*

Year	NAV Total Returns (%)	Year-End Premium (+)/ Discount (–) (%)	No. of Funds
1996	4.02	–6.3	204
1995	22.79	–10.9	203
1994	–9.76	–9.9	199
1993	16.06	–3.9	140
1992	10.78	+1.0	81
1991	13.29	+3.1	50
1990	6.29	+0.5	39
1989	9.81	+1.0	23
1988	11.43	+3.9	10
1987	0.75	–1.7	2

*Returns and premiums/discounts are median values.
Source: Lipper Analytical Services Inc.*

markdown or a premium.

- *The majority have leveraged portfolios.* Dividend yields can easily be leveraged, as I'll explain. Leveraged muni funds can produce higher dividends than unleveraged funds. But they are riskier because leverage is a double-edged sword.
- *They don't have to sell bonds to meet redemptions.* This gives them an advantage during weak markets with rising interest rates. Liquidity often dries up in the muni market when conditions sour, making the closed-end fund structure particularly appropriate.
- *They can be more fully invested.* Closed-end managers need not maintain a cash cushion to meet redemptions. By being more fully invested they may be able to generate slightly higher returns.
- *They have less investment liquidity*. Their prices bob up and down during the day in response to investor buying and selling. A large market order to buy or sell could push the fund's price up or down, resulting in a poor execution. Conversely, with an open-end fund you can buy or sell a large amount at that day's net asset value.

Understanding Leverage

The vast majority of closed-end muni portfolios leverage their common shares with municipal auction-rate preferred stock—in other words, the fund actually issues shares of preferred stock and, in fact, individual investors can buy muni preferreds (see accompanying box at the end of this article). The preferred issue commonly amounts to about one-third of the fund's total capitalization, but it may exceed 40%. The objective is to enhance yield and total return. In essence, money is borrowed at relatively low short-term rates and invested at higher long-term rates. The proceeds of the preferred issue are invested in additional long-term municipals. The municipal yield curve generally slopes steeply upward—in other words, interest rates rise steeply with maturity—so the strategy normally is profitable. For example, if the "embedded" yield on the fund's long-term holdings is 6% and the preferred costs 3.5%, shareholders benefit from a spread of 250 basis points (600 basis points – 350 basis points; 1 basis point is 0.01%).

The dividend rate on the muni preferred is pegged to short-term interest rates. The shares normally have very short maturities, such as seven or 28 days. When an issue of preferred matures, a new one immediately replaces it at the current interest rate. So if short-term rates are trending up, the preferred would be rolled over at successively higher rates, which can pose problems.

Leverage affects a closed-end muni fund in the following ways:

- Dividends are higher than normal.
- Dividend cuts can occur if interest rates rise and push up borrowing costs.
- Fluctuations in net asset value returns are magnified.
- Wider swings in premiums and discounts occur.

Table 4 illustrates the impact of favorable leverage on the dividend yield of a hypothetical $300 million portfolio with a $100 million preferred issue, which amounts to the typical 33% leverage. The common shareholders earn 7.25% before expenses, even though the fund's embedded yield is only 6% due to the extra yield on the borrowed amount. These rates were representative of the muni yield curve at this writing.

Because of their sizable tax-free yields, leveraged muni funds proved exceedingly popular from the late 1980s through 1993, a period of falling interest rates. Some funds distributed special or supplemental dividends resulting from the favorable leverage. Premiums were widespread.

Table 5 compares the average net asset value returns of non-leveraged and leveraged national muni funds over the past four years, based on an analysis done by Mariana Bush at Everen Securities. The younger muni funds with inception dates since 1990 are more interest-rate sensitive than their predecessors, primarily due to their lower coupons. With their higher-coupon

Table 2.
States Covered by State-Specific Closed-End Municipal Bond Funds*

Arizona (3)	Georgia	Missouri	Pennsylvania (8)
California (27)	Maryland	New Jersey (8)	Texas
Colorado	Massachusetts (3)	New York (21)	Virginia
Connecticut	Michigan (5)	North Carolina	Washington
Florida (12)	Minnesota (6)	Ohio (3)	

*Indicates the number of funds available if more than one invests in the state.
Source: Lipper Analytical Services Inc.*

bonds, the older funds have shorter durations, making them less interest sensitive. (Duration is a more sophisticated measure of a bond fund's interest rate sensitivity than its average maturity, taking into account all income flows over time. For example, if rates surge by one percentage point, a portfolio with a duration of 10 would fall in value by about 10%; a portfolio with a duration of five would drop by only half as much, or 5%.)

