Corporate bonds and municipal bonds

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Today's outline

- Corporate bonds: Definitions and types
- Bond indentures
- Corporate bond vs bank debt
- Bond ratings
- Fund raising through debt instruments in Thailand
- Municipal bonds: Definitions and types
- Municipals vs corporate bonds: Spreads and tax equivalent yield

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CORPORATE BONDS: DEFINITIONS AND TYPES

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Corporate bonds

- A **Corporate bond** is a security issued by a corporation.

- It represents a promise to pay bondholders a fixed sum of money (called the bond's ***principal***, or par or face value) at a future maturity date, along with periodic payments of interest (called ***coupons***).

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Corporate Bond Basics

- Corporate bonds differ from common stock in three fundamental ways.

Corporate Bonds	Common Stock
Represent a creditor's claim on the corporation	Represents an ownership claim on the corporation
Promised cash flows (coupons and principal) are stated in advance	Amount and timing of dividends may change at any time
Mostly callable	Almost never callable

Corporate Bond Basics

- There are several trillion dollars of corporate bonds outstanding in the United States.

- More than half of these are owned by life insurance companies and pension funds.
  - These institutions can eliminate much of their financial risk via *cash flow matching*.
  - They can also diversify away most default risk by including a large number of different bond issues in their portfolios.

Types

- Subordinate vs unsubordinated bonds
- Collateralized vs non-collateralized (Debentures)
- Fixed vs floating interest rates
- Bonds with sinking funds
- Guaranteed bonds (usually by third party)
- Term bonds vs serial bonds

BOND INDENTURES

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Indentures

- The indenture is a written agreement between the borrower and a trust company. The *indenture* usually lists
  - Amount of Issue, Date of Issue, Maturity
  - Denomination (Par value)
  - Annual Coupon, Dates of Coupon Payments
  - Security
  - Sinking Funds
  - Call Provisions
  - Covenants

Bond covenants

- A legally binding term of an agreement between a bond issuer and a bond holder. Bond covenants are designed to protect the interests of both parties. Negative or restrictive covenants forbid the issuer from undertaking certain activities; positive or affirmative covenants require the issuer to meet specific requirements.

Corporate Bond Basics

TABLE 17.1	Software Iz Us Five-Year Note Issue	
Issue amount	$20 million	Note issue total face value is $20 million
Issue date	12/15/2003	Notes offered to the public in December 2003
Maturity date	12/31/2008	Remaining principal due December 31, 2008
Face value	$1,000	Face value denomination is $1,000 per note
Coupon interest	$100 per annum	Annual coupons are $100 per note
Coupon dates	6/30, 12/31	Coupons are paid semiannually
Offering price	100	Offer price is 100 percent of face value
Yield to maturity	10%	Based on stated offer price
Call provision	Not callable	Notes may not be paid off before maturity
Security	None	Notes are unsecured
Rating	Not rated	Privately placed note issue

Corporate bond vs bank debt

Banks

PROs - Simple Structure
- Easy to Execute
- Flexible Size

CONs - Limit Borrowing Line
- Expensive Cost of Fund
-

Bonds

PROs - Cheaper funding
- New investors base separate from equity market

CONs - Size
- Repayment at redemption

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BOND RATINGS

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Bond Ratings

- What is rated:
  - The likelihood that the firm will default.
  - The protection afforded by the loan contract in the event of default.
- Who pays for ratings:
  - Firms pay to have their bonds rated.
  - The ratings are constructed from the financial statements supplied by the firm.
- Ratings can change.
- Raters can disagree.

