February 2021

An Overview of Municipal Finance

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1. Introduction to the U.S. Municipal Bond Market

Brief History of Municipal Bonds in the U.S.

U.S. state and local governments have been selling debt securities since the early nineteenth century.

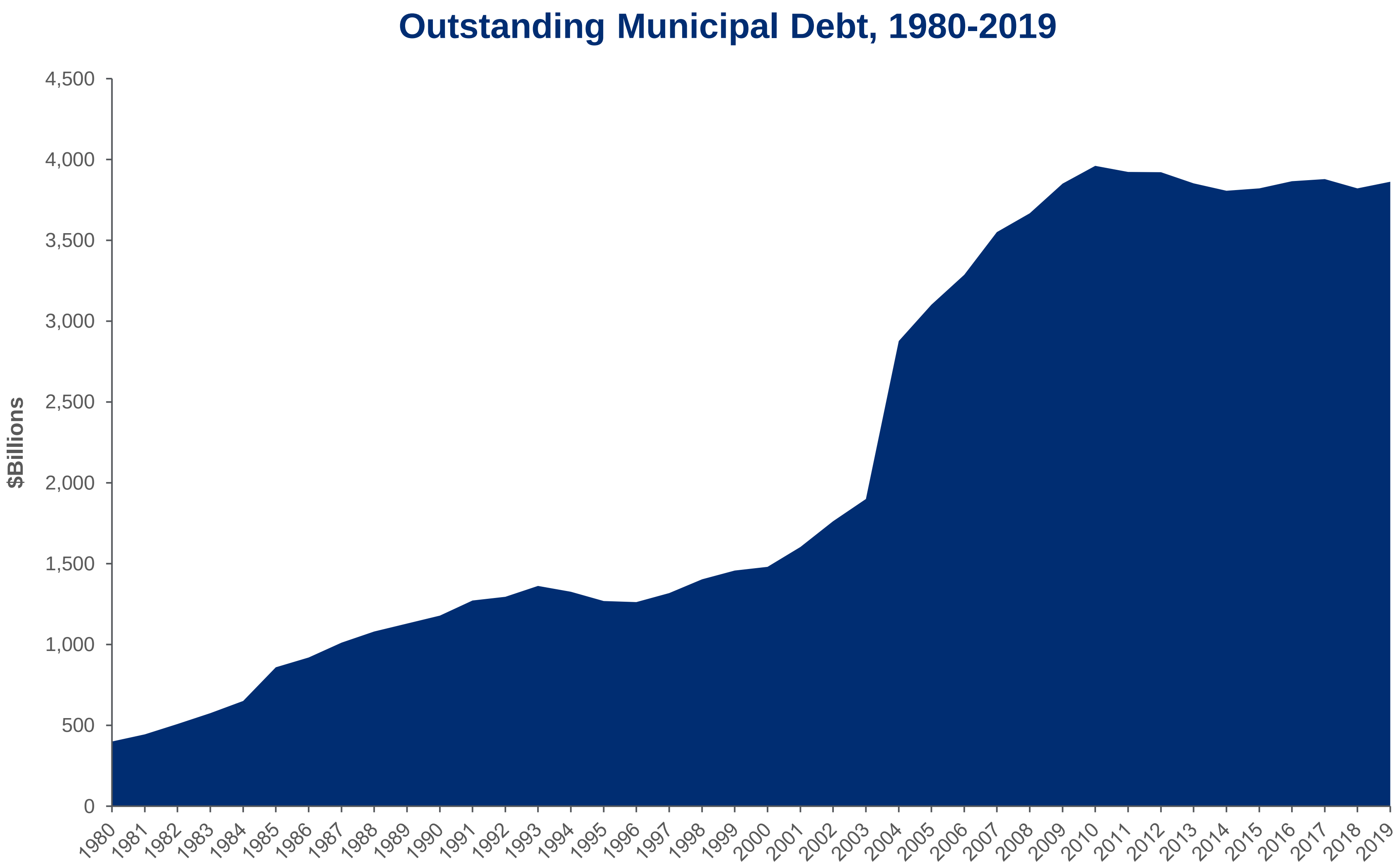
- Initially, as cities began to grow, capital expenditures were funded by loans, sales of public land, donations, subscriptions, lotteries and taxation
- Debt of state and local governments has grown rapidly for more than a century and a half

Historical Highlights of Municipal Bonds

1812:	New York began to issue securities.
1870's:	Widespread defaults on bonds issued for economic development (railroads) led to constitutional restrictions and gave rise to the requirement of a bond counsel opinion.
1900:	State and local governments borrowed $175 million, bringing outstanding debt to over $2 billion.
1913:	16th Constitutional Amendment established federal income tax; however, municipal bonds were exempt.
1918:	Moody's began rating municipal bonds.
1932-1945:	The Great Depression and World War II affected the rapid increase of municipal debt. During the Great Depression, outstanding municipal debt peaked and receded to a low of $13.4 billion by the end of World War II.
1975:	Congress passed the Securities Acts Amendments (including the Tower Amendment) and established the Municipal Securities Rulemaking Board ("MSRB") to govern the activities of brokers and dealers in the municipal market.
1986:	Congress passed the Tax Reform Act of 1986 to tighten the tax regulations of municipal bonds. Volume increased in anticipation of the change in the tax code.
2007:	More than $487 billion of municipal bonds issued.
2007-2009	Worst financial crisis since the Great Depression leads to collapse of bond insurers and consolidation of broker-dealers
2009-2010:	American Recovery and Reinvestment Act (ARRA) enables issuance of Build America Bonds (BABs) at a subsidized cost to state and local governments.
2011+:	Dodd-Frank Act tightens regulations on broker- dealers, rating agencies, and issuer disclosures.
Dec 2017:	Tax Reform eliminates the ability for Municipal Issuers to advance refund outstanding new money bonds on a tax-exempt basis.

Growth of US Municipal Bond Market

The amount of municipal bonds outstanding more than doubled from 2000 to 2010, as US state and local governments increased their investment in infrastructure.



Source: Securities Industry and Financial Markets Association – “US Bond Market Issuance and Outstanding”.

Overview of Municipal Bonds

Municipalities, States and Public Authorities (i.e., “political subdivisions”) can directly issue tax-exempt municipal bonds and certain not-for-profit entities can issue tax-exempt bonds through a governmental conduit issuer.

- A municipal bond is a long-term promise of an issuer to repay a specified principal amount on a certain date, together with interest at a stated rate on defined dates, payable from a defined source of funds
- Municipal bonds provide a low cost of capital to the public sector for the purpose of public infrastructure and development, while providing tax-exempt income to investors
- Municipal bonds may be classified according to their tax status and source of repayment:
  - **Tax-exempt**
    - Interest on bonds is not included in gross income pursuant to Section 103 of IRS for federal tax purposes
  - **Tax-exempt (AMT)**
    - Considered “private activity” bonds; interest is an item of tax preference for purposes of determining the alternative minimum tax imposed on individuals for federal tax purposes (e.g. some airport bonds)
  - **Taxable**
    - Interest subject to all federal taxes
    - However, interest is usually exempt from state and local personal income tax
  - **General Obligation Bonds**
    - Principal and interest secured by the full faith and credit of the issuer
    - Usually supported by the issuer’s unlimited or limited taxing power
  - **Revenue Bonds**
    - Principal and interest secured by revenues of an enterprise or facility, such as water and sewer systems, tolls, airports and hospitals

Characteristics of U.S. Municipal Bond Market

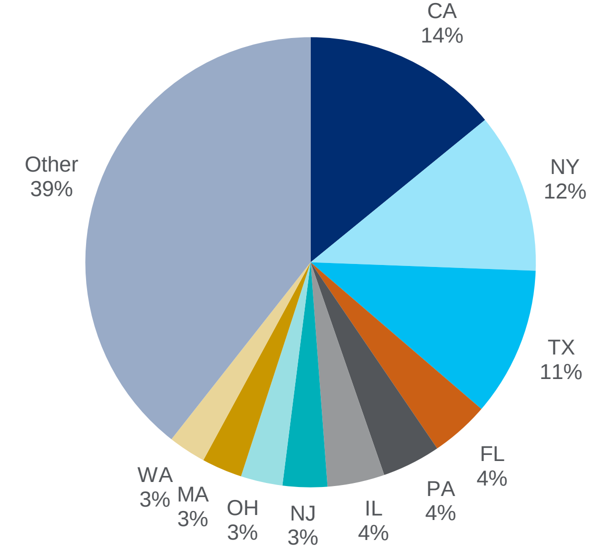
U.S. Municipal Bond Credit Sector

- There are over 87,000 state and local governments that can borrow in the U.S. municipal market ranging from the State of California to a variety of school districts and special purpose districts
- Governments borrow for the following purposes:
  - **Infrastructure:** Finance long-term projects such as schools, roads, water tunnels, wastewater facilities, stadiums, hotels and power plants
  - **Cash Management:** Provide seasonal cash flow for short-term operating needs. Repaid within the fiscal year
- **Debt Management:** Debt is typically repaid over the useful life of the asset being financed; principal is being amortized; and issuers refund outstanding debt for interest rate savings

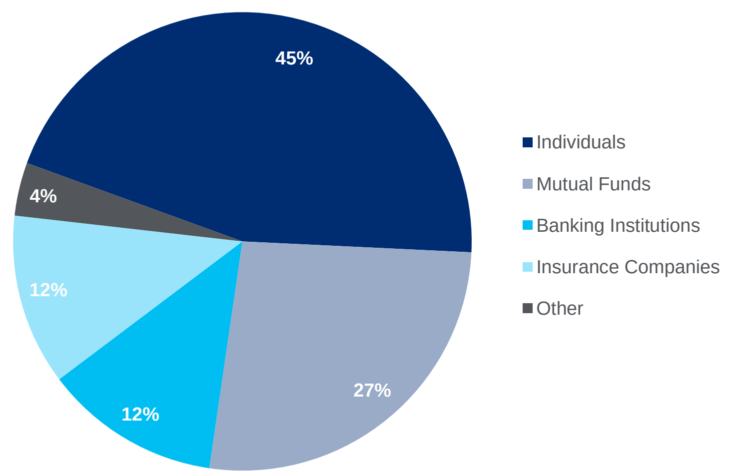
Other Tax-Exempt Borrowers

- In addition, under certain circumstances, tax-exempt financing is available to a variety of public purpose borrowers, including:
  - **Authorities:** State and local government authorities, such as transportation agencies (e.g., MTA), municipal utilities (e.g., LIPA) and development agencies (e.g., ESD)
  - **501(c)(3)'s:** Not-for-profits such as hospitals and universities
  - **Affordable Housing:** For-profit providers of affordable housing issuing under a variety of state and federal programs
  - **Public Purposes:** Corporations issuing for public purposes such as pollution control or airport facilities
- Municipal bond buyers include individual households as well as institutional investors

Municipal Issuance Breakdown by State Since 2010[1]



Municipal Bond Ownership[2]



[1] Source: Thomson Reuters.
[2] Source: Securities Industry and Financial Markets Association – "US Bond Market Issuance and Outstanding".

U.S. Municipal Bonds

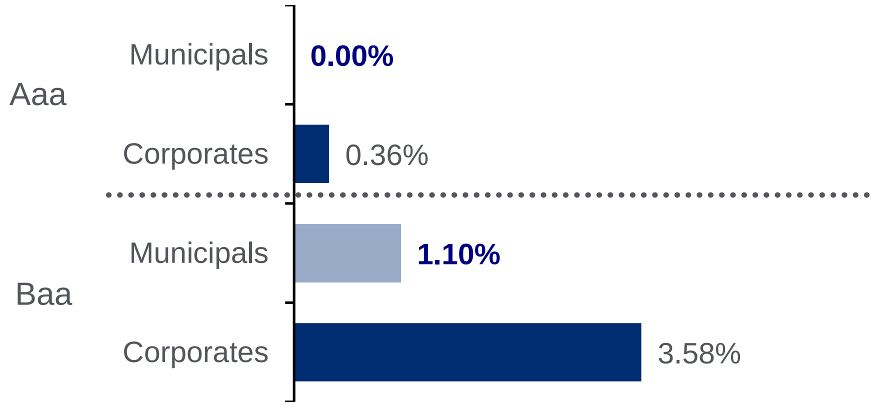
The U.S. municipal market is a $3.9 trillion capital market and has been integral to U.S. public infrastructure investment.

