Bond Concepts

Key Concepts And Principles Of Municipal Debt

Municipal Debt Essentials, Debt 1: Debt Basics, Session One
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Why Do Municipalities Issue Bonds?

- State and local governments usually issue municipal bonds to pay for relatively large infrastructure projects.

- Municipal bonds are a common and popular tool, with over $332 billion of municipal bonds issued in 2014, $3.2 trillion outstanding.

- Key Question: Should an issuer use Pay-As-You-Go funds or issue bonds to pay for a new infrastructure project?

- Key Considerations:
  - Can an issuer afford to pay 100% of a project upfront and:
    - Maintain healthy reserves
    - Effectively manage rate/tax increases
  - Would an issuer need or prefer to finance multiple projects instead of just one project at the same time and with the same amount of revenues?
  - “Intergenerational equity” – if an issuer wants all the people that benefit from the project over time to pay for it, it would issue bonds.

- Long-term bonds should not be used to finance operations or maintenance (though occasionally are).
Municipal Bonds Have a Long and Noble History in the U.S.

- Financed many iconic governmental projects in California and across the country

- Golden Gate Bridge
- CA State Water Project
- University of California
- K-12 Schools
- California State University
- California Community Colleges
- Los Angeles International Airport
What are Municipal Bonds?

- Municipal bonds are a form of securities - “Stocks & Bonds”
  - Industry is “self-regulated” by the MSRB (Municipal Securities Rulemaking Board), subject to SEC review and approval of rules

- Municipal governments that issue bonds receive a cash payment at the time of issuance in exchange for a promise to repay investors principal plus interest over time
  - Bonds to finance long-term municipal infrastructure projects are typically repaid over 20-40 years

- Rather than getting a loan from one institution (e.g., a commercial bank), municipal bonds are sold in the public capital markets to many investors
  - Large loan is broken up into pieces as small as $5,000
  - Each maturity is an investment product that can be sold to different types of investors with different investment horizons
  - Maturities are further tailored to fit the needs of different types of investors: such as individuals and mutual funds

- Accessing the capital markets generally results in getting the lowest cost of capital for projects of size
How are Bonds Issued?

- Finance team works together to create a marketable and credit-worthy financing structure
- Legal documentation outlines the (limited) rights of the bondholders and the mechanics for repayment; provides disclosure information on the credit to potential investors
- Issuer offers its bonds to investors through investment banks (broker-dealers)

- Broker-dealers manage the sales process
- Make an offer to the issuer to buy the bonds at certain prices on a maturity-by-maturity basis based on investor demand
- If less than 100% of bonds are sold, broker-dealers typically underwrite a portion of the bonds
- Other key players include financial advisors, bond and disclosure counsel, trustees, and rating agencies
What is Special about Municipal Bonds?

- Historically, interest on municipal bonds is tax-exempt at the Federal and State level
  - As a result, tax-exempt investors accept lower rates than available on taxable investments to achieve the same after-tax return
  - Tax-exempt interest is more valuable to individuals in higher tax brackets
  - Tax-exempt interest rates are also lower in states with high income tax rates, all else buy equal
  - Typically, tax-exempt bonds carry lower interest rates than taxable bonds of similar credit quality

- Bond counsel opines at closing that all conditions have been met to qualify for tax-exemption or as BABs
Some Introductory Vocabulary

- **Principal**: also known as par amount or face value. The amount of bonds to be paid back on the maturity date.

- **Interest**: cost of borrowing money.

- **Yield**: percentage rate the investor will earn, based on the nominal rate on the bond (“the coupon rate”) and the price of the bond (“par,” “discount,” or “premium”).

- **Debt Service**: sum of all principal and interest due on a bond series.

- **Maturity**: date on which principal payments are due.
  - Most bond issues have principal maturing each year until the final maturity date.
  - Typically, maturity dates on municipal bonds are within 30 years.
When Can a Local Government Issue Bonds?

