Overview of Chapter 5 Topics

- Introduction
- Global Money Markets
- Short-Term Money Markets in US

Money Market Participants

- Issuers of money market instruments:
  - Government entities
  - Securities dealers
  - Commercial banks
  - Non-financial corporations
- Investors
  - Direct purchases of money market instruments
  - Purchases of money market funds
- Broker-Dealers
  - Can trade on their own account or on behalf of their customers
Group Exercise

- Working in your groups, answer the following questions:
- Are you involved at all in the investment management for your company or bank?
- What do you think is the key difference between managing short-term investments vs. long-term investments (aside from the obvious difference in maturities)?

Investment Risk Considerations

- Default or Credit Risk
- Liquidity Risk
- Interest Rate Risk
  - Price Risk vs. Reinvestment Risk
- Foreign Exchange (FX) Risk

Comparison of Short-Term Investments

<table>
<thead>
<tr>
<th>MATURITY</th>
<th>AAA/AA+</th>
<th>BBB</th>
<th>B</th>
<th>CCC</th>
<th>CCC-</th>
<th>Thailand</th>
<th>Vietnam</th>
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<td>Fixed</td>
<td>Fixed</td>
<td>Fixed</td>
<td>Fixed</td>
<td>Fixed</td>
<td>Fixed</td>
<td>Fixed</td>
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<td>Fixed</td>
<td>Fixed</td>
<td>Fixed</td>
<td>Fixed</td>
<td>Fixed</td>
</tr>
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<td>REFINANCE</td>
<td>Fixed</td>
<td>Fixed</td>
<td>Fixed</td>
<td>Fixed</td>
<td>Fixed</td>
<td>Fixed</td>
<td>Fixed</td>
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<td>TAXABLE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<td>ACCESS TO AVAILABLE FURTHER MATURED</td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<td>INVESTMENT</td>
<td>- Cash</td>
<td>- Credit</td>
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<td>CREDIT QUALITY</td>
<td>- Grade</td>
<td>- Grade</td>
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<td>CREDIT QUALITY</td>
<td>- Grade</td>
<td>- Grade</td>
<td>- Grade</td>
<td>- Grade</td>
<td>- Grade</td>
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</tr>
<tr>
<td>RETURN</td>
<td>- %</td>
<td>- %</td>
<td>- %</td>
<td>- %</td>
<td>- %</td>
<td>- %</td>
<td>- %</td>
</tr>
</tbody>
</table>

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Commercial Paper (CP)
- Tradable promissory notes issued by companies
- Maturity from overnight to 270 days (but average maturity is 30 days)
- Issued at a discount with face value paid at maturity
- Active secondary market, but most is held to term
- Standard CP is not secured but may be credit enhanced

Asset-Backed Commercial Paper (ABCP)
- ABCP has most of the features of standard CP but is secured against specific assets
- Typically issued through a sponsoring financial institution (Conduit), rather than directly by an issuing company
- The assets are usually short-term trade receivables
  - Single Seller ABCP: single company assets
  - Multi-Seller ABCP: multiple company assets
- Primary advantage is protection offered by the assets
- May also include credit enhancements
- Disadvantage is complex structure that makes it harder to appraise credit risk

Bank Obligations
- Time Deposits
  - Savings accounts
  - Certificates of Deposit (CD)
    - Negotiable CDs
  - Eurodollar Market
    - (USD deposits/issues held outside of the US)
  - Yankee CDs
    - (USD deposits/issues in US branches of non-US banks)
  - Repurchase Agreements (Repo)
- Banker’s Acceptances (BAs)
  - A time draft arising from a commercial trade obligation that has been “accepted” by a bank
  - Represents an unconditional promise by the bank to pay the draft upon maturity
Government Paper

- Issued by national, state and local government entities
- Typically called T-bills or tradable promissory notes issued by governments
- Market is generally liquid and highly active, with a wide range of maturities available
- Default risk and returns are usually low
- Most short-term government debt is issued at discount
- U.S. T-bills are considered to be risk-free the benchmark for government issues
- Some sovereign debt may be very risky