Corporate bond ratings

EXHIBIT 7-2 Summary of Corporate Bond Ratings Systems and Symbols

Moody's	*S&P*	*Fitch*	*D&P*	*Brief Definition*
		Investment Grade: High Creditworthiness		
Aaa	AAA	AAA	AAA	Gilt edge, prime, maximum safety
Aa1	AA+	AA+	AA+	
Aa2	AA	AA	AA	Very high grade, high quality
Aa3	AA−	AA−	AA−	
A1	A+	A+	A+	
A2	A	A	A	Upper medium grade
A3	A−	A−	A−	
Baa1	BBB+	BBB+	BBB+	
Baa2	BBB	BBB	BBB	Lower medium grade
Baa3	BBB−	BBB−	BBB−	
		Distinctly Speculative: Low Creditworthiness		
Ba1	BB+	BB+	BB+	
Ba2	BB	BB	BB	Low grade, speculative
Ba3	BB−	BB−	BB−	
B1	B+	B+	B+	
B2	B	B	B	Highly speculative
B3	B−	B−	B−	
		Predominantly Speculative: Substantial Risk or in Default		
	CCC+			
Caa	CCC	CCC	CCC	Substantial risk, in poor standing
	CCC−			
Ca	CC	CC		May be in default, extremely speculative
C	C	C		Even more speculative than those above
	CI			CI = Income bonds; no interest is being paid
		DDD		Default
		DD	DD	
	D	D		

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Corporate bonds: Credit risk

- Source of credit risk:
  1. Default
  2. Change in credit rating
- Change in credit rating is due to:
  1. Firm performance
  2. Economic-wide conditions: recessions
  3. Event risk

Corporate bonds : High-yield sector

- A non-equity security that has been graded as “speculative.” (Moody’s less than Baa and S&P less than BBB-)
- Why bonds become high-yield bonds
  - Issued as investment grade and downgraded due to voluntary increase in debt
  - Fallen angels
  - Issued as speculative grade

Corporate bonds : High-yield sector

- Why companies issue debt as high-yield bonds?

  They:

  – Are growing rapidly and have little cash to service debt

  – Have purposefully chosen a high-leverage balance sheet

  – Do not have established track record of earnings, CF, or issuing debt

Corporate bonds : High-yield sector

- Some primary attractions of high-yield debt for investors are:
  - High coupon yields
  - Potential upside present in the warrants (convertibles)
  - Trading based on forecast of credit spread between Treasury securities and corporate bonds

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Corporate bonds: Risk and return

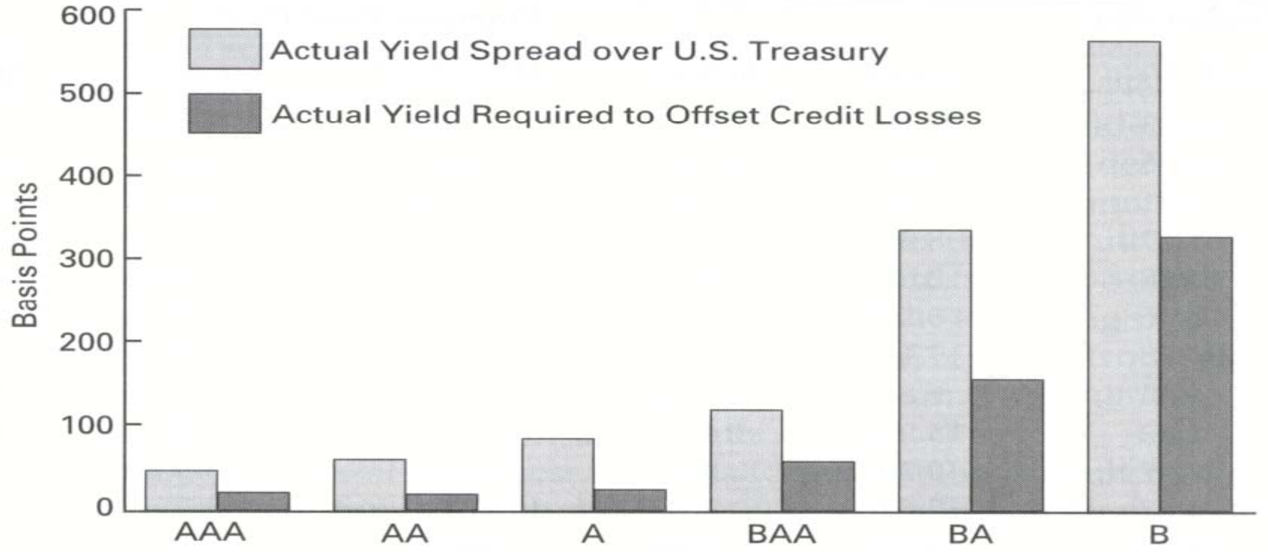
EXHIBIT 7-7 Summary Statistics for Various Assets: 1980–1987