- There are state constitutional debt limits in all states
- Unless an issuer meets an exception to the State Constitutional debt limitation, it must get voter approval to issue bonds

<table>
<thead>
<tr>
<th>Government Level</th>
<th>State of California Voter Approval Requirement</th>
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<tbody>
<tr>
<td>State</td>
<td>50%</td>
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</tbody>
</table>
| Local            | 55% - Property Tax Secured – School Districts  
                   2/3 - Property Tax Secured – Other |

- Three major exceptions to the State’s debt limitations have been recognized by California Courts and are commonly used

- **Lease**
  - Strong case law
  - Payments cannot exceed “fair rental value”
  - Debt service is subject to abatement if no “beneficial use & occupancy”

- **Special Fund**
  - Revenue bond debt service supported by revenues related to the project(s) financed
  - Case law allows for other “special fund” obligations

- **Obligation Imposed by Law**
  - Involuntary obligation, such as one imposed by a legal judgment
  - Examples: Judgment Obligation Bonds, Pension Obligation Bonds, Teeter Financings

- State statutes and local law also govern when and how bonds can be issued
## What Resources are Used to Repay Bonds?

<table>
<thead>
<tr>
<th>Source of Repayment</th>
<th>Type of Bond</th>
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<tbody>
<tr>
<td><strong>Dedicated Taxes</strong></td>
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<tr>
<td>Dedicated Taxes</td>
<td>General Obligation Bonds (GOs)</td>
</tr>
<tr>
<td>Unlimited ad valorem property tax</td>
<td>Sales tax revenue bonds</td>
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<tr>
<td>Voter-approved additional sales tax</td>
<td>Mello-Roos bonds</td>
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<td>Parcel tax</td>
<td>Redevelopment tax allocation bonds</td>
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<td>Property tax increment</td>
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<td><strong>General Fund Obligations</strong></td>
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<tr>
<td>General Fund Obligations</td>
<td>Lease revenue bonds</td>
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<tr>
<td>Annually appropriated lease payments</td>
<td>Pension obligation bonds</td>
</tr>
<tr>
<td>Required pension contributions</td>
<td>State-level GOs</td>
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<tr>
<td>General fund payments</td>
<td></td>
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<tr>
<td><strong>Special Fund Bonds</strong></td>
<td></td>
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<tr>
<td>Special Fund Bonds</td>
<td>Enterprise revenue bonds</td>
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<tr>
<td>Water and other utility fees</td>
<td>Assessment bonds</td>
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<td>Special benefit assessments</td>
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<tr>
<td><strong>Non-Governmental Activities</strong></td>
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<tr>
<td>Non-Governmental Activities</td>
<td>501(c)3 revenue bonds</td>
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<tr>
<td>Loan repayments from non-profit</td>
<td>Private Activity bonds</td>
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<tr>
<td>corporations like hospitals and universities</td>
<td></td>
</tr>
<tr>
<td>Loan repayments from “exempt” business</td>
<td></td>
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</tbody>
</table>
Bonds and Other Bond-like Securities Contain Promises (Covenants) Made to Bond Buyers (Lenders)

- Promise to repay principal and interest
- Promise to take actions necessary to ensure repayment; for example:
  - Levy a property tax for local government general obligation bonds
  - Budget and appropriate lease payments for lease revenue bonds or COPs
  - Set rates to pay operating costs, debt service, and usually a margin of safety for revenue bonds
- Promise to maintain tax-exemption (if tax-exempt)
  - Promise to use proceeds on non-private activities
  - Expectations regarding expenditure within three years
  - Rebate of arbitrage
- Other promises to protect investors may include
  - Maintenance of system
  - Limitations on additional debt
  - Maintain insurance on assets
  - Annual audits
  - Continuing disclosure
How are Bond Proceeds Used?

- **New Money**
  - Capital projects
  - Costs of bond issuance
  - Debt service reserve fund equal to up to one-year’s debt service
  - Pre-funded or “capitalized” interest

- **Refundings**
  - Tax-exempt municipal bonds are usually callable; i.e., can be redeemed by an issuer prior to maturity (often after ten years)
  - Call option may increase initial interest rates
  - Refunding bonds are usually issued at lower rates to generate cash flow and present value savings
  - Non-economic refundings done less frequently to change the covenants in the legal documents or to restructure debt service

- **Working Capital**
  - Tax and Revenue Anticipation Notes are for annual cash-flow borrowings
  - Long-term working capital (deficit borrowings)
  - Tricky tax laws govern what can be issued as tax-exempt bonds

- **Interim Finance**
  - Bond anticipation notes or commercial paper are sold in anticipation of bond issue
What Determines Interest Rates on Municipal Bonds?