T-Bill Quotes

- Dealers typically utilize a bid-ask quote framework
- Bid quote is the price at which the dealer will BUY a T-Bill
- Ask quote is the price at which the dealer will SELL a T-Bill
- Ask yield is the yield to an investor purchasing a T-Bill at the ask discount

<table>
<thead>
<tr>
<th>Maturity Date</th>
<th>Days to Maturity</th>
<th>Bid Discount</th>
<th>Ask Discount</th>
<th>Ask Yield (Percent)</th>
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<td>April 18</td>
<td>36</td>
<td>0.075</td>
<td>0.065</td>
<td>0.066</td>
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<td>April 25</td>
<td>43</td>
<td>0.075</td>
<td>0.035</td>
<td>0.035</td>
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<tr>
<td>May 2</td>
<td>50</td>
<td>0.070</td>
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<td>May 9</td>
<td>57</td>
<td>0.055</td>
<td>0.050</td>
<td>0.051</td>
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Purchase Price = Par Value – Dollar Discount

Floating Rate Notes (FRNs)

- Both companies and banks issue FRNs to raise funds in the short-term market
- Maturities are typically one year or longer
- Pay a coupon plus face value at maturity
- Interest rate resets periodically, usually based on Libor or Euribor
- Also perpetual FRNs, with no maturity date
- Most issues have a published credit rating
- Disadvantage is that FRN capital value can fluctuate between interest-rate resets
- Bid-offer spread is wider than other MM instruments
- Issued with fairly large minimum denominations
Repurchase Agreements (REPOs)

- A bank or securities dealer sells government securities to an investor and agrees to repurchase them at a later date and at a slightly higher price
- Referred to as “repo” from the perspective of the entity selling the securities & agreeing to repurchase them as at a later date (the borrower)
- Referred to as “reverse-repo” from the perspective of the entity that buys the security with the promise to sell it back at a later date (the investor)

More on Repos

- Maturity
  - Overnight
  - Term (2 days to 1-year)
  - Open (no maturity date, but either party can terminate on day-by-day basis)
- Each repo is negotiated individually between two parties, making it easy to tailor it to almost any situation
- Taking legal possession of the underlying security (usually through a broker/dealer) gives investor a high degree of comfort

Other Types of Money Market Investments

- Money Market Funds (MMF)
  - Commingled pools of MM instruments
  - NAV generally fixed at one currency unit
  - Convenient and highly liquid
- Short-duration Mutual Funds
  - Longer maturities than MMFs (1-3 years)
  - NAV is NOT fixed – floating NAV
  - May offer higher returns than MMFs
- Investment Sweep Accounts
  - Offered by most depository institutions to sweep excess, end-off-day funds into an investment account
  - Loan sweeps may also be offered
Common Types of MMFs

- US Treasury Funds
  - Invested only in US Treasuries
- Government Funds
  - 99.5% of total assets must be invested in cash, government securities and Repos collateralized by government securities
- Institutional Prime Funds
  - Commercial paper, CDs, government securities, Repos and other ST investments
- Institutional Municipal/Tax-Exempt Funds
  - Tax-exempt securities issued by state and local governments
- Retail Funds
  - Funds offered to individuals
  - Institutional investors are NOT permitted to hold these as of October 2016


- Floating NAV
- Redemption fees if funds fall below threshold
- Ability to suspend redemption for up to 10 days (redemption gates)

<table>
<thead>
<tr>
<th>TYPE OF FUNDS</th>
<th>NET ASSET VALUE (NAV)</th>
<th>REDUCTION FEES</th>
<th>REDEMPTION GATES</th>
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<tr>
<td>US Treasury</td>
<td>Stable</td>
<td>No</td>
<td>No</td>
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<tr>
<td>Government</td>
<td>Stable</td>
<td>No</td>
<td>No</td>
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<tr>
<td>Institutional Prime</td>
<td>Floating</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Institutional Municipal/Tax-Exempt</td>
<td>Floating</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Retail</td>
<td>Stable</td>
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Money Markets in US

- Processing and Clearing of S-T Investments in US
- US Money Market Participants
- US Federal Agency and Government Sponsored Enterprise(GSE) Securities
- Municipal Notes, Variable-Rate Demand Obligations(VRDOs), and Tax-Exempt Commercial Paper(CP)

Source: ETMS – Ex. 5.3 – © AFP
Processing & Clearing of S-T Investments in U.S.