U.S. Municipal Bond Credit Sector

- **Bond Issuers:** U.S. states, cities, authorities, etc.
- **Tenor:** 25 to 40-year fixed-rate amortizing financing
  - Some Century Bond issuance (e.g. higher ed, DC Water)
- **Credit:** Local entity full faith and credit pledge (GO) and/or specific pledged revenues (e.g., water bills, tolls)
- **Market Size:** With $3.9T outstanding, U.S. municipals are a major U.S. credit market, on par with consumer and corporate borrowing (see top right)
- **Credit Quality:** U.S. municipalities have had dramatically lower default rates than corporate peers (see below)

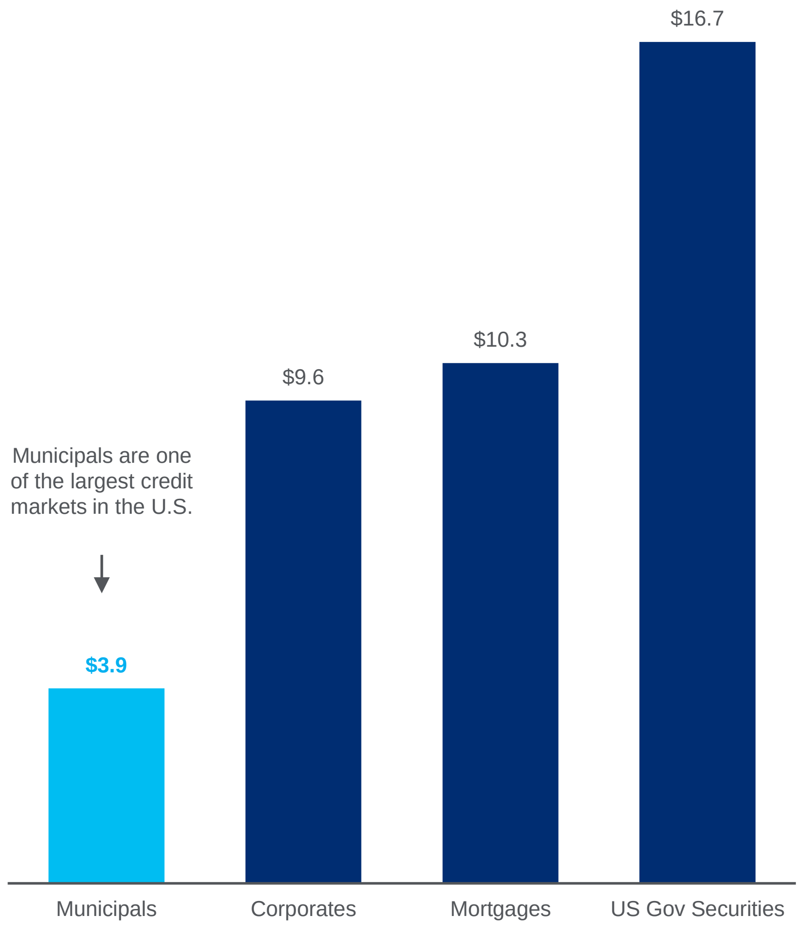
U.S. Municipals vs. U.S. Corporates[2]

(Moody's 10-yr Cumulative Default Rates)



Ranking of U.S. Debt Sectors[1]

($ in trillions, non-financial borrowers)

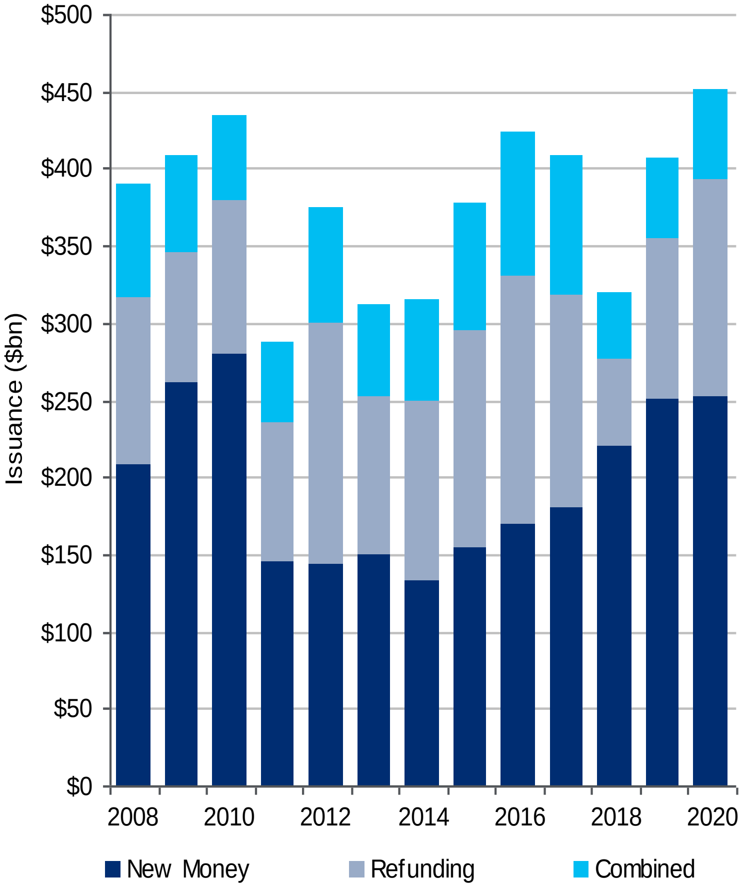


[1] Source: Securities Industry and Financial Markets Association – "US Bond Market Issuance and Outstanding".
[2] Source: Moody's Investors Service, Special Comment, "U.S. Municipal Bond Defaults and Recoveries" (July 15, 2020).

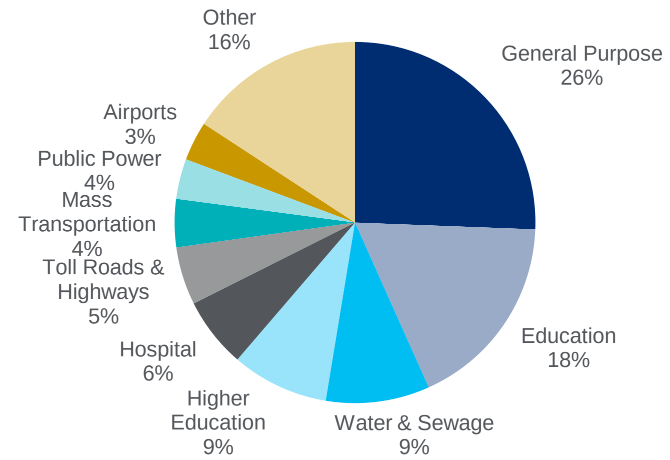
Importance of U.S. Municipal Market to State and Local Governments

The U.S. municipal market is a substantial and reliable source of funding for a broad array of purposes and provides capital funding for a very diverse mix of governments and public enterprises.

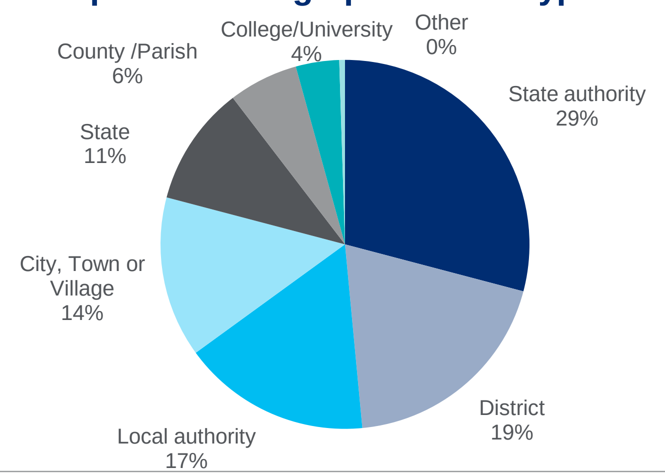
U.S. Municipal Financings per Use of Funds



U.S. Municipal Financings per Purpose Since 2010



U.S. Municipal Financings per Issuer Type Since 2010

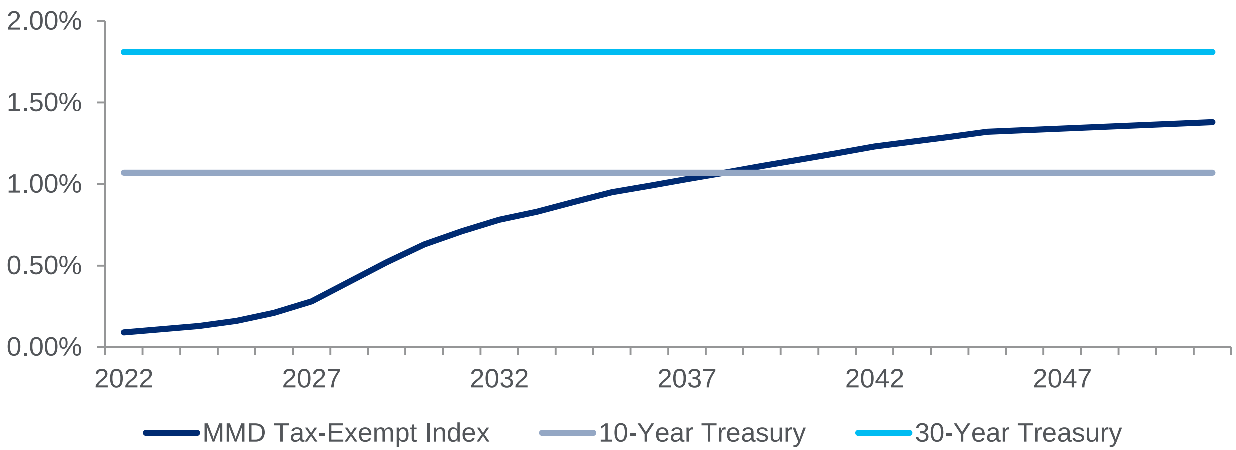


Source: Thomson Reuters.

Benefits of Tax-Exempt Debt

- Lower interest rate
- Long-term bonds are typically callable after 10 years
- Longer maximum maturity – strong market demand for 30-year and longer maturities
- Efficiencies from serials vs. term bonds
  - Tax-exempt debt maturities under 20 years often price on a serial basis, paying yearly principal and interest
    - Each maturity year has a discrete coupon, whereas taxable corporate debt typically prices as bullets or term bonds with the same rate for each sinking fund year
  - Tax-exempt debt maturities greater than 20-25 years typically price as term bonds with sinking funds

Tax-Exempt and Treasury Yields



Municipal credits are priced with tighter spreads over the MMD Index than Corporate credit spreads over Treasuries

Yields as of January 28, 2021.

2. Overview of Municipal Bonds and the Financing Process

How Municipalities Fund Their Needs

Muni bonds are broadly classified as either tax-backed or revenue bonds.

Tax-Backed Bonds

General Obligation Bonds

- **Credit Support:** Secured by the full faith and taxing power of the issuing government. Prior to Detroit's bankruptcy, G.O.s were considered the strongest of all municipal debt structures
- **Investor Analysis:** Evaluation of G.O. credit worthiness is based on ability and willingness to pay, with increased focus on pension and OPEB obligations

Annual Appropriation Bonds, Lease Revenue Bonds, and Certificates of Participation ("COPs")

- **Credit Support:** Repayment is generally secured by annual appropriation, but historically the incidence of non-appropriation has been extremely low (e.g. State Service Contract Bonds)
- **Investor Analysis:** Credit considerations include the essentiality of the project financed to evaluate the risk of non-appropriation

Revenue Bonds

Essential Service Revenue Bonds

- **Credit Support:** Backed by a defined stream of revenues from necessary services such as water and sewer or municipal utilities
- **Investor Analysis:** Evaluation includes the essential nature of services provided and the legal protections for debt holders

Other Revenue Bonds

- **Credit Support:** Secured by a pledge of revenues associated with a specific project or program. Examples include sales taxes, hotel occupancy taxes, user fees, gas taxes, toll road revenues, lottery receipts, property tax increments, special assessments and participations in the tobacco MSA
- **Investor Analysis:** Credit analysis includes evaluation of the debt service coverage, nature of the project, collateral valuation and legal protections for debt holders

Non-Governmental Borrowers

- **Credit Support:** Secured or unsecured obligations of a corporation or project finance credits
- **Investor Analysis:** Credit analysis is comparable to traditional corporate or project finance credit evaluation

