CHAPTER 10

EQUITY MARKETS

CHAPTER OVERVIEW

- This chapter compares and contrasts the basic types of equity securities.
- This chapter explains how equities enter the primary market and trade on different kinds of secondary markets.
- This chapter explains a basic technique of equity valuation and a basic model of equity risk.
- This chapter describes several major stock market indices and examines the stock market's reliability as a predictor of economic activity.

LEARNING OBJECTIVES

1. Describe the three types of equity securities.
2. Explain how equity securities are sold in the primary market and the role of underwriters.
3. Explain how equity securities are traded in the secondary markets and be able to understand a stock quote.
4. Describe the basics of equity valuation.
5. Explain how a short sale works.
6. Explain the risks associated with equity securities and discuss how to measure these risks.
7. Describe the major stock market indexes and how they are constructed.
8. Discuss whether the stock market is a good predictor of economic activity.

CAREER PLANNING NOTE: PLANT AND OFFICE VISITS

Take advantage of any opportunity to visit the offices or other key facilities of firms that interest you. This will help you better understand a prospective employer's business. College students have many opportunities for such visits through various student organizations, and many large firms offer plant tours to the general public. If you have not traveled widely, make a special effort to visit parts of the country that aren't familiar to you. You may be surprised how attractive some of them are to you.

READING *THE WALL STREET JOURNAL:* "AHEAD OF THE TAPE"

The "Ahead of the Tape" column tries to make sense of what's happening in the market. If news likely to move either the broad market or particularly important stocks has broken, this column will offer details and analysis.

TOPIC OUTLINE AND KEY TERMS

I. What Are Equity Securities?

A. Common Stock - Basic Ownership in a Corporation

1. One vote per share (in person or by proxy)—
    a. elect directors
    b. decide major issues of corporate governance.
2. Board of directors declares dividends (or decides to retain earnings),
3. Residual (last) claim on income and assets in liquidation.
4. Liability limited to amount of original investment.
5. Shareholder returns derive from management's success (or failure) in earning profit.
6. Dual-class stock provides voting for one class of stock and limits or excludes voting for another class of common stock.
7. With cumulative voting, voting for the board is made in one ballot, permitting shareholders the opportunity to aggregate their votes and cast them together. The largest block of votes may appoint the first director, etc. Minority shareholder interests *may* be represented on the board. Majority or straight voting permits a majority or plurality to win all contested board seats, for each board seat is a separate election and the majority will win all.

B. Preferred Stock - Preferred claim on earnings and assets compared to common stock.

1. Preferred dividends are paid ahead of common if declared.
    a. **Cumulative** – arrearage plus current dividends must be paid before paying any dividend to common shareholders.
    b. **Non-participating** – preferred stockholders receive fixed dividends, thus not participating in possible high earnings of the corporation.
    c. **Adjustable-rate--**varying with an index interest rate.
2. Preferred stockholders usually do not vote.

C. Convertible Securities—convertible to common stock at some predetermined ratio.

1. **Convertible Preferred Stock**
2. **Convertible Bonds**—usually subordinated

II. The Market for Equity Securities

A. Shareholder Ownership

1. Households dominate direct holdings of equity securities.
   a. May own directly or
   b. Through mutual funds.

2. Mutual funds rank first in institutional ownership, followed by foreign investors and pension funds.

B. Primary Market for Equities

1. Securities originate in *primary market* transactions—
   a. **initial public offering (IPO):**
      first time a firm offers a particular type of security to the public
   b. **seasoned offering:**
      subsequent new issue of the same type of security
   c. **private placement**
   d. **rights offering** enabling existing shareholders to increase holdings

2. New issues of securities may be—
   a. sold directly to investors by the firm.
   b. underwritten--an investment banker buys and resells the issue.
   c. sold to existing shareholders in a right**s** offering.
   d. sold in subsequent installments via "shelf registration" with SEC.

3. Size of underwriter's spread is—
   a. inversely related to size of offering.
   b. directly related to risk of offering,.
   c. smaller with shelf registrations (usually larger, well-known firms).