- Commercial Book-Entry System (CBES)
  - Nearly all short-term securities are issued in book-entry form and registered and transferred electronically
  - CBES is a multi-tiered automated system for purchasing, holding and transferring marketable securities
  - Top-tier is the National Book-Entry System (NBES) which is operated by the Fed for Treasuries
  - Mid-tier, depository institutions hold book-entry accounts for its customers
  - CBES has succeeded in replacing paper securities with electronic records

Processing & Clearing of S-T Investments in U.S.

- Depository Trust and Clearing Corp. (DTCC)
  - Industry-owned corporation that works to provide clearing, settlement and info services for a wide range of securities
  - Combo of Depository Trust Corp. (DTC) and National Securities Clearing Corp (NSCC)
  - Act as a legal depository for security certificates
  - Net transactions between brokers, dealers, mutual funds, insurance companies and other large institutional investors
  - Operate on an at-cost basis for their members
  - Registered with SEC

U.S. Money Market Participants

- U.S. Treasury
- Federal agencies
- Government Sponsored Entities (GSE)
- Securities dealers
- Commercial banks
- Thrift institutions
- Municipalities
- Corporations
- Federal Reserve
  - Settlement of most book-entry sales/purchases
  - FOMC
  - Fiscal agent of the treasury
U.S. Money Market Instruments

- U.S. Treasury Bills (T-Bills)
  - Sold at discount in regular auctions
- Bank debt obligations
  - CDs of various types
- Commercial paper (CP)
  - Unsecured, discounted, rated, credit-enhanced
- U.S. Federal agency and GSE securities
  - Direct debt vs. asset-backed
- Municipal notes, VRDOs & Tax-exempt CP
  - Also: BANs and TANs, active secondary market
- MMFs
  - Prime, government, treasury, tax-exempt

Overview of Chapter 6 Topics

- Introduction
- Overview of Capital Markets
- Debt Market
- Equity (Stock) Securities

Introduction

- Capital markets are where firms issue debt (bond) and equity (stock) securities
- They are a major source of funding for investments for many types of organizations in various countries
- Treasury professionals must consider the conditions in these markets when determining the optimal mix of debt and equity financing that maximizes the firm's value (i.e., the target capital structure)
- Money Markets vs. Capital Markets
- Debt Market vs. Equity Market
Group Exercise

- Working in your groups, answer the following questions:
- What are "Fixed-Income" securities?
- What are some of the key differences between fixed income investments and equity investments?
- Which group is harder to manage?

Overview of Capital Markets

- The Basics of Capital Markets
  - Money versus Capital Markets
  - Debt versus Equity Markets
- Key Participants
  - Issuers of Securities
  - Investors
  - Broker-Dealers (Investment Banking & Brokerage Firms)
  - Regulators
  - Other Participants

More on Market Participants

- Issuers of Securities
  - Governments & Central Banks (Debt)
  - Corporations (Debt & Equity)
  - State-Owned Enterprises – SOE (Debt)
  - Sub-Sovereign Entities/Municipalities (Debt)
  - Mutual Fund Companies (Debt & Equity)
- Investors (Retail vs. Institutional)
- Investment Banking and Brokerage Firms
  - Investment bankers
  - Origination desks
  - Securities traders
More on Capital Markets

- **Regulators**
  - Critical to the maintenance of fair and open markets
  - Often different from banking and/or money market regulators
  - General role is to require issuers to provide consistent and transparent disclosure of financial information related to the securities traded and to ensure a fair and level playing field for all market participants
  - There is no global regulator of capital markets

