

Introduction To Municipal Finance

Presented to Division 6 of the
California Municipal Treasurers Association

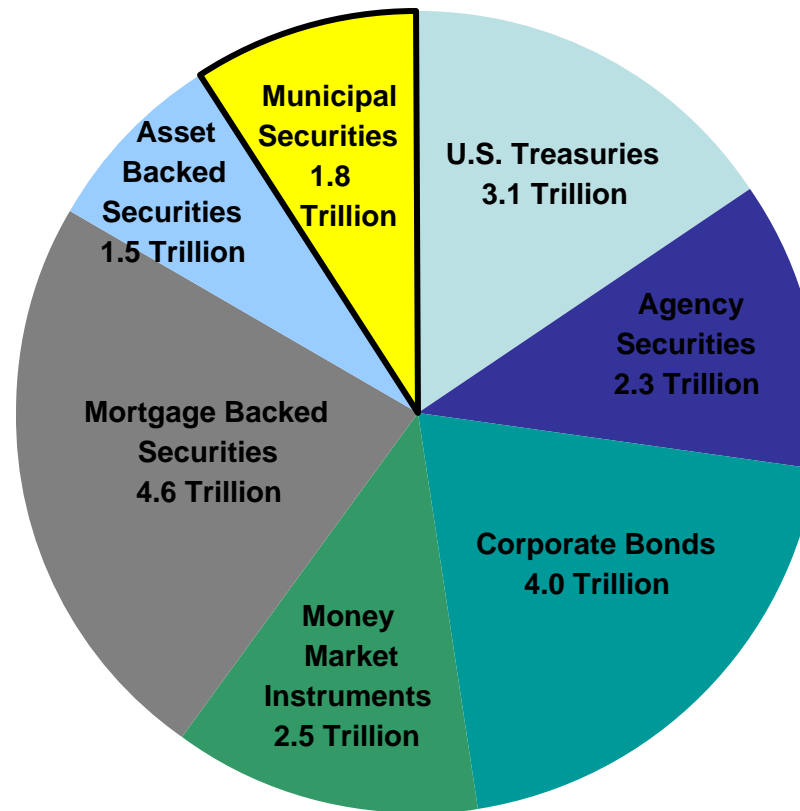
September 8, 2005

The Market

U.S. Capital Markets



Fixed Income Market



Municipal Securities Market



* Source: 2004 Bond Buyer Statistical Summary

Issuance Patterns

	2000	2001	2002	2003	2004
Par Value (Billions)	\$ 200.7	\$ 288.2	\$ 358.7	\$ 384.0	\$ 418.8
Transactions	11,257	13,973	14,404	14,973	16,607
Avg. Size (Millions)	\$17.8	\$20.6	\$24.9	\$25.6	\$25.2
Negotiated	73%	77%	79%	79%	76%
Competitive	24%	22%	20%	21%	23%
Private Placement	3%	1%	1%	1%	1%

Source: 2004 Bond Buyer Annual YearBook

2004 Long-Term Bond Issuance by Sector

General Purpose	118,730	32.9%
Education	96,341	26.7%
Utilities	33,202	9.2%
Transportation	32,354	9.0%
Health Care	28,368	7.9%
Housing	22,603	6.3%
Public Facilities	8,847	2.5%
Electric Power	7,025	1.9%
Environmental Facilities	6,905	1.9%
Development	6,386	1.8%
	\$ 360,761	100%