Asset: 1980–1997	*Return*	*Arithmetic Return*	*Volatility*	*Serial Correlation*	*Highest Return*	*Lowest Return*	*Median*	*N Positive Periods*	*N Negative Periods*
U.S. 30-Day T-Bill	7.13	7.13	0.91	0.94	1.35	0.21	6.43	216	0
U.S. Intermediate Treasury	10.16	10.39	7.19	0.24	11.98	−6.41	10.69	150	66
ML Corp Master	11.31	11.65	8.88	0.21	11.97	−7.36	12.29	150	66
DLJ HY Bonds	13.71	14.07	9.19	0.31	11.67	−8.25	13.36	163	53
S&P 500	17.13	18.39	17.24	−0.02	13.43	−21.52	21.13	144	72
U.S. Inflation	4.23	4.23	1.08	0.60	1.44	−0.46	3.67	197	12

Source: Adapted from Exhibit 1 in Sam DeRosa-Farag, "High Yield as an Asset Class," Chapter 5 in Frank J. Fabozzi (ed.), *The Handbook of Corporate Debt Instruments* (New Hope, PA: Frank J. Fabozzi Associates, 1998).

Corporate bonds: Risk and return

EXHIBIT 7-8 Actual versus Required Corporate Bond Yield Premium, 1983–1992



Source: Data from Salomon Brothers, Moody's Investors Service, and Miller, Anderson & Sherrerd, as reported in Thomas L. Bennett, Stephen F. Esser, and Christian G. Roth, *Corporate Credit Risk and Reward* (West Conshohocken, PA: Miller, Anderson & Sherrerd, 1993). Reprinted by permission.

Concept Check

If you believe that the yield spread between investment grade bonds and junk bonds will widen. How would you trade to capitalize on your view? You do not have a view on the general direction of interest rates.

G) Long AAA bonds and short junk bonds

Y) Long junk bonds and short AAA bonds

R) Long AAA bonds and long junk bonds

FUND RAISING THROUGH DEBT INSTRUMENTS IN THAILAND

Debentures No.6/1999 2004 (SCC#6)

The Siam Cement Group

- Security: Unsubordinated, Unsecured Debenture
- Maturity: 5 years and the redemption date there of is November 1, 2004
- Offering Price: Baht 1,000 per unit
- Interest Rate:Fixed interest rate at 8.75%p.a.
- Interest Payment Date: Each of February 1, May 1, August 1, and November 1
- Total Issue Amount: Baht 6,000 Million
- Issue Date: November 1, 2001

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Debentures No.1/2000 2006 (SCC#7)

The Siam Cement Group

- Security: Unsubordinated, Unsecured Debenture
- Maturity: 6 years and the redemption date there of is March 31, 2006
- Offering Price: Baht 1,000 per unit
- Interest Rate: Fixed interest rate at 7.75%p.a. in the first four years. For the last two years, one year fixed deposit interest rate plus the margin of 2.0%p.a.

ต่อ....