- **Other Participants**
  - Rating agencies
  - Transaction processors
  - External auditors
  - Attorneys, bond trustees, printing companies, proxy solicitors and data service providers

Different Capital Markets

- **Division of Capital Markets**
  - Primary markets
  - Secondary markets
  - Private markets

- **Security Exchanges and OTC Markets**
  - Facilitate the buying and selling of securities
  - Major exchanges in most developed nations
  - OTC markets tend to be more decentralized
  - Financial markets in developing countries or emerging markets are often run on an OTC basis until volumes increase

Benefits of Organized Exchanges

- Provide a market system where the competitive forces of supply and demand determine securities prices
- Sustain a market where frequent trading minimizes price volatility between individual trades
- Maintain a market large enough (i.e., increased depth) to enable issuers to raise large amounts of capital through securities offerings
- Ensure a fair market for exchange participants
Debt Market
- Medium- and Long-Term Borrowing
  - Term Loans
  - Medium- or Intermediate-Term Notes
  - Long-term Bonds
    - Mortgage Bonds
    - Debentures (Unsecured Bonds)
    - Convertible Bonds
    - Sovereign Bonds
    - Sub-Sovereign Bonds (Munis)
    - Eurobonds
    - Zero-Coupon Bonds
    - Floating or Adjustable-Rate Debt
    - High-Yield Bonds

Other Types of Bonds
- Income Bonds
- Collateral Trust Bonds
- Equipment Trust Certificates
- Index Bonds
- Economic Development Bonds
- Tax Increment Financing (TIF) Bonds
- Tender Option Bonds
- International Bonds
  - Foreign bonds
  - Global bonds
  - Multicurrency bonds
  - Green Bonds

Other Forms of Debt Capital
- Project Financing
- Securitization
- Off-Balance-Sheet Financing
Debt Contract Provisions
- Debt (Bonds and Term Loan) indentures and covenants
- Representations and warranties
- Events of default
- Material Adverse Change (MAC) clause
- Call and Put provision
- Sinking funds
- Refinancing
- Defeasance of debt
- Promissory note
- Collateral
- Liens

Group Exercise
- Working in your groups, answer the following questions:
  - What is the role of credit enhancements and guarantees in the world of debt securities?
  - What is meant by the term “maturity matching” when using debt as a source of capital?

Other Factors in Using Debt as a Source of Capital
- Credit Enhancements
- Guarantees
  - Full, Specific Project, Guarantee of Payment or Collection, Comfort Letter, Performance, Personal
- Bond/Credit Ratings
- Maturity Matching
- Effects of Interest Rate Levels and Forecasts
- Availability of Collateral
Equity (Stock) Securities
- Common Stock
- Preferred Stock
- Hybrid Securities
- Depositary Receipts (DRs)

Common Stock
- Represents ownership in a company
- Balance Sheet Accounts and Definitions
  - Par value
  - Retained earnings
  - Additional Paid-in-Capital (APIC)
  - Book value per share
  - Market value per share
  - Treasury stock
- Types of Common Stock
  - Multiple Classes
  - Tracking Stock

Preferred Stock
- Major Provisions or Preferred Stock Issues
  - Priority claim on earnings and assets
  - Typically fixed as a percentage of par value
  - Cumulative dividends in arrears
  - Voting rights/Seat on board
  - May be convertible
- Evaluation of Preferred Stock
- Users of Preferred Stock
  - Financial institutions are heavy issuers
  - Young/high-growth/financial distressed firms
  - Adjustable-rate preferred stock
  - Convertible preferred shares in mergers
Overview of Chapter 13 Topics

- Introduction
- Managing Short-Term Investments
- Pricing and Yields on Short-Term Investments
- Managing Short-Term Financing
- Debt Financing