Types of Bonds

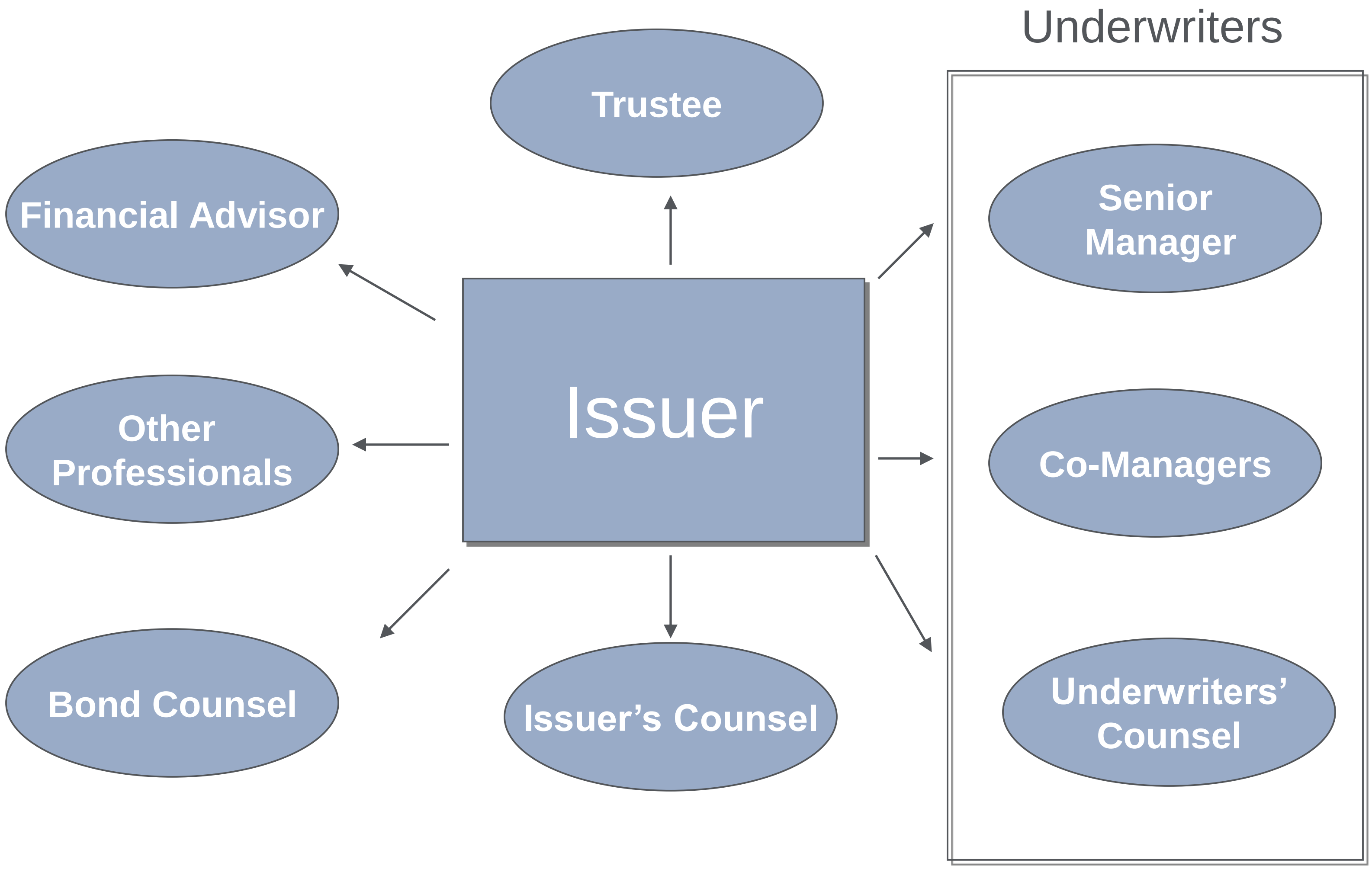
- **Bond Anticipation Notes (BANS):** Notes with fixed interest rates and maturities from approximately six months to five years. Upon maturity, they are “taken out” (paid) with proceeds of long term bonds
- **Capital Appreciation Bond or CAB:** A long-term municipal security on which the investment return on an initial principal amount is assumed to be reinvested at a stated compounded rate until maturity, at which time the investor receives a single payment (the "maturity value") representing both the initial principal amount and the total investment return. Several different types of capital appreciation bonds are issued, including compound interest bonds and multiplier bonds
- **Commercial Paper:** Short-term debt, with maturities from one day to 270 days. Both the maturity and interest rates are reset upon each maturity. Typically issued with credit support (Bank LOC)
- **Par Bond:** A bond selling at its face value
- **Put Bonds or Tender Option Bonds:** Obligations which grant the bondholder the right to require the issuer or specified third party to purchase the bonds, usually at par, either periodically, at a certain time prior to maturity or upon the occurrence of specified events or conditions
- **Revenue Anticipation Notes (RANs):** Similar to TANS, issued by states and cities in anticipation of revenues (such as state aid) coming in at a later date to provide for cash flow needs
- **Serial Bond:** A bond issue which is designed so that a portion of the total debt is retired in semi-annual or annual increments over several consecutive years
- **Tax Anticipation Notes (TANs):** Notes issued in anticipation of tax revenues. Generally used to meet mismatches in the cash flows of cities and states
- **Term Bond:** A bond with a single maturity date, usually long-term and usually traded by dollar price rather than yield. The issuer usually agrees to make periodic payments into a sinking fund for mandatory redemption of term bonds before maturity or for payment at maturity
- **Variable Rate Demand Obligations:** Obligations where the interest rate is reset periodically, most often on a weekly basis, and investor has a right to “put” the bond periodically. The nominal maturity may be up to 40 years, but the obligation trades as if the maturity is only as long as the interest rate period
- **Zero Coupon Bond:** An original issue discount bond on which no periodic interest payments are made, but which is issued at a deep discount from par, accreting (at the rate represented by the offering at issuance) to its full value at maturity

Overview of Major Buyers in the Municipal Market

There are four primary buyer classes of municipal bonds.

- **Separately Managed Accounts / Individual Investors**
  - Until the 2008-2009 financial crisis, individuals (i.e. "mom and pop" investors) were a major buyer
  - The activity of this investor group fluctuates, depending on the absolute level of interest rates, the relationship of municipal yields to those of taxable securities and income tax rates, the perceived attractiveness of equities and the slope of the yield curve
  - Recently, SMAs have been the fastest growing investor segment as individuals turn to professional money managers in a market with fewer insured issuances
- **Mutual (Bond) Funds**
  - Managed mutual funds specializing in municipal bonds that pass tax-exempt income onto investors
- **Insurance Companies**
  - Investment objectives and high tax rates have encouraged companies in the property and casualty insurance industry to invest in municipal bonds
- **"Non-Traditional Investors"**
  - Take advantage of inefficiencies in the municipal market or certain beneficial relationships between tax-exempt and taxable yields

Finance Team Members



Finance Team Members

Parties Involved	Respective Role
Issuer	Entity under whose name the bonds are issued. However, the issuer is not always the entity liable for the bonds. For example, hospitals may issue through the local health facilities authority or an airline issue could be sold through a port authority.
Issuer's Counsel (General Counsel)	Either an internal or outside counsel, who generally gives an opinion on the legality of the issuer's actions under the issuer's enabling statutes.
Financial Advisor	A consultant who advises the issuer on matters pertaining to a new bond issue, such as structure, timing, marketing, fairness of pricing, term and ratings.
Bond Counsel	An outside counsel to the issuer who gives an opinion (1) on the tax exemption of the bonds and (2) on the validity of the bond issue.
Underwriters	
Senior Managing Underwriter	The Underwriters agree to purchase all of the bonds from the issuer and resell them to investors The Senior Manager is the book running manager for the issue whose responsibilities include working directly with the issuer to develop the plan of finance, structure the marketing plan, prepare documents and lead the syndicate.
Co Managing Underwriters	Other underwriting firms involved in the financing. Usually their role includes assisting in the marketing process and sale of the bonds.
Underwriter's Counsel	Legal counsel hired by the underwriters to assist in documentation, preparation of the official statement, disclosure and state securities filings ("blue sky").

Finance Team Members

Parties Involved	Respective Role
Consulting Engineer	If the transaction involves construction projects that will generate revenues to repay the bonds, an engineering firm gives an opinion as to the economic and operational feasibility of a project. For existing projects, the engineer will opine as to the current state of the project.
Feasibility Consultant	This consultant generally restricts his/her opinion to the economic feasibility of a project, as opposed to the current state of operational feasibility.
Trustee	The Trustee handles the payments of interest and principal to the bondholders. Trustees have a fiduciary role to serve as representative of the bondholders in relation to the issuer.
Rating Agencies	The organizations (Moody's Investor Services, Fitch, Standard & Poor's, and Kroll) which provide publicly available ratings of the credit quality of municipal and corporate issuers.
Credit Enhancement Providers	An insurance company or commercial bank providing insurance or a letter of credit guaranteeing the timely payment of principal and interest on the bonds. The credit enhancement provider will also guarantee debt service payments if the issuer is unable to make payments. The issuer in return will reimburse the credit enhancement provider.

Financing Process

Structuring, Pre-Pricing, Pricing, and Post-Pricing process.

Structuring	Pre-Pricing	Pricing	Post Pricing
• Determination of project costs to be financed or bonds to be refunded	• Marketing strategies set by Issuers/Sponsors and underwriter	• Underwriter proposes final offering terms to Issuers/Sponsors including interest rates	• Legal documents and opinions are finalized and executed
• Issuers/Sponsors and senior managing underwriter determine capital structure, contractual arrangement terms, plan of finance, etc.	• Rating agency presentations made by Issuers/Sponsors with help from senior managing underwriter	• Bonds offered to investors by the underwriting syndicate	• Bonds are delivered at closing and funds are transferred among parties
• Consultant reports commissioned, project documents negotiated	• Ratings received	• Senior Manager collects orders from syndicate and makes allocations based on priority of orders	• Underwriters conduct analysis of distribution
• Ratings sought, if appropriate	• Preliminary Official Statement mailed and posted on the internet	• Final pricing determined based on market demand	• Secondary market activities maintained on bonds
• Preliminary market outreach	• Investor visits, site tour, internet roadshow and conference calls completed	• Issuers/Sponsors and the senior managing underwriter, as representative of the underwriters, approve and execute Bond Purchase Agreement	• Final Official Statement distributed
• Financing documents, including Preliminary Official Statement prepared	• Syndicate established		
	• Research begun to establish pricing scale		
	• Pre-Sale orders taken		

The Marketing Process: Negotiated vs. Competitive Sales

While there are two methods to sell bonds in the municipal market, most are sold through the negotiated process.

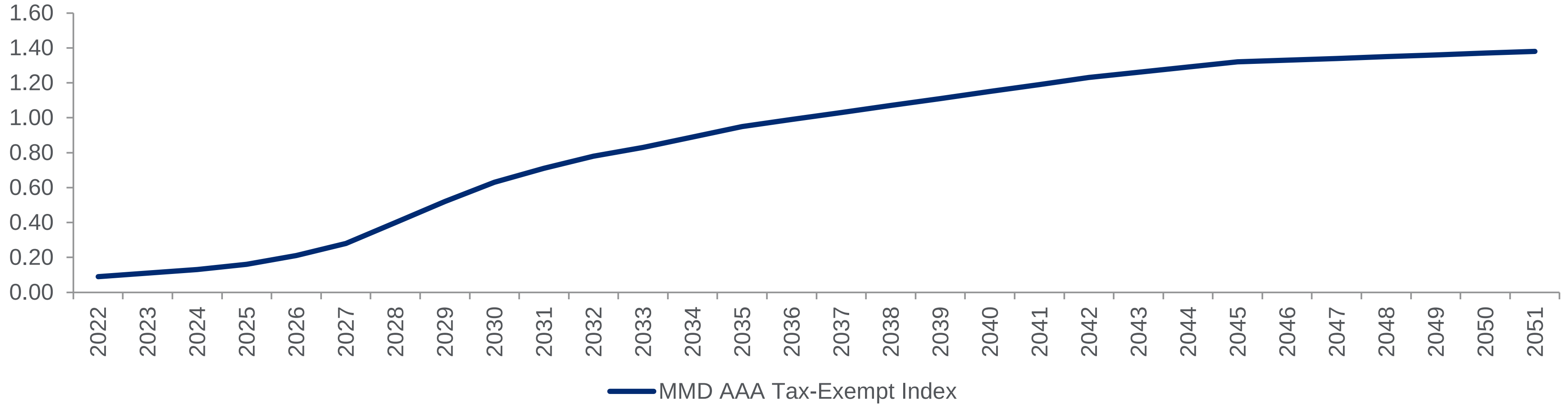
- There are two primary methods to sell bonds in the municipal market: negotiated and competitive
  - Negotiated – In a negotiated underwriting, the sale of bonds is by negotiation and agreement with an underwriter or an underwriting syndicate selected by the issuer prior to the sale
  - Competitive – In a competitive underwriting, the bonds are purchased by the underwriter or syndicate of underwriters that submit the best bid according to guidelines in a notice of sale
- There are a number of advantages of a negotiated versus a competitive sale, including:
  - Flexibility and Control
  - Pre-Sale Marketing Effort
  - Restructuring/Repricing
  - Retail Participation
  - Ability to Negotiate Terms
  - Ability to Create Opportunity for Minority and Women-Owned Business Enterprises
  - Market Timing
  - Increased Services
  - Use of Innovative Products
  - Ability to Reward Firms for Innovative Financing Ideas

3. Bond Mechanics

What is a Bond?

