What is Public Finance?

Study of role of government in the economy
Taxation, other funding, managing operations, impact upon social welfare and the economy

• Economics
• Finance (Financial Economics)
• Public Economics
• Public Choice
Public Finance Tutorial

• Operations of your government
  – Social programs, public safety, education, judicial system, recreation, infrastructure
  – Infrastructure financing
    • Public – roads, transit, water, wastewater
    • Private – electricity, telecommunications, rail
    • PPP
• Other obligations of your government
  – Pensions
  – Health Care / Insurance
Public Finance Tutorial

• Managing funds for your government
  – Budgets – Good for accountability, flawed for decision making!
  – Good financial management is critical to your ability to access capital at reasonable rates
  – The summary of your financial management is in the entity’s CAFR (Comprehensive Annual Financial Report)
Public Finance Tutorial

• Financing operations of your government
  – Taxes
  – Fees and Penalties
  – Loans
  – Bonds
  – Other debt
The CAFR

• Introductory Section
• Financial Section
  – Financial Statements
  – Notes to Financial Statements
  – Auditor’s Report
• Statistical Section
  – Additional data and Ratios
  – Trend analysis
## SAMPLE CAFR: Your Town Net Position

<table>
<thead>
<tr>
<th>Current and other assets</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital assets</td>
<td></td>
</tr>
<tr>
<td><strong>Total assets</strong></td>
<td></td>
</tr>
<tr>
<td>Total deferred outflows of resources</td>
<td></td>
</tr>
<tr>
<td>Long-term liabilities outstanding</td>
<td></td>
</tr>
<tr>
<td>Other liabilities</td>
<td></td>
</tr>
<tr>
<td><strong>Total liabilities</strong></td>
<td></td>
</tr>
<tr>
<td>Net position:</td>
<td></td>
</tr>
<tr>
<td>Net investment in capital assets</td>
<td></td>
</tr>
<tr>
<td>Restricted</td>
<td></td>
</tr>
<tr>
<td>Unrestricted</td>
<td></td>
</tr>
<tr>
<td><strong>Total net position</strong></td>
<td></td>
</tr>
</tbody>
</table>
New Pension Standards

• GASB No. 67 *Financial Reporting for Pension Plans*

• GASB No. 68 *Accounting and Financial Reporting for Pensions*

• Increased transparency of pension obligations

• Net Pension Liabilities now reported on the government’s balance sheet
Important Ratios in the CAFR

• Outstanding Debt by Type
  – General Obligation, Revenue, Etc.

• General Bonded Debt Outstanding

• Debt Capacity
  – Current debt and ability to issue within legal limits

• Debt Service Funds
  – Shows the financial resources committed to repayment of debt
Infrastructure Assessment: $57 trillion

Planes, trains and sewers
Global infrastructure investment required
2013-30, $trn, 2010 prices

- Roads: 16.6
- Ports: 0.7
- Airports: 2.0
- Rail: 4.5
- Power: 12.2
- Water: 11.7
- Telecoms*: 9.5

Total: $57 trn

Source: McKinsey Global Institute

*Brazil, China, India and OECD countries only
Nature of Borrowers and Purposes of Municipal Debt Issues

• State and local governments
• On behalf of and to serve residents (the public)
• Avoid need to pay-as-you-go
• Borrow for capital asset projects
• Interim (short-term) needs of projects
• Conduit bonds for private entity (often a nonprofit), not obligation of municipality
Debt Policy

- Purposes for Debt Issuance
- Types of Debt
- Limitations on Indebtedness
- Debt maturity schedule
- Method of sale
- Method of selecting consultants and professionals
- Refunding policies
- Disclosure
Debt Limitations / Capacity

• The GFOA recommends that government “issuers undertake an analysis of their debt capacity prior to issuing bonds.”