- **Interest Rates, Generally**
  - Inflation and other economic activity
  - Treasury bonds are the “benchmark” rate
  - Shape (slope) of the yield curve changes

- **Supply**
  - Abundance or scarcity of tax-exempt bonds available on the market

- **Demand**
  - Money flows between stocks and bonds
  - Liquidity (short-term) or yield (long-term)
  - The need to shelter income from taxes

- **Credit Spread**
  - Ratings
  - Buyer sentiment

**Sources:** MMD
How is a “Bond Issue” Structured?

- Most bond issues are structured to produce level debt service
  - “Amortization” occurs by paying all interest due and some principal each year
  - Debt service can be sculpted by accelerating or deferring principal payment

- Principal is amortized by paying off individual maturities of the bond issue
  - Bonds can either mature annually (serial bonds) or as term bonds

- Nominally, a term bond matures at the final date
  - Annual “sinking fund” payments of principal are made prior to the term bond’s final maturity
  - Some investors like term bonds because they are large “blocks” and increase secondary market “liquidity”
How is a “Bond Issue” Priced?

- Each maturity of a bond has a “coupon” rate, the nominal interest rate
  - Each maturity can be sold at a “premium” (more than par), or a “discount” (less than par), reducing or increasing the “yield”
  - Pricing reflects investor preference and market outlook
    - Retail investors like to buy bonds at par
    - Premium bond: Institutional investors like because there is less price volatility. If interest rates rise after you purchase the bond the value of the bond will not fall as quickly
    - Discount bond: Institutional investors like for call protection. In a market environment where interest rates are falling it will take longer for a bond with a lower coupon to be profitably called for refunding

- Interest is paid periodically until bond matures
  - Fixed-rate bonds usually pay interest every six months, principal annually
  - Variable-rate bonds might change rates weekly, pay interest monthly

<table>
<thead>
<tr>
<th>Maturity Date</th>
<th>Principal</th>
<th>Coupon</th>
<th>Yield</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/1/2012</td>
<td>$10,245,000</td>
<td>1.50%</td>
<td>1.69%</td>
<td>99.627</td>
</tr>
<tr>
<td>1/1/2013</td>
<td>$10,395,000</td>
<td>2.00%</td>
<td>2.08%</td>
<td>99.768</td>
</tr>
<tr>
<td>1/1/2014</td>
<td>$10,605,000</td>
<td>2.50%</td>
<td>2.50%</td>
<td>100</td>
</tr>
<tr>
<td>1/1/2015</td>
<td>$10,870,000</td>
<td>5.00%</td>
<td>2.80%</td>
<td>110.198</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$42,115,000</strong></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
Additional Jargon to Impress Your Friends

- **Basis Point**
  - Yields on bonds are usually quoted in terms of basis points, with one basis point equal to one one-hundredth of one percent
  - .50% = 50 basis points

- **MMD**
  - Municipal Market Data
  - A yield curve published daily by TM3 (Thompson Municipal Market Monitor)
  - Pricing (i.e., interest rates) is often discussed in terms of a basis point spread to the “AAA” MMD
    - “AAA” MMD is the benchmark for all tax-exempt pricings and represents an index of the highest quality municipal bonds

- **A security by any other name…**
  - Bond: a security sold according to a bond law
  - COP (certificate of participation): A bond-like security secured by a contract (a lease or installment purchase agreement), often used when an issuer wants to leverage its revenues but is not authorized to sell bonds by law
  - Note: a bond that matures in less than three years
Summary

- U.S. municipal bond market is large and well-established
- Municipal bonds are a useful and cost-effective method to raise capital for infrastructure projects
- As with any debt, it is important to make sure that both the debt service as well as the operating costs are affordable
- Hire a strong team of financial professionals to assist you in developing a credit-worthy and cost-effective structure
- The role of the public finance staff:
  - Ask questions
  - Understand the tradeoffs between costs, risks and opportunities so you, your management and your governing board can make informed decisions
  - Ask even more questions: as the issuer, there are no stupid questions
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