- **A Bond** is an agreement between a lender and a borrower in which:
  - Lender agrees to loan the borrower funds for a specified period of time
  - Borrower agrees to repay the loan in full on the specified date
  - Borrower agrees to pay interest on the loan through the repayment date as compensation to the lender for use of the funds
- **The par, principal or face value** of a bond is the dollar ($) amount of the bond that is used to calculate interest payments, and is also the $ amount that is ultimately repaid by the issuer
- **The maturity date** is the date on which the par amount of a bond is repaid
- **The Coupon** is the rate at which interest is paid
- **The bond's cash flow** is the principal plus the interest payments (coupon times principal) the holder receives
- **The Price** is the amount you would pay to purchase the bond and receive future cash flows (quoted as a percentage of par amount where 100 = the par amount)
- **The Yield** is the rate of return that investors receive based on the price of the bonds and the coupon %(the rate at which present value of the cash flows equals the price)
- **The Yield Curve** shows what the yield is for a particular credit (e.g., issuer) for different maturity lengths, at a given point in time. Fixed rate tax-exempt bonds are priced at a spread to MMD

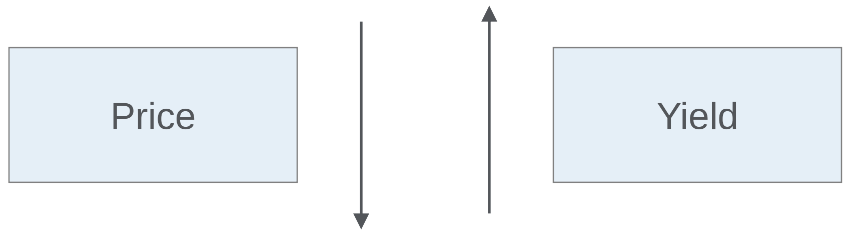
Tax-Exempt Benchmark Yields – MMD "AAA" Index



Yields as of Thursday, January 28 2021.

Price / Yield Relationships

- Price: The amount paid for a security (usually quoted as a percentage of par (e.g., 102) or in terms of the annual yield to maturity (e.g., yielding 7.125%)). The price is dependent on market conditions when the security is sold and on the rating of the security



- Yield, price and coupon are all related
  - A bond with a 4% coupon purchased at par (or 100%) yields 4% to maturity
  - If the price of a bond is more than par ("premium bond"), its yield is lower than its coupon
  - A bond priced below par ("discount bond") will have a yield higher than its coupon
- All bonds are priced to their cheapest cash flow cost. Either:
  - **Yield to Maturity** – The return on the investment if the bond is held to maturity and all interest payments received are invested at the coupon rate of the security
  - **Yield to 1st Call Date** – The return on the investment if the bond is held to the 1st call date and then called from the buyer at the call premium of the bond
  - **Yield to Par Call Date** – The return on the investment if the bond is held to the 1st call date that the bond has no call premium

4. Refunding

Types of Financings

NEW MONEY FINANCING

- New money bonds are used to finance new construction projects or improvements to existing projects, or to reimburse issuers for previous construction/improvements that have not been financed

REFUNDINGS

- Refundings are the issuance of debt and using the proceeds of the debt to retire or provide the future debt service payments on previously issued bonds
- Refundings are done to:
  - Provide debt service savings to the issuer (most common reason)
  - Remove a restrictive bond covenant
  - Restructure debt service payments
- Unlike new money transactions where the bond size is an estimate, in a refunding transaction, every dollar must be accounted for and all investments must be locked into securities. This is to ensure the transaction will execute its stated purpose in the future and the bonds can come off the issuer's books
- Two types of refundings:
  - Current refunding – refunding bonds are issued no more than 90 days prior to the call date of refunded bonds
  - Advance refunding – refunding bonds are issued more than 90 days before the call date of the refunded bonds
  - Tax-exempt bonds can no longer be advance refunded with tax-exempt bonds under the Tax Reform Act of 2017 (a taxable advance refunding is still allowed)

Call Provisions of Bonds

- Most municipal issuers sell a portion of their bonds as callable bonds
- Historically, bonds have been issued with a 10 year par call, but issuers have increasingly utilized shorter calls (5-9 years) due to the elimination of tax-exempt advance refundings in the Tax Reform Act of 2017
- Callable bonds permit the issuer to repay the bond prior to its maturity (i.e. “call back” the bond from the bond holder) at a specified price, usually 100%
- The provisions as to when (i.e., the call date) and at what price the issuer can call the bonds away from the buyer are stated in the Official Statement and are referred to as optional redemption provisions
- The ability to prepay the bond is important to the issuer because if interest rates decrease, an issuer can refinance the bonds in the cheaper market
- Since the issuer is basically “buying a call option” from the buyer of a bond, the additional flexibility of being able to call the bond costs the issuer. The additional cost has historically been taken in increased yield of a callable bond verse a non-callable bond. Given relatively low yield levels, this spread has diminished for many issuers

Current Refunding

Current Refunding Overview

- **Definition:** When refunding bonds are issued no more than 90 days before the call date of the refunded issue
- Most tax-exempt bonds are issued with 10 years of call protection
  - If a bond is issued in October 2021, the bonds maturing from 2022 to 2031 are non-callable . Bonds maturing after 2031 can be called starting in 2031
- Optional redemption is unique to the municipal market
  - Corporate bonds are non-callable

Wasting Asset

- The option held by the issuer to call or prepay a bond prior to its maturity is an asset
- If the option can be exercised to economically benefit the issuer but it is not, the option becomes a "wasting asset"
  - The option is worth less as time passes if it is not exercised

Yield Kick

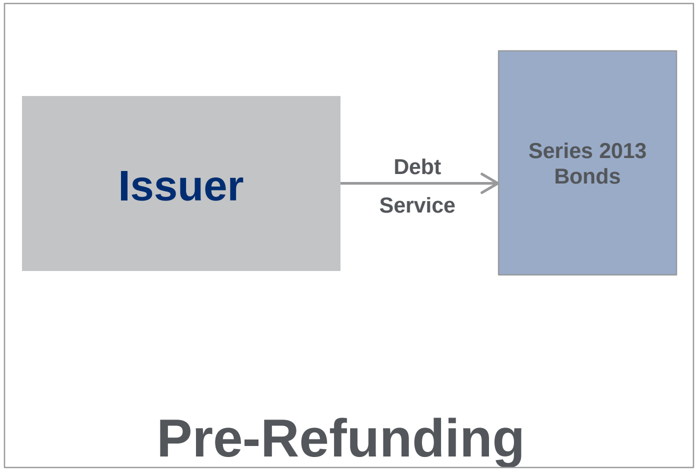
- Difference between the Yield to Maturity and Yield to Call on a premium bond
- Premium bonds are priced to their call date, not their maturity date
- Investors receive a yield "kick" (higher rate of return) if the bonds are not called on their first call date because the price paid for the bonds assumed they would be called

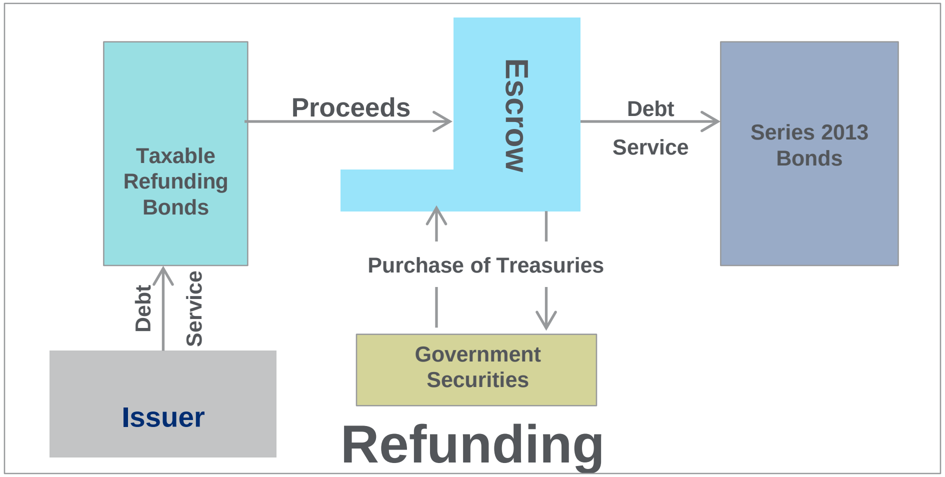
10 Year Call Schedule for Bonds Delivered in 2021

Maturity	Par Amount	Call Date
6/1/2022	10,000,000	
6/1/2023	10,000,000	
6/1/2024	10,000,000	
6/1/2025	10,000,000	
6/1/2026	10,000,000	
6/1/2027	10,000,000	
6/1/2028	10,000,000	
6/1/2029	10,000,000	
6/1/2030	10,000,000	
6/1/2031	10,000,000	
6/1/2032	10,000,000	6/1/2031
6/1/2033	10,000,000	6/1/2031
6/1/2034	10,000,000	6/1/2031
6/1/2035	10,000,000	6/1/2031
6/1/2036	10,000,000	6/1/2031
6/1/2037	10,000,000	6/1/2031
6/1/2038	10,000,000	6/1/2031

Advance Refunding

- Refunding a bond more than 90 days before its call date is an advance refunding
- Issuers can no longer advance refund tax-exempt bonds with tax-exempt bonds, but they can execute a taxable advance refunding of tax-exempt bonds if market conditions permit
- Since a refunded bond cannot be repaid until it is callable, in an advance refunding proceeds of the refunding bonds are used to establish an escrow fund which will generate amounts sufficient to pay principal and interest on the refunded bonds until their call date
  - Establishing a refunding escrow will result in the refunded bonds being defeased
  - In most cases, the issuer will no longer be obligated with respect to defeased bonds; they are payable solely from the escrow
- Refunding escrows can only be invested in government securities or securities guaranteed by the United States
  - As a “pre-refunded” bond, the refunded bond will have the same rating as the government securities in the escrow (if a new rating is applied for): Aaa/AA+/AAA
  - Having to invest bond proceeds in an escrow to pay principal and interest to the call date adds costs to the transaction





Advance Refunding Considerations

- If the yield on the refunding bonds is higher than the yield on the government securities purchased with refunding bond proceeds, negative arbitrage is incurred
  - Stated differently, negative arbitrage is the amount of additional escrow cost above the “perfect” escrow price—i.e., the cost if the escrow was able to earn the refunding bond yield
- So an important factor in an advance refunding is the yield on Treasuries vs. the yield on munis
- If an escrow is generating negative arbitrage, the longer the escrow the more negative arbitrage there will be
  - So if a bond is advance refunded six years after issuance, it will have a four-year escrow (assuming typical 10-year call)
- Escrow efficiency is a measure of how the savings from a refunding compare to the negative arbitrage

Escrow with Negative Arbitrage

Date	Escrow Requirement	Escrow Cost 0.900%	Perfect Cost 2.750%	Negative Arbitrage -1.850%
6/1/21				
12/1/21	2,500,000	2,488,800	2,466,091	(22,709)
6/1/22	2,500,000	2,477,651	2,432,642	(45,009)
12/1/22	2,500,000	2,466,551	2,399,647	(66,904)
6/1/23	2,500,000	2,455,502	2,367,100	(88,402)
12/1/23	2,500,000	2,444,501	2,334,993	(109,508)
6/1/24	2,500,000	2,433,550	2,303,323	(130,228)
12/1/24	2,500,000	2,422,649	2,272,082	(150,567)
6/1/25	102,500,000	98,883,615	91,891,836	(6,991,780)
Total	120,000,000	116,072,821	108,467,714	(7,605,106)

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Advance Refunding vs. Current Refunding

- Given the additional costs of an advance refunding, it is better to wait to do a current refunding **other things being equal**
- But by waiting until bonds can be called, the issuer risks losing the opportunity for savings or generating lower savings if interest rates go up between the date of the contemplated advance refunding and the call date
- So the issuer has to balance whether to seize the "bird in the hand" and do the advance refunding or wait until the bonds are callable and hope that similar savings can be achieved
  - If rates are lower on the call date, other things being equal, savings will be greater
- The breakeven movement in interest rates is the amount that interest rates would have to increase between the advance refunding date and the call date of the bonds so that the savings generated are the same—if rates increase more than the breakeven, the issuer would have been better off doing the advance refunding