C. Secondary Market for Equities

1. Securities trade among subsequent holders in *secondary market* transactions.
2. Trading is either "over the counter" (OTC) or on organized exchanges.
3. Equilibrium prices—where supply from sellers equals demand from buyers.
   a. **Market Capitalization** = Number of shares outstanding x share price
   b. **Dividend Yield** = Annual dividend as percentage of share price
   c. **Earnings Per Share (EPS**) = annual net income divided by number of shares outstanding
   d. **Price/Earnings Ratio (P/E**) = share price divided by EPS

4. 4 different types of secondary markets—
   a. **Direct Search**: buyers and sellers seek each other out directly
   b. **Brokered:** brokers bring buyers and sellers together
   c. **Dealer:** Dealers "make markets" – buy at *bid* price; sell at *as*k price
   d. **Auction:** sale to the highest bidder

5. Bid-ask spreads vary
   a. according to different dealers' valuations and inventory objectives
   b. inversely with frequency of a particular stock's trading

III. Equity Trading

A. Over-the-counter (OTC) market for unlisted stocks of public companies

1. Reasons for not listing a stock—
   a. little investor interest.
   b. small issue size.
   c. insufficient order flow.
2. This "dealer market" includes a large number of relatively small dealers.
3. Brokers seek favorable prices from a variety of dealers.

B. Nasdaq

1. Originally an electronic OTC network (created in 1971).
2. Still a dealer market, but now functions as a virtual organized exchange.
3. Competes with NYSE—lists more companies but average company is smaller.
   a. Prominent companies have switched back and forth.
   b. NYSE has evolved technologically (see below).
   c. Competition should reduce costs and improve services to investors.

C. New York Stock Exchange: Preeminent U.S. organized exchange

1. Historically an *auction* market relying on *specialists,* who—
   a. Act as both brokers and dealers in a given stock
   b. Trade at an assigned "post" on the exchange floor
   c. Process transactions from 3 main sources—
      (1) brokers executing market orders
      (2) limit orders left with the specialist for execution
      (3) trading for specialist's own account

2. Has more recently evolved into a "hybrid" market; traders can choose—
   a. to execute an order through a specialist in the traditional way, or
   b. to execute electronically, while physically absent from the floor

D. Global Stock Markets

1. Technology has reduced costs and made 24-hour global trading possible.
2. Nasdaq and NYSE have internationalized by acquiring foreign stock exchanges.
3. U.S. investors widely hold foreign stocks through **American Depository Receipts (ADRs)--**
   a. Dollar-denominated claims issued by U.S. banks
   b. Representing shares of foreign stock held by the bank in the host country
   c. Covered by U.S. securities laws

E. Common types of transactions—

1. **Market Order:** Buy or sell at best available price at first available opportunity.
2. **Limit Order:** Buy or sell at instructed price or better during term of order.
3. **Stop Order—**
   a. **Stop Loss—**sell if the price drops to the instructed "stop" price
   b. **Stop Buy**—buy if the price rises to the instructed "stop" price
4. **Short sale:** Borrow stock and sell it, expecting the price to drop.
   a. If price drops, seller repays the loan of stock and keeps the difference.
   b. If price rises, seller repays the loan of stock plus the difference.
   c. Commonly hedged with a stop-buy order.

F. ***Beyond many state laws, two major federal laws cover all publicly traded securities--***

1. **Securities Act of 1933**
   a. Requires prospectus fully disclosing all relevant information.
   b. Requires registration of publicly traded securities.
2. **Securities Exchange Act of 1934**
   a. Established the SEC and empowered it to enforce the 1933 Act.
   b. SEC regulates issue and trading of all publicly traded securities.

IV. Equity Valuation Basics

A. The value of a security is the present value of expected cash flows.

1. Identify the amounts and times of the future cash flows.
2. Determine the required rate of return.
3. Discount the cash flows by the required rate of return.
4. Sum the discounted cash flows.

