How Are Municipal Bonds Quoted and Priced?

There is no simple answer to the question, "What should the price be, exactly?" Many factors affect the pricing of investments. For municipal bonds, both during an initial offering, called the "primary market", and in later "secondary market" trading, factors that affect the price include credit quality, the prevailing interest rates for bonds generally and for similar bonds more specifically, and broad market trends that can make investors more or less likely to prefer investing in debt over equity (*i.e.*, stock).

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Before exploring the additional factors that affect the pricing of a municipal bond, it is essential to understand the terminology related to municipal bond pricing. Most municipal bonds are issued in a **minimum denomination** of $5,000, which is typically the smallest amount of a municipal bond an investor can buy or trade. Sometimes municipal bonds are issued in minimum denominations that are considerably larger, such as $25,000 or $100,000, to target the bonds to institutional investors. Municipal bonds also may be issued in a minimum denomination of $1,000 to attract local or regional investors.

Generally, municipal bond prices are **quoted** in reference to face or par value of $100/bond, even though the bonds are not traded in $100 increments.

Interest Payment Periods

Unless an investor happens to trade a municipal bond on an interest payment date, some accrued interest must be settled in the transaction, which will affect the price of the bond. Generally fixed rate municipal bonds pay interest on a semiannual basis such as on June 30 and December 31 of each year. However, municipal bonds can have different payment periods and dates, such as an annual payment. Municipal market rules govern the way accrued interest is calculated (see MSRB Rule G-33, which generally requires that the accrued interest calculations be made as if every month was 30 days long and every year 360 days long).

Primary Market Pricing

The price of municipal bonds in the primary market depends on how they are issued to the public, whether through a competitive sale of bonds to an underwriter that will sell them to investors, or through a negotiated sale through an underwriter that takes what are referred to as "conditional trading commitments" or conditional orders, prior to the sale of the bonds.

In a competitive bond sale, the issuer of the bonds publishes a notice of sale alerting potential underwriters how the bond issue will be structured, including the total par value for each maturity, the number of maturities, call provisions and other structural or legal conditions. On a particular day and time, the issuer receives written bids from each underwriter or syndicate indicating the issuer's total interest cost and specifying the coupon rates the underwriter believes are necessary to make each maturity saleable to the public. The issuer awards the bonds to the underwriter offering the lowest total interest cost. The award of the bonds to the underwriter results in a contract between the issuer and the underwriter in which the underwriter agrees to buy the bonds and offer them to the public at those "initial offering" prices.

PRIMARY OFFERING PRIMER

Dealers often solicit orders, accept orders and conditionally allocate to orders prior to the formal award. The prices at which such orders are conditionally allocated pending the formal award, known as conditional trading commitments, generally are determined prior to the formal award and often will reflect market conditions at the time of the determination rather than at the time the trade is executed after the formal award.

In a negotiated bond sale, the issuer asks underwriters, through a request for proposal, to submit potential structures for the bond issue and to explain how they can help to sell the bonds to investors. The underwriter or syndicate does not promise a specific set of coupon rates. Instead, as the sale date for the new issue approaches, the syndicate pre-markets the bond issue to individual retail investors and/or institutional investors, which may include banks, mutual funds and insurance companies. On the actual day of sale, the outcome of numerous discussions with potential bond investors determines what the final offering prices will be. There may be an initial retail order period in which only orders from retail investors are filled. Then institutional orders are filled. The underwriter then assembles all orders and presents the final conditional orders (orders that will be filled "when, as, and if issued") and prices to the issuer for review and approval of the prices. Only then is a contract between the issuer and the underwriter signed (the "formal award").

Several factors can influence the price of bonds in a negotiated sale. The issuer wants to pay the lowest interest rate to obtain its "loan" of principal from investors. Countering this desire is the fact that investors want the highest interest rate they can obtain. The underwriter, meanwhile, must carefully balance

these competing interests to arrive at a market price — the price where the seller and the buyer agree. The underwriter uses recent sales of comparable bonds and yield curves, among other information, to set that price.