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- Interest Payment Date: Each of March 31, June 30, September 30, December 31
- Total Issue Amount: Baht 25,000 Million
- Issue Date: March 31, 2001

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ISO9002CERTIFIED
หุ้นกู้เทเลคอมเอเชีย
บริษัทสื่อสารของไทย
ทางเลือกใหม่ของการลงทุน
• จ่ายดอกเบี้ยทุก 3 เดือน ตลอดอายุหุ้นกู้
• มูลค่าจองซื้อขั้นต่ำเพียง 100,000 บาท
• จองซื้อหุ้นกู้ตั้งแต่ วันที่ 7 - 14 ตุลาคม 2545
TelecomASIA
www.telecomasia.co.th

หุ้นกู้บริษัทเทลคอมเอเซียคอร์ปอเรชั่นจำกัด (มหาชน)

❖ Type of the debentures: Partially guaranteed early redeemable secured debenture with periodic payments in registered form, unsubordinated, with a debentureholders' representative

หุ้นกู้มีประกัน ชนิดทยอยชำระคืนเงินต้น สามารถไถ่ถอนก่อนกำหนด ระบุชื่อผู้ถือ และไม่ด้อยสิทธิ และมีผู้แทนผู้ถือหุ้นกู้

- ครั้งที่ 1/2545 ครบกำหนดไถ่ถอนปี 2551
- ครั้งที่ 2/2545 ครบกำหนดไถ่ถอนปี 2554

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ครั้งที่ 2/2545, ครบกำหนดไถ่ถอนปี 2554

- Amount and value of the debentures to be offered: The offering amount of the debentures is 4,400,000 units, valuing in the amount of 4,400,000,000 Baht
- Par value per unit: 1,000 Baht
- Offering price per unit: 1,000 Baht
- Issuing Date: 15 October 2002
- Maturity Date: 3 February 2011

ครั้งที่ 2/2545, ครบกำหนดไถ่ถอนปี 2554

- Principal Repayment: The Company shall repay principal by installment on every interest payment date commencing on 3 November 2009 onwards. The last principal repayment date will occur on the date of redemption.
- Interest Rate and Interest Payment: The Company shall pay interest of the debentures at the rate of MLR p.a. during every three-month period on 3 February, 3 May, 3 August and 3 November of each year commencing on 3 February 2003.

- MLR means the average of the reference rates quoted by BBL, SCB, KTB and TFB as of the 3rd Thai Business Day before the beginning of the relevant debenture interest period.

- Redemption of the debentures: The redemption of the debentures will be made by paying the last installment of unpaid principal amount including the last interest payment then due in whole to the debentureholders per 1 unit of the debentures.

วันทยอยชำระคืนเงินต้น	จำนวนเงินต้นที่ต้องชำระต่อหุ้นกู้ 1 หน่วย (บาท)
3 พ.ย. 2552	160.00
3 ก.พ. 2553	160.00
3 พ.ค. 2553	160.00
3 ส.ค. 2553	160.00
3 พ.ย. 2553	180.00
3 ก.พ. 2554	180.00

หุ้นกู้ไม่มีประกันบริษัท บ้านปู จำกัด (มหาชน)

- <u>Bond Type</u> Straight (fixed)/Unsecured
- <u>Par</u> Bt. 1,000
- <u>Issue Size</u> Bt. 600 mil.
- <u>Term</u> 5 years
- <u>Issue Date</u> 29 January 1999
- <u>Maturity Date</u> 29 January 2004
- <u>Coupon</u> 11.0000% Semi-annually
- <u>Call/Put Option</u> Callable and puttable on 29-Jan-01 at par
- <u>Financial Covenants</u> D/E $\leq$ 2.5 at the end of each quarter.

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หุ้นกู้มีประกันบริษัท รอยัลการ์เด้น รีซอร์ท จำกัด (มหาชน) ครั้งที่ 1/2542

- Bond Type — Straight (float)/Secured
- Par — Bt. 1,000
- Issue Size — Bt. 900 mil.
- Term — 3 Years
- Issue Date — 25 August 1999
- Maturity Date — 25 August 2002
- Coupon — Float (an average of MLR quoted by BBL, KTB, SCB, TFB -0.5000%) Semi-annually

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หุ้นกู้มีประกันบริษัท รอยัลการ์เด้น รีซอร์ท จำกัด (มหาชน) ครั้งที่ 1/2542

- Financial Covenants D/E ratio to be ≤ 1.75 at the end of each quarter. Dividend payout ratio ≤ 60%.