5. Variable Rate Demand Bonds

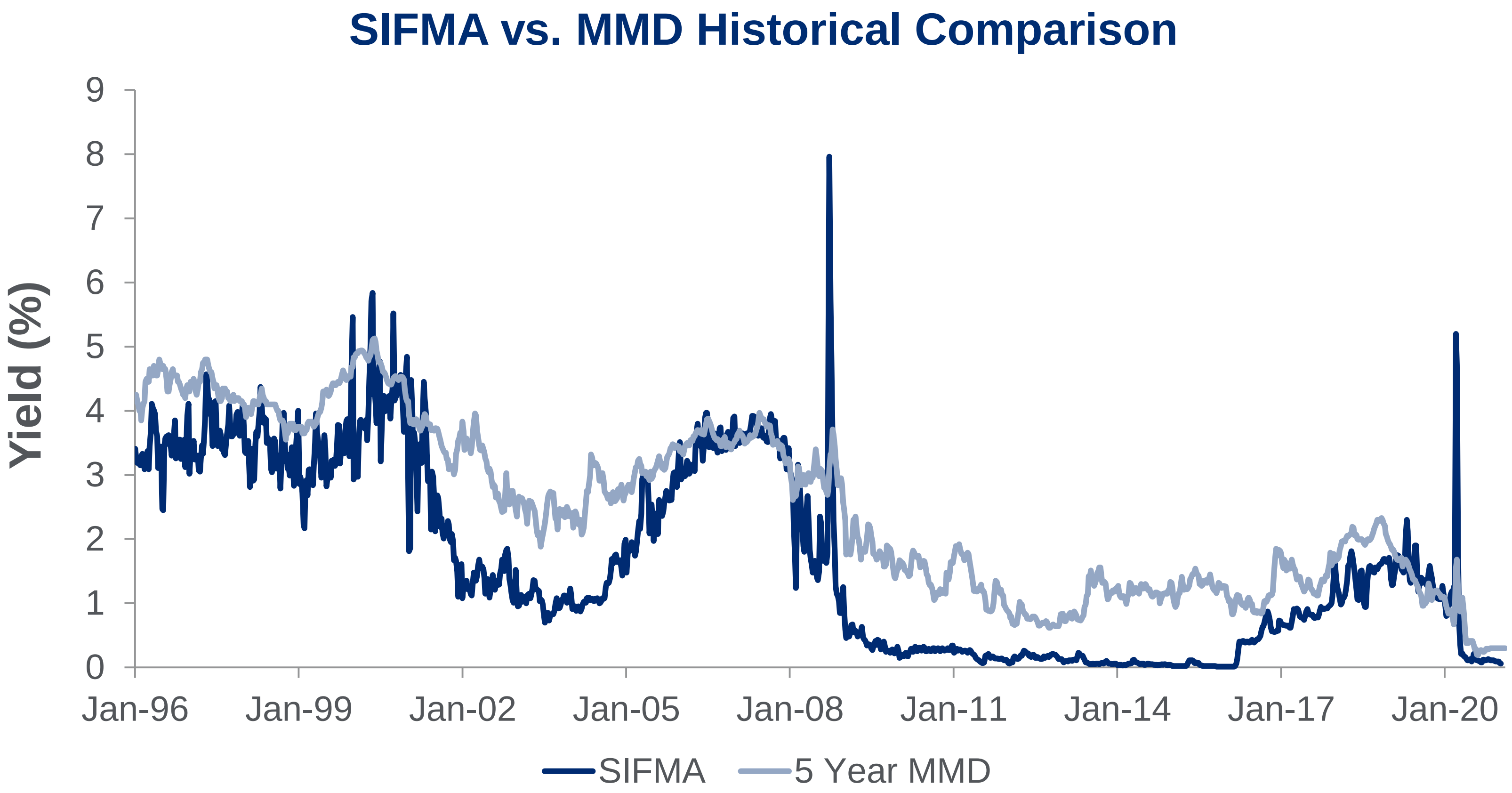
Variable Rate Demand Bonds

VRDBs are long-term bonds which bear interest at a short-term rate.

- Bonds may be issued with a interest rate that is fixed to maturity or with a rate that “floats” or changes at predetermined intervals based on market conditions
- Both fixed and floating rate bonds may also be issued with a “put” feature, which allows the holders of the bonds to require that their bonds be purchased by the issuer or a bank providing a Letter of Credit or Standby Bond Purchase Agreement pursuant to an agreement with the issuer
  - When the issuer uses its own funds to purchase the bonds upon exercise of a put by the holder, it is referred to as “self-liquidity”
- Variable rate demand bonds are bonds with a long “nominal” maturity that bear interest at a floating rate which varies periodically (most typically weekly or daily) and which can be “put” or tendered by the holder (i.e., optional tender) either on seven days’ notice (for weeklies) or a few hours notice (for dailies)
- Remarketing Agent is a broker-dealer that sets the rate either each day or on the same day each week, based on the rate required on that day to sell the bonds at par or 100% of their principal amount
- Since the holder of the bonds can opt to be fully repaid in a short time, the interest rate is a short-term rate, even though the bonds do not mature until later

Variable vs. Fixed Historical Rates

VRDBs are a reliable source of debt service savings compared with Fixed Rate bonds but recent increases in SIFMA have eroded some of the benefit.



Yields as of January 28, 2021.

Mechanics of VRDBs

- The Remarketing Agent resets the interest rate daily or weekly based on an index known as SIFMA
- Holders can tender their bonds by giving notice to the Tender Agent (typically the trustee) and the Remarketing Agent
- The Remarketing Agent seeks to find buyers of bonds that are tendered and may, but is not required to, take bonds into inventory if it is unable to find buyers of tendered bonds
- If the Remarketing Agent is not able to find buyers for bonds tendered and does not purchase the bonds itself, the LOC or Standby Bond Purchase Bank is notified and is required to provide funds to pay the purchase price of the Bonds to the holder
- If the LOC or Standby Bank provides funds to purchase the tendered bonds, they become “Bank Bonds” and the interest rate increases to a “Bank Bond Rate” which is negotiated with each bank and is significantly higher than the SIFMA based rate
- Remarketing agent continues to try to remarket bonds held by the bank
- If bonds are not remarketed and continue to be held by the bank the bank is repaid earlier than the original maturity

Risks of VRDBs

Committed vs. uncommitted funding; certainty of total debt service costs vs. interest rate risk.

- Traditional fixed rate bonds provide a borrower with “committed funding” — the bonds have maturities set by the issuer and the holder has no right to demand repayment prior to maturity, absent a default
  - Some bond documents permit acceleration of principal upon an event of default
- VRDB holder can demand repayment for any or no reason (so the funding is uncommitted) and if no market exists for the bonds, they become bank bonds and are required to be paid on a faster schedule
- Accordingly, with VRDBs, the issuer and not the bondholder bears the risk of market disruptions, deterioration of the issuer’s credit or deterioration of the credit enhancer’s credit (bond insurer or LOC/Standby Bank)
  - Prior to 2008, industry participants could not recall an instance of a VRDB becoming a “bank bond” and many banks were pricing their LOCs/liquidity facilities at extremely low rates (lower than 20 bps)
  - “National put day” occurred when Lehman declared bankruptcy and continued for weeks thereafter
  - VRDBs with bond insurance and uninsured bonds backed by banks that were weak (Dexia, Depfa, Allied Irish, e.g.) generally became bank bonds
- Bank facilities expire typically within three years, so there is a risk of non-renewal. If no replacement bank can be found, the issuer is forced to convert to a fixed rate, which involves market access risk
  - If no market for the fixed rate conversion, the LOC bank buys the bonds and they become bank bonds
- The interest costs of VRDBs will fluctuate with the market and are unknown when the bonds are issued
- VRDBs are for issuers with the resources to manage the risks

LOCs vs. SBPA

LOCs typically provide credit support, while SBPA provides liquidity in the event of a failed remarketing.

- LOCs will typically pay principal and interest when due on a VRDB if the issuer fails to pay
  - As a result, the long-term rating on the bonds may reflect the bank's long-term rating or a rating higher than both the bank and the issuer because both are obligated to pay principal and interest
- SBPAs do not provide for payment of scheduled principal or interest, only the purchase price of a bond tendered that is not remarketed
  - VRDB's long-term rating is the issuer's rating and the short-term rating reflects the bank's short-term rating
- Unlike a LOC, the SBPA can terminate without notice is certain events occur, such as ratings below investment grade, payment default by the issuer on parity debt, invalidity of bonds or security documents
  - These immediate termination events are dictated by the rating agencies as a condition to the bonds receiving the bank's short-term rating
  - Because the immediate termination events are limited, the Standby Bank is taking credit risk because if the issuer's credit deteriorates but an immediate termination event has not occurred, the holder may tender and the bank is required to provide funds to buy the bonds

6. Municipal Credit Overview

Credit Ratings

Credit ratings are very important to market participants, because they reflect the likelihood that the issuer will be able and willing to support future payments of principal and interest.

- Four independent companies publish credit ratings upon request for both corporate and municipal debt, Standard and Poor's ("S&P"), Moody's Investor Services, Fitch, and the newcomer, Kroll
  - They provide objective unbiased guidelines for assessing credit risk
  - The rating agencies evaluate an issuer's solvency and liquidity
- Some of their functions include:
  - Assigning a rating which reflects the likelihood that the issuer will be able and willing to support future debt service payments
  - Evaluating all bond documents and historical and projected budget and financial reports
  - Updating ratings periodically while debt is outstanding
  - Consulting on potential credit structures and fiscal actions
- Issuers maintain relationships with the rating agencies by:
  - Consultation during development of a financial plan
  - Developing a comprehensive credit presentation
  - Maintaining an ongoing dialogue with periodic updates between financings

Long-Term Ratings

Long-term ratings reflect an issuer's ability to pay principal and interest on long-term bonds.

- Credit rating agencies conduct in-depth analyses of an issuer's operations and environment to determine the issuer's ability to repay newly issued debt in full and on a timely basis
- S&P and Fitch ratings often are accompanied by "+" or "-" and Moody's ratings are accompanied by a "1, 2 or 3" to indicate degrees

Grade	Moody's	S&P	Fitch	Description
Investment Grade	Aaa	AAA	AAA	Highest quality investment with least risk. Interest payments are protected by a large or exceptionally stable margin and principal is secure.
	Aa	AA	AA	Judged to be of high quality and subject to very low credit risk. Fluctuation of margin is slightly higher than AAA or other long-term risks are slightly higher.
	A	A	A	Upper medium grade obligations. Factors providing security for principal and interest are adequate.
	Baa	BBB	BBB	Medium grade neither highly protected nor poorly secured. Subject to moderate credit risk and may possess certain speculative characteristics
Non – Investment Grade	Ba	BB	BB	Speculative with substantial credit risk.
	B	B	B	Lack characteristics of desirable investments. Assurance of protection and coverage small over time.
	Caa	CCC	CCC	Poor standing. Uncertainty of current payment of principal and interest.
	Ca	CC	CC	Highly speculative standing. Default is expected to be a virtual certainty.
	C	C	C	Highly vulnerable to non-payment
		D	D	Default.

Short-Term Ratings

Short-term ratings reflect an issuer's ability to pay principal and interest on short-term notes.

- For short-term obligations (notes), separate rating systems exist
- The justification for a different scale is that the cyclical nature of the economy can affect an entity's liquidity without seriously damaging its solvency
- There are also separate rating scales for commercial paper, and some debt instruments carry a dual rating which combines long-term and short-term ratings

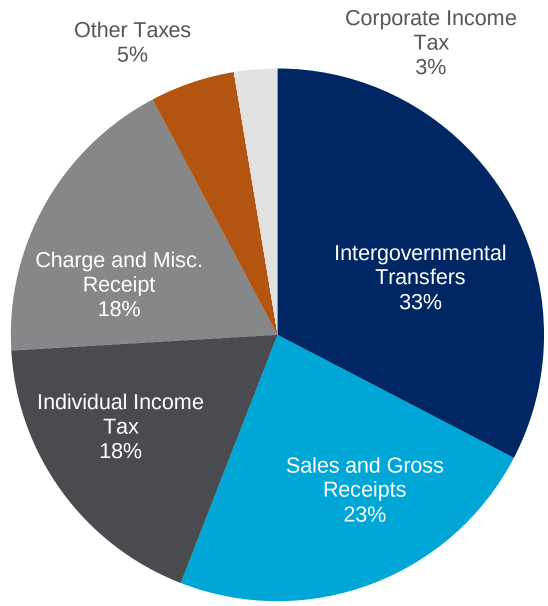
Moody's	S&P	Fitch	Description
MIG-1	A-1	F-1	Very strong capacity to repay, high safety characteristics.
MIG-2	A-2	F-2	Satisfactory capacity to repay principal or interest.
MIG-3	A-3	F-3	Satisfactory capacity to repay, but coverage margin and market access to refinance subject to fluctuations.
SG	B	F-4	Speculative capacity to repay principal and interest.

