Ethical and Professional Standards

The candidate should be able to demonstrate a thorough knowledge of the CFA Institute Code of Ethics and Standards of Professional Conduct, familiarity with the Global Investment Performance Standards, and familiarity with corporate governance issues and risks affecting companies.

Study Session 1
Ethical and Professional Standards

Reading Assignments

1.* "Code of Ethics and Standards of Professional Conduct" *Standards of Practice Handbook*, 9th edition (CFA Institute, 2005)
2.* "Guidance" for Standards I – VII, *Standards of Practice Handbook*, 9th edition (CFA Institute, 2005)
3.* Introduction to the Global Investment Performance Standards (GIPS®)
4.* Global Investment Performance Standards (GIPS®), pp. i–iii and 1–9, (CFA Institute, 2005)
   A. Preface: Background of the GIPS Standards
   B. I. Introduction
   C. II.0. Provisions of the Global Investment Performance Standards – Fundamentals of Compliance
5.* The Corporate Governance of Listed Companies: A Manual for Investors (CFA Institute, 2005)

Learning Outcomes

1. **"Code of Ethics and Standards of Professional Conduct"**

   The Code of Ethics establishes the framework for ethical decision making in the investment profession. The candidate should be able to state the six components of the Code of Ethics.

   The Standards of Professional Conduct are organized into seven standards:
   I. Professionalism
   II. Integrity of Capital Markets
   III. Duties to Clients and Prospective Clients
   IV. Duties to Employers
   V. Investment Analysis, Recommendations, and Action
   VI. Conflicts of Interest
   VII. Responsibilities as a CFA Institute Member or CFA Candidate

   Each standard contains multiple provisions for which the candidate is responsible. The candidate should be able to identify the ethical responsibilities required by the Code and Standards.

* Readings marked with an asterisk are contained in the 2006 Level I Candidate Readings.

2. **"Guidance" for Standards I – VII**

The guidance in the *Standards of Practice Handbook* addresses the application of the Standards of Professional Conduct. For each standard, the *Handbook* offers guidance for the standard, presents recommended procedures for compliance, and provides examples of the standard in practice. The candidate should be able to

a) demonstrate a thorough knowledge of the Standards of Professional Conduct by recognizing and applying the standards to specific situations;
b) distinguish between conduct that conforms to the Code and Standards and conduct that violates the Code and the Standards.

3. "**Introduction to the Global Investment Performance Standards (GIPS®)"** and
4. **"Global Investment Performance Standards"**

The Global Investment Performance Standards (GIPS®) contain ethical and professional standards for presenting investment performance in the context of portfolio management. The GIPS standards are covered in the Ethical and Professional Standards topic area at Level I, but are covered in the Portfolio Management topic area at Level III. Note that the GIPS standards are printed in their entirety in the readings, but the Level I candidate is required only to know the material through the end of Section II.0., "Fundamentals of Compliance."

The candidate should be able to

a) explain why the GIPS standards were created;
b) explain what parties the GIPS standards apply to and whom the standards serve;
c) characterize "composites";
d) explain the purpose of verification;
e) explain why a global standard is needed and how it is being implemented;
f) state the "vision" of the GIPS standards;
g) state the objectives and key characteristics of the GIPS standards;
h) state the appropriate disclosure when the GIPS standards and local regulations are in conflict;
i) explain the scope of the GIPS standards with respect to definition of the firm, historical performance record, and compliance;
j) name and characterize the eight major sections of the GIPS standards;
k) explain the fundamentals of compliance with the GIPS standards.

5. **"The Corporate Governance of Listed Companies: A Manual for Investors"**

The candidate should be able to

a) identify the factors in evaluating the quality of corporate governance and the relative strength of shareowner rights;
b) define corporate governance and identify practices that constitute good corporate governance;
c) define independence as used to describe corporate board members, and explain the role of independent board members in corporate governance;
d) list and explain the major factors that enable a board to exercise its duty to act in the best long-term interests of shareowners;

e) identify characteristics of a board that contribute to the board's independence, and state why each characteristic is important for shareowners' interests;
f) identify factors that indicate a board and its members possess the experience required to govern the company for the benefit of its shareowners;
g) explain the importance to shareowners of a board's ability to hire external consultants;
h) identify advantages and disadvantages of annual board elections compared to less frequent elections;
i) explain the implications of a weak corporate code of ethics with regard to related-party transactions and personal use of company assets;
j) critique characteristics and practices of board committees, and determine whether they are supportive of shareowner protection;
k) identify the information needed for evaluating the alignment of a company's executive compensation structure and practices with shareowner interests;
l) state the provisions that should be included in a strong corporate code of ethics;
m) identify components of a company's executive compensation program that positively or negatively affect shareowners' interests;
n) explain the implications for shareowners of a company's proxy voting rules and practices;
o) state whether a company's rules governing shareowner-sponsored board nominations, resolutions, and proposals are supportive of shareowner rights;
p) explain the implications of different classes of common equity for shareowner rights;
q) determine the probable effects of takeover defenses on share value.

