CHAPTER FOUR

Structuring, Pricing, and Executing Municipal Debt Products

(31 questions out of 100 questions)

Issuing municipal bonds is a complex process. The first step is to determine the structure of the issuance—will it be a term or serial bond? Will it be a public offering or a private placement?

In a competitive bidding process, the financial advisor helps the issuer determine the structure of the bonds before the issuer chooses an underwriter. If the issuer chooses a negotiated bid, it will select an underwriter earlier in the process, and the underwriter will help determine the structure and other aspects of the offering.

After the bond is issued, interest rates might drop or issuers might want to rid themselves of certain restrictions in the bond covenant. In these cases, issuers might refund the bond or redeem it early. The call features that allow issuers to redeem bonds early could save the issuer money in the long run, but they tend to make the bond less appealing to investors.

Most municipal bonds are tax-free, which is part of their appeal to investors, but a variety of other factors affect the marketability of a bond and make an issue more or less likely to attract the interest of investors. These factors are covered in this chapter.

4.1. DEBT SERVICE STRUCTURE

New issues of municipal bonds may be structured to mature in one of two ways:

1. Term bonds are those in which the entire issue is scheduled to reach maturity on the same date and offers a single interest rate. A city that issues a $100 million bond with a maturity of 10 years will repay the entire $100 million principal when the bond comes due. Term bonds are generally quoted in dollars or as a percentage of par (in bond points).

2. A serial bond is a bond issue that matures at regular intervals over a specific time period. For example, a $100 million serial bond might have $10 million due each

year of the bond's 10-year life. The bonds with a shorter term pay a lower interest rate than bonds with a longer term. Serial bonds are typically quoted by yield.

Term bonds sometimes require that the issuer make periodic payments into a sinking fund to be assured that the issuer will have the required funds when the principal comes due. As long as the bonds are callable, term bonds give the issuer the ability to redeem the bonds early if it chooses.

Serial bonds have the advantage of reduced interest payments over the life of the bond. As the principal is paid off with its scheduled redemptions, the reduced principal provides a corresponding reduction of interest payments. However, serial bonds often do not allow the issuer to redeem bonds whenever it chooses. Redemption is typically on a fixed schedule and repurchase must be made at par.

Serial bonds are often used for projects that have predictable income or payment streams. A toll road, for example, has consistent revenue streams as each phase of a highway is completed. Power plants, too, may come online in stages. As projects begin to generate more revenue, each portion of the issue can be successfully redeemed.

Typically, a serial bond is sold as a block to the underwriting syndicate. A syndicate splits the issue into individual strips that are marketed separately. The advantage for the underwriter is that it can get a higher price for the entire issue by selling each strip to the investors who want that maturity the most. The advantage for the issuer is that it can tailor the retirement schedule to its cash flows, and its overall interest payments will be less than with a term bond.

Term Bonds vs. Serial Bonds

Term bonds	• Entire issue matures on the same date • More likely to have a sinking fund • More likely to be redeemed early • Usually quoted in dollars or bond points
Serial bonds	• Maturities are staggered over the life of the bond • Less likely to be redeemable • Better for projects with predictable income • Usually quoted in yield

SUMMARY

EXERCISE

ANSWER THE FOLLOWING QUESTIONS.

1. **Which is likely to have lower average interest payments over the life of the bond, term bonds or serial bonds?**

2. **Which is more likely to have a sinking fund, term bonds or serial bonds?**

ANSWERS

1. **Serial bonds.** As the principal is paid down over the life of the issue, there will be a corresponding decrease in interest payments.

2. **Term bonds.** The sinking fund helps the issuer to have the required cash on hand when the bonds mature. Because the principal is paid down over the life of a serial issue, a sinking fund is less necessary.

4.2. EARLY REDEMPTION OF MUNICIPAL BONDS

Redeemable bonds are bonds that may be retired prior to the bond's maturity date by the issuer. Bonds are redeemed at a price specified in the bond (usually its face value) together with accrued interest. Their redemption may be optional or mandatory.

4.2.1. CALLABLE OR REDEEMABLE BONDS

When the issuer has the right or obligation to redeem all or a portion of a bond issue prior to the bond's maturity date, it is known as a **callable bond**, or **redeemable bond**. An **optional redemption** allows the issuer to redeem the bonds early, at its option, often at a premium. This callable right may only be exercised at specified times, usually after a certain period of years has elapsed. Issuers will generally choose to redeem a callable bond when interest rates for similar bonds fall below a bond's coupon rate. Like refinancing the mortgage on your house, the issuer can save money by paying off the bond and issuing another bond at a lower interest rate.

With a **mandatory redemption**, a bond issuer is required to redeem an entire issue or a portion of its outstanding issues prior to maturity. Some types of mandatory redemptions occur on a pre-determined basis. Bonds are redeemed at a specified price, often at par, plus interest accrued prior to the redemption date. Other mandatory redemptions occur when a specified amount of money is acquired in a sinking fund. These are known as sinking fund redemptions. A **sinking fund redemption** requires the issuer to set money aside regularly in a reserve account for the redemption of the bonds before maturity.