Source: Bond Buyer - Annual Statistical Section

Fixed vs. Variable

Fixed	Variable
\$ 317.00	\$ 101.80

Short-Term vs. Long-Term

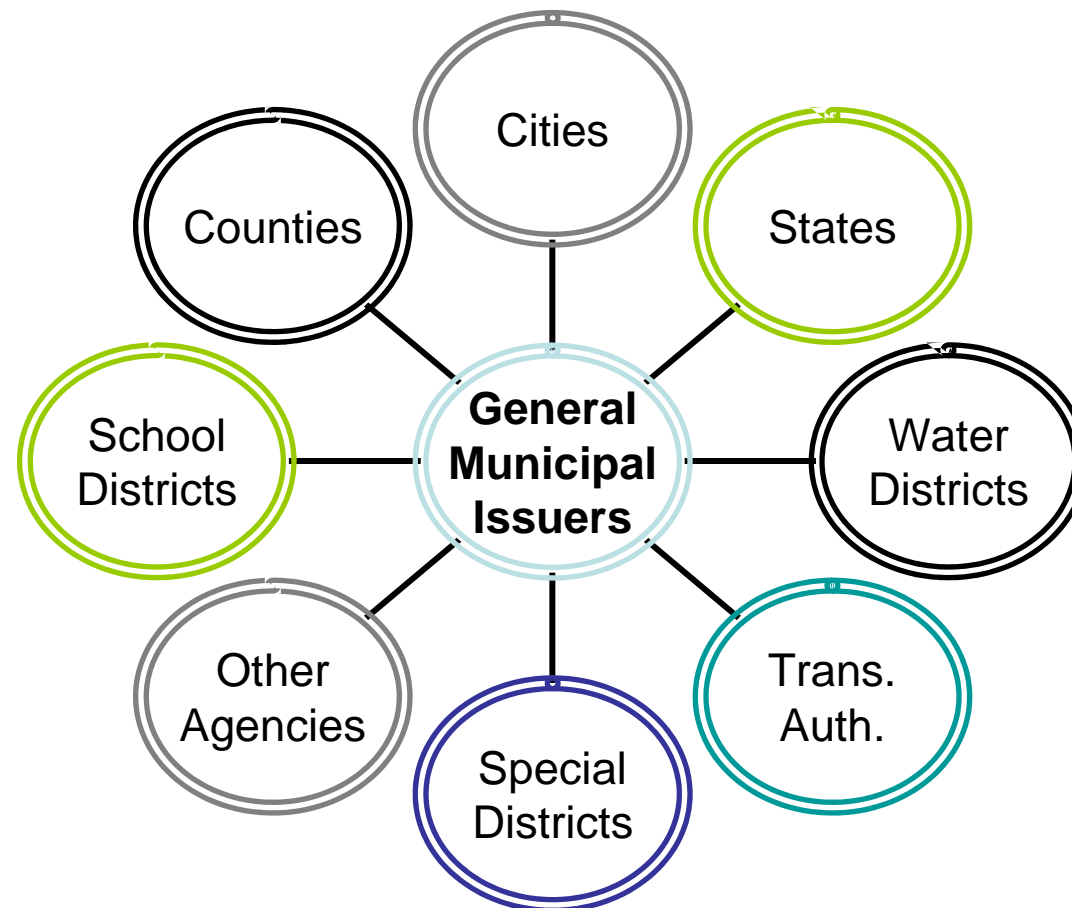
Notes	Bonds
\$ 58.00	\$ 360.70

New Money vs. Refunding

New	Refund
\$ 290.50	\$ 128.20

Who Issues Municipal Bonds ?
Why Buy Municipal Bonds ?
Who Buys Municipal Bonds ?

Who Issues Tax-Exempt Bonds?



Private Activity Bonds?

**Private
Activity
Bonds**

❑ Conduit Issues

- ◆ 501(c) 3 Non-profits
- ◆ Facilities for Airports, Docks, Warves
- ◆ Health care facilities
- ◆ Environmental facilities
- ◆ Multi-family and Single-family Housing
- ◆ Student Loan Bonds
- ◆ Industrial Development Bonds (IDBs)

**Usually Requires Volume Cap*

Total U.S. Volume Cap - \$25 Billion

Tax Equivalent Yield

- **Tax Exempt Rate / (1 - Income Tax Rate)**
 $3.55\% / (1 - 28\%) = 4.93\%$

Impact of State Income Tax

1. Federal Income Tax Rate = 28%

2. CA State Income Tax = 9.3%

$$9.3\% \times (1 - 28\%) = 6.7\%$$



3. Marginal Tax Rate = 34.7%

Taxable Equivalent Yield

$$3.55\% / (1 - 34.7\%) = 5.43\%$$

It's not what you earn, it's what you keep!

Impact of Higher Tax Bracket

- ❑ **Tax-exempt securities are more attractive to investors in higher tax brackets.**