B. Common Stock Valuation

1. Expected cash flows are—
   a. expected dividends during holding period
   b. expected resale price at end of holding period

2. Required rate of return = risk-free rate plus appropriate risk premium.

3. The general discounted cash flow(DCF) model closely resembles the bond Pricing model from Chapter 5, but—
   a. The maturity term is "infinity" because stock has no maturity; and
   b. None of the inputs is contractually promised; they must all be assumed.

4. Assuming non-constant dividends, expected CFs must be discounted separately.

5. Assuming a constant rate of growth in dividends, the DCF model simplifies to

$$P_0 = D_1/(r-g)$$

(see equation 10.11 and its derivation)

C. Preferred stock valuation

1. Preferred dividends generally represent a level perpetuity.
2. For a level perpetuity, the DCF model simplifies to

$$P_0 = D/r$$

V. Equity Risk

A. The total risk of a security comprises its " Systematic" & "Unsystematic" risk.

1. **Systematic risk—**
   a. Also called "market risk" because it is the risk that
   b. price will fluctuate with market movements unrelated to the issuing firm.
   c. **"Beta"** coefficient is a measure of systematic risk.
      (1) The market as a whole has a Beta of 1.00.
      (2) **"Aggressive" stocks** have Betas over 1.00
      (price moves more dramatically with market)
      (3) **"Defensive" stocks** have Betas under 1.00
      (price moves less dramatically with market)
   d. Systematic risk cannot be "diversified away".

2. **Unsystematic risk—**
   a. Also called security-specific, firm-specific, or diversifiable risk.
   b. Arises from unique characteristics of the issuer of the security.
   c. Can theoretically be "diversified away"
      (1) As number of non-perfectly-correlated securities increases,
      (2) Portfolio risk declines toward the level of systematic risk

B. The Security Market Line (SML)

1. Graphs the returns demanded for increased increments of risk.
2. Graphically portrays the capital asset pricing model (CAPM).

3. Required return iss the sum of the risk-free rate plus a market risk premium adjusted for the relative risk of the stock (Beta):

$$E(R_j) = R_f + \beta_j[E(R_M) - R_f] \qquad \text{(equation 10.17a)}$$

VI. Stock Market Indexes

A. Indexes are useful benchmarks that help assess performance of stock portfolios.

1. Must select a starting point in time, a representative portfolio, and a formula.
2. Each index stock is assigned a relative weight to compute the index—

   a. A **price-weighted index**
      (1) sums the prices of the individual stocks in the index, then
      (2) divides the sum a divisor to find the index value.
      (3) The divisor is a number that made starting index some round number.
      (4) The divisor is adjusted as stocks split or index components change.

   b. A **market value-weighted index**
      (1) sums the total market value of the firms whose stock is in the index.
      (2) makes similar use of a divisor.
      (3) tracks changes in aggregate market value of the member firms.

B. *Examples of Preeminent Indexes*

1. **Dow Jones Industrial Average (DJIA)**
   a. 30 “blue chip” stocks assumed to represent U.S. economy
   b. price-weighted

2. **Standard & Poors 500 (S&P 500)**
   a. 500 largest public companies by market capitalization
   b. market value-weighted

3. **Nasdaq Composite**
   a. All Nasdaq-listed stocks
   b. market value-weighted

C. *The Stock Market as a Predictor of Economic Activity*

1. Stock prices presumably value of expected cash flows over the long run.
2. Consequently, indexes should
   a. decline if investors forecast a recession and
   b. rise if investors forecast a recovery or expansion

3. Historically, however, the stock market predicts correctly about 41% of the time.

COMPLETION QUESTIONS

1. A majority shareholder group will win all the board seats in a board of directors’ election using ________ voting.

2. Securities are first issued in the ________ market; subsequent trading is in the ________ market.

3. While the money market is a ________ market, the capital market finances ________.

4. The largest amount outstanding of any one capital market security is ________ followed by ________.

5. The capital market securities, which are issued by corporations, are different from one another. List the types of capital market securities issued by corporations and the major differences in the securities.