Example: Cloverton has planned for a mandatory redemption of half of its $40,000,000 bond issue, which has a 4% coupon rate. The redemption date is at the end of a semi-annual interest payment period. How much money will Cloverton need for this mandatory redemption? How much would an investor with a $1,000 bond receive from the mandatory redemption?

Cloverton will need $20,000,000 to cover the principal of half its bond issue. The city must also pay accrued interest. Since the annual interest payment is 4%, the

interest accrued in the six months since the last interest payment is 2%, or $400,000. This means Cloverton needs $20,400,000 for this mandatory redemption.

The investor would receive $1,000 plus 2% accrued interest, or $1,020.

Another kind of early redemption is the **extraordinary redemption**. An extraordinary redemption allows the early redemption of a bond if certain extraordinary events occur, such as an earthquake or fire that damages or destroys the funded project. These events will be specified in the offering statement.

Extraordinary redemptions, sometimes called extraordinary calls, may also occur when bond proceeds aren't spent according to schedule or when bond proceeds are used in a way that makes non-taxable bond interest taxable. Extraordinary redemptions may be optional or mandatory.

4.2.2. MAKE-WHOLE CALL

When a bond has a **make-whole provision** and it is called, the issuer must provide the bondholder with a lump sum payment that includes not just the principal but also the net present value (NPV) of all future coupon payments that the bondholder would have received if not for the call. Thus, the investor is always assured of being fully compensated, or "made whole." A make-whole provision allows the issuer to offer a lower coupon rate than for the usual callable bond. An issuer includes this type of call provision in the bond indenture when it does not expect to use the call but wants to have the option. Since the cost of an early redemption can often be significant, such provisions are rarely invoked.

4.2.3. TENDER OPTIONS

A **tender option bond**, sometimes referred to as an optional tender, is a bond that provides the bondholder with the right to surrender the bonds to the issuer at a predetermined price (usually par). The dates within which the bond may be tendered are exclusively designated by the issuer. Tender offer bonds are typically issued when outstanding bonds are ineligible for an advance refunding, either because they have already been refunded once or do not otherwise qualify for advance refunding. Tender options are sometimes referred to simply as put options.

A **mandatory tender** is a long-term, variable interest rate bond with a mandatory tender date, generally six months to five years after issuance. Like a variable-rate demand obligation, a mandatory tender option bond provides issuers with interest rate flexibility and investors with the option to put the security back to the issuer. Interest rates are adjusted on the mandatory tender date. Unlike a VRDO, however, a mandatory tender requires investors to surrender the bond, unless they specifically opt to roll over the investment at the new rate. Tender dates are established in the bond indenture or specified by the issuer upon the occurrence of some specified event. The purchase price typically is at par. A mandatory tender is sometimes referred to as a mandatory put.

4.3. TAXATION OF MUNICIPAL BONDS

It is important to note that the tax-free nature of municipal bonds only applies to their scheduled interest payments. Like any other investment, when an investor sells a municipal security and earns a profit, taxes are due on those profits. As we shall see, earnings drawn from the issuer are tax-exempt; earnings drawn from an investor's market activity are not. Profits from buying and selling municipal bonds on the secondary market may be taxable, either as capital gains or ordinary income.

4.3.1. TAX-EQUIVALENT YIELD

For comparing the relative benefits of taxable versus tax-free bonds, a useful measure is tax-equivalent yield. **Tax-equivalent yield** is the pre-tax yield that a taxable corporate bond must offer to be equivalent to the tax-free yield of a municipal bond. Its formula is simple. You must memorize this formula for the exam.

$$\text{tax-equivalent yield} = \frac{\text{tax-free yield}}{1 - \text{investor's tax rate}}$$

Investors can use tax-equivalent yield to compare their "pre-tax" yield of a corporate bond.

EXAMPLE QUESTION

A general obligation bond is issued at an interest rate of 4%. Cindy has a $600,000 salary and her brother, Max, scrapes by on $78,000. She is interested in acquiring this GO bond and is encouraging her brother to buy in as well. Cindy is in the 39.6% tax bracket and Max is in the 25% tax bracket. What are the tax-equivalent yields for the GO bond for Cindy and Max?

Answer: Cindy, 6.6%; Max, 5.3%. For Cindy, in the 39.6% tax bracket, her tax-equivalent yield is 6.6% (4% / (1 – 0.396)). Max's yield, in the 25% tax bracket, is 5.3% (4% / (1 – 0.25)). This means that for Cindy, corporate bonds paying 6.6% would be equivalent to this GO bond. For Max, corporate bonds paying 5.3% would be equivalent. In comparison to a 6% corporate bond, Cindy would buy the GO bond and Max would buy the corporate bond.

4.3.2. TAXATION OF INTEREST AT THE STATE AND LOCAL LEVELS

Municipal bonds may also be tax-free at the state and local levels, depending on where you live. If you buy a bond issued by your state of residence, interest earned is generally not subject to state tax. If you purchase a bond from a state other than your state of residence, your state will generally tax your interest earned.

You can expect the same treatment at the local level. If you want a tax-free bond at