


# Essential Learning for CTP Candidates

## Carolinas Cash Adventure 2018 – Session #CTP-08

Carolinas Cash Adventure – 2018: CTP Track  
**Capital Markets & L/T Investments**  
Session #8 (Tues. 8:00 – 9:00 am)



- ❖ **ETM5-Chapter 6:**  
Capital Markets
- ❖ **ETM5-Chapter 19:**  
Long-Term Investments

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As a prep course for the CTP exam, significant portions of these lectures are based on materials from the *Essentials* text.

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### Overview of Chapter 6 Topics

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



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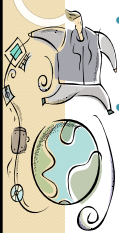
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### Introduction

- 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



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# Essential Learning for CTP Candidates

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### 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



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### 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



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### 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



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### 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



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### 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



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### 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



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### 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



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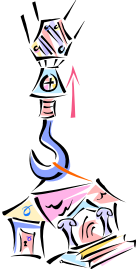
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### Other Forms of Debt Capital

- Project Financing
- Securitization
- Off-Balance-Sheet Financing



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### 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



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### 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



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### Equity(Stock) Securities

- Common Stock
- Preferred Stock
- Hybrid Securities
- Depository Receipts (DRs)



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### 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



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### 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



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### Hybrid Securities: Convertibles

- Basic Features
  - Converts existing debt/pref. stock into common equity
  - Maturity value of bond and conversion ratio determine the conversion price
  - Ex: \$1000 par value and conversion ratio of 20, implies price of \$50 ( $\$1000/20$ )
  - May carry a lower interest rate and fewer covenants than similar debt
- Disadvantages
  - If stock price increases significantly, regular debt may have been a better option
  - Convertibles with low coupon rate may be lost if bond is converted
  - If stock prices do not rise, then the company may be locked into the debt issue



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### Hybrid Securities: Warrants

- Basic Features
  - Company issued options often issued with bonds to provide additional compensation
  - Most are detachable & trade separately from the bond
  - They are often listed on major exchanges and trade like options
  - Can help to bring additional funds into a company, while keeping debt costs low
  - Sometimes called a bond with an “equity kicker”
  - Used extensively by small, rapidly growing companies
- Disadvantages
  - May dilute the value of current shareholder’s equity and EPS
  - Required disclosures with SEC



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### Depository Receipts(DRs)

- Depository Receipts (DRs)
  - Negotiable financial instruments that trade on a local exchange, but actually represent stock ownership in a foreign, publicly listed company
  - ADRs versus GDRs
  - Benefits of DRs
    - Offers greater exposure and opportunity to raise capital, especially for companies in countries with limited financial markets
    - Helps to increase global trade
    - Helps to reduce market inefficiencies



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### Overview of Chapter 19 Topics

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



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### 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



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### Valuation of Long-Term Securities



- Publicly traded corporate securities are valued by financial markets
- The value is based on the cash flow stream expected by the investor as well as the relevant discount rate:

$$PV_0 = \sum_{t=1}^n \frac{CF_t}{(1+k)^t} = \frac{CF_1}{(1+k)^1} + \frac{CF_2}{(1+k)^2} + \dots + \frac{CF_n}{(1+k)^n}$$

- Where:  $PV_0$  = Current value of the asset
- $CF_t$  = Cash flow in period t
- k = Opportunity cost for the security

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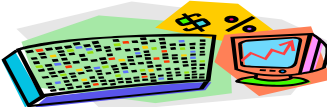
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### Bond or Fixed Income Valuation

- Valuation of bonds or any fixed income security is generally fairly easy
- Concept of Yield to Maturity (YTM)
- Some bonds have call provisions (YTC)
- Concept of Yield to Worst (YTW)
  - Can also be used with other types of bonds to determine the impact of all potentially negative provisions (pre-payments, sinking funds, etc.)



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### Bond or Fixed Income Valuation

- The YTM for a three-year \$1,000 bond with a 10% coupon rate selling at a market price of \$1,136.16 would be calculated as:

$$\$1,136.16 = \frac{\$100}{(1+YTM)^1} + \frac{\$100}{(1+YTM)^2} + \frac{\$1,100}{(1+YTM)^3}$$

YTM = 0.05 = 5.0%



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### Preferred Stock Valuation