1. Federal Income Tax Rate = 38.9%

2. California State Income Tax = 9.3%

$$9.3\% \times (1 - 38.9\%) = 5.7\%$$

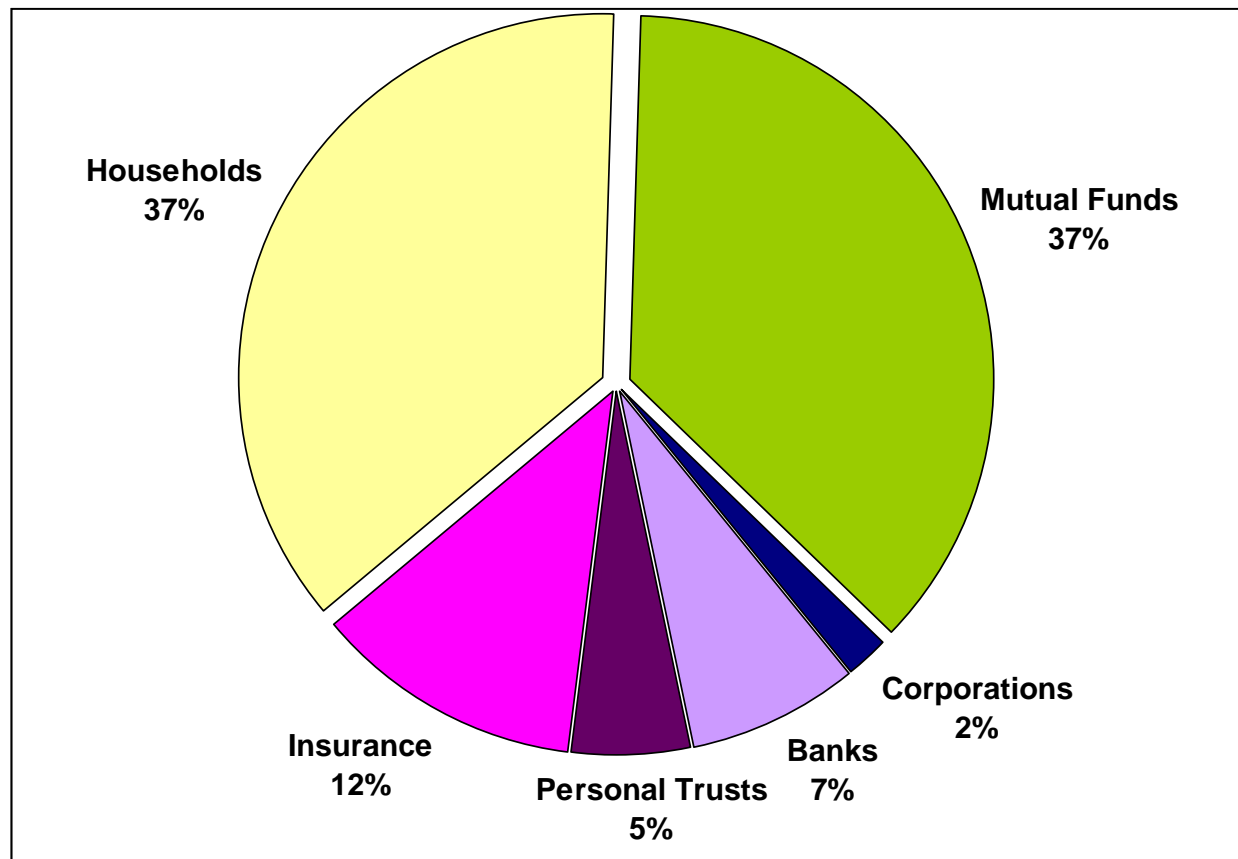
3. Marginal Tax Rate = 44.6%

Taxable Equivalent Yield

$$3.55\% / (1 - 44.6\%) = \mathbf{6.40\%}$$

- ◆ Tax-exempt securities often provide attractive investments to high net worth investors. 10-year AAA/AA corporate bonds yielding 4.50 – 4.75%.
- ◆ California issuers have lower borrowing costs (than national average): 10-Year Insured (National Scale) = 3.55% vs. CA-Insured = 3.45%

Holders of Municipal Debt



The Basics

What is a municipal bond?

□ What is a bond?

- ◆ A loan secured by a pledge of revenues and/or assets (e.g., car loan, mortgage, etc.)
- ◆ Monetized cash flows.

□ What is a municipal bond?

- ◆ A debt or obligation of a public agency.
- ◆ Bears interest.
- ◆ Recognize by specific maturity date.
- ◆ Generally used for capital financing.

Types of Municipal Securities

- ❑ Backed by Revenue of Project/Enterprise
 - ◆ Backed by project/enterprise-specific revenues
 - ✓ Revenue bonds - water and wastewater enterprise bonds, parking bonds, sales tax, etc.)
 - ✓ Tax Allocation Bonds
- ❑ Direct Obligation of Issuer
 - ◆ Requires an General Fund Pledge and/or asset pledge, but no voter approval required
 - ✓ COPs / Lease Revenue Bonds / Tax-exempt Lease
 - ✓ POBs (Pension Obligation Bonds)
 - ✓ TRANs (Tax and Revenue Anticipation Notes)
- ❑ Backed by Property Tax or Special Lien
 - ◆ Requires voter approval
 - ✓ General Obligation Bonds – unlimited ability to raise taxes
 - ✓ Assessment District Bonds – special assessment bonds
 - ✓ CFDs (Community Facilities District) – special tax bonds