Management of S-T Investment Portfolio

- In-House Management
  - Typically seen in larger organizations
  - Driven by investment policies
  - Must have resources, training and experience in investment management
- Outsourced Management
  - Assign S-T investment portfolio management to 3rd party money manager
  - May have greater resources and experience than internal money managers
  - Guidelines must be clearly communicated
  - MMFs may be an option here

Short-term Investment Policy

- Typical board-approved policy includes:
  - Investment objectives (risk and return)
  - Permissible and prohibited investments
  - Minimum acceptable security ratings
  - Maximum maturity for individual securities
  - Maximum weighted average maturity or duration for the portfolio
  - Maximum percentages for asset classifications
  - Policies/guidelines for foreign securities
  - Specific responsibilities for implementing policy
  - Methods of monitoring compliance
  - Provisions for performance measurement, evaluation and reporting
  - Responsibilities and reporting requirements
  - Exception management and related approval processes
Investment Strategies

- Conservative investor may prefer a passive strategy, employing a **buy-and-hold to maturity** approach.
- More aggressive investor may prefer **active portfolio management**.
- High-tax bracket corporate investor may favor **tax-based strategies**.
- A company without the resources to actively manage a S-T portfolio may choose to hold one or more of the MMFs discussed earlier.
- These strategies may be used individually or in combination.

**Yield Curves**

- **Normal Yield Curve (Upward Sloping)**
- **Inverted Yield Curve (Downward Sloping)**

Group Exercise

- **Working in your groups, answer the following questions:**
  - How would you construct a yield curve?
  - What would be the best security or securities to use for this purpose?
  - What does it mean when we have a downward sloping or inverted yield curve?
Tax Status
- When computing taxable vs. tax-exempt instruments, use the formula below
- Assume a taxable security with a 4.6% yield and a tax-exempt security with a 3.2% yield (both have similar risk and maturity) – marginal tax rate is 35%

\[
\text{Taxable Equivalent Yield} = \frac{\text{Tax-exempt Yield}}{(1 - \text{Investor's Marginal Tax Rate})}
\]

\[
\text{Taxable Equivalent Yield} = \frac{0.032}{(1 - 0.35)} = 0.0492 \text{ or } 4.92\%
\]

\[
\text{After-Tax Yield} = \text{Taxable Yield} \times (1 - \text{Marginal Tax Rate})
\]

\[
\text{After-Tax Yield} = 4.60\% \times (1 - 0.35) = 2.99\%
\]

In this example – the tax-exempt security should be chosen

Yield Calculations for S-T Investments
- Usually made on a simple interest basis
- Yield is usually a function of:
  - Cash flows received from the investment
  - Amount paid for that investment
  - Maturity or holding period
- Different types of yield
  - Holding period yield
  - Money market yield (360 day year basis)
  - Bond equivalent yield (365 day year basis)

The Key Formulas for Investing and Borrowing

What You Get
What You Pay

What You Pay
What You Get

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Yield Calculations

\[
\text{Holding Period Yield} = \frac{\text{Cash Rec. at Maturity} - \text{Amt Invested}}{\text{Amt Invested}}
\]

\[
\text{Annual Yield} = \text{Holding Period Yield} \times \frac{\text{Days in Year}}{\text{Days to Maturity}}
\]

Assume a $100,000, 90-day T-bill sells for $98,800

\[
\text{Holding Period Yield} = \frac{100,000 - 98,800}{98,800} = \frac{1,200}{98,800} = 0.01215 \text{ or } 1.215\%
\]

\[
360-\text{Day Basis Yield} = 0.01215 \times \frac{360}{90} = 0.01215 \times 4 = 0.0486 \text{ or } 4.86\%
\]

Source: ETM5 - © AFP

Converting Year Basis

- To determine the yield on a 365-day basis versus a 360-day basis use the following:

\[
\text{365-\text{Day Basis Yield}} = \frac{365}{360} \times \text{360-\text{Day Basis Yield}}
\]

Using the information from the previous slide:

\[
\text{365-\text{Day Basis Yield}} = 0.0486 \times \frac{365}{360} = 0.0493 \text{ or } 4.93\%
\]