- Preferred stock is equity, but has features of debt financing in its payments
- Assume a \$50 par value, with a 6.6% annual dividend and an 8.0% required return



$$\text{Pref. Stock Div.} = \text{Pref. Stock Div. Rate} \times \text{Par Value}$$

$$= 6.6\% \times \$50 = \$3.30$$

$$\text{Price of Pref. Stock} = \frac{\text{Pref. Stock Annual Div.}}{\text{Required Rate of Return}}$$

$$= \frac{\$3.30}{.08} = \$41.25$$

- Now, assume required return increases to 10%

$$\text{Price of Preferred Stock} = \frac{\$3.30}{.10} = \$33.00$$

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### Common Stock Valuation

- Neither the timing or the amount of the cash flows are known with certainty
- To value common stock, it is necessary to estimate the dividend stream and liquidation price, as well as a required rate of return on the stock



$$P_0 = \frac{D_1}{(1+k_s)^1} + \frac{D_2}{(1+k_s)^2} + \frac{D_3}{(1+k_s)^3} + \dots + \frac{D_\infty}{(1+k_s)^\infty}$$

$$= \sum_{t=1}^{\infty} \frac{D_t}{(1+k_s)^t}$$

- Where:  $P_0$  = Current value of the stock  
 $D_t$  = Dividend in period  $t$   
 $k_s$  = Required rate of return for the stock

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### Common Stock Valuation


- Common assumption is to assume that dividends will grow at some constant rate in the future
- Dividend in period  $t = D_t = D_0(1+g)^t$
- Substituting this into the general equation, we get:

$$P_0 = \sum_{t=1}^{\infty} \frac{D_0(1+g)^t}{(1+k_s)^t}$$

- Assuming that  $D_t = D_0(1+g)^t$ , we get:

$$P_0 = \frac{D_1}{(k_s - g)} \quad \text{or} \quad P_t = \frac{D_{t+1}}{(k_s - g)}$$

- This formulation works well for companies paying a steadily growing dividend, which includes a significant portion of large cap firms in the U.S.



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### Common Stock Valuation - Example

- Assume the following:
  - Last dividend ( $D_0$ ) = \$2.00
  - Estimate growth rate ( $g$ ) = 6%
  - Return on stock ( $k_s$ ) = 13%



$$P_0 = \frac{D_1}{(k_s - g)} = \frac{D_0(1 + g)}{(k_s - g)}$$

$$= \frac{\$2.00(1 + .06)}{(0.13 - 0.06)} = \frac{\$2.12}{0.07} = \$30.29$$

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### Asset Allocation Decision

- The mix between fixed-income (debt) and equity (stock) is a key decision in the management of long-term portfolio



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### L-T, Fixed Income Portfolio Mgmt.

- Many of the issues are similar to those covered in Chap 13 (Short-Term Investing)
- 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



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### Interest Rate Risk

- Duration is directly correlated to interest rate risk
- Compare the price action for a 1-year versus a 10-year bond, both with 3% coupon rate, \$1M par value
- You buy the bond at par, then rates go to 4%
- What is the impact on the prices?

Par Value	Maturity	Mkt Price @4%	Change	% Change	Duration
\$1,000,000	1 year	\$990,292	\$(9,708)	-0.9708%	0.9926
\$1,000,000	10 years	\$918,295	\$(81,705)	-8.1705%	8.6354

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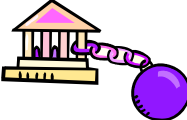
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### Other Issues in Debt Portfolio Mgmt.



- 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

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### 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

$$r_E = r_{RF} + (r_M - r_{RF})\beta_i$$

Where:  $r_E$  = Required rate of return on stockholder's equity  
 $r_{RF}$  = 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:

$$r_E = r_{RF} + (r_M - r_{RF})\beta_i$$

$$r_E = 0.02 + (0.08 - 0.02)(1.5) = 0.110 = 11.0\%$$



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

$$r_E = r_{RF} + (r_M - r_{RF})\beta_i$$

$$r_E = 0.02 + (0.08 - 0.02)(0.6) = 0.056 = 5.6\%$$

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### Determining Portfolio Risk & Return



- One of the biggest benefits of using CAPM and Beta is the ability to determine a portfolios 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%

$$\text{Portfolio } \beta = (\% \text{ of A-Stock} \times \beta_A) + (\% \text{ of H-Stock} \times \beta_H)$$

$$= (.70 \times 1.5) + (.30 \times 0.60) = 1.23$$

$$\text{Port. Return} = (\% \text{ of A-Stock} \times r_A) + (\% \text{ of H-Stock} \times r_H)$$

$$= (.70 \times 11.0\%) + (.30 \times 5.6\%) = 9.38\%$$

$$r_E = r_{RF} + (r_M - r_{RF})\beta_{\text{Portfolio}}$$

$$= .02 + (.08 - .02)(1.23) = 0.0938 \text{ or } 9.38\%$$

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### Session Wrap-up

#### Session 8: Capital Markets & L/T and Capital Instruments

- What did we learn in this session?*
- What topics do we need to learn more about?*



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## Carolinas Cash Adventure 2018 – Session #CTP-08



Carolinas Cash Adventure – 2018: CTP Track  
**Capital Markets**

**End of This Session**

**We will reconvene at 9:15 am Today.**

**The topic will be:**

More Key Concepts  
Cash Forecasting

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