• Debt Policy established before finalizing Needs Assessment for Capital Spending

• Debt Capacity Analysis must be performed before Debt Issuance
Purposes of Tax-Exempt Issues

• Schools, roads, police and fire stations, etc.
• Working capital needs: anticipation notes
• Private activity: 10 percent rule
• Tax-exempt private activity (95% rule)
  – Docks and Wharves
  – Airports
  – Water / Sewage / Solid Waste Projects
  – Mass Transit
Investors in Municipal Securities

- **Individual investors**
  - In-state residents primarily
  - Higher proportion for higher tax brackets
  - Household (direct)
  - Mutual Funds
  - Money Market Fund

- **Institutional Investors**
  - Insurance companies
  - Pensions
Determinants of Municipal Bond Interest Rates

• Risk and required return!
• U.S. Treasuries considered lowest risk
• Any element that deviates will increase required return
• \( R_{\text{muni}} = R_{\text{comp}}(1-t) \)
Rates and Bond Prices

<table>
<thead>
<tr>
<th>Coupon Rate</th>
<th>Yield to Maturity</th>
<th>Bond Price</th>
<th>1000 (Par)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;</td>
<td></td>
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<tr>
<td>&lt;</td>
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</tr>
</tbody>
</table>

- Bond P < $1000 => Discount
- Bond P > $1000 => Premium
Market Risk

• Risk that price of the Bond may fall
• Focus on: Interest Rate Risk
  – If interest rates rise, then bonds fall in value
  – Interest rates directly influenced by inflation
Credit Risk

- Risk that issuer is not able to repay the interest or principle
- Sometimes called Default Risk
- Bond ratings assess credit risk
Security

• General Obligation: Issuer will use tax revenue to repay
  – Local Govt: Property tax
  – State: Income and sales tax

• Revenue bond: Specific stream of revenues
  – Gross: Pledged revenues service debt first
  – Net: Operating and maintenance costs prioritized
Revenue Bond Security

• Use other sources as interim security
  – Capitalized interest
  – Defer principal payments
  – Use Capital Appreciation Bonds
Maturity Schedules

• Maturity of debt should match the useful life – “Intergenerational Equity”
• Generally – “Not exceed useful life”
• Avg Maturity Schedule – Retire 25% of debt within 5 years and 50% within 10 years (S&P)
Callable Securities

• Issuer has the option to purchase (refund) the bond at a set price (usually includes premium)
• Promised yield has additional premium to compensate the owner for the call option
• Yield on Callable Bond =
  \[ \text{Yield on Equivalent Non-Callable Bond} + \text{Call Reinvestment Risk Premium} \]
Debt Limitations / Capacity

• Debt Service Limitations
  – Operating Budget Policies
  – Operating Revenue Policies
  – General Fund Revenue Policies
  – Expenditure Limitations

• Outstanding Debt Limitations
  – Market Value Limitations
  – Assessed Value Policies
  – Per Capita Limitations
Security and Tax Law –
Restrictions and Requirements

• Basic goal: Full and comprehensive disclosure
• SEC (or MSRB) registration not required
• Rule 15c2-12
  – Brokers and dealers must provide information to MSRB
• Official Statement not required, BUT...
• Continuing disclosure not required, BUT...
• CAFR
• Rule 10b-5 “Anti-fraud” provision: Accurate disclosure and no material omission
Capital Financing Methods
Advantages/Disadvantages of Methods

• Goal is to reduce / minimize financing costs
• Often the project type makes the decision
• Understand the impact of each factor on:
  – Risk
  – Thus, cost of financing (interest rate)
Policy and Legal Considerations

• Legal or statutory constraints
• Financial and policy objectives
• Rating agency or credit enhancer criteria
• Structure to lower overall financing costs
  – Tailor to specific investor clientele?
• New debt impact on existing portfolio of obligations
Types of Municipal Debt

- General Obligation Bonds
- Revenue Bonds
General Obligation Bonds

- Often need voter approval
- Benefit community as a whole
- Secured by full faith and credit of taxing authority
- Financed by property taxes
- Lower risk to investors => lower rates
- Many states limit the amount of G.O. bonds
- No debt service reserve fund
Revenue Bonds