When there's a bull market in bonds (that is, a period of falling interest rates) as in 1993 and 1995, a leveraged fund's gains are amplified. An ideal scenario would be a time of falling short- and long-term rates. The lower short-term rate would enhance investors' dividend income due to lower interest costs for the preferred, while falling long-term rates boost net asset value. The strategy also enhances returns when rates are stable and the yield curve slopes upward, which it always has in the muni market. The lower the short-term rate relative to the embedded yield, the better.

The Double-Edged Sword

Rising short-term rates will eat into a leveraged portfolio's income. Referring to Table 4, the profit from the leverage is erased if the 3.5% preferred yield should rise to the 6% embedded yield. However, managers who anticipate rising rates can extend the maturity of their preferred, locking in current rates for longer time periods. If short rates were to climb above the embedded yield, leverage reduces the net income. But unlike in the U.S. Treasury market, where the short rates occasionally top long rates, an inverted yield curve hasn't been witnessed in the tax-exempt market due to a persistent structural scarcity of short-term borrowing.

Another problem is that bond prices decline if long-term rates ratchet upward, which leads to a decline in net asset value—a decline that is amplified in a leveraged fund. This decline is particularly pronounced with long-duration portfolios, which face greater interest-rate risk. Under extreme circumstances the fund can try to minimize the problem by deleveraging, or calling in the preferred at par, but long-term bonds would have to be sold at a loss to raise the needed money.

When rates spiked upward in late 1993 and 1994, the funds' net asset values were adversely impacted and their shares slumped to double-digit discounts, as fear set in. As evident in Table 5, double-digit net asset value declines were common among the leveraged portfolios in 1994. Share price losses were greater, as discounts to net asset value deepened. Thus, if interest rates rise sharply, leveraged muni investors face a triple whammy—reduced dividends, falling net asset values, and deepening discounts.

Table 3.
Determining Taxable-Equivalent Yields

The pretax-equivalent yield on a national muni portfolio, holding bonds from a variety of states, is found as follows:

$$\frac{\text{Yield on national muni fund}}{(1.00 - \text{federal tax rate})} = \text{Taxable equivalent yield}$$

Example: If a national fund yields 6% and you are in the 31% federal bracket, your pretax-equivalent yield is:

$$\frac{0.06}{(1.00 - 0.31)} = 8.70\% \text{ Taxable equivalent yield}$$

If you invest in a home state muni fund your pretax-equivalent yield is computed as follows:

$$\frac{\text{Yield on state muni fund}}{(1.00 - \text{federal tax rate})(1.00 - \text{state tax rate})} = \text{Taxable equivalent yield}$$

This calculation assumes that state muni interest is tax-exempt and that state taxes are deducted on your federal return.

Example: With a 31% federal and an 8% state tax rate, a 5.7% yield on a state muni fund would provide:

$$\frac{0.057}{(1.00 - 0.31)(1.00 - 0.08)} = 8.98\% \text{ Taxable equivalent yield}$$

Older Funds May Face Call Risk

Long-term munis typically have 10 years of call protection. Because the closed-end funds began to go public in 1987, the older portfolios have started to experience calls, which can cut down their often-juicy dividends. Interest rates were higher in the late 1980s than now, so the bonds will be refunded by municipalities seeking to reduce financing costs.

Managers deal with call risk in different ways. One alternative to standing pat would be to replace a high-coupon callable issue with a newer lower-yielding, call-protected issue. This strategy would lead to a reduced dividend for the fund and a realized capital gain on the sale of the callable bond. Because investors dislike both of these consequences, they may sell their shares, causing discounts to deepen.

The newer funds that went public since 1991 hold lower-yielding bonds with more call protection. Investors have bid these portfolios down to discounts so that they will yield more. These funds are more sensitive to interest-rate fluctuations than the older portfolios that have held onto their high-coupon issues, because they have lower coupons that result in greater durations. They would do well if interest rates decline but could fare worse than older, higher-yielding funds if rates rise.