- Collateral: Pledged of the Royal Garden Plaza Pattaya as follow:
  1) 4-storey building
  2) Part of the lease-hold contract
  3) 2,999,993 common stocks
     (99% of all common stocks)
  4) Bondholders will be the beneficiaries of the plaza building's, fire insurance.

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หุ้นกู้ด้อยสิทธิไม่มีประกันธนาคารทหารไทย จำกัด (มหาชน) ครั้งที่ 3/2541

- Bond Type Straight (float) /Unsecured/ Subordinated
- Par Bt. 1,000
- Issue Size Bt. 600 mil.
- Term 7 Years
- Issue Date 17 November 1998
- Maturity Date 17 November2005
- Coupon Float (highest fixed deposit rate quoted by TMB +4.0000% with the minimum rate 12.5000% Quarterly

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- Call/Put Option   Callable at the end of the fifth year on 17-Nov-03 at par under the approval of BOT

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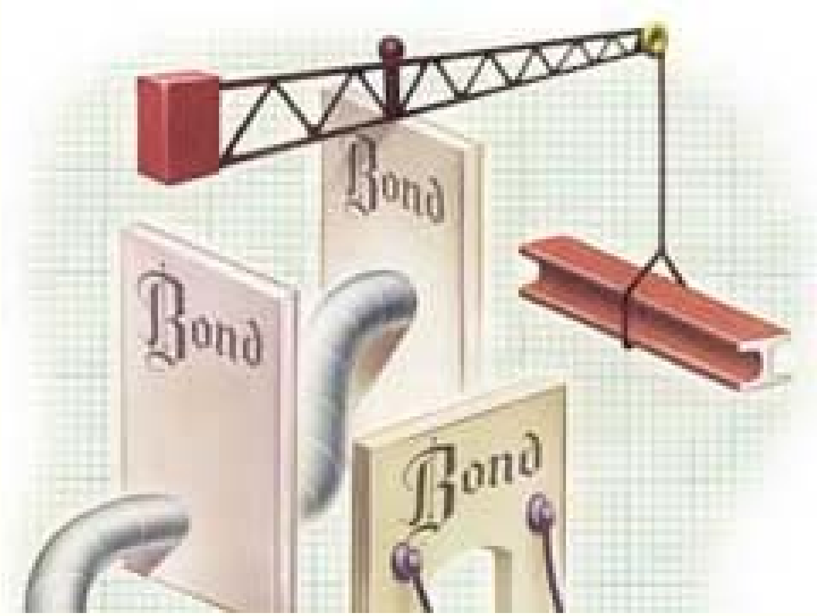
MUNICIPAL BONDS

Municipal securities

- Municipal securities are issued by state and local government entities
- Municipal bonds are exempt from Federal tax and some times from state and local tax as well
- Purpose of issuing municipal bonds
  - Finance short-term seasonal budget needs
  - Finance long-term projects
  - Finance long-term budget deficit

Types of Municipal Bonds

- Revenue Bonds
- Tax-Backed Debt
  - General Obligation Debt
  - Appropriation-Backed Obligations
  - Public Credit Enhancement Programs
- Hybrid/Special Bonds
  - Insured Bonds
  - Prerefunded Bonds
  - Asset-Backed Bonds
  - Zero Coupon Bonds
  - Taxable Municipal Bonds



Features of municipal securities

1. **General obligation bonds**: secured by the issuer's taxing power

- Limited-tax general obligation bond: secured by the issuer's taxing power, but the taxing power is limited.
- Double-barrel: secured by outside revenues in addition to the issuer's taxing power.

2. **Revenue bonds**

- Issue for projects or enterprise financing
- Issuers pledge to the bondholder the revenues generated by the project financed.