• Finance facilities with clear revenue base
• Secured only by that source of funds
• Less secure than G.O. => Higher rates
• “Double-barreled” bonds also G.O. secured
• Bond covenants:
  – Interest rate
  – Additional bonds test
  – Operational/maintenance requirements
Tax Increment Financing

• Primary form of Economic Development / Redevelopment financing
• Tax revenue from two sources
  – Base revenues – existing sources that can assess property taxes
  – Incremental revenues – new revenues above the base revenues generated by development projects
Special Assessment or Special Improvement Bonds

• Assessment only levied on properties benefitting from project
• Risk is above average
• Some jurisdictions mitigate the risk by pledging full faith and credit
Long-Term Debt

- Coupon-paying debt
  - Serial Bond issue – several bonds with maturities in consecutive years
  - Term Bond – Bond with single maturity
    - Often at conclusion of Serial Bond (like several serial bonds maturing at one point)
- Zero-coupon bonds (Zeros, Discount)
Short-Term Debt

• Interest Rates generally lower than for LTD
• Direct Loans – usually with Local Bank
• Line of Credit – w/ Local Bank
• Tax exempt debt – BANs, RANs, TANs, GANs
  – Bond-, Revenue-, Tax-, Grant- anticipation notes
  – Tax-exempt commercial paper
• State Lending Programs
• Reverse Repurchase Agreement
Variable Rate Debt

• Interest charge changes with current market interest rates – “Short term”
• Better if interest rates fall from levels at issue
• Useful for interim financing
Types of Leases and Transactions

• Operating lease
  – “True Lease” < 75% of useful life
• Equipment or facilities
• Rarely need voter approval
• Reduce commitment, effective for shorter asset needs
• Annual costs higher than bond financed purchase of assets
Certificates of Participation

• Investors participate in the government’s lease-purchase agreement
• Portion of lease payments go to investor
• Tax-exempt income to investor
• Significant credit risk => high rates
Role of Rating Agencies

- Moody’s Investor Services, Standard & Poor’s, Fitch Ratings, Kroll Bond Rating Agency
- Ratings assess Credit Risk
- Lower risk => Higher Rating
- Higher Rating => Lower financing cost
Rating Process and Analysis

• Issuer requests rating agency to provide rating
• Submit drafts of bond documents (preliminary official statement, audited financial reports (CAFR), operating and capital budgets
• Analyst makes recommendation
• Ratings committee makes final determination
Information Requirements

• GO: Debt Burden, Management, Financial Performance, Economic Base
• Revenue: add Demand for Service, look at Trust Indenture, Rate Covenants
Rating Designations


• Long-term Debt:
  • Investment Grade
    – AAA (Aaa) to BBB- (Baa3)
  • High-yield (Junk)
    – Below BBB- to D (C)

• Default rates lower for Munis than similar rated Corporates
## Tracking Bond Benchmarks