Table 4.
The Impact of Favorable Leverage on Dividend Yield

Closed-End Fund Capital Structure:		
Common	$200,000,000	
Preferred	100,000,000	[3.5% cost]
Total portfolio	300,000,000	[6% embedded yield]
Investment Results:		
Earnings on portfolio	$18,000,000	[6% of $300 million]
Preferred dividend	3,500,000	[3.5% of $100 million]
Earnings *less* dividend	14,500,000	[Ignoring expenses]
Dividend yield on common	**7.25%**	**[$14.5 million/$200 million]**

Unique Twists

The closed-end muni fund universe is large and diverse. In addition to garden-variety state and national funds, you can find small groups of funds featuring unique twists.

Fixed-portfolio funds. Nuveen introduced the fixed portfolio closed-end muni fund in 1992. These passive portfolios have a very low turnover, but will replace bonds that are called as well as issues that deteriorate in credit quality. The trading symbols of the Nuveen Select funds with this structure are: NXP, NXQ, NXR, NXC, and NXN. The last two listed are California and New York portfolios, respectively. None of the five Selects are leveraged. They all expect to liquidate in 20 to 25 years after their inceptions—but not later than 2017—at net asset values that are expected to be about $14.50 or $14.75 in the year 2017.

Municipal term trusts. Funds in this small group have a maturity date when they liquidate and expect to return a projected amount, such as $10 a share, to their holders. Term trusts are usually leveraged and hold some zero-coupon bonds to facilitate the return of the projected amount upon liquidation. These trusts are relatively complex and may use sophisticated hedging strategies. BlackRock offers several term trusts.

High-yield funds. A small group of closed-end funds invest in the fairly illiquid muni junk market. These funds tend to have less sensitivity to interest rate changes because of their higher-coupon bonds and shorter durations. As they can be good holdings during periods of rising rates, they fared better than the other closed-end muni funds during 1994, when rates spiked upward. Apex Municipal, Colonial High-Income Municipal, Kemper Strategic Municipal Income, and Municipal Income Opportunities are illustrative of the high-yield products.

Finding a Fund

Muni bond portfolios differ in subtle ways and it's important to know what you're buying. You can get the information needed to do this analysis from Morningstar, Standard & Poor's, or from brokerage firms that research these investments. The latter include Dean Witter, A.G. Edwards, Everen Securities, Merrill Lynch, Smith Barney, PaineWebber, and Prudential Securities. Morningstar's Principia for Closed-End Funds software covers 201 closed-end muni funds and the printed Morningstar Mutual Funds covers 25. Because closed-end funds are exchange-traded stocks, you can find profiles of them in Standard & Poor's Stock Reports. Finally, you can get useful information such as shareholder reports and current data by calling the fund itself. [For details on closed-end bond fund information, see the Reference Shelf on page 23].

Here are a dozen key questions to ponder if you decide to shop in this arena.

• *Do you want a state or a national portfolio?* The former frequently offer better taxable equivalent yields for residents of high-tax states. A potential disadvantage, however, is that they have less diversification than national funds.

• *How much interest-rate risk can you tolerate?* Longer durations mean greater interest-rate sensitivity. Durations of closed-end muni funds range from about four to 12 years. Values of eight or more reflect high interest-rate risk. Long durations coupled with leverage make for higher volatility. Most funds should be able to supply reasonably current duration information by phone.

• *Do you want leverage?* Unleveraged portfolios are available for those seeking lower risk. The danger of leverage increases when the probability of rate hikes becomes high.

• *What's the call risk?* Call risk is a big issue with any kind of investment in bonds, but the muni funds that came to market prior to 1991 can be impacted more than the newer funds because the former may have a large slice of their assets in older, high-coupon issues.

• *Is there sufficient diversification?* With a national fund, determine the percentages of its assets allocated to its top five states. Too much in one or a few states may be a red flag. Likewise, be

Table 5.
Average NAV Returns of Closed-End Municipal National Funds

	1993	**1994**	**1995**	**1996**
Type of market	bull	bear	bull	mixed
Non-leveraged muni funds	14.6%	–5.6%	19.3%	4.1%
Leveraged muni funds	19.0%	–12.9%	26.8%	4.8%

Source: CDA/Wiesenberger and Everen Securities.

sure there is sufficient sector diversification.