Quantitative Methods

The candidate should be able to demonstrate a thorough knowledge of elementary statistics, data collection and analysis, regression and correlation analysis, probability theory and distributions, the time value of money, and performance measurement.

Study Session 2
Investment Tools
Quantitative Methods: Basic Concepts

Reading Assignments
Quantitative Methods for Investment Analysis, 2nd edition, Richard A. DeFusco, Dennis W. McLeavey, Jerald E. Pinto, and David E. Runkle (CFA Institute, 2004)

6. "The Time Value of Money," Ch. 1
7. "Discounted Cash Flow Applications," Ch. 2
8. "Statistical Concepts and Market Returns," Ch. 3
9. "Probability Concepts," Ch. 4

Note: Candidates are responsible for the problems at the end of each chapter. Solutions to the problems are found at the end of each chapter.

Learning Outcomes

6. **"The Time Value of Money"**

The candidate should be able to

a) explain an interest rate as the sum of a real risk-free rate, expected inflation, and premiums that compensate investors for distinct types of risk;
b) calculate and interpret the effective annual rate, given the stated annual interest rate and the frequency of compounding;
c) solve time value of money problems when compounding periods are other than annual;
d) calculate the PV of a perpetuity;
e) calculate and interpret the FV and PV of a single sum of money, ordinary annuity, annuity due, or a series of uneven cash flows;
f) draw a time line, specify a time index, and solve problems involving the time value of money as applied, for example, to mortgages and savings for college tuition or retirement;
g) show and explain the connection between present values, future values, and series of cash flows.

7. **"Discounted Cash Flow Applications"**

The candidate should be able to

a) calculate and interpret the net present value (NPV) and the internal rate of return (IRR) of an investment;
b) contrast the NPV rule to the IRR rule;
c) discuss problems associated with the IRR method;

d) calculate, interpret, and distinguish between the money-weighted and time-weighted rates of return of a portfolio and appraise the performance of portfolios based on these measures;
e) calculate and interpret the bank discount yield, holding period yield, effective annual yield, and money market yield for a U.S. Treasury bill;
f) convert and interpret among holding period yields, money market yields, and effective annual yields;
g) calculate and interpret the bond equivalent yield.

8. **"Statistical Concepts and Market Returns"**

The candidate should be able to

a) describe the nature of statistics and differentiate between descriptive statistics and inferential statistics and between a population and a sample;
b) explain the concepts of a parameter and a sample statistic;
c) explain the differences among the types of measurement scales;
d) define and interpret a frequency distribution;
e) define, calculate, and interpret a holding period return (total return);
f) calculate and interpret relative frequencies and cumulative relative frequencies, given a frequency distribution;
g) describe the properties of data presented as a histogram or a frequency polygon;
h) define, calculate, and interpret measures of central tendency, including the population mean, sample mean, arithmetic mean, weighted average or mean (including a portfolio return viewed as a weighted mean), geometric mean, harmonic mean, median, and mode;
i) describe and interpret quartiles, quintiles, deciles, and percentiles;
j) define, calculate, and interpret 1) a range and mean absolute deviation, and 2) a sample and a population variance and standard deviation;
k) contrast variance with semivariance and target semivariance;
l) calculate and interpret the proportion of observations falling within a specified number of standard deviations of the mean, using Chebyshev's inequality;
m) define, calculate, and interpret the coefficient of variation and the Sharpe ratio;
n) define and interpret skew, explain the meaning of a positively or negatively skewed return distribution, and describe the relative locations of the mean, median, and mode for a nonsymmetrical distribution;
o) define and interpret kurtosis, and measures of population and sample skew and kurtosis.