Friday, December 05, 2014

<table>
<thead>
<tr>
<th>Index</th>
<th>Close</th>
<th>% Chg</th>
<th>YTD total return</th>
<th>52-wk % Chg</th>
<th>Latest</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Broad Market</strong> Barclays Capital</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>U.S. Government/Credit</td>
<td>2072.50</td>
<td>-0.28</td>
<td>5.25</td>
<td>5.12</td>
<td>2.150</td>
<td>1.840</td>
<td>2.200</td>
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<tr>
<td><strong>U.S. Corporate Indexes</strong> Barclays Capital</td>
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<td></td>
<td></td>
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<tr>
<td>U.S. Corporate</td>
<td>2466.12</td>
<td>-0.28</td>
<td>6.58</td>
<td>7.04</td>
<td>3.150</td>
<td>2.810</td>
<td>3.280</td>
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<tr>
<td>Intermediate</td>
<td>2382.87</td>
<td>-0.33</td>
<td>4.04</td>
<td>4.05</td>
<td>2.540</td>
<td>2.160</td>
<td>2.570</td>
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<tr>
<td>Long-term</td>
<td>3237.35</td>
<td>-0.16</td>
<td>13.36</td>
<td>15.19</td>
<td>4.550</td>
<td>4.350</td>
<td>5.290</td>
</tr>
<tr>
<td>Double-A-rated (AA)</td>
<td>507.34</td>
<td>-0.29</td>
<td>5.41</td>
<td>5.48</td>
<td>2.420</td>
<td>2.090</td>
<td>2.450</td>
</tr>
<tr>
<td>Triple-B-rated (Baa)</td>
<td>624.23</td>
<td>-0.28</td>
<td>7.21</td>
<td>7.88</td>
<td>3.600</td>
<td>3.220</td>
<td>3.810</td>
</tr>
<tr>
<td><strong>U.S. Agency Indexes</strong> Barclays Capital</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>U.S. Agency</td>
<td>1556.05</td>
<td>-0.25</td>
<td>3.14</td>
<td>2.82</td>
<td>1.410</td>
<td>1.150</td>
<td>1.450</td>
</tr>
<tr>
<td>10-20 years</td>
<td>1407.50</td>
<td>-0.24</td>
<td>1.85</td>
<td>1.54</td>
<td>1.210</td>
<td>0.940</td>
<td>1.230</td>
</tr>
<tr>
<td>20-plus years</td>
<td>2940.86</td>
<td>-0.29</td>
<td>16.58</td>
<td>16.24</td>
<td>3.160</td>
<td>2.980</td>
<td>4.210</td>
</tr>
<tr>
<td><strong>Tax-Exempt</strong> Merrill Lynch</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Muni Master</td>
<td>482.96</td>
<td>-0.11</td>
<td>7.43</td>
<td>7.47</td>
<td>1.802</td>
<td>1.554</td>
<td>2.670</td>
</tr>
<tr>
<td>7-12 years</td>
<td>335.19</td>
<td>-0.14</td>
<td>7.04</td>
<td>7.23</td>
<td>1.873</td>
<td>1.564</td>
<td>2.614</td>
</tr>
<tr>
<td>12-22 years</td>
<td>369.03</td>
<td>-0.10</td>
<td>10.89</td>
<td>11.04</td>
<td>2.325</td>
<td>2.004</td>
<td>3.829</td>
</tr>
<tr>
<td>22-plus years</td>
<td>347.27</td>
<td>-0.10</td>
<td>14.34</td>
<td>14.47</td>
<td>3.040</td>
<td>2.800</td>
<td>4.919</td>
</tr>
</tbody>
</table>
The Bond Sale
Selecting a Municipal Advisor

- Track Record
- Style and Strategies
- Government-specific needs
Investment Advisers

• New rules for Municipal Advisors
• Requires Municipal Advisors to register with the Securities Exchange Commission
• A municipal advisor is a person (who is not a municipal entity or an employee of a municipal entity) that provides advice to or on behalf of a municipal entity or obligated person with respect to municipal financial products or the issuance of municipal securities, or that undertakes a solicitation of a municipal entity or obligated person.
Selecting Bond Counsel

• Experience of firm with similar issues
• Experience in similar tax matters
• Experience regarding federal securities law
• ID potential conflicts of interest
• Appropriate malpractice insurance
Methods of Sale

- Private Placement – unique situations
- Competitive bid
- Negotiated bid
Competitive Bid Process

• Solicit bids from underwriters
• Select (sell to) underwriter or syndicate from bids
• Issuer has responsibility for setting size, structure of issue, obtaining rating, prepare documentation
• Syndicate surveys bond market, reviews comparable issues, identifies potential investors
• Notice of Sale to advertise the issue
Evaluation of Bids