Source: ETM5 - © AFP

Managing Short-Term Financing

- Short-Term Funding Alternatives
  - Trade credit
  - Intercompany loans
  - Selling of receivables
    - Factoring
    - Securitization
  - Supply chain credit
  - Commercial bank credit
  - Single payment notes
  - Repurchase agreement (Repo)
  - Commercial Paper (CP) issuance
  - Asset-based borrowing
Commercial Bank Credit

- Loan Syndications and Participations
  - Allow banks to offer larger loans than they could on their own due to capital requirements
- Syndication
  - Multiple financial institutions share the funding of a single credit facility
  - All members share common documentation, but each lender has a promissory note
- Participation
  - An institution purchases an interest in another lender’s credit facility
  - Purchaser is a participant, seller is lead institution
  - In blind participation, agreement is not disclosed to borrower

Commercial Bank Line of Credit

- Lender gives borrower access to funds up to a max amount over a specified period of time
  - Can provide short-term financing, back up for a CP program or provide temporary liquidity
- Most lines are revolving, some are multi-year
- May be secured or unsecured
  - Secured by A/R or inventory
- May be committed or uncommitted
  - Commitment fee and/or compensating balances
- Requirements and conditions include:
  - Clean-up period, credit sub-limits, covenants, MAC
  - Guidance lines are used by banks to accommodate credit exposure arising from non-borrowing activities, such as daylight overdrafts, ACH or FX exposure

Other Bank Credit Facilities

- Single Payment Notes
  - Short-Term and for a specific purpose
- Repurchase Agreement (Repo)
  - Securities are sold with agreement to buy them back at a slightly higher price in the future
- Commercial Paper Issuance
  - Issued at discount & rolled over on a regular basis
  - Require credit enhancements & strong credit rating
  - Costs: dealer fees, back-up credit facility fees, rating agency charges or other credit enhancement fees
- Asset-Based Borrowing
  - WC loans typically secured by A/R or inventory to support temporary financing needs
Debt Financing

- Costs of Borrowing
  - Include costs of credit enhancements, fees paid to rating agencies, legal, etc.
- Basic Components in Interest Rates
- Base Rates
- Short-Term Versus Long-Term Borrowing
- Loan Agreements and Covenants
- Credit Rating Agencies

Basic Components in Interest Rates

- Interest rates depend on many factors
- \( r = r_{RF} + IP + DP + LP + MP \)
  - Where: \( r_{RF} \) = Real risk-free interest rate
  - \( IP \) = Inflation premium
  - \( DP \) = Default premium
  - \( LP \) = Liquidity premium
  - \( MP \) = Maturity premium

- Some observations
  - Treasuries: \( DP \) and \( LP = 0 \)
  - Both corporate and muni’s have \( DP \) and \( LP \)
  - Most L-T bonds have some \( MP \)
  - \( MP \) increases with issue’s time to maturity

Calculation of Interest Rates

<table>
<thead>
<tr>
<th>Investment</th>
<th>Real Risk-Free Rate</th>
<th>Inflation Premium</th>
<th>Default Premium</th>
<th>Liquidity Premium</th>
<th>Maturity Premium</th>
<th>Cost of Borrowing</th>
</tr>
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<tbody>
<tr>
<td>1-year Treasury</td>
<td>0.0%</td>
<td>0.5%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.5%</td>
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<td>5-year Treasury</td>
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<td>0.0%</td>
<td>0.0%</td>
<td>0.4%</td>
<td>2.9%</td>
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<td>10-year Treasury</td>
<td>0.0%</td>
<td>4.0%</td>
<td>0.0%</td>
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<td>0.9%</td>
<td>4.9%</td>
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<td>1-year Corporate</td>
<td>0.0%</td>
<td>0.5%</td>
<td>2.5%</td>
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<td>3.5%</td>
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<td>5-year Corporate</td>
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<td>2.5%</td>
<td>2.5%</td>
<td>0.5%</td>
<td>0.4%</td>
<td>5.9%</td>
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<tr>
<td>10-year Corporate</td>
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<td>4.0%</td>
<td>2.5%</td>
<td>0.5%</td>
<td>0.9%</td>
<td>7.9%</td>
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<td>1.0%</td>
<td>0.0%</td>
<td>3.0%</td>
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<tr>
<td>5-year Municipal</td>
<td>0.0%</td>
<td>2.5%</td>
<td>1.5%</td>
<td>1.0%</td>
<td>0.4%</td>
<td>5.4%</td>
</tr>
<tr>
<td>10-year Municipal</td>
<td>0.0%</td>
<td>4.0%</td>
<td>1.5%</td>
<td>1.0%</td>
<td>0.9%</td>
<td>7.4%</td>
</tr>
</tbody>
</table>