Securities Issued

1. ____

2. ____

3. ____

4. ____

Major Differences in Securities

1. ____

2. ____

3. ____

4. ____

5. ____

6. An order to buy or sell at the best price available is a ____________ order.

7. A major federal regulator of stock exchanges is the _____________.

8. While brokers earn __________ for their services; dealers earn their return for services from the ______________.

9. _________ risk may be reduced by diversifying a security portfolio.

10. Stock indices are usually constructed using either ______or _________ weights.

TRUE-FALSE QUESTIONS

1. T F Common stock has a residual claim on earnings and assets ahead of bondholders.

2. T F Limited liability sets a limit on the amount of their investment that a common stockholder might lose in case of bankruptcy and liquidation.

3. T F All common stockholder have one vote per share owned.

4. T F An initial public offering is made in the primary market.

5. T F The household sector is the largest single direct investor in common stock.

6. T F The underwriter's spread is inversely related to the size of the primary offering.

7. T F A market price for common stock with a high degree of depth, breadth, and resiliency will be quite stable.

8. T F Prices for stocks on the New York Stock Exchange are determined by brokers and dealers.

9. T F The NASDAQ is an exchange-based, electronic method for trading common stock.

10. T F A limit order to buy or sell stock may be delayed on the NYSE.

MULTIPLE-CHOICE QUESTIONS

1. A(n) ___________ is sold in the ___________ market.
   a. unseasoned; primary
   b. initial public offering; secondary
   c. seasoned offering; secondary
   d. initial public offering; primary

2. Select the answer that best depicts ***increasing*** required rates of return by investors.
   a. common stock, corporate bonds, treasury bonds, agency debt
   b. treasury bonds, agency bonds, common stock, preferred stock
   c. treasury bonds, agency bonds, corporate bonds, common stock
   d. agency bonds, corporate bonds, treasury bonds, preferred stock

3. Which of the following securities would be in default if periodic payments were not made?
   a. debentures
   b. preferred stock
   c. common stock
   d. convertible preferred stock

4. ***All but one*** *of the following* is associated with the primary market?
   a. rights offering
   b. shelf registration
   c. over-the-counter
   d. underwriter's spread

5. What is the price of a share of common stock that paid a $4.00 dividend this last year, expects to grow steadily at 6 per cent per year, and investors are requiring an 18 per cent rate of return?
   a. $16.67
   b. $17.67
   c. $33.33
   d. $35.33

6. Malley Corporation's preferred stock is currently priced at $85, was issued at $100, and pays an $8.00 annual dividend. What is the market required rate of return?
   a. 8 per cent
   b. 9.4 per cent
   c. 10 per cent
   d. cannot be calculated

7. What is the current value of a share of common stock that is expected to pay a $3 dividend each year for five years, and at the end of the fifth year, be sold for $40, if the discount rate is 18 per cent?
   a. $26.87
   b. $16.62
   c. $21.68
   d. $28.43

8. The relevant risk of a common stock is
   a. its diversifiable risk.
   b. its risk relative to the market portfolio
   c. its beta.
   d. both "b" and "c" above.

9. The Security Market Line shows the relationship between
   a. systematic and unsystematic risk.
   b. risk and return.
   c. aggressive versus defensive stocks.
   d. a dividend yield versus a capital gains yield.

10. The stocks associated with a price-weighted index with a current value of 150 with a base of 100 over five years has had an annual compound rate of return of
   a. 50 per cent
   b. 10 per cent
   c. 9.2 per cent
   d. 8.5 per cent

11. *All but one of the following* is associated with characteristics of common stock:
   a. residual claim on income and assets
   b. proxy
   c. cumulative dividends
   d. dual-class stock

12. Security exchanges provide a valuable function in that they
   a. create interest in stocks.
   b. increase the marketability of securities.
   c. provide a legal way to gamble.
   d. supply money to deficit spending units.

13. The New York Stock Exchange is a(n) ________ market.
   a. auction
   b. exchange
   c. secondary
   d. all of the above

14. Which of the following is ***not*** true about **American Depository Receipts (ADR)?**
   a. An **American Depository Receipt (ADR)** is a claim issued by the U.S. financial intermediaries (FIs) against shares in foreign companies, with the shares held in custody by the FIs for investors.
   b. ADRs are issued in the U.S. and are denominated in U.S. dollars. All cash flows to the investor are in dollars.
   c. Enhances a company's visibility, status and profile in the U.S. and internationally among investors, consumers and customers.
   d Decreases the foreign firm's U.S. liquidity (and potentially total global issuer liquidity).