9. **"Probability Concepts"**

The candidate should be able to

a) define a random variable, an outcome, an event, mutually exclusive events, and exhaustive events;
b) explain the two defining properties of probability;
c) distinguish among empirical, subjective, and a priori probabilities;
d) state the probability of an event in terms of odds for or against the event;
e) describe the investment consequences of probabilities that are mutually inconsistent;

f) distinguish between unconditional and conditional probabilities;
g) define a joint probability and calculate and interpret the joint probability of two events;
h) calculate the probability that at least one of two events will occur, given the probability of each and the joint probability of the two events;
i) distinguish between dependent and independent events;
j) calculate a joint probability of any number of independent events;
k) calculate, using the total probability rule, an unconditional probability;
l) explain the use of conditional expectation in investment applications;
m) calculate an expected value using the total probability rule for expected value;
n) diagram an investment problem, using a tree diagram;
o) define, calculate and interpret covariance and correlation;
p) calculate and interpret the expected value, variance, and standard deviation particularly for return on a portfolio;
q) calculate covariance given a joint probability function;
r) calculate and interpret an updated probability, using Bayes' formula;
s) calculate and interpret the number of ways a specified number of tasks can be performed using the multiplication rule of counting;
t) solve counting problems using the factorial, combination, and permutation notations;
u) calculate the number of ways to choose r objects from a total of n objects, when the order in which the r objects are listed matters, and calculate the number of ways to do so when the order does not matter;
v) identify which counting method is appropriate to solve a particular counting problem.

Study Session 3
Investment Tools
Quantitative Methods: Application

Reading Assignments
Quantitative Methods for Investment Analysis, 2nd edition, Richard A. DeFusco, Dennis W. McLeavey, Jerald E. Pinto, and David E. Runkle (CFA Institute, 2004)
10. "Common Probability Distributions," Ch. 5
11. "Sampling and Estimation," Ch. 6
12. "Hypothesis Testing," Ch. 7
13. "Correlation and Regression," Ch. 8

Note: Candidates are responsible for the problems at the end of each chapter. Solutions to the problems are found at the end of each chapter.

Learning Outcomes
10. **"Common Probability Distributions"**
The candidate should be able to
a) define and explain a probability distribution;
b) distinguish between and give examples of discrete and continuous random variables;
c) describe the set of possible outcomes of a specified random variable;
d) define a probability function, state its two key properties, and determine whether a given function satisfies those properties;
e) define a probability density function;
f) define a cumulative distribution function and calculate and interpret probabilities for a random variable, given its cumulative distribution function;
g) define a discrete uniform random variable and calculate and interpret probabilities, given a discrete uniform distribution;
h) define a binomial random variable and calculate and interpret probabilities, given a binomial probability distribution, and calculate and interpret the expected value and variance of a binomial random variable;
i) construct a binomial tree to describe stock price movement;
j) describe the continuous uniform distribution and calculate and interpret probabilities, given a continuous uniform probability distribution;
k) explain the key properties of the normal distribution;
l) distinguish between a univariate and a multivariate distribution;
m) explain the role of correlation in the multivariate normal distribution;
n) construct and explain confidence intervals for a normally distributed random variable;
o) define the standard normal distribution, explain how to standardize a random variable, and calculate and interpret probabilities using the standard normal distribution;
p) define shortfall risk, calculate the safety-first ratio and select an optimal portfolio using Roy's safety-first criterion;

q) explain the relationship between the lognormal and normal distributions and explain and interpret the use of the lognormal distribution in modeling asset prices;
r) distinguish between discretely and continuously compounded rates of return; and calculate and interpret the continuously compounded rate of return, given a specific holding period return;
s) explain Monte Carlo simulation and historical simulation and describe their major applications and limitations.

11. **"Sampling and Estimation"**

The candidate should be able to

a) define simple random sampling, define and interpret sampling error, and define a sampling distribution, and interpret sampling error;
b) distinguish between simple random and stratified random sampling;
c) distinguish between time-series and cross-sectional data;
d) state the central limit theorem and describe its importance;
e) calculate and interpret the standard error of the sample mean;
f) distinguish between a point estimate and a confidence interval estimate of a population parameter;
g) identify and describe the desirable properties of an estimator;
h) explain the construction of confidence intervals;
i) describe the properties of Student's *t*-distribution;
j) calculate, explain, and interpret degrees of freedom;
k) calculate and interpret a confidence interval for a population mean when sampling from a normal distribution with 1) a known population variance, 2) an unknown population variance, or 3) when sampling from a population with an unknown variance and the sample size is large;
l) discuss the issues regarding selection of the appropriate sample size;
m) define and discuss data-mining bias, sample selection bias, survivorship bias, look-ahead bias, and time-period bias.