• *Are there significant AMT holdings?* Find the percentage of the portfolio held in alternative minimum tax (or AMT) bonds. AMT bonds generally offer higher yields, which are attractive to most investors who aren't subject to the AMT.

• *What are the expenses?* Deep discounts on closed-end funds don't guarantee value. Some funds have expense ratios that are well in excess of 1.0%.

• *What's the yield?* This is a telling indicator. A high-yielding portfolio could have some of the following attributes: call risk, a long duration, leverage, derivatives, lower-quality issues, or substantial amounts of AMT bonds. Finally, low expense ratios lead to higher yields.

• *What is the sustainability of the dividend?* Find out how much of the dividend is coming from the leverage factor. If interest rates move up, the dividend on a leveraged fund may be reduced. In addition, the dividend is at risk if the fund holds a preponderance of bonds than could be called. Finally, if the fund has dividend reserves built up from earlier in the year, it would be better able to temporarily cope with factors such as the above.

• *What's the quality?* The larger the proportion of bonds with single-A and triple-B ratings (and below), the greater the credit risk. A large stake in non-rated issues is not necessarily cause for concern if the management has a good track record, since value often exists in smaller, under-researched issues.

• *Should you go for insurance?* The insured funds hold bonds that are protected against credit risk. But this feature probably isn't necessary if you're investing in a well-diversified, high-quality portfolio. Because the insurance coverage has a cost, insured funds yield a bit less than otherwise comparable uninsured funds. In addition, insurance won't shield you from interest-rate risk.

• *Is the value there*? Examine the fund's discount relative to its levels over the past year or so and the current discounts of its peers. Timing is important, especially if you're making a fairly large commitment. Longer duration portfolios may trade at deeper discounts.

Trading Considerations

Because closed-end funds are less liquid than mutual funds, it's important to make sure you receive a good execution when buying or selling shares. This is particularly true if you want to buy or sell a fairly large number of shares relative to the fund's average daily volume. The best way to ensure this is to use a limit order, trying to buy at the bid or sell at the asked. Avoid market orders because you normally will end up buying at the asked or selling at the bid. You need to be patient because it can take some time for an order to be filled. If you're not in a hurry, you can try for an even better price by placing a limit order an eighth of a point or so below the bid or above the asked, as the case may be. Getting a good price will give you a better yield.

Of course, some closed-end funds are more liquid than others. For instance, a fund that targets a state with a smaller market, such as Georgia or Washington, would tend to trade less and have less liquidity than a national portfolio. The higher the average daily volume of a fund, the greater its liquidity. You also can ask your broker for the so-called "size" in the quote to determine the number of shares being bid for and offered. A large size also points to more liquidity.

Conclusion

Closed-end muni bond funds can offer interesting opportunities for investors willing to do some extra research and who understand the added risks.

It's often wise to own more than one muni fund to broaden your diversification, especially if you're allocating a significant slice of your assets to tax-free investments. By holding several funds you can diversify durations, credit quality, and portfolio manager styles, thereby hedging against possible adverse changes in the muni market and fixed-income securities in general.

Buy closed-end muni funds only when the value is there. The most important consideration is to find a fund that fits your risk profile. Then, look for discounts of at least 5% on well-managed funds with below-average expenses and relatively attractive yields.

Investing in Auction-Rate Muni-Preferred Stock

Even though the muni-preferred market amounts to more than $16 billion, this investment is not well-known. Auction-rate muni-preferred stock, issued by many closed-end municipal bond funds, may be a good alternative to a tax-free money-market fund for individual investors. Of course, the $25,000 minimum investment for the former exceeds the typical entry fee of $3,000, or less, for the latter. And you don't have the usual fund shareholder services, either.

You pay no commissions for the highly liquid seven-day paper, which yields 25 to 30 basis points more than the average tax-free money fund, because fund expenses are not netted out of your return. You can buy muni preferreds through major warehouses and some discounters, including Schwab and Fidelity.

Nearly all muni preferreds have triple-A credit ratings. That's because there's virtually no credit risk since every dollar of muni preferred is backed by at least two dollars of the fund's bonds. Issuers reset their rates in periodic auctions so you can benefit if rates are climbing. The reset period is seven days, though longer-term issues increase when managers expect higher interest rates and want to lock in the current rate. Muni-preferred interest is tax-exempt at the federal level and also may be state tax-exempt if you find the right issue for your state.