Features of municipal securities

3. Hybrid and special bond securities

- Bank-backed Municipal bonds
- Refund bonds:
  - Refunding: the issuer purchases a Treasury security with the same payment obligations as the original bonds and places it in trust. The cash flow of this Treasury security will service the refund bonds.

Why refund bonds?

- To nullify any covenant included in the original bond issue.
- Alter the maturity schedule of the obligation.

Concept Check

The state of TN issued ABC bonds 5 years ago. Now it has refunded these bonds by buying Treasury securities and put the securities in trust. The cash flow from Treasury securities will pay cash flow of the ABC bonds. What should be the credit rating of the ABC bond now?

G) Rating of TN

Y) Rating of Treasury

R) Rating of junk bond

Municipal bonds: Investing

- Risk
  - Interest rate risk
  - Credit risk
  - Liquidity risk
  - <u>Tax risk</u>
- Credit ratings reported by Moody's and S&P
- What is considered when performing credit analysis?
  - Overall debt burden and revenue available to issuer
  - Political discipline to maintain sound budgetary policy
  - Socioeconomic environment
- <u>Tax risk</u>
  - Change in Federal income tax code
  - Change in tax status of an issue by IRS ruling

Trading and investment

- Bond pricing: price off the yield curve for a security class
- Arbitrage within a security class
- Trade on yield spread (credit spread)

Caveats

- Many corporate and municipal bonds are much less liquid than Treasuries.

- Getting information such as yield curve or the market value of a particular provision for pricing bonds can be difficult if that class of bond trades infrequently.

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Taxability

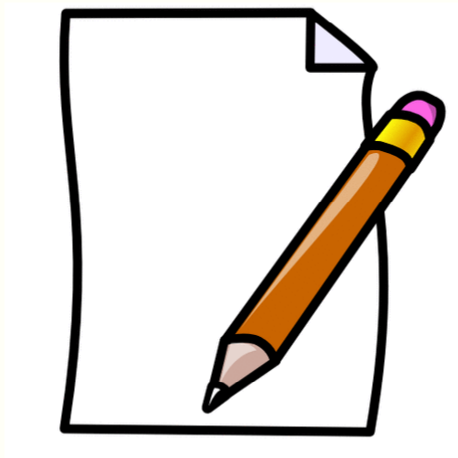
- Generally tax-exempt
- Taxation on acquisition, ownership, and disposition
- Private Activity Bonds
  - Alternative Minimum Tax (AMT)
- Taxable Municipal Bonds
  - e.g. Build America Bonds (BABs)

Consider This…

- At what marginal tax rate would an investor be indifferent between buying municipal or taxable bonds?

- What interest rate on a corporate bond would you require in order to earn a better return than 4.5% on municipal bonds?
  - ***Tax Equivalent Yield (TEY)***

$$\text{TEY} = \frac{\text{Tax Free Yield}}{1 - \text{Marginal Tax Rate}}$$



Tax Equivalent Yield

TAX-FREE VS. TAX EQUIVALENT YIELD

THE POTENTIAL IMPACT OF TAXES ON YOUR RETURN

	Federally Tax-Free Yield			
	5.00%	5.25%	5.50%	6.00%
Federal Tax Rate	**Taxable Equivalent Yield**			
25%	6.67%	7.00%	7.33%	8.00%
28%	6.94%	7.29%	7.64%	8.33%
33%	7.46%	7.84%	8.21%	8.96%
35%	7.69%	8.08%	8.46%	9.23%

- Higher tax brackets derive more benefit from munis.
- Changing tax rates will affect the corporate-municipal yield spread.
- Competition with other markets increases when the economy is strong.

