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# Municipal bonds and debt management

PAD 642

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# Types of Finance

- Three sources of financing capital assets.
  - Debt/credit: Borrowing funds through instruments such as municipal bonds, bank loans, or notes. The government repays the principal with interest over time.
  - Equity: Capital contributions from private investors in exchange for ownership or revenue-sharing arrangements (more common in public-private partnerships, PPP).
  - Retained earnings: Using surpluses or reserves generated from prior operations to finance capital investments.
- Debt is the most common financing method in the public sector, particularly through municipal bonds, because large infrastructure projects require significant upfront capital.
- Private equity and private investment are playing a growing role in financing public infrastructure through public-private partnerships (PPPs).
- Retained earnings may come from enterprise funds (e.g., utilities, airports, transit systems)

# Types of municipal bonds

- General Obligation (GO) bonds
  - Backed by the full faith and credit of the issuing government.
  - Repaid primarily through the government's taxing power.
  - Generally considered lower risk, so they often carry lower interest rates.
- Revenue bonds
  - Repaid from specific revenue sources generated by a project or service, rather than from general taxes.
  - Not backed by the government's full taxing authority, so they typically involve higher risk and higher interest rates.
  - Commonly used to finance toll roads, bridges, airports, water and sewer systems, hospitals, and public housing.

# Debt financing

- Pay-as-you-go:
  - Governments save funds in advance and use current revenues to pay for capital projects.
- Debt financing
  - Allows governments to raise large amounts of capital upfront for major construction and infrastructure projects.
  - Interest earned on most municipal bonds is exempt from federal income tax (for investors).
  - Intergenerational equity: residents who benefit from infrastructure help pay for it over time through taxes or user fees used to repay the debt.

# Non-traditional bond financing

- Securitizing future revenue streams: Borrowing against expected future revenues, such as tolls, fees, or taxes, by pledging them to repay bonds.
- Airport passenger facility charges: Fees added to airline tickets that airports use to finance capital improvements, such as terminals or runways.
- Tax increment bonds: Bonds repaid from the future increase in property tax revenues generated by new developments.
- Private purpose bonds: Municipal bonds issued for projects that serve both public and private purposes, such as multifamily housing projects and private utilities. May not eligible for tax-exempt.
- Tax credit bonds: Bonds in which investors receive a tax credit, instead of traditional interest payments.

# Non-traditional bond financing

- Municipal minibonds: Small-denomination municipal bonds marketed directly to individual investors rather than mainly to large institutions.
- Certificates of participation: Financing instruments that give investors a share of lease or installment payments made on a public facility.
- Bond banks, state revolving funds: Pooled financing mechanisms that help local governments borrow more cheaply;
- Revolving funds recycle loan repayments to finance new projects.

# Bond issuance

- Issuer: General-purpose governments (cities, counties, states), special-purpose governments, and public service entities.
- Financial advisers: Help structure the bond issue to make it attractive to investors, including decisions about:
  - Maturity of the bonds
  - Interest rate
  - Repayment terms
- Bond counsel: Legal advisors who review the bond issue and provide a legal opinion confirming that the bonds are valid and comply with applicable laws.
- Underwriters: Investment banks or financial institutions that purchase the bonds from the issuer and sell them to investors.
- Investors: Individuals, banks, mutual funds, pension funds, and other financial institutions that buy the bonds.

# Bond Issuance Costs

- Typical issuance costs
  - Usually about 0.5%–1.5% of the bond's par value (can be lower for very large issues and higher for small or complex issues).
  - Costs vary depending on issue size, credit quality of the issuer, bond structure, market conditions, and investor demand.
- Common components of issuance costs
  - Underwriting spread (largest component)
  - Financial advisor fees
  - Bond counsel / legal fees
  - Credit rating fees
  - Printing, disclosure, and administrative costs

# Voter Approval (Bond Election)

- General obligation (GO) bonds often require voter approval, depending on state law and local government charters.
- Revenue bonds usually do not require voter approval, because they are repaid from project revenues rather than taxes.