12. **"Hypothesis Testing"**

The candidate should be able to

a) define a hypothesis, describe the steps of hypothesis testing; define and interpret the null hypothesis and alternative hypothesis, and distinguish between one-tailed and two-tailed tests of hypotheses;
b) discuss the choice of the null and alternative hypotheses;
c) define and interpret a test statistic, a Type I and a Type II error, and a significance level, and explain how significance levels are used in hypothesis testing;
d) define and interpret a decision rule and the power of a test;
e) explain the relation between confidence intervals and hypothesis tests;
f) distinguish between a statistical decision and an economic decision;
g) identify the appropriate test statistic and interpret the results for a hypothesis test concerning the population mean of a normally distributed population with 1) known or 2) unknown variance;
h) identify the appropriate test statistic and interpret the results for a hypothesis test concerning the equality of the population means of two normally distributed

populations, based on independent random samples with 1) equal or 2) unequal assumed variances;

i) identify the appropriate test statistic and interpret the results for a hypothesis test concerning the mean difference of two normally distributed populations (paired comparisons test);
j) identify the appropriate test statistic and interpret the results for a hypothesis test concerning the variance of a normally distributed population;
k) identify the appropriate test statistic and interpret the results for a hypothesis test concerning the equality of the variances of two normally distributed populations, based on two independent random samples;
l) distinguish between parametric and nonparametric tests and describe the situations in which the use of nonparametric tests may be appropriate.

13. **"Correlation and Regression"**

The candidate should be able to

a) define and interpret a scatter plot;
b) calculate and interpret a sample covariance and a sample correlation coefficient;
c) formulate a test of the hypothesis that the population correlation coefficient equals zero and determine whether the hypothesis is rejected at a given level of significance;
d) differentiate between the dependent and independent variables in a linear regression and explain the assumptions underlying linear regression;
e) define, calculate, and interpret the standard error of estimate and the coefficient of determination;
f) calculate a confidence interval for a regression coefficient;
g) formulate a null and an alternative hypothesis about a population value of a regression coefficient, select the appropriate test statistic, and determine whether the null hypothesis is rejected at a given level of significance;
h) interpret a regression coefficient;
i) describe the use of analysis of variance (ANOVA) in regression analysis and interpret ANOVA results;
j) calculate and interpret a predicted value and a confidence interval for the predicted value for the dependent variable given an estimated regression model and a value for the independent variable;
k) discuss the limitations of regression analysis and identify problems with a particular regression analysis or its associated results and any conclusions drawn from them.

Economics

The candidate should be able to demonstrate a thorough knowledge of macroeconomic and microeconomic principles, including the key components of economic activity, macroeconomic theory and policy, international trade, and exchange rates.

Preparing to Study the CFA Curriculum Materials on Economics

Before beginning the Reading Assignments, candidates should have a basic mastery of the concepts typically presented in introductory college-level economics courses. The primary source of Reading Assignments in the CFA Curriculum is *Economics: Private and Public Choice*, 10th edition, by Gwartney, Stroup, Sobel, and Macpherson.

Reading Assignments assume candidates are already knowledgeable in economics and understand the following important subjects:

- using national income, output, and price measures to track the performance of national economies
- economic terms and definitions
- factors affecting aggregate demand and supply, and how markets adjust to changes in these factors
- major theoretical and practical considerations of macroeconomic models
- the laws of supply and demand, and factors causing shifts in or movements along the supply and demand curves
- price determination, market equilibrium, and the behavior of market participants
- the operation of market forces in resource and funds markets
- effects on economic activity of price controls and taxes

If you have not taken an introductory economics course during the past few years, we strongly encourage you to consider additional study of introductory course material. Although examination questions are drawn only from the Reading Assignments, studying the additional introductory material will strengthen candidates' understanding of the required concepts. CFA Institute's book distributor offers the textbook used for the Reading Assignments, *Economics: Private and Public Choice,* 10th edition, by Gwartney, Stroup, Sobel, and Macpherson. At a minimum, we recommend that you study the following chapters:

- Chapter 3 – Supply, Demand and the Market Process
- Chapter 4 – Supply and Demand: Applications and Extensions
- Chapter 7 – Taking the Nation's Economic Pulse
- Chapter 10 – Working with Our Basic Aggregate Demand/Aggregate Supply Model
- Chapter 11 – Keynesian Foundations of Modern Macroeconomics

Many economics textbooks and courses provide similar coverage and will enable you to master the concepts and principles discussed in the Gwartney, et. al. text.

If you do not have a strong background in economics, please take some extra time before you begin your study program to review economic concepts and principles.