Main Sources of Revenue

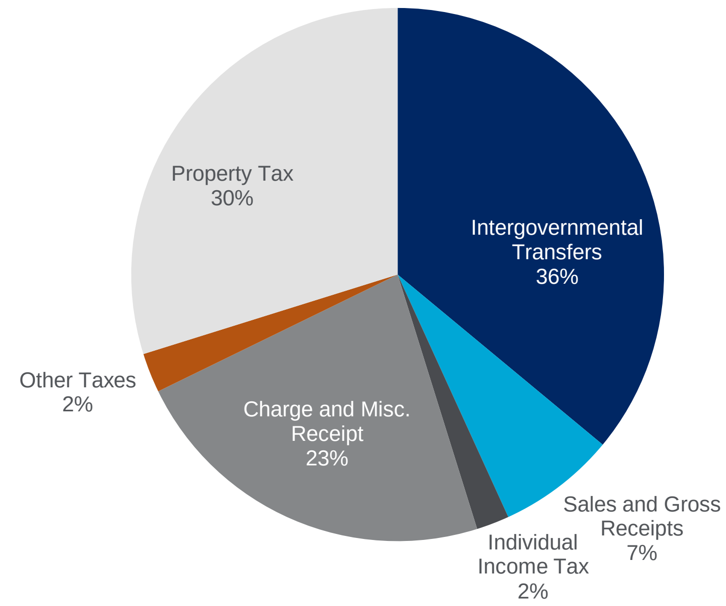
The U.S. municipal market is unique because most revenues are generated through the ability of state and local governments to raise their own funds, reducing their dependence on higher governments.

- The table provided below illustrates the different mix of revenues between state and local governments

State General Revenue



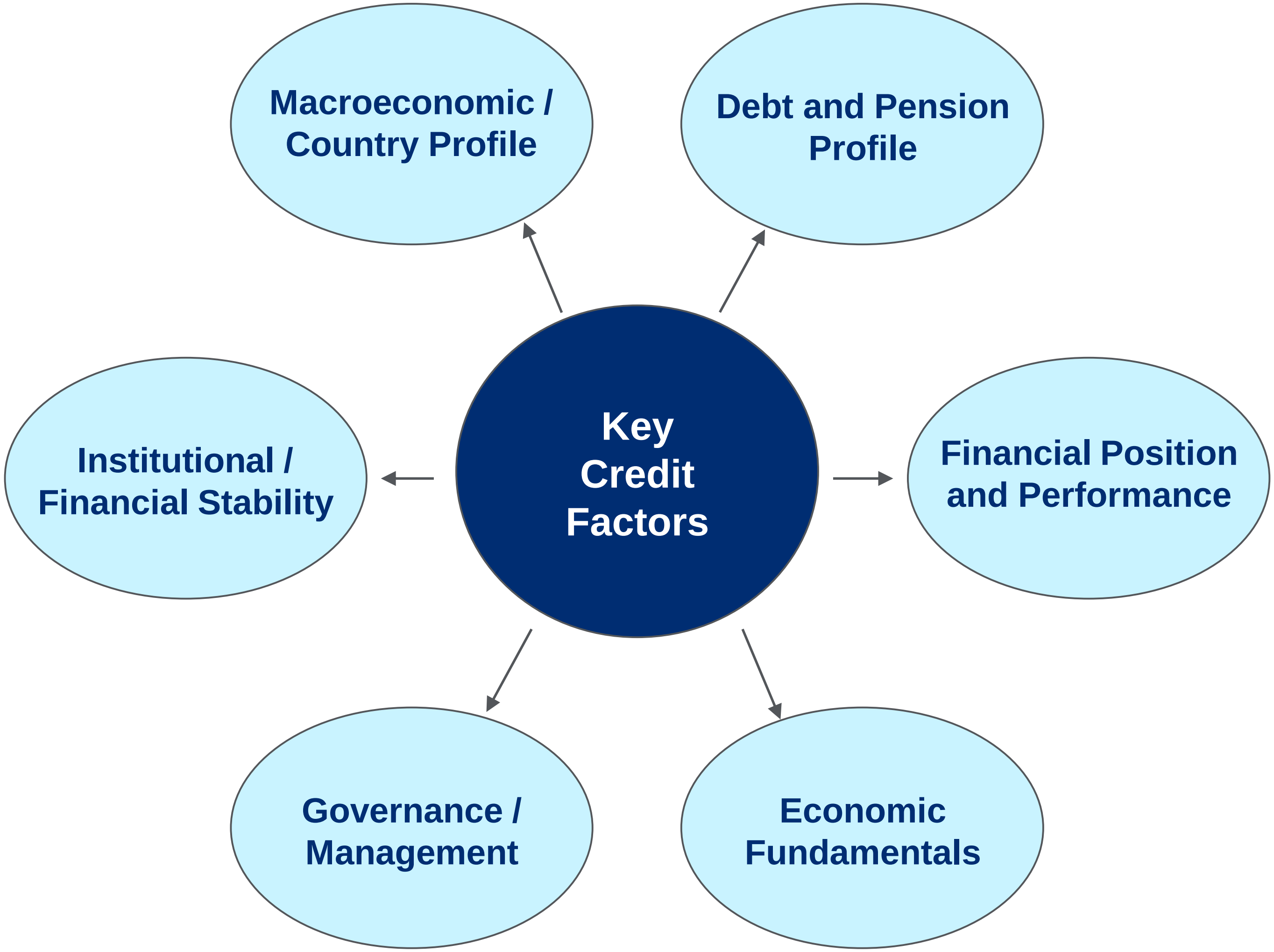
Local General Revenue



Source: Tax Policy Center

What are the Key Factors in Analyzing State and Local Credit Quality?

There are a range of ability and willingness factors to assess credit quality.



What are Characteristics of High Performing Municipalities?

The following are characteristics of highly rated municipalities.

Characteristic	Value
Conservative budgeting	Very Significant
Budget Reserves and Rainy Day Funds	Very Significant
Pension actuarial reports and retiree healthcare actuarial reports	Very Significant
Debt affordability reports	Very Significant
Institutionalized economic and revenue forecasts	Significant
Multi-year capital improvement plan	Significant
Multi-year financial plan	Significant
Management information	Significant
Non-recurring budget items	Influential
Pay-as-you-go financing of capital needs	Influential
Economic development strategies and plans	Influential
Transparency and timeliness of financial reporting	Influential
Investments	Influential

Key Concerns in Evaluating Municipal Credit

Practices that are red flags.

1. Accounting practice irregularities
2. Audits that are late or subject to audit exception or qualifications
3. Deficit financings that are recurring
4. Over reliance on non-recurring budget fixes
5. Short term cash flow borrowing, delays in bill payments, illiquidity
6. Borrowing or transfers among funds and public corporations with no plan or capacity to repay intergovernmental loan
7. Lack of capital improvement plan and deferral of repair and rehab of critical infrastructure
8. Debt restructuring, deferral of debt retirement and debt not matched to the useful of the assets financed by the debt
9. Increased leveraging and debt issuance / reduced pay-as-you-go capital
10. Pension funding ratio that is below average and not fully funding annual unfunded actuarial contributions
11. Aggressive investment policies and assumptions
12. Gridlock and late budget adoption which is symptomatic of a ‘lack of willingness’
13. Lack of accountability and transparency

7. Bond Documents

Legal Documents

Legal documents authorize the issuance of bonds, specify their terms and provide for their marketing, sale and delivery.

- General Resolution or Indenture for authorities or local development corporations and Deputy Comptroller's Certificate for GO authorize the issuance and sets forth general terms of bonds
  - Provides for security (creates the pledge or trust estate) and source of repayment
  - Specifies the purposes for which bonds can be issued and the conditions to issuance of bonds ("additional bonds test")
    - No "additional bonds test" for GO bonds, just Constitutional debt limit
  - Includes issuer covenants, such as debt service coverage, limitations on sales of assets, maintenance of existence, maintenance of tax-exemption, prohibition on debt secured by senior or parity liens except debt issued under the General Resolution or Indenture
  - Creates funds and accounts and specifies the flow of funds
  - Specifies events of default and remedies
  - Provides for amendments with and without bondholder consent

- Supplemental Resolution or Supplemental Indenture provides for the specific terms of each bond issue
  - Principal amount, interest rate or coupon and yield
  - Method of sale
  - Redemption provisions
  - Provides for credit enhancement, if applicable

- Depending on the structure, there may also be a loan agreement, lease or financing agreement (typically for a conduit borrowing)

Marketing and Sale Documents

- Preliminary Official Statement describes the issuer, including its management, finances and outstanding debt, the security and source of payment for the bonds, covenants of the issuer, and all terms of the bonds other than those determined at the time of pricing
  - Under Rule 15c2-12, prior to an underwriter bidding or offering to purchase bonds, it must review an official statement "deemed final" by the issuer, except for omission of offering price, interest rates, principal amounts and other matters depending on pricing
  - Marketing of the bonds takes place after the distribution or posting of the POS
- Official Statement is prepared after pricing and includes the information in the POS, plus the interest rate, principal amounts, maturities, redemption provisions, and other terms determined at the pricing
- Bond Purchase Agreement or Purchase Contract is the agreement between the underwriters and the issuer for the purchase and sale of the bonds
  - Underwriters agree to purchase all of the bonds at a specified purchase price and the issuer agrees to issue and deliver the bonds, subject to certain conditions
    - Purchase price equals the par amount of the bonds, plus/minus net original issue premium/discount, minus the underwriters' discount
    - Underwriters' discount or "gross spread" consists of the takedown (compensation for selling the bonds), management fee, if any, and underwriters' expenses
  - Conditions include delivery of executed bond documents, opinions, ratings, reps and warranties being true as of the closing date, etc.
  - BPA also includes certain termination events or "outs" that permit the underwriters to terminate their obligations under the agreement
  - Signing of the BPA is the "final award" of the bonds to the underwriters and bonds are then free to trade on an "as issued" basis

Closing and Other Documents

- Opinions
  - Bond Counsel approving opinion as to the validity and enforceability of the bonds and their tax-exempt status
  - Bond counsel also renders a supplemental opinion to the underwriters that the bonds are not subject to registration under the ’33 Act, the indenture or resolution is exempt from qualification under the Trust Indenture Act, and enforceability of documents
  - Supplemental opinion also typically includes “negative assurance” 10b-5 opinion (nothing has come to counsel’s attention which would lead them to believe that there is a material misstatement or omission in the Official Statement)
  - Issuer’s counsel opines as to the due authorization, execution and delivery of the various transaction documents on the part of the issuer
- Continuing Disclosure Agreement
  - Underwriters may not enter into a BPA with an issuer unless the issuer agrees to provide annual operating and financial data disclosure, file its audited financial statements each year and provide notice of specified material events
  - Underwriters must also have a reasonable basis to believe that the issuer will comply with the Continuing Disclosure Agreement in all material respects
- No Arbitrage Certificate or Tax Certificate or Tax Regulatory Agreement
  - Contains certifications and agreements by the issuer as to use of proceeds, investment of funds and other matter to insure that the bonds are and will remain tax-exempt