• Ensure terms of Notice of Sale are met
• Bonds awarded to bid with lowest Net Interest Cost or True Interest Cost
• NIC = Total Coupon PMTS + Discount (-Prem) / # of Bond Years
• TIC = Rate that discounts future payments to value equal to the bond proceeds, IRR
Pricing Bonds in a Negotiated Sale

- Underwriting firm established early in process
- Syndicate commits to Agreement Among Underwriters
- Final rates set after marketing by underwriter: day of sale
Preparation of the Official Statement

• “Near final” Official Statement must be reviewed by underwriter before recommending to customers
• Terms of issue
• Information: financial, operating data, funds, accounts, persons with material interest
Role of Underwriter

• Primary qualification: ability to sell issue
• Help establish
  – type of financing
  – Redemption features
  – Coupon
  – Yield
  – Premium or discount issue
Syndicate Activities

• Managing or “lead” underwriter – usually investment bank
• Underwriter syndicate
  – Investment banks and brokers
  – To handle the marketing of issue too large for one underwriter
  – To handle the marketing of issue with more risk than one underwriter wants to manage
• Selling group is only responsible for marketing / sales of issue
Complying with Arbitrage Restrictions

• Arbitrage is associated with the low rate financing available to governments
• Returns on invested funds may exceed the cost of borrowing those funds (Bond issue)
• See other presentations at the Conference!!
• There are Exemptions!
Assessing Refinancing Opportunities: Refunding

• Savings of at least 110 bp and certainly at 150 bp – Kalotay and May

• At least 3-5% cash (NPV) savings, net of all issuance costs and cash contributed to refunding
Providing Secondary Market Disclosure

- Municipal Securities Rulemaking Board
- MSRB gives guidance on EMMA
- Take utmost care!
Continuing Disclosure Requirements

EMMA
Electronic Municipal Market Access
A service of the MSRB

emma.msrb.org
Maintaining an Investor Relations Program

• Identify responsible individual who will approve all external communication regarding disclosure

• Ensure communication with ratings agencies and significant institutional investors

• Provide Disclosures and Official Financial Documents on Website
Providing Updated Information to Rating Agencies

• Ensure prompt information flow to Rating Agencies to enhance relationship with those parties

• Information significant to the government’s financial position
Cash Management Specific Objectives

• Maintain liquidity
• Optimize cash resources
• Protect government assets
• Generate investment income
Internal Controls

- Segregation of Duties
- Daily processing and timely deposits
- Reconciliation
- Automation
Cash Flow Forecast Objectives

- Optimize Use of Funds
- Insure Liquidity
- Goal: avoid need for short-term borrowing or selling securities before maturity
Keys to Bank Management

• Protect Governmental Assets (#1)
• Understand What You Pay For
• Determine the Banking Services you Need
• Assess Innovations in Technology
Securing Deposits

• Too Big to Fail?
• FDIC coverage
• Collateralization: Virginia Security for Public Deposits Act
• CAMEL Credit evaluation
CAMEL

• C = Capital Adequacy
• A = Asset Quality
• M = Management
• E = Earnings
• L = Liquidity

• However... collateralization coverage by Virginia Security for Public Deposits Act
Virginia Security for Public Deposits Act

- Protects public deposits held in Virginia banks and Savings & Loans
- All deposits must be collateralized
- Managed by the Virginia Department of Treasury
  - Monitors collateral balances
  - Publishes list of qualified public depositories
  - Sets collateralization guidelines
Does Size Matter?

• Large banks
  – Too big to fail?
  – Staff resources
  – Service capabilities
  – Volume processing capabilities
  – Systems

• Small banks
  – Personal attention
  – Local coverage
  – Customized relationships
  – Outsourced services
Getting the Most Out of Banking Relationships

• Understand the changing banking sector
• Minimize your risk exposure
• Assess the benefits of new technology
• Understand how bank compensation works
• Maintain an open dialogue with your banking partners