Impact of Interest on Borrowing

Sources & Uses

- ❑ Comparison of 15 and 30 –year financing

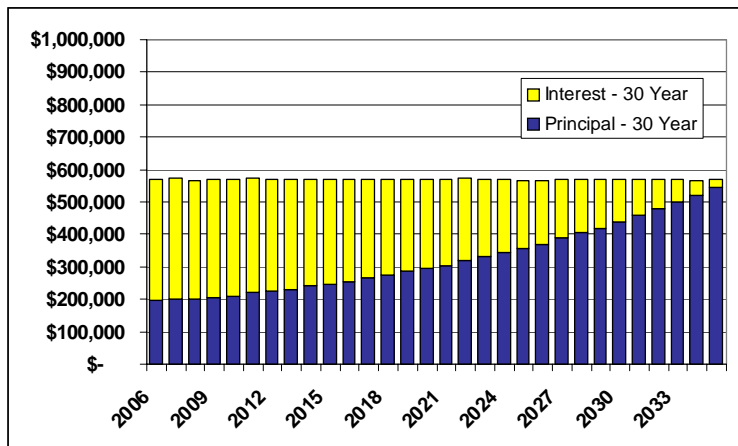
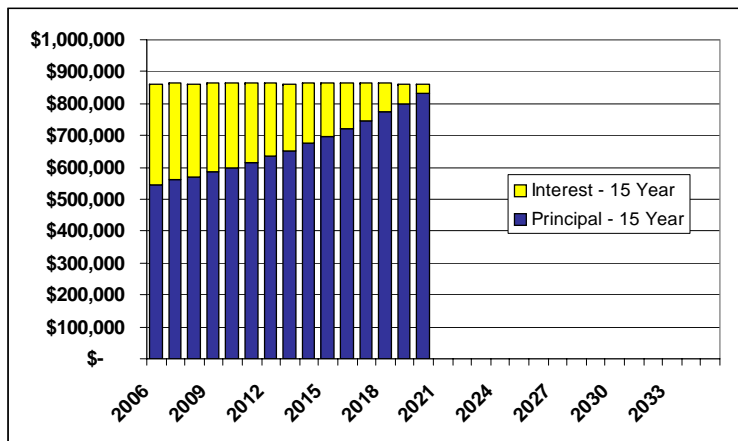
	15-Year Bond	30-Year Bond
<u>SOURCES</u>		
Par Amount	\$ 10,000,000	\$ 9,730,000
Total Sources	\$ 10,000,000	\$ 9,730,000
<u>USES</u>		
Project Fund	8,812,720	8,812,720
Debt Service Reserve	866,030	571,960
Cost of Issuance	150,000	150,000
Underwriter's Discount	100,000	97,300
Bond Insurance - 55 bps	71,250	93,986
	<u>\$ 321,250</u>	<u>\$ 341,286</u>
Additional Proceeds	-	4,034
Total Uses	\$ 10,000,000	\$ 9,730,000

Sample Debt Service Schedule

	Date	Principal	Coupon	Interest	Debt Service	Annual D/S	All-In TIC%
	6/1/2005						\$ (9,678,750)
1	12/1/2005	-		158,329	158,329		155,313
2	6/1/2006	545,000	2.10%	158,329	703,329	861,658	676,794
3	12/1/2006	-		152,606	152,606		144,052
4	6/1/2007	560,000	2.25%	152,606	712,606	865,213	659,851
5	12/1/2007	-		146,306	146,306		132,895
6	6/1/2008	570,000	2.35%	146,306	716,306	862,613	638,253
7	12/1/2008	-		139,609	139,609		122,027
8	6/1/2009	585,000	2.50%	139,609	724,609	864,218	621,292
9	12/1/2009	-		132,296	132,296		111,273
10	6/1/2010	600,000	2.70%	132,296	732,296	864,593	604,195
11	12/1/2010	-		124,196	124,196		100,519
12	6/1/2011	615,000	2.85%	124,196	739,196	863,393	586,878
13	12/1/2011	-		115,433	115,433		89,901
14	6/1/2012	635,000	3.05%	115,433	750,433	865,865	573,321
15	12/1/2012	-		105,749	105,749		79,252
16	6/1/2013	650,000	3.25%	105,749	755,749	861,498	555,600
17	12/1/2013	-		95,186	95,186		68,645
18	6/1/2014	675,000	3.35%	95,186	770,186	865,373	544,852
19	12/1/2014	-		83,880	83,880		58,209
20	6/1/2015	695,000	3.45%	83,880	778,880	862,760	530,214
21	12/1/2015	-		71,891	71,891		48,007
22	6/1/2016	720,000	3.55%	71,891	791,891	863,783	518,733
23	12/1/2016	-		59,111	59,111		37,984
24	6/1/2017	745,000	3.65%	59,111	804,111	863,223	506,866
25	12/1/2017	-		45,515	45,515		28,144
26	6/1/2018	775,000	3.70%	45,515	820,515	866,030	497,693
27	12/1/2018	-		31,178	31,178		18,551
28	6/1/2019	800,000	3.80%	31,178	831,178	862,355	485,140
29	12/1/2019	-		15,978	15,978		9,148
30	6/1/2020	830,000	3.85%	15,978	845,978	861,955	475,149
		\$ 10,000,000		\$ 2,954,525	\$ 12,954,525	\$ 12,954,525	\$ (0)

3.8830%

Debt Service Comparison



15-Year Bond

Total Interest	\$	2,954,525	
Total D/S	\$	12,954,525	
Avg. Annual D/S	\$	863,635	
All-In TIC%		3.883%	

30-Year Bond

Total Interest	\$	7,358,413	249%
Total D/S	\$	17,088,413	132%
Avg. Annual D/S	\$	569,614	-34%
All-In TIC%		4.399%	