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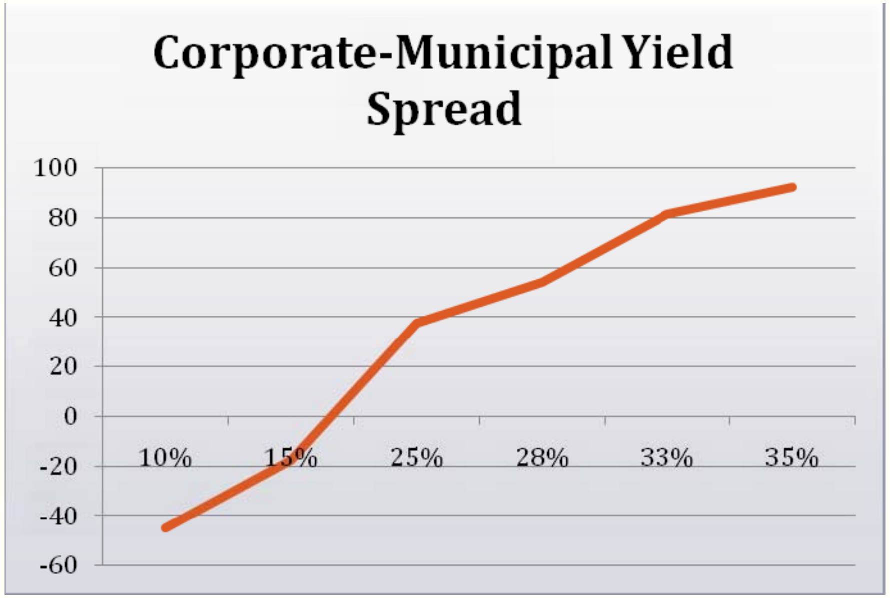
When Does it Make Sense to Buy Municipal Bonds?

- Available Investment: ***$10,000***

- Potential Alternatives:
  - 10 yr, AAA-rated municipal bond yielding **4.5%,** and
  - Similarly rated corporate bond yielding **5.5%**

Corporate-Municipal Spreads



Tax Rate	Municipal Bonds	Corporate Bonds	Spread
10%	$450	$495	$-45
15%	$450	$467.5	$-17.5
25%	$450	$412.5	$37.5
28%	$450	$396	$54
33%	$450	$368.5	$81.5
35%	$450	$357.5	$92.5

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Concept Check

Should the yield of a municipal bond be higher/equal/or lower than the yield of a corporate bond of the same default risk and liquidity risk?

G) Higher

Y) Lower

R) Equal

Municipal Bonds vs. Corporate Bonds

Munis

- Serial maturity structure
- Do not require registration
- OTC, lower trading levels

Corporate Bonds

- Term maturity structure
- More disclosure/ transparency
- More market liquidity

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Future Outlook

- Continued budget stress for some municipalities
  - Defaults are extremely rare
  - States and many municipalities are not legally allowed to file for bankruptcy
  - Important to understand the ample protection of municipal bonds
- Supply/demand imbalances
  - Effect of negative headlines on retail investors
  - Attractive tax equivalent income

Useful Websites

- www.investinginbonds.com (for more information on corporate bonds)
- www.sec.gov (U.S. Securities and Exchange Commission)
- www.convertbond.com (for more information about convertible bonds)
- www.bondsonline.com (follow the "corporate bond spreads" link)
- www.nasdbondinfo.com (for TRACE data on bond trades)

- Websites for companies in this chapter:
  - www.nwa.com (Northwest Airlines)
  - www.amd.com (Advanced Micro Devices)
  - www.marriott.com (Marriott International, Inc.)
  - www.hostmarriott.com (Host Marriott Corporation)

- Websites for Ratings Agencies:
  - www.duffllc.com (Duff and Phelps, LLC.)
  - www.fitchibca.com (Fitch Investors Service)
  - www.moodys.com (Moody's)
  - www.standardpoor.com (Standard & Poor's)
  - www.mcmwatch.com (MCM)

Sources

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- Investopedia http://www.investopedia.com/university/advancedbond/advancedbond4.asp
- MSRB http://www.msrb.org
- MunicipalBondsToday.com http://www.municipalbondstoday.com/25/municipal-bond-basics/
- Wikipedia http://en.wikipedia.org/wiki/Municipal_bond