# Underwriting

- Most municipal bonds are sold through investment banks acting as underwriters.
  - The underwriter purchases the bonds from the issuer and resells them to investors.
  - Underwriters also help price the bonds and market them to institutional investors.
- Typical underwriting fees (spread)
  - Usually 0.3%–1.0% of the bond issue
  - Lower for large, highly rated issues
  - Higher for smaller or riskier issues

# Bond features

- Term bonds: The entire principal is repaid on a single maturity date.
- Serial bonds: Principal is repaid in installments according to a scheduled series of maturity dates.
- Coupon bonds: Pay periodic interest payments (coupons), usually semiannually, with the principal repaid at maturity.
- Discount bonds: Sold at a price lower than their face (par) value.
- Zero-coupon bonds: Pay no periodic interest; instead, they are issued at a deep discount and pay the full face value at maturity.
- Fixed-rate bonds: interest rate remains constant over the life of the bond.
- Variable-rate bonds: interest rate adjusts periodically based on market conditions.
- Call provisions: Allow the issuer to redeem (repay) the bond before maturity, typically after a specified date. This feature is very common in municipal bonds.

# Debt burden measures

- Per capita debt: Total government debt divided by the population.
- Debt relative to economic capacity:
  - Debt-to-income
  - Debt-to-wealth
  - Debt-to-GDP (or regional economic output)
- Debt to assets (or net position): Compares total liabilities with the government's assets.
- Debt service to total expenditures: Measures how much of the government's spending goes toward principal and interest payments.
- Debt service to current revenues: Indicates the share of current revenues required to repay debt.

# Bond rating

- Bond ratings influence borrowing costs. Higher-rated bonds typically have lower interest rates, while lower-rated bonds require higher yields to attract investors.
- Major rating agencies: Moody's; Standard & Poor's (S&P); Fitch
- Factors affecting bond ratings
  - Economic conditions: Strength and diversity of the local or regional economy.
  - Debt structure: Total debt levels, repayment schedule, and debt service burden.
  - Financial condition: Revenue stability, budget balance, reserves, and fiscal management.
  - Demographic factors: Population growth, income levels, employment trends, and tax base stability.
  - Governance and management practices: Financial management policies, budgeting practices, and long-term planning.

| | Moody's | Standard & Poor's | Fitch |
|---|---|---|---|
| Best Quality | Aaa | AAA | AAA |
| High Quality | Aa1<br>Aa2<br>Aa3 | AA+<br>AA<br>AA- | AA+<br>AA<br>AA- |
| Upper Medium Grade | A1<br>A2<br>A3 | A+<br>A<br>A- | A+<br>A<br>A- |
| Medium Grade | Baa1<br>Baa2<br>Baa3 | BBB+<br>BBB<br>BBB- | BBB+<br>BBB<br>BBB- |

# Credit rating

Cumulative historic default rates (in percent)

| Rating categories | Moody's | | S&P | |
|---|---|---|---|---|
| | Muni | Corp | Muni | Corp |
| Aaa/AAA | 0.00 | 0.52 | 0.00 | 0.60 |
| Aa/AA | 0.06 | 0.52 | 0.00 | 1.50 |
| A/A | 0.03 | 1.29 | 0.23 | 2.91 |
| Baa/BBB | 0.13 | 4.64 | 0.32 | 10.29 |
| Ba/BB | 2.65 | 19.12 | 1.74 | 29.93 |
| B/B | 11.86 | 43.34 | 8.48 | 53.72 |
| Caa-C/CCC-C | 16.58 | 69.18 | 44.81 | 69.19 |

# Debt capacity

- Debt capacity: the amount of borrowing a government can reasonably afford given its revenues, economic base, and spending needs.
- Factors influencing debt capacity
  - Expenditure pressure: population growth and service demand; economic conditions affecting service needs; condition of infrastructure and capital facilities; socioeconomic characteristics of the population
  - Revenue and resources: tax base and tax capacity; state/federal aid; other revenue sources (fees, charges, utility revenues)
  - Fiscal and institutional commitment: government willingness to prioritize debt repayment; fiscal management practices and policies; legal or constitutional debt limits and borrowing rules

# Principles for debt financing

- Use debt primarily for long-term capital investments, such as infrastructure, buildings, and major equipment.
- Avoid using debt for routine operating expenses, which should be financed with current revenues.
- Match the repayment period to the useful life of the asset being financed.
- Short-term borrowing should be used only for temporary cash flow needs, such as timing differences between revenues and expenditures.
- Total debt levels should remain within the government's debt capacity.
- Promote intergenerational equity: the residents who benefit from long-lived infrastructure should share in paying for it over time.