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Base Rates
- For most borrowers, the cost of funds is expressed as the sum of some base rate, plus an appropriate adjustment (or spread) to account for other risks involved in the arrangement.
- Base rate will include adjustments for inflation and maturity premiums
- Spread will factor in adjustments for the default and liquidity premiums
- Popular base rates include:
  - LIBOR, Prime & Fed Funds

Short-Term vs. Long-Term Borrowing
- Benefits of short-term borrowing:
  - Historically, short-term rates are usually lower than long-term rates
  - Offers ease of access and flexibility
- Risks of borrowing on short-term basis:
  - Fluctuating market rates could mean rising costs of short-term funds
  - Availability of funding is not guaranteed
- Advantage of long-term borrowing:
  - Borrowing on a fixed-rate basis stabilizes interest costs or it provides a narrow range for fluctuations in interest costs

Loan Agreements & Covenants
- Loan covenants typically have a significant impact on financial decision making in an organization
- Lenders use covenants to protect their interests in a loan agreement
- Typical restrictive covenants:
  - Ability to sell certain assets
  - Right of an organization to issue additional bonds
  - Use of second or junior mortgages
  - Key ratios that limit flexibility in financial decision making
  - Payment of dividends
Group Exercise

- Working in your groups, answer the following questions:
- What is the role of the credit rating agencies?
- How are they paid?
- Do we really need them, or do they just cause too many problems?

Credit Rating Agencies

- Most publicly issued debt by corporations and munis are rating by one or more NRSROs
- Rating agencies have access to internal information and are widely accepted by market participants and regulators
- Part of Dodd-Frank was directed at ratings agencies
  - Greater disclosure of models and methodologies
  - Subjects them to greater liability

Long-Term Bond Credit Ratings

<table>
<thead>
<tr>
<th>Long-Term Bond Credit Ratings</th>
<th>S&amp;P</th>
<th>DBS</th>
<th>ICIG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment Grade</td>
<td></td>
<td></td>
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<tr>
<td>Prime (Highest Quality)</td>
<td>Aaa</td>
<td>AAA</td>
<td>AAA</td>
</tr>
<tr>
<td>Higher Grade (High Quality)</td>
<td>A+</td>
<td>AA+</td>
<td>AA+</td>
</tr>
<tr>
<td>Lower Grade (Mid Grade)</td>
<td>A</td>
<td>AA</td>
<td>A</td>
</tr>
<tr>
<td>Lower Investment Grade</td>
<td>Bbb</td>
<td>BBB</td>
<td>BBB</td>
</tr>
<tr>
<td>Below Investment Grade</td>
<td>B</td>
<td>BB</td>
<td>BB</td>
</tr>
<tr>
<td>Speculative (High Risk)</td>
<td>C</td>
<td>CCC</td>
<td>CCC</td>
</tr>
<tr>
<td>BBB+</td>
<td></td>
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<td>BBB</td>
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Overview of Chapter 19 Topics

- Introduction
- Valuation of Capital Market Securities
- Managing Capital Market Investments

Objectives of Capital Market Investments

- Goals should be expressed in terms of risk and return and should conform to the organization’s investment policies
- Capital preservation is not necessarily the primary goal for capital investments
- Issues to consider:
  - Risk tolerance for the portfolio
  - Return objectives
  - Liquidity needs
  - Time horizons or future needs for funds
  - Tax issues
  - Asset/liability matching
  - Legal or regulatory factors (especially for pension funds)
- Some mix between current income and capital appreciation
L-T, Fixed Income Portfolio Mgmt.