Credit Ratings, Credit Enhancement and Borrowing Costs

Credit Ratings and Bond Insurance

	Moody's	Standard & Poors	FITCH
"AA" category	Aaa	AAA	AAA
	Aa1	AA+	AA+
	Aa2	AA	AA
	Aa3	AA-	AA-
"A" category	A1	A+	A+
	A2	A	A
	A3	A-	A-
"BBB" category	Baa1	BBB+	BBB+
	Baa	BBB	BBB
	Baa3	BBB-	BBB-

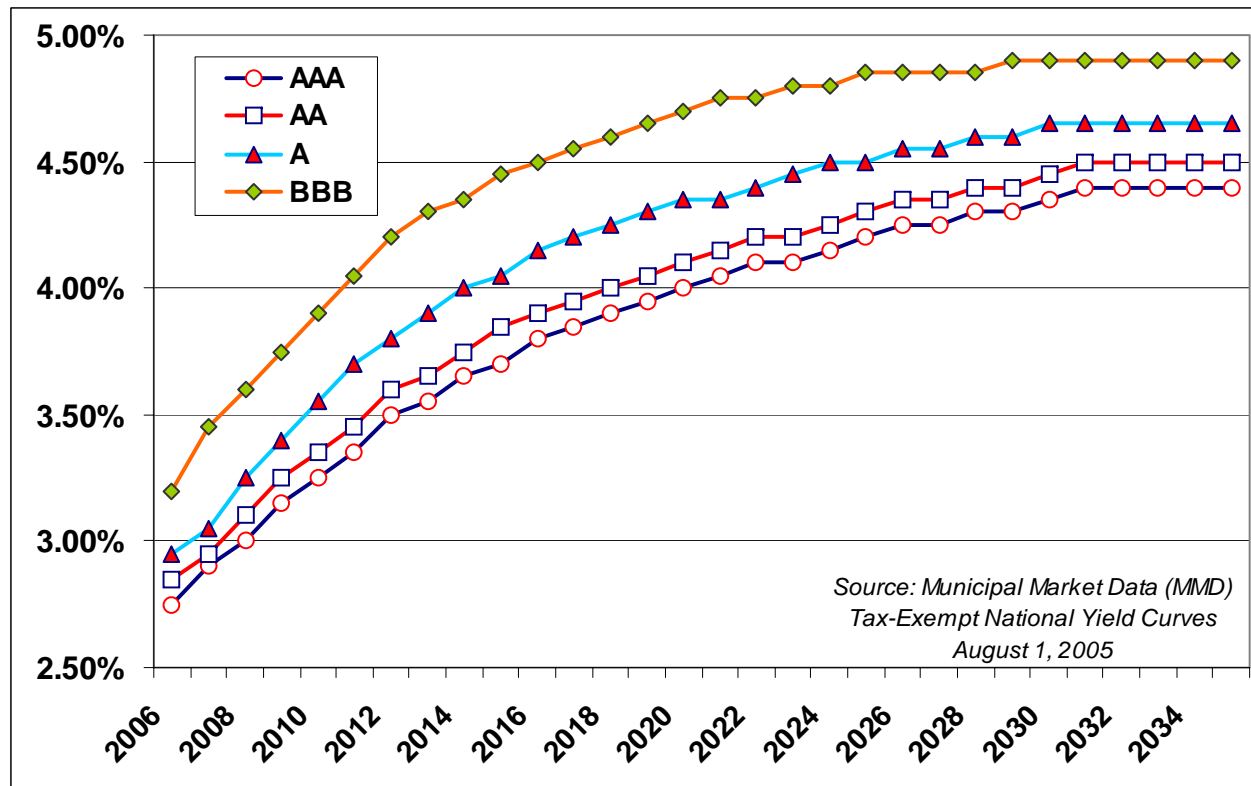







- Bond that carry "AAA" bond insurance trade like natural "AA" bonds.
- Fees based on total debt service paid (principal + interest).

The Yield Curve



☐ Tax-Exempt Bonds take advantage of serialized (annual maturities) structure, as opposed to a single bullet maturity