8. Glossary of Common Terms

Glossary

- Ad Valorem Tax: A tax based on assessed value of real property
- Advance Refunding: The refinancing of outstanding bonds by the issuance of a new issue of bonds prior to the date on which the outstanding bonds because due or are callable. Accordingly, for a period of time, both the issue being refunded and the refunding issue are outstanding
- Amortize: Periodic payments to retire debt. To adjust the cost basis of a bond bought at a premium towards par
- Arbitrage: (1) Generally, transactions by which securities are bought and sold in different markets at the same time for the sake of the profit arising from a difference in prices in the two markets. (2) With respect to the issuance of municipal securities, arbitrage usually refers to the difference between the interest paid on the tax-exempt securities and the interest earned by investing the security proceeds in higher-yielding securities. Internal Revenue Service regulations govern arbitrage on the proceeds from issuance of municipal securities
- Asked: The price at which a bond is offered for sale
- Assessed Valuation: The valuation placed on property for the purpose of taxation
- Assured Guaranty: The only viable remaining bond insurer
- Authority or Agency: A state or local unit of government created to perform a single activity or a limited group of functions and authorized by the state legislature to issue bonded debt
- Authorizing Ordinance: A law that when enacted allows the unit of government to sell a specific bond issue or finance a specific project
- Balloon Maturity: An inordinately large amount of bond principal maturing in any single year. Also called a Term Bond
- Bank Qualified Bonds: In the past, certain bond issues (i.e. revenue or conduit bonds) were not considered suitable for commercial bank portfolios or underwritings. These banking and securities laws prevented many local banks from participating in the public improvement of their own communities. Today banks may buy any bond issue - and use depositors' interest-bearing money to fund the purchase of tax-free money - provided the issuer does not sell more than $10 million in any calendar year. Private investors should not assume that because they are "bank qualified" they are in some way more creditworthy than non-bank qualified bonds. Because they are in demand by local banks, they tend to be higher priced, lower-yielding instruments than other equivalent issues

Glossary

- Basis Point: 1/100 of 1 percent of yield. If a yield increases from 8.25% to 8.50%, the difference is referred to as a 25 basis point increase
- Bearer Bond: A bond which has no identification as to owner. It is presumed to be owned by the holder. Synonymous with coupon bond
- Bid: The price at which a buyer is willing to purchase a bond
- Blue List: A list of municipal bond offerings by dealers and dealer banks, published by the Blue List Publishing Co. This list is used extensively by municipal traders to find offerings of other municipal dealers
- Bond: Evidence of the issuer's obligation to repay a specified principal amount on date certain (maturity date), together with interest at a stated rate, or according to a formula for determining that rate. Bonds are distinguishable from notes, which usually mature in a much shorter period time. Bonds may be classified according to maturity structure (serial vs. term), source of payment (general obligations vs. revenue), method of transfer (bearer vs. registered), issuer (state vs. municipality vs. special district) or price (discount vs. premium)
- Bond Anticipation Notes (BANS): Notes with fixed interest rates and maturities from approximately six months to five years. Upon maturity, they are “taken out” through the issuance of long term bonds
- Bond Buyer: A daily trade paper of the municipal bond industry
- Bond Counsel: An attorney (or firm of attorneys) retained by the issuer to give a legal opinion that the issuer is authorized to issue proposed securities, the issuer has met all legal requirements necessary for issuance, and interest on the proposed securities will be exempt from federal income taxation and, where applicable, from state and local taxation. Typically, bond counsel may prepare, or review and advise the issuer regarding authorizing resolutions or ordinances, trust indenture, official statements, validation proceeding and litigation. The bond counsel may also be referred to as the "bond attorney," the "bond approving attorney" or the "bond" approving counsel
- Bond Discount: The amount at which a bond or note is bought or sold below its par value or face value without including accrued interest
- Bond Insurance: Insurance issued by a private insurance company for either an entire issue or specific maturities that guarantees to pay principal and interest when due. This will provide a credit rating of triple-A and thus a lower borrowing cost for the issuer

Glossary

- Bond Premium: The amount at which a bond or note is bought or sold above its par value or face value without including accrued interest
- Bond Resolution or Indenture: The document or documents in which the issuer authorizes the issuance and sale of municipal securities. Issuance of the securities is usually approved in the authorizing resolution or ordinance, and sale is usually authorized in a separate document known as the "sale" or "award" resolution. All such resolutions, read together, constitute the bond resolution, which describes the nature of the obligations and the issuer's duties to the bondholders. State law or local ordinances may prescribe whether a bond issue may be authorized by resolution, or whether the more formal procedure of adopting an ordinance is required. The Bond Resolution or a separate Trust Indenture may constitute the contract between the Issuer and a Trustee for bondholders, and set out the security for the bondholder and remedies in case of a default
- Bond Transcript: All legal documents, including minutes of appropriate meetings of the issuer, associated with the offering of a new issue of municipal securities. Bond counsel's opinion is given after a review of the transcript and becomes a part thereof
- Book Entry: A paperless system where the owner of a bond or his/her agent is registered with the trustee for the issuance of principal and interest payments. No certificate is available
- Callable Bond: A bond which the issuer is permitted or required to redeem before the stated maturity date a specified price usually at or above par, by given notice of redemption in a manner specified in the bond indenture
- Capital Appreciation Bond or CAB: A long-term municipal security on which the investment return on an initial principal amount is assumed to be reinvested at a stated compounded rate until maturity, at which time the investor receives a single payment (the e "maturity value") representing both the initial principal amount and the total investment return. Several different types of capital appreciation bonds are issued, including compound interest bonds and multiplier bonds
- Capitalized Interest or Funded Interest: A portion of the proceeds of an issue which is set aside to pay interest on the securities for a specified period of time. Interest is commonly capitalized for the construction period of a revenue-producing project. In an accounting sense, capitalized interest is the interest expense paid during the construction period (net of income earned on construction funds) which is added to the book value of the asset being built
- Certificates of Participation (COPs): A form of lease revenue bond that permits the investor to participate in a stream of lease payments, installment payments or loan payments relating to the acquisition or construction of specific equipment, land or facilities. In theory the certificate holder could foreclose on the equipment or facility financed in the event of default, but so far no investor has ended up owning a piece of a school house or a storm drainage system. COPs are not viewed legally as "debt" because payment is tied to an annual appropriation by the government body. As a result, COPs are seen by investors as providing weaker security and often carry ratings that are a notch or two below an agency's general obligation rating

Glossary

- Closing: The meeting of concerned parties on the date of delivery of a new issue of municipal securities for the issuer to make physical delivery of the signed securities (or other evidences of indebtedness) and the requisite legal documents in exchange for the purchase price. The parties attending the closing usually include representatives of the issuer, bond counsel and the purchases (underwriters or bank). Sometimes a pre-closing meeting is held on the day delivery to review the adequacy of the closing procedures and documents
- Co-Managing Underwriters: Other underwriting firms involved in the transaction, usually their primary role is to assist in marketing and sale of bonds
- Commercial Paper: Short-term debt, with maturities from one day to 270 days. Both the maturity and interest rates are reset upon each maturity
- Conduit Financing: Bonds issued by a governmental unit to finance a project to be used primarily by a third party, usually a corporation, such as a private non-profit hospital or nursing home, engaged in private enterprise. The security for such bonds is the credit of the private user rather than the governmental issuer. Generally such bonds do not constitute obligations of the issuer because the corporate obligor is liable for generating the pledge revenues
- Consulting Engineer: On many construction projects, this is the engineering firm that will give an opinion as to the economic and operational feasibility of a project. For existing projects, the Consulting Engineer will opine as to the current state of the project
- Co-Senior Manager(s): This firm may receive a special role as compared to other co-managers such as higher involvement in financing, a greater share of the fees or bonds and sometimes alternates position with the senior manager
- Cost of Issuance: The expenses associated with the sale of a new issue of municipal securities, including such items as printing, legal and rating agency fees, underwriters' discount and others
- Coupon rate: The specified annual interest rate payable to the bond or note holder as printed on the bond. This term is still used even though there are no coupon bonds anymore.
- Covenant: A legally binding commitment by the issuer of municipal bonds to the bondholder. An impairment of a covenant can lead to a Technical Default
- Coverage: This is the margin of safety for payment of debt service on a revenue bond that reflects the number of times the actual and/or estimated project earnings or income for a 12-month period of time exceeds debt service that is payable

Glossary

- Current Yield: The ratio of the coupon rate on a bond to the dollar purchase price expressed as a percentage. Thus if you pay par or 100 cents on the dollar for your bond and the coupon rate is 6%, the current yield is 6%; however, if you paid 97 for your 6% discount bond the current yield is 6.186%. (.06 divided by 97). If you paid 102 for a 6% bond the current yield is 5.88% (.06 divided by 102)
- Credit Enhancers: Additional sources of security for municipal obligations such as bond insurance, letter of credit or guarantees
- CUSIP Numbers: (Committee on Uniform Security Identification Procedures) - Identification numbers assigned each to maturity of a bond issue
- Dated Date: The date carried on the face of a bond or note from which interest normally begins to accrue
- Dealer: A person or firm acting as a principal in buying and selling securities
- Debenture: A debt obligation which is not secured by a specific asset but is backed by the general credit of the issuer
- Debt Limit: The legal maximum debt a municipality can incur
- Debt Service: Payment required of a municipality for interest on and retirement of principal amount on a bond issue. The amount of money necessary to pay interest on an outstanding debt, the principal of maturing serial bonds and the required contributions to a sinking fund for term bonds. Debt service on bonds may be calculated on a calendar year, fiscal year, or bond fiscal year basis
- Default: Failure to pay principal or interest payments as agreed upon due date. Actual default usually occurs 30 days after late payment
- Discount: The amount by which the par value of a security exceeds the price paid for the security
- Defeasance: Termination of the rights and interests of bondholders, usually occurs in connection with the refunding of an outstanding issue by the final payment, or provision for future payment, of principal and interest on a prior issue
- Delivery: For bonds bought or sold in the secondary market, delivery - and payment - must be in three business days. For new issues, the time when payment is made to, and the executed bonds and notes are received from, the issuer. New-issue delivery takes place several weeks after the sale to allow the bonds and notes to be printed and signed
- Denomination: The face amount or par value of a bond that the issuer promises to pay on the maturity date. Most municipal bonds are issued in the minimum denomination of $5,000 although a few issues are available in smaller denominations. Registered bonds may be issued in larger denominations
- Dollar Bond: A bond which is traded in dollars rather than in terms of yield. Usually a term bond
- Doubled Barreled Bond: A bond which is secured by more than one source of funds, i.e. a special tax and then taxing power of a municipality

Glossary

- Due Diligence: The process of thorough investigation of a bond issue, usually by underwriters' counsel, to assure that all material facts are fully disclosed to potential investors
- Escrow Fund: A fund that contains monies that only can be used to pay debt service
- Escrowed to Maturity: An Advanced Refunded bond. When interest rates fall, an issuer may chose to sell a new issue called a refunding issue and use the proceeds of the second issue to pay off the original issue, much the same as a home owner refinancing a mortgage in an effort to save interest costs. The proceeds of the refunding issue are used to structure a portfolio of U.S. government securities, the principal and interest payments of which exactly match the principal and interest payments of the refunded bonds. The portfolio is placed in escrow at the paying agent and the bond issue is said to be fully defeased and escrowed to maturity. In actual practice the bonds are usually called on the first call date. Because of the U.S. Treasury backing, ETM bonds are considered the safest municipal bonds available and trade on the market as a rich triple-A
- Feasibility Consultant: Selected by the borrower, this participant prepares the feasibility study as described previously
- Feasibility Study: A report of the financial practicality of a proposed project and financing thereof, which may include estimates of revenues that will be generated ad a review of the physical, operating, economic or engineering aspects of the proposed project
- Financial Advisor: Generally a bank, investment-banking company or independent consulting firm that advises the issuer on all financial matters pertaining to a proposed issue and is not part of the underwriting syndicate
- Fiscal Agent: Also known as the Paying Agent, the bank, designated by the issuer, to pay interest and principal to the bondholder
- Fiscal Year: A 12-month time horizon by which state and local governments annually budget their respective revenues and expenditures. Usually not the calendar year, January to December, but often July to June
- Flow of Funds: The annual legal sequence by which enterprise revenues are paid out for operating and maintenance costs, debt service, sinking fund payments, and so on
- Full Faith and Credit: The pledge of "the full faith and credit and taxing power without limitation as to rate or amount." A phrase used primarily in conjunction with General Obligation bonds to convey the pledge of utilizing all taxing powers and resources, if necessary, to pay the bond holders
- Floating or Variable Interest Rate: A method of determining the interest to be paid on a bond issue by reference to an index or according to a formal or other standard of measurement at stated intervals