Study Session 4
Investment Tools
Economics: Macroeconomic Analysis

Reading Assignments
Economics: Private and Public Choice, 10th edition, James D. Gwartney, Richard L. Stroup, Russell S. Sobel, and David A. Macpherson (South–Western, 2003)

14. "Economic Fluctuations, Unemployment, and Inflation," Ch. 8
15. "Fiscal Policy," Ch. 12, pp. 269–283
16. "Money and the Banking System," Ch. 13
17. "Modern Macroeconomics: Monetary Policy," Ch. 14
18. "Stabilization Policy, Output, and Employment," Ch. 15, pp. 348–362

Learning Outcomes

14. **"Economic Fluctuations, Unemployment, and Inflation"**
    The candidate should be able to:
    a) explain the phases of the business cycle;
    b) discuss the problems in measuring unemployment and describe the three types of unemployment;
    c) explain full employment and the natural rate of unemployment;
    d) define inflation, discuss its causes, distinguish between anticipated and unanticipated inflation, and discuss the harmful effects of both on economic activity.

15. **"Fiscal Policy"**
    The candidate should be able to
    a) explain the process by which, according to the Keynesian view, fiscal policy affects aggregate demand and aggregate supply;
    b) explain the importance of the timing of changes in fiscal policy and the difficulties in achieving proper timing;
    c) discuss the impact of expansionary and restrictive fiscal policies based on the basic Keynesian model, the crowding-out model, the new classical model and supply-side model;
    d) identify automatic stabilizers and explain how such stabilizers work.

16. **"Money and the Banking System"**
    The candidate should be able to
    a) explain the relationship among the required reserve ratio, the potential deposit expansion multiplier, and the deposit expansion multiplier;

b) describe the role of a country's central bank and the tools that a central bank can use to control the money supply, and explain how a central bank can use monetary tools to implement monetary policy;
c) discuss potential problems in measuring an economy's money supply.

17. **"Modern Macroeconomics: Monetary Policy"**

The candidate should be able to

a) discuss the determinants of money demand and supply;
b) discuss how anticipation of the effects of monetary policy can influence the policy's effectiveness;
c) identify the components of the equation of exchange, and discuss the implications of the equation for monetary policy, describe the quantity theory of money, and discuss its implications for the determination of inflation;
d) compare and contrast the impact of anticipated and unanticipated monetary policy on the inflation rate, real output and employment, and interest rates.

Corrections/Clarifications

- On **page 329**, the sentence beginning in the next-to-last line should read: "On average, each dollar in the M1 money supply was used 9.2 times to purchase ..."

18. **"Stabilization Policy, Output, and Employment"**

The candidate should be able to

a) describe the composition and use of the index of leading economic indicators;
b) discuss the time lags that may influence the performance of discretionary monetary and fiscal policy;
c) contrast the adaptive expectations hypothesis to the rational expectations hypothesis and discuss implications on prices and output under the two hypotheses when there are changes in macroeconomic policies;
d) distinguish between an activist and a non-activist strategy for stabilization policy.

Study Session 5
Investment Tools
Economics: Microeconomic Analysis

Reading Assignments
Economics: Private and Public Choice, 10th edition, James D. Gwartney, Richard L. Stroup, Russell S. Sobel, and David A. Macpherson (South-Western, 2003)

19. "Demand and Consumer Choice," Ch. 19, including addendum "Consumer Choice and Indifference Curves"
20. "Costs and the Supply of Goods," Ch. 20
21. "Price Takers and the Competitive Process," Ch. 21
22. "Price-Searcher Markets with Low Entry Barriers," Ch. 22
23. "Price-Searcher Markets with High Entry Barriers," Ch. 23
24. "The Supply of and Demand for Productive Resources," Ch. 24
25.* "The Financial Environment: Markets, Institutions, and Interest Rates," Ch. 4, pp. 130–143, including Box on pp. 142—143, *Fundamentals of Financial Management*, 10th edition, Eugene F. Brigham and Joel F. Houston (South-Western, 2004)

Learning Outcomes

19. **"Demand and Consumer Choice,"** including addendum **"Consumer Choice and Indifference Curves"**

The candidate should be able to:

a) explain the fundamental principles of consumer choice and discuss marginal utility, marginal benefit, and the demand curve;
b) distinguish between the income effect and the substitution effect;
c) discuss the determinants of price and income elasticity of demand, and explain the concepts of price and income elasticity of supply;
d) calculate and interpret price and income elasticity of demand, and explain why the price elasticity of demand tends to increase in the long run;
e) discuss the characteristics of consumer indifference curves, the role of the consumption-opportunity constraint, and the budget constraint in indifference curve analysis.