The Yield Curve

MMD National Tax-Exempt Investment Grade

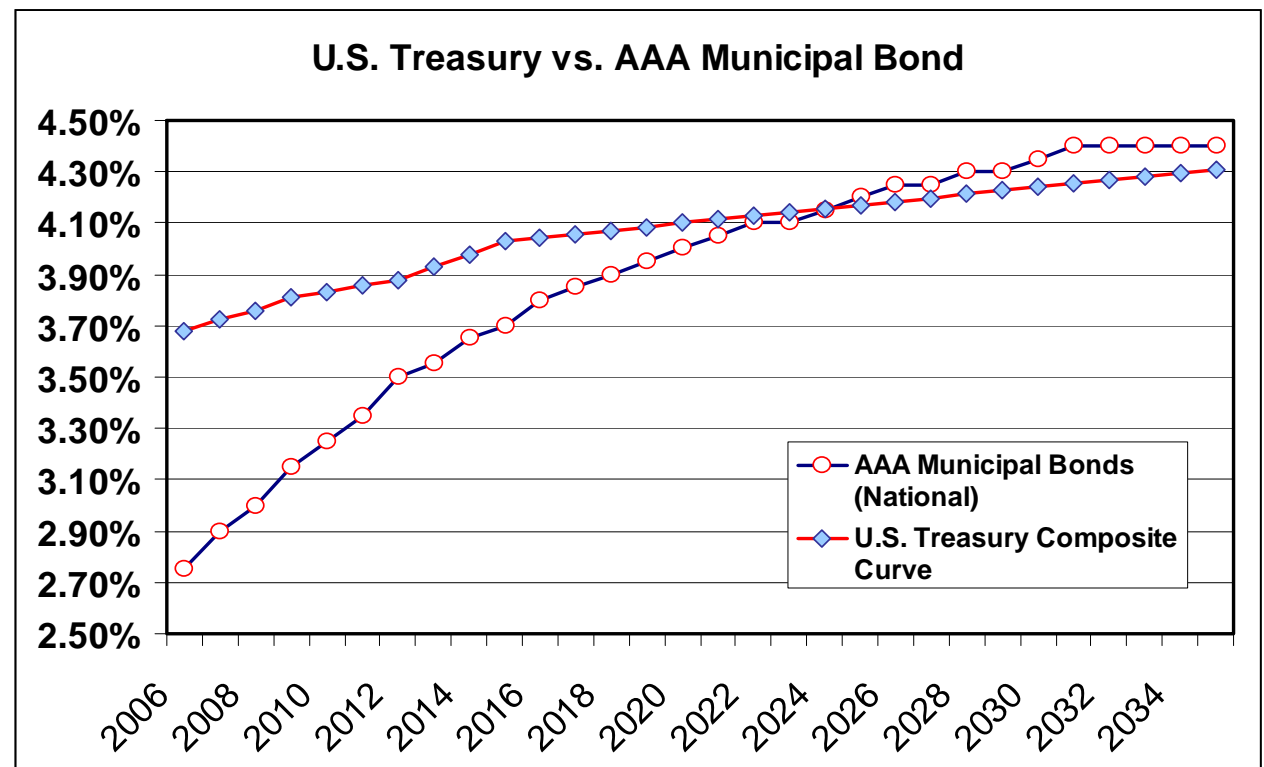
		AAA	AA	A	BBB	AAA / AA Spread	AA to A Spread	A to BBB Spread
1	2006	2.75%	2.85%	2.95%	3.20%	0.10%	0.10%	0.25%
2	2007	2.90%	2.95%	3.05%	3.45%	0.05%	0.10%	0.40%
3	2008	3.00%	3.10%	3.25%	3.60%	0.10%	0.15%	0.35%
4	2009	3.15%	3.25%	3.40%	3.75%	0.10%	0.15%	0.35%
5	2010	3.25%	3.35%	3.55%	3.90%	0.10%	0.20%	0.35%
6	2011	3.35%	3.45%	3.70%	4.05%	0.10%	0.25%	0.35%
7	2012	3.50%	3.60%	3.80%	4.20%	0.10%	0.20%	0.40%
8	2013	3.55%	3.65%	3.90%	4.30%	0.10%	0.25%	0.40%
9	2014	3.65%	3.75%	4.00%	4.35%	0.10%	0.25%	0.35%
10	2015	3.70%	3.85%	4.05%	4.45%	0.15%	0.20%	0.40%
11	2016	3.80%	3.90%	4.15%	4.50%	0.10%	0.25%	0.35%
12	2017	3.85%	3.95%	4.20%	4.55%	0.10%	0.25%	0.35%
13	2018	3.90%	4.00%	4.25%	4.60%	0.10%	0.25%	0.35%
14	2019	3.95%	4.05%	4.30%	4.65%	0.10%	0.25%	0.35%
15	2020	4.00%	4.10%	4.35%	4.70%	0.10%	0.25%	0.35%
16	2021	4.05%	4.15%	4.35%	4.75%	0.10%	0.20%	0.40%
17	2022	4.10%	4.20%	4.40%	4.75%	0.10%	0.20%	0.35%
18	2023	4.10%	4.20%	4.45%	4.80%	0.10%	0.25%	0.35%
19	2024	4.15%	4.25%	4.50%	4.80%	0.10%	0.25%	0.30%
20	2025	4.20%	4.30%	4.50%	4.85%	0.10%	0.20%	0.35%
21	2026	4.25%	4.35%	4.55%	4.85%	0.10%	0.20%	0.30%
22	2027	4.25%	4.35%	4.55%	4.85%	0.10%	0.20%	0.30%
23	2028	4.30%	4.40%	4.60%	4.85%	0.10%	0.20%	0.25%
24	2029	4.30%	4.40%	4.60%	4.90%	0.10%	0.20%	0.30%
25	2030	4.35%	4.45%	4.65%	4.90%	0.10%	0.20%	0.25%
26	2031	4.40%	4.50%	4.65%	4.90%	0.10%	0.15%	0.25%
27	2032	4.40%	4.50%	4.65%	4.90%	0.10%	0.15%	0.25%
28	2033	4.40%	4.50%	4.65%	4.90%	0.10%	0.15%	0.25%
29	2034	4.40%	4.50%	4.65%	4.90%	0.10%	0.15%	0.25%
30	2035	4.40%	4.50%	4.65%	4.90%	0.10%	0.15%	0.25%