- Many of the issues are similar to those covered in Chap 11 (Money Markets)
- Concept of Duration
  - Primary measure of risk for a bond portfolio
  - Weighted average maturity of investment
  - Measure of sensitivity of the investment to changes in underlying interest rates
  - Bond prices move inversely to interest rates
- Interest Rate Risk
  - Longer term bonds will fluctuate more in price for a given change in interest rates than shorter term bonds

Other Issues in Debt Portfolio Mgmt.

- Diversification
- Fixed/Floating Ratio
  - Usually expressed in terms of a target ratio
  - May be too narrow to be used on its own
- Foreign Currency Denominated Investments
  - FX derivatives may be used to manage risk
- Using Derivatives in a Long-Term Debt Portfolio
  - Use of credit default swaps, in addition to futures forwards and options
- Asset-Liability Management
  - Especially a problem when S-T funds are borrowed to fund L-T investments
- Securities Lending
  - Allows the borrower to hedge or short-sell securities

Equity (Stock) Portfolio Mgmt.

- Defining and Measuring Investment Risk
  - Expected return and standard deviation
  - Use of covariance in portfolio management
- Benefits of Diversification
  - Reduces the overall riskiness of a portfolio
- Capital Asset Pricing Model (CAPM)
  - Beta is a measure of relative market risk
  - In a diversified portfolio, Beta is the only relevant measure to an investor
- CAPM – Model Relationship
  \[ r_i = r_{fr} + (r_M - r_{fr})\beta_i \]
  Where:
  - \( r_i \) = Required rate of return on stockholder's equity
  - \( r_{fr} \) = Expected rate of return on the risk-free asset
  - \( r_M \) = Expected rate of return on the market portfolio
  - \( \beta_i \) = Beta value for stock i

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CAPM Calculation Example

- Assume a risk-free rate (T-bill) of 2.0%, a market rate of return of 8.0%, and historic Beta for Apple Computer of 1.5:

\[ r_E = r_{RF} + (r_M - r_{RF})\beta_i \]
\[ r_E = 0.02 + (0.08 - 0.02)(1.5) = 0.110 \times 11.0\% \]

- Assume the same information as above, but for H.J. Heinz with a Beta of 0.60:

\[ r_E = r_{RF} + (r_M - r_{RF})\beta_i \]
\[ r_E = 0.02 + (0.08 - 0.02)(0.6) = 0.056 \times 5.6\% \]

Determining Portfolio Risk & Return

- One of the biggest benefits of using CAPM and Beta is the ability to determine a portfolio’s average return and overall riskiness as a function of simple weighted averages.

Using the stocks from the previous slide with weights of Apple(A) = 70% and Heinz(H) = 30%:

Portfolio \( \beta = (\% \text{ of A-Stock} \times \beta_A) + (\% \text{ of H-Stock} \times \beta_H) \)
\[ = (.70 \times 1.5) + (.30 \times 0.60) = 1.23 \]

Port. Return = (\% of A-Stock \times r_A) + (\% of H-Stock \times r_H)
\[ = (.70 \times 11.0\%) + (.30 \times 5.6\%) = 9.38\% \]

\[ r_E = r_{RF} + (r_M - r_{RF})\beta_{\text{Portfolio}} \]
\[ = .02 + (.08 - .02)(1.23) = 0.0938 \text{ or } 9.38\% \]

Session Wrap-up

Session 4: Money and Capital Markets

- What did we learn in this session?

- What topics do we need to learn more about?
End of This Session

We will reconvene at 8:30 am Tuesday.

The topic will be:

More Key Concepts
Cash Forecasting and Risk Management