Glossary

- General Obligation: Refers to the credit backing of a bond. A GO bond backed by the full faith and credit and taxing power of the issuer
- Gross Debt: The sum total of a state's or local government's debt obligations
- Gross Revenues: Generally, all annual receipts of a revenue bond issuer prior to the payment of all expenses. Normally only Net Revenues are pledged to the repayment of bonds
- Indenture of Trust: A legal document describing in specific detail the terms and conditions of a bond offering, the rights of the bondholder, and the obligations of the issuer to the bondholder; such document is alternatively referred to as a bond resolution
- Industrial Development Bonds (IDBs): also called Industrial Revenue Bonds (IRBs). Used to finance facilities for private enterprises, water and air pollution control, ports, airports, resource-recovery plants, and housing, among others. The bonds are backed by the credit of the private corporation borrower rather than by the credit of the issuer. Also known as Conduit Bonds. Private purpose bonds are limited by federal law to $75 times the state's population on an annual basis
- Industrial Revenue Bond: A bond that is secured by the credit of a public or private corporation. Interest is exempt from federal income taxes and sometimes state income taxes
- Indenture : Sets out the structure and mechanics of the financing. It established the project funds, reserve funds and outlines the manner in which the borrower/sponsor will pay debt service and the bondholders, in turn, receive interest income
- Interest: The amount paid by a borrower as compensation for the use of borrowed money. This amount is generally an annual percentage of the principal amount
- Interest Rate: The annual rate, expressed as a percentage of principal, payable for use of borrowed money
- Interim Borrowing: (1) Short-term loans to be repaid from general revenues or tax collections during the current fiscal year (TRANs or RANs); (2) short-term loans in anticipation of bond issuance or grant receipts (BANs)
- Intermediate Range: Bonds maturing in 5 to 15 years
- Inverted Scale: A scale with interest rates higher on the shorter maturities than on the longer maturities
- Issue of Bonds or Issue of Securities: Bonds or securities sold in one or more series which are authorized under the same resolution or indenture and have the same dated date

Glossary

- Issuer: A municipality which issues bonds in order to borrow money. A unit or agency of government established to perform specialized functions, usually financed by service charges, fees or tolls, although it may also having taxing powers. Authorities may have the power to issue debt which is secured by the lease rental payments made by a governmental unit using the facilities constructed with bond proceeds. An authority may function independently of other governmental units, or it may depend upon other units for its creation, funding or administrative oversight. Examples of authorities include health facilities authorities, economic development corporations and housing authorities
- Legal Opinion or Approving Opinion: The written conclusions of bond counsel that the issuance of municipal securities and the proceedings taken in connection therewith comply with applicable laws, and that interest on the securities will be exempt from federal income taxation and where applicable from state and local taxation. The legal opinion is generally printed on the securities
- Letter of Credit: A form of supplement or, in some cases, direct security for a municipal bond under which a commercial bank or private corporation guarantees payment on the bond under certain specified conditions
- Level Debt Service: Principal and interest payments that, together, represent more or less equal annual payments over the life of the loan. Principal may be serial maturities or sinking fund installments
- LIBOR: (London Interbank Offered Rate) - A floating-rate interest payment index used frequently to establish short term borrowing or lending rates. LIBOR is often used instead of indices such as prime or treasury bill rates.
- Lien: A claim on revenues, assessments or taxes made for a specific issue of bonds
- Limited Tax Bond: A bond secured by the taxing power of an issuer where a maximum rate of taxation has been set limiting the issuer's taxing power
- Loan Agreement: Spells out the business terms of the financing including operating and financing covenants. The non-profit sponsor will be asked to adhere to certain operating covenants which are negotiated with the intent of establishing minimum requirement for meeting its debt service obligations. The primary purpose of financial covenants is to provide the borrower/sponsor with industry proven standards for monitoring financial health
- Manager: The member (or members) of an underwriting syndicate charged with the primary responsibility of conducting the affairs of the syndicate. The manager generally takes the largest underwriting commitment
- Lead Manager or Senior Manager - The underwriter serving as head of the syndicate. The lead manager generally handles negotiations in a negotiated underwriting of a new issue of municipal securities or directs the processes by which a bid is determined for a competitive underwriting. The lead manager also is charged with allocating securities among the members of the syndicate according to the terms of the syndicate agreement and the orders received
- Joint Manager or Co-Manager - Any member of the management group (although the term is often used to refer to a member other than the lead manager)

Glossary

- Maximum Annual Debt Service: The maximum amount of principal and interest due by a revenue bond issuer on its outstanding bonds in any future fiscal year. This is sometimes the amount to be maintained in the Debt Service Reserve Fund
- Munifacts: A private wire communication system originating in the New York editorial offices of The Bond Buyer. Munifacts transmit current bond market information which is printed out in the offices of its subscribers
- Net Revenue Available for Debt Service: Usually, gross operating revenues of an enterprise less operating and maintenance expenses but exclusive of depreciation and bond principal and interest. Net revenue as thus defined is used to determine coverage on revenue bond issues
- Negotiated Sale: The sale of a new issue of municipal securities by an issuer through an exclusive agreement with an underwriter or underwriting syndicate selected by the issuer. A negotiated sale should be distinguished from a competitive sale, which require public bidding by the underwriters. The primary points of negotiation for an issuer are the interest rate and purchase price on the issue. The sale of a new issue of securities in this manner is also known as a negotiated underwriting
- Non-Callable Bond: A bond that cannot be redeemed at the issuer's option before its stated maturity date
- Note: A written, short-term promise of an issuer to repay a specified principal amount on a date certain, together with interest at a stated rate, payable from a defined source of anticipated revenue. Notes usually mature in one year or less, although notes of longer maturities are also issued
- Official Statement or Final Official Statement (O.S.): Statement prepared by the issuer to inform the public about the security of a particular issue. A document published by the issuer which generally discloses material information on a new issue of municipal securities including the purposes of the issue, how the securities will be repaid and the financial economic and social characteristics of the borrower. Investors may use this information to evaluate the credit quality of the securities
- Overlapping Debt: The proportionate share of the general obligation bonds of local governments located wholly or in part within the limits of the reporting unit of government that must be borne by property owners within the unit
- Par Bond: A bond selling at its face value
- Parity Bonds: Revenue bonds that have an equal lien on the revenues of the issuer
- Paying Agent: Usually a specific bank or the treasurer's office of a bond issuer that is responsible for distributing principal and interest payments to the bondholders
- Point: When referring to bond pricing represents 1% of $1,000 or $10.00

Glossary

- Premium: The amount by which a bond is available for purchase above the stated par value
- Principal: The face amount of a bond not including interest
- Put Bonds or Tender Option Bonds: Obligations which grant the bondholder the right to require the issuer or specified third party to purchase the bonds, usually at par, either periodically, at a certain time prior to maturity or upon the occurrence of specified events or conditions
- Qualified Legal Opinion: Conditional affirmation of the legality of securities, before or after they are sold. An unqualified or "clean" legal opinion, on the other hand, is an unconditional affirmation of the legality of securities
- Ratings: Evaluations of the credit quality of notes and bonds usually made by independent rating services. Ratings are intended to measure the probability of the timely repayment of principal of an interest on municipal securities. Ratings are initially made before issuance and are periodically reviewed and may be amended to reflect changes in the issuer's credit position. The information required by the rating agencies varies with each issue, but generally includes information regarding the issuer's demographics, debt burden, finances, and management structure. Many financial institutions also assign their own individual ratings to securities
- Red-Herring: A preliminary prospectus
- Redemption: Also known as Call. Exchanging or redeeming outstanding bonds for cash on or before maturity. Redemption prices are determined when the bond is initially offered to the public, and one price is assigned to each year of the issue’s life. Called bonds that are not surrendered for authorized redemption cease to accrue interest
- Refunding: A procedure whereby an issuer refinances an outstanding bond issue by issuing new bonds. There are generally two major reasons for refunding: to reduce the issuer's interest costs or to remove a burdensome or restrictive covenant imposed by the terms of the bonds being refinanced. The proceeds of the new bonds are either deposited in escrow to pay the debt service on the outstanding obligations, when due, or they are used to immediately retire the outstanding obligations. The new obligations are referred to as the "refunding bonds," and the outstanding obligations being refinanced are referred to as the "refunded bonds" or the "prior issue". If the prior issue is not to be redeemed until a later date the proceeds of the refunding bonds are used to purchase other obligations which are deposited in escrow, and which mature in sufficient amounts and at appropriate times to provide funds to pay the interest and principal of the prior issue when due. This latter procedure is called advance refunding
- Registered Bonds: A bond in which the issuer or an agent of the issuer records the name of the owner as to principal and interest or principal only
- Registrar: Keeps the Register or listing of the owners of the bonds. Often the Registrar will also act as the Trustee

Glossary

- Reserve Fund: The fund which may be used to pay debt service if the sources of the pledged revenues do not generate sufficient funds to satisfy the debt service requirements. The reserve fund is either funded in whole or in part from the proceeds of the bonds or is allowed to gradually accumulate over a period of years through required payments from the pledged revenues. If the reserve fund is used in whole or part to pay debt service, the issuer usually is required to replenish the reserve fund from the first available funds or revenues. A typical reserve requirement might be the maximum aggregate annual debt service requirement for any year remaining until the bonds reach maturity. The size and investment of the reserve may be subject to arbitrage regulations
- Revenue Anticipation Notes (RANS): Similar to TANS, issued by states and cities in anticipation of revenues (such as state aid) coming in at a later date
- Revenue Bonds: A bond that is secured by revenues produced by the facility for which the bond was issued
- Scale: Public offering prices or yields of a new issue in maturity order
- Senior Managing Underwriter: The senior managing underwriter is the book running manager for the transaction whose responsibilities include working directly with the issuer to develop the financial plan and marketing plan, to prepare documents, and to lead the syndicate
- Serial Bond: A bond issue which is designed so that a portion of the total debt is retired in semi-annual or annual increments over several consecutive years
- SLGS: An acronym for State and Local Government Series. SLGS are United States Government securities sold by the Secretary of the Treasury to states, municipalities and other local government bodies through individual subscription agreements. The interest rates and maturities of SLGS are arranged to comply with arbitrage restrictions imposed under the Internal Revenue Code. SLGS are most commonly used for deposit in escrow in connection with the issuance of refunding bonds
- Spread: The difference between the bid and the offer price of a security (debt or equity)
- Syndicate: A group of investment bankers who buy a bond issue and then re-offer it to the public
- Super Sinker: A term maturity in a housing mortgage bond issue. These will be the first bonds to be called, on any interest payment date, from the proceeds of prepaid mortgages. The average mortgage is prepaid though refinancing or sale in 6.8 years. While it is likely, it cannot be guaranteed that a super sinker will be called; as a result they are priced as a long-term bond but are most likely to be a short-term maturity. It is a way to get a higher yield for a short term bond
- Swap: The exchange of one bond for another. Generally, the act of selling a bond to establish an income tax loss and replacing the bond with a new item of comparable value

Glossary

- Tax and Revenue Anticipation Notes (TRANS): Notes secured by a combination of taxes and revenues
- Tax Anticipation Notes (TANS): Notes issued in anticipation of tax revenues. Generally used to meet mismatches in the cash flows of cities and states
- Tax-Exempt Bond: Another term for a municipal bond. Interest on municipal securities is exempt from federal income taxation pursuant to Section 103 of the Internal Revenue Code, and may or may not be exempt from state income or personal property taxation in the jurisdiction where issued. If the bond is exempt from state income tax, it possesses "double exemption" status. "Triple exemption" bonds are exempt from municipal or local income taxes, as well as from federal and state income tax
- Term Bond: A bond with a single maturity date, usually long-term and usually traded by dollar price rather than yield. Bonds comprising a large part or all of a particular issue which come due in a single maturity. The issuer usually agrees to make periodic payments into a sinking fund for mandatory redemption of term bonds before maturity or for payment at maturity
- Trustee and Trustee's Counsel: A trustee selected by the borrower in consultation with the underwriter will manage all bond funds and pass through the borrower monthly payments to bondholders to pay interest and principal on the bonds. The trustee is represented by its counsel to ensure that it is not subjected to excessive liability as a result of the financing structure
- Underwriter: A dealer which purchases a new issue of municipal securities for resale. The underwriter may acquire the securities either by negotiation with the issuer or by award on the basis of competitive bidding
- Underwriter's Counsel: A law firm selected by the underwriter drafts the preliminary and official statement and bond purchase agreement. Underwriter's counsel negotiates on behalf of the underwriter and ensures that proper disclosure is provided in the official statement
- Variable Rate Obligations: Obligations where the interest rate is reset periodically, most often on a weekly basis. The nominal maturity may be up to 40 years, but the obligation trades as if the maturity is only as long as the interest rate period
- Yield Curve: Graph depicting the relationship between yields and current maturity for securities with identical default risk
- Yield to Call: Yield to a bond’s call date, either premium or par. Always quoted to the worst case scenario
- Yield to Maturity: The average annual return on an investment based on the interest rate, price and length of time to maturity. It differs from current yield because it considers the increase to par of a bond bought at a discount and the decrease to par of a bond bought at a premium as well as the reinvestment of coupon interest
- Zero Coupon Bond: An original issue discount bond on which no periodic interest payments are made, but which is issued at a deep discount from par, accreting (at the rate represented by the offering at issuance) to its full value at maturity