Municipal Market Data (MMD) - Rates National Scale as of August 1, 2005

U.S. Treasuries vs. Municipal Bonds

		AAA Municipal Bonds (National)	U.S. Treasury Composite Curve	%
1	2006	2.75%	3.68%	75%
2	2007	2.90%	3.73%	78%
3	2008	3.00%	3.76%	80%
4	2009	3.15%	3.81%	83%
5	2010	3.25%	3.83%	85%
6	2011	3.35%	3.86%	87%
7	2012	3.50%	3.88%	90%
8	2013	3.55%	3.93%	90%
9	2014	3.65%	3.98%	92%
10	2015	3.70%	4.03%	92%
11	2016	3.80%	4.04%	94%
12	2017	3.85%	4.06%	95%
13	2018	3.90%	4.07%	96%
14	2019	3.95%	4.09%	97%
15	2020	4.00%	4.10%	98%
16	2021	4.05%	4.11%	98%
17	2022	4.10%	4.13%	99%
18	2023	4.10%	4.14%	99%
19	2024	4.15%	4.16%	100%
20	2025	4.20%	4.17%	101%
21	2026	4.25%	4.18%	102%
22	2027	4.25%	4.20%	101%
23	2028	4.30%	4.21%	102%
24	2029	4.30%	4.23%	102%
25	2030	4.35%	4.24%	103%
26	2031	4.40%	4.25%	103%
27	2032	4.40%	4.27%	103%
28	2033	4.40%	4.28%	103%
29	2034	4.40%	4.30%	102%
30	2035	4.40%	4.31%	102%

Rates as of August 1, 2005



The tax-exempt interest rates do not follow the Treasury market directly.

FITCH Default Study

Municipal Bonds vs. Corporate Bonds

Cumulative 10-Year Default Rates

AAA	0.06
AA	0.82
A	0.79
BBB	3.27
BB	18.09
B	34.99
CCC	56.65

Recovery Rates

Corporate Bonds	41%
vs.	
Municipal Bonds	68%

Cumulative 15-Year Default Rates Municipal Bond Sector

Tax Supported / General Purpose	0.26
Single-family Housing	0.18
Multi-family Housing	4.86
Health Care	2.62
Industrial Development	14.89
Environmental Facilities	0.32
Electric Power	2.77
Water and Sewers	0.04
Transportation	0.04
Public Facilities	0.13
Education	0.05
Overall Default Rate	1.48*

**1.08 without IDBs*

Source: FITCH 1999 and 2003 Municipal Default Risk Studies

The Issuance Process

The Players

Issuer

- ◆ Hires the team
- ◆ Approves financing
- ◆ Provides financing objectives

Bond counsel

- ◆ Issues opinion as to validity and exemption
- ◆ Drafts basic legal documents (e.g. Trust Indenture) and Resolutions