15. Which of the following is true about secondary markets?
    a. A buyer may incur search costs and find a seller on their own, called a direct search.
    b. A broker may bring buyer and seller together, charging a commission.
    c. A dealer may buy and sell securities from his inventory, reducing search costs. The dealer's return is the bid/ask spread.
    d. An auction market allocates the selling shares to the highest bidder, providing a buyer/seller.
    e. all of the above are true.

SUPPLEMENTARY ASSIGNMENT

Choose 5 dividend-paying stocks from the current DJIA. Assuming constant dividend growth of 3% per year in each case, “back in” to a required rate of return for each stock by iterating until you have a discount rate that equates the market price to the present value of dividends. Do the results seem reasonable for the companies you selected? Why or why not?

SOLUTION TO COMPLETION QUESTIONS

1. straight or majority voting

2. primary; secondary

3. liquidity; real capital, growth, or long-term capital investments

4. stock; mortgages

5. <u>Securities issued</u>: bonds; preferred and common stock; convertibles

   <u>Major differences in the securities</u>:

   (1) maturity
   (2) claim on income
   (3) claim on assets in liquidation
   (4) voice in management (control)
   (5) cost of capital (required rate of return)

6. market

7. Securities and Exchange Commission (SEC)

8. commissions; bid/ask spread

9. specific, unsystematic, diversifiable risk

10. price; market value

SOLUTIONS TO TRUE-FALSE QUESTIONS

1.	F	Bondholders have a prior claim on income and assets
2.	F	Stockholders may lose all of their investment in common, but no more than that.
3.	F	Some companies have dual-class common, which may restrict voting.
4.	T	Subsequent trading is in the secondary market.
5.	T	See *Federal Reserve Bulletin* "Flow of Funds Accounts" or the *Annual Statistical Digest* published by the Federal Reserve System.
6.	T	The larger the issue, the smaller the underwriter spread.
7.	T	Many investors are interested in prices above (sell) and below (buy) the current price, thus stabilizing the price.
8.	F	Prices are determined by auction at the trading post on the floor of the exchange.
9.	F	The NASDAQ is the contact point for the over-the-counter dealer market.
10.	T	The limit order will be held by the specialist until the order expires or price hits the level specified in the limit order.

SOLUTIONS TO MULTIPLE CHOICE QUESTIONS

1.	d	The investment banker buys and sells the issue for the first time.
2.	c	Increased risk, increased returns required.
3.	a	Debentures are contractual debt requiring specific payment of interest and principal.
4.	c	The over-the-counter market is associated with secondary market trading.
5.	d	$4.00 (1.06) / (0.18 - 0.06) = **$35.33**
6.	b	The security price varies to give the new investor the required rate of return or $8.00/$85.00 = 9.4 per cent.
7.	a	The value of the stock is the sum of the present value stream of dividends plus the PV of the future selling price discounted at the required rate of return. The calculator solution is:

5 N
18 i
40 FV
3 PMT
PV = $26.87

8. d The relevant risk is the risk the stock brings to the portfolio. A measure of the relative riskiness of the stock relative to the market portfolio is the beta coefficient.

9. b The SML represents the risk/return tradeoff.

10. d The price level has grown from 100 to 150 over five years, an 8.45 per cent annual rate of return. 100 PV, 150 FV, 5n; I = **8.45%**

11. c Cumulative dividends is associated with preferred stock, not common stock.

12. b Security exchanges provide a valuable function in that they ***increase*** the marketability of securities.

13. d The New York Stock Exchange is a secondary market in the form of a physical exchange where securities are traded in an auction process.

14. d It actually **increases** the foreign firm's U.S. liquidity (and potentially total global issuer liquidity).

15. e All of the four are true about secondary markets. The statements *a* through *d* describe the four types of secondary markets.