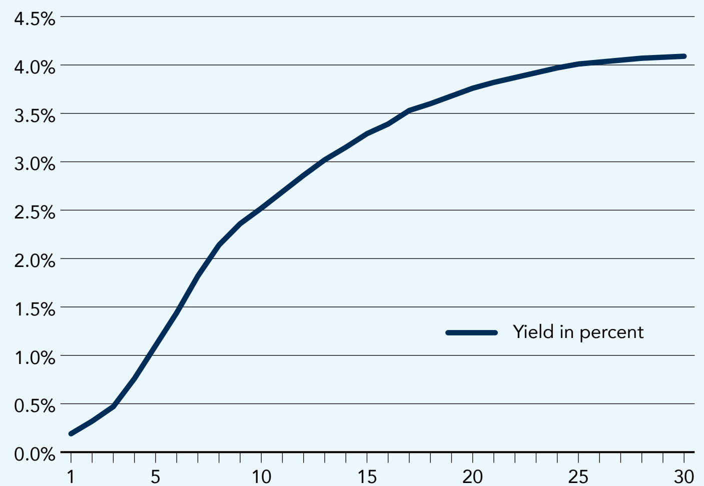
Secondary Market Pricing

Prices for bonds trading in the secondary market are set differently than those in the primary market. For an investor purchasing or selling a municipal bond in the secondary market, a broker or municipal securities dealer (dealer) executing the transaction must offer a fair price that is reasonably related to the market price for a municipal security (See, *e.g.*, MSRB Rules G-30, G-19 and G-17.) There are well over one million outstanding municipal bonds and many distinct kinds of bonds, which are identified by a unique identifier called a CUSIP number. Because of the large number of outstanding municipal bonds, the dealer's determination of a fair price involves multiple factors.

To determine how to price a municipal bond, the dealer typically first looks at the price it has paid or received for the bond in a recent trade. Sometimes, no recent trades are available, for example because the dealer has held the bond in inventory for a significant period. In that case, or if market conditions have changed in a way that the dealer's recent trade price is no longer relevant, the dealer may look at reports of recent trades in the bond between other counterparties to determine market price.

The dealer's next step in pricing would be to look for similar or comparable securities that have recently traded. The obvious question is: what makes a security "similar" or "comparable?"

The MSRB sets forth several factors a dealer may use in determining the degree to which a municipal bond is "similar" to another municipal bond. However, this list of factors is non-exclusive, ultimately giving dealers flexibility to determine whether a bond is "similar" based on their professional expertise, taking into account all relevant factors. A dealer seeking to price a bond for which there is no reasonably recent trade information could look at other bonds with similar yields, maturities, credit quality, tax treatment and sources of security. For instance, the dealer might look for a recent sale of a bond from the same issue, but with a different maturity, and decide on a price



by referring to a yield curve. Yield curves reference multiple sales of similarly credit-rated bonds to determine the "average yields for a group of AAA-rated municipal bonds," for instance. There are also yield curves for lower-rated bonds. The above graphic is an illustrative example of a municipal bond yield curve. This illustration does not show today's yield values, which change frequently.

Dealers also sometimes use economic models to help them determine the market price of a municipal bond. These models take into account several measures such as credit quality, interest rates, industry sector, call provisions, time to maturity and others. A dealer may consider the prices or yields from such a model in determining the market price of a bond.

This means that, for example, rather than buying the bond from another party at one price and then selling it to an investor at a slightly higher price — keeping the difference between the two prices as compensation — the dealer executes the transaction between two investors at the same price, taking a fee or commission for its services. Whether a transaction is handled in a principal or agency capacity, a dealer still has certain fair pricing and fair compensation responsibilities. If a dealer is acting as a principal in a transaction, and not as an agent, the price that is quoted to the investor buying the bond includes a mark-up, or a mark-down if the investor is selling the

bond. The amount of the mark-up or mark-down is sometimes required to be disclosed on the trade confirmation. If the broker is acting as an agent, it must disclose the sales charge or commission on the trade confirmation.

Example: An investor wants to buy $30,000 (face value or par value) of a specific municipal bond issue in the secondary market. Based on market conditions, the investor's broker quotes a price of $94.62 per $100/bond. That means the total price is going to be $28,386. That total price is arrived at by multiplying the par value the investor requested by the price per $100/bond the broker quoted.

$30,000 x $94.62/100 = $28,386

Accrued interest and a transaction charge may be added to this total price.

PRINCIPAL? AGENT? ADVISER?

When a brokerage firm acts as a **principal**, it is selling a bond it owns, even if quite briefly. The firm is the "other side" of the investor's transaction, although the firm is still required to charge or pay the investor an "all-in" fair price that includes the firm's mark-up or mark-down. In contrast, if the firm acts as an **agent**, it finds a seller or buyer elsewhere in the marketplace who has or wants what the investor is trading. The firm acting as agent will impose a sales charge. There are advantages and disadvantages to both ways of doing business. New customers at firms typically sign an agreement choosing to operate one way or the other, based on their probable trading patterns. Finally, it is possible that an investor's arrangement with the financial services firm or professional is that it acts as an **adviser** for a fixed or percentage-of-assets fee, and the investor is not charged on a per transaction basis. See *Ways to Buy Bonds*.