Underwriter

- ◆ Buys at wholesale, sells at retail

Financial advisor

- ◆ Advises on suitability of financial plan, pricing, terms and structure

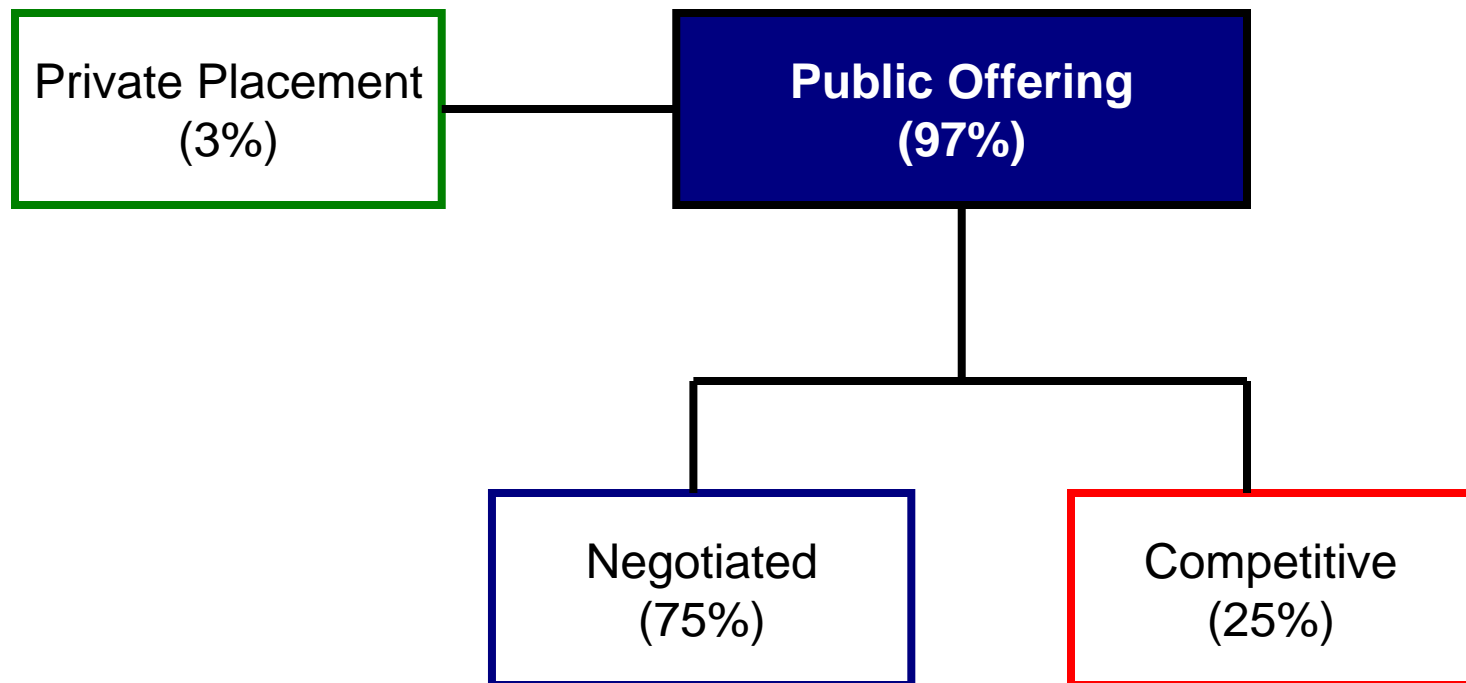
Disclosure Counsel

- ◆ Drafts Offering Document (Preliminary Official Statement – POS) (Official Statement – OS)

The Role of the Financial Advisor

- ❑ Planning of the financing program
 - ◆ How much money is needed; when is it needed; how much will it cost
- ❑ Management of the individual sales of debt required to execute the program
 - ◆ Probably the most visible part of what we do, but by no means the most important
- ❑ Selection of the underwriter and other service providers
 - ◆ Bond counsel, rating agency, trustee, insurer, others
- ❑ Advise on the reinvestment of bond proceeds

Method of Issuance



- ❑ The issuer should decide which method of sale is likely to result in the lowest costs for its debt and achieve other important policy objectives

Public Offering

□ Competitive Sale

- ◆ Typically used for G.O. Bonds/investment grade issues.
- ◆ FA assists issuer in determining size and structure.
- ◆ Publish Notice of Sale (NOS) – serves as Purchase Agreement
- ◆ Solicit bids via competitive process
- ◆ Sell bonds to firm/syndicate that provides the lowest borrowing costs (TIC%)

□ Negotiated Sale

- ◆ May be used for transactions that require greater market support.
- ◆ Underwriting firm is selected in advance of the sale date.
- ◆ Final purchase price, reflecting underwriter's discount and coupon-yield structure is negotiated on the sale date.
- ◆ Once the terms for the sale have been reached, a bond purchase agreement is executed.

Private Placement

- ❑ Issuer sells bonds directly to a limited number of sophisticated investors without a public offering.
 - ◆ Includes tax-exempt leases
- ❑ Limited secondary market for trades.
- ❑ No offering documents needed.
- ❑ Lower issuance costs, slightly higher borrowing costs
- ❑ Smaller transactions / shorter maturity

Ten Helpful Tips

Ten Helpful Tips

- ❑ Focus on the borrowing costs and structure – not the cost of issuance.
 - ◆ 1 bps reduction in a Term bond (10 years) for a 30-year borrowing saves more than \$10,000.
- ❑ Tax-exempt bonds are not always better than taxable bonds.
- ❑ 3% NPV savings is a general rule
 - ◆ Depends on time to maturity, level of interest rates, amount of savings, and refunding objectives.
 - ◆ “Suit Rule” – The amount of savings from a refunding issue should exceed the fees of the “people in suits” (attorneys, bankers, consultants)

Ten Helpful Tips

- ❑ Cash-funded DSR may cost less than a Surety.
- ❑ Do not ignore the reinvestment of bond proceeds
 - ◆ Refunding with 3% savings on \$10 million = \$300,000
 - ◆ In comparison,
 - ◆ Increase DSR earnings by 1.0% for 30 years: ($\$1 \text{ million DSR} \times 1.0\% \times 30 = \$300,000$)
- ❑ Opportunity to make up negative arbitrage goes away when you call the bonds.
- ❑ You may not have to perform arbitrage calculations every 5 years.

Ten Helpful Tips

- ❑ G.O. Bond Election does not require majority voter approval
 - ◆ Requires 1/3 + 1 voter to say no
- ❑ Include additional \$ in Cost of Issuance (contingency) to cover future / on-going legal and consulting fees.
- ❑ Post Documents On-Line + Get Final Transcripts in Electronic (Pdf) Format.