20. **"Costs and the Supply of Goods"**

The candidate should be able to:

a) describe the principal-agent problem of the firm, distinguish among the types of business firms, and discuss the major factors promoting cost efficiency and customer service;
b) distinguish between 1) explicit costs and implicit costs, 2) economic profit and accounting profit, and 3) the short run and the long run in production;
c) define and identify opportunity costs, fixed costs, variable costs, marginal costs, average costs, and sunk costs, and differentiate between economic costs and accounting costs;
d) state the law of diminishing returns and explain its impact on a company's costs;

* Readings marked with an asterisk are contained in the 2006 Level I Candidate Readings.

e) describe the shapes of the short-run marginal cost, average variable cost, average fixed cost, and average total cost curves;
f) define economies and diseconomies of scale, explain how each is possible, and relate each to shapes of long-run average total cost curves;
g) describe both the factors that cause cost curves to shift and the economic way of thinking about costs.

21. **"Price Takers and the Competitive Process"**

The candidate should be able to

a) discuss the conditions that characterize pure competition (a price taker market) and explain how and why price takers maximize profits at the quantity for which marginal cost, price, and marginal revenue are equal;
b) calculate and interpret the total revenue and the marginal revenue for a price taker, explain the relationship between total revenue, total cost, price, marginal revenue, marginal cost, and the profit maximizing out put level;
c) explain the decision by price takers to continue to operate, temporarily shut down, or go out of business, when faced with price below average total cost;
d) describe the short-run supply curves for a company and for a competitive market;
e) explain the impact on prices and output of increases or decreases in demand in a competitive market;
f) contrast the role of constant-cost, increasing-cost, and decreasing-cost industries in determining the shape of a long-run market supply curve;
g) explain the impact of time on the elasticity of market supply and discuss the role of profits and losses in a purely competitive market.

22. **"Price-Searcher Markets with Low Entry Barriers"**

The candidate should be able to

a) describe the conditions that characterize monopolistic competition (a competitive price-searcher market);
b) explain how firms choose price and output combinations in monopolistic competition;
c) summarize the debate about the allocative efficiency of monopolistic competition with low barriers to entry, including the implications of contestable markets and entrepreneurship;
d) discuss the principle of price discrimination and illustrate how a firm might apply this principle to gain from such a practice.

23. **"Price-Searcher Markets with High Entry Barriers"**

The candidate should be able to

a) discuss entry barriers that may protect companies against competition from potential market entrants;
b) differentiate between a monopoly and an oligopoly;
c) describe how a profit-maximizing monopolist sets prices and determines output and discuss price and output under oligopoly, with and without collusion;
d) discuss why oligopolists have a strong incentive to collude and to cheat on collusive agreements and discuss the obstacles to collusion among oligopolistic companies;

e) describe the different defects that can occur in a market with high entry barriers;
f) describe government policy alternatives that are intended to reduce the problems stemming from high barriers to entry;
g) contrast the pricing and output decisions of firms in pure competition, monopolistic competition, oligopoly, and monopoly with reference to quantity produced, price, marginal revenue, marginal cost, demand, and average total cost.

24. **"The Supply of and Demand for Productive Resources"**

The candidate should be able to:

a) explain the relationship between the price of a resource and the quantity demanded of that resource with reference to supply, demand, and derived demand;
b) identify and describe three factors that may cause shifts in the demand curve for a resource;
c) define marginal product, marginal revenue, value of marginal product (VMP), the marginal revenue product (MRP) of a resource, and explain the relation between MRD and demand for that resource;
d) explain the necessary conditions to achieve the cost-minimizing employment levels for two or more variable resources;
e) discuss the factors that influence resource supply and demand in the short run and long run.

25. **"The Financial Environment: Markets, Institutions, and Interest Rates"**

The candidate should be able to

a) identify and explain the factors that influence the cost of capital;
b) describe the role of interest rates in allocating capital;
c) explain how the supply of and demand for funds determine interest rates;
d) discuss the factors that cause the supply and demand curves for funds to shift;
e) distinguish between the real and the nominal risk-free rate of interest;
f) discuss economic conditions that can change the real risk-free rate of interest;
g) explain the effect of inflation on the real rate of return earned by financial securities and by physical assets;
h) describe default risk, liquidity risk, and maturity risk premiums;
i) explain interest rate risk and reinvestment rate risk;
j) explain how inflation-indexed bonds can protect investors from inflation and maturity risk.

Study Session 6
Investment Tools
Economics: Global Economic Analysis

Reading Assignments

26. "Gaining from International Trade," Ch. 17, *Economics: Private and Public Choice,* 10th edition, James D. Gwartney, Richard L. Stroup, Russell S. Sobel, and David A. Macpherson (South-Western, 2003)
27. "Foreign Exchange," Ch. 1, *International Investments*, 5th edition, Bruno Solnik and Dennis McLeavey (Addison Wesley, 2004)
28. "Foreign Exchange Parity Relations," Ch. 2, pp. 31–48, *International Investments*, 5th edition, Bruno Solnik and Dennis McLeavey (Addison Wesley, 2004)

Note: Candidates are responsible for the problems listed following the learning outcome statements for readings 27 and 28. Solutions to the problems are found at the end of each chapter.

Learning Outcomes

26. **"Gaining from International Trade"**

The candidate should be able to

a) state the conditions under which a nation can gain from international trade in the context of both comparative and absolute advantage, and describe the benefits of international trade;
b) discuss the effects of international trade on domestic supply and demand;
c) distinguish between commonly used trade-restricting devices, including tariffs, quotas, voluntary export restraints, and exchange-rate controls, and explain their impact on the domestic economy;
d) identify who benefits and loses from the imposition of a tariff;
e) discuss the three arguments to adopt trade restrictions and discuss popular fallacies related to trade restrictions.

Corrections/Clarifications

- On **page 399**, in Exhibit 1, the values shown for 2000 in panel (a) and panel (b) are not consistent with the values cited in the narrative. The intent of the graph is to show that the U.S. trade sector has grown from 1960 to 2000. Candidates are not responsible for the numerical values.

27. **"Foreign Exchange"**

The candidate should be able to

a) define direct and indirect methods of foreign exchange quotations and convert direct (indirect) foreign exchange quotations into indirect (direct) foreign exchange quotations;

b) calculate and interpret the spread on a foreign currency quotation and explain how spreads on foreign currency quotations can differ as a result of market conditions, bank/dealer positions, and trading volume;
c) calculate and interpret currency cross rates, given two spot exchange quotations involving three currencies;
d) distinguish between the spot and forward markets for foreign exchange;
e) calculate and interpret the spread on a forward foreign currency quotation and explain how spreads on forward foreign currency quotations can differ as a result of market conditions, bank/dealer positions, trading volume, and maturity/length of contract;
f) calculate and interpret a forward discount or premium and express it as an annualized rate;
g) explain interest rate parity and illustrate covered interest arbitrage.

Problems: 1–13, 17–20

28. **"Foreign Exchange Parity Relations"**

The candidate should be able to

a) explain how exchange rates are determined in a flexible or floating exchange rate system;
b) explain the role of each component of the balance-of-payments accounts;
c) explain how current account deficits or surpluses and financial account deficits or surpluses affect an economy;
d) describe the factors that cause a nation's currency to appreciate or depreciate;
e) explain how monetary and fiscal policies affect the exchange rate and balance-of-payments components;
f) describe a fixed exchange rate and a pegged exchange rate system;
g) discuss absolute purchasing power parity and relative purchasing power parity.

Problems: 1–7

Preparing to Study the CFA Curriculum Materials on Financial Statement Analysis

Before beginning the Reading Assignments, candidates should have a basic mastery of the concepts typically presented in introductory college-level accounting courses. The primary source of Reading Assignments in the CFA Curriculum is *The Analysis and Use of Financial Statements*, 3rd edition, by White, Sondhi, and Fried.

These Reading Assignments assume candidates are already knowledgeable in accounting practices, and understand the following important subjects:

- the accounting equation and the mechanics of journal entries (debits and credits)
- accounting terms and definitions
- practices for measuring and reporting business and financial activities
- basic principles and rules of financial reporting, as required by U.S. and IASB GAAP
- the relationship between management decisions and financial reporting
- the construction of and interrelationships among the balance sheet, income statement, and statement of cash flows
- basic accounting and business vocabulary related to the use and construction of financial statements and financial reporting.

If you have not taken an introductory accounting course during the past few years, we strongly encourage you to consider additional study of introductory course material. Although examination questions are drawn only from the Reading Assignments, studying the additional introductory material will strengthen candidates' understanding of the required concepts. CFA Institute's book distributor offers a good basic accounting textbook, *Financial Accounting*, 8th edition, by Needles and Powers. At a minimum, we recommend that you study the following chapters:

- Chapter 3 –Measuring Business Income
- Chapter 5 – Financial Reporting and Analysis (pp. 246–258)
- Chapter 8 – Inventories
- Chapter 9 – Current Liabilities and the Time Value of Money (pp. 412–426)
- Chapter 12 – Contributed Capital (pp. 543–553)
- Chapter 13 – The Corporate Income Statement and the Statement of Stockholders' Equity (pp. 584–591)

Many accounting textbooks and courses provide similar coverage and will enable you to master the concepts and principles discussed in the Needles and Powers text.

Before you begin your study program, take some time to review the Reading Assignments in the textbook by White, Sondhi and Fried. If you find the material too difficult, it may be an indication that you would benefit from first studying basic accounting concepts and practices.

Financial Statement Analysis

The candidate should be able to demonstrate a thorough knowledge of financial accounting procedures and the rules that govern disclosure. Emphasis is on basic financial statements and how alternative accounting methods affect those statements and the analysis of financial statement relationships.

Some of the accounting concepts in the Financial Statement Analysis study sessions (Session 7 through Session 10) may have been superseded by updated rulings and/or pronouncements issued after a reading was published. Candidates are expected to be familiar with the overall analytical framework contained in the study session readings, as well as the implications of alternative accounting methods for financial analysis and valuation, as provided in the assigned readings.

For purposes of the Level I Examination, candidates should assume that U.S. GAAP (Generally Accepted Accounting Principles) applies unless otherwise noted.

Study Session 7
Investment Tools
Financial Statement Analysis: Basic Concepts

Reading Assignments

29. "Framework for Financial Statement Analysis," Ch. 1, *The Analysis and Use of Financial Statements*, 3rd edition, Gerald I. White, Ashwinpaul C. Sondhi, and Dov Fried (Wiley, 2003),
30.* "Long-Term Assets," Ch. 10, *Financial Accounting,* Belverd E. Needles, Jr., and Marian Powers, 8th edition, (Houghton Mifflin, 2004)
31. "Accounting Income and Assets: The Accrual Concept," Ch. 2, including Box 2-5 *The Analysis and Use of Financial Statements*, 3rd edition, Gerald I. White, Ashwinpaul C. Sondhi, and Dov Fried (Wiley, 2003)
32.* "The Statement of Cash Flows," Ch. 14, *Financial Accounting,* Belverd E. Needles, Jr., and Marian Powers, 8th edition, (Houghton Mifflin, 2004)
33. "Analysis of Cash Flows," Ch. 3, pp. 74–82, 84 (Box 3-1), and 87–99, including Box 3-1, *The Analysis and Use of Financial Statements*, 3rd edition, Gerald I. White, Ashwinpaul C. Sondhi, and Dov Fried (Wiley, 2003)
34.* *Future FASB Changes and the Analytical Challenges of GAAP*, Patricia A. McConnell (AIMR 2004), pp. 18–20 and 23–24

Candidates are responsible for the questions, exercises, and problems listed following the learning outcome statements for the White et al. textbook in study sessions 7–10. Solutions to the questions, exercises, and problems are found in the Solutions Manual for *The Analysis and Use of Financial Statements* by Gerald I. White, Ashwinpaul C. Sondhi, and Dov Fried (3rd edition, Wiley, 2003). The Solutions Manual is listed on the textbook order form in this Study Guide.

* Readings marked with an asterisk are contained in the 2006 Level I Candidate Readings.

Note: Except where noted in this Study Guide, the "Boxes" in the White et al. text are not part of the Level I reading assignment.

Learning Outcomes

29. **"Framework for Financial Statement Analysis"**

The candidate should be able to

a) discuss the general principles of the financial reporting system and explain the objectives of financial reporting according to the Financial Accounting Standards Board (FASB) conceptual framework;
b) identify the accounting qualities (e.g., relevance, reliability, predictive value, timeliness) set forth in Statement of Financial Accounting Concepts (SFAC) 2, and discuss how these qualities provide useful information to an analyst;
c) discuss the roles of the International Organization of Securities Commissions (IOSCO) and the International Accounting Standards Board (IASB) in setting and enforcing global accounting standards;
d) describe and distinguish between the principal financial statements: Balance Sheet, Income Statement, Statement of Comprehensive Income, Statement of Cash Flows and Statement of Stockholders' Equity and discuss the additional sources of information accompanying the financial statements, including the financial footnotes, supplementary schedules, Management Discussion and Analysis (MD&A) and Proxy statements;
e) discuss the role of the auditor and the meaning of the audit opinion.

30. **"Long-Term Assets"**

The candidate should be able to

a) describe the factors that distinguish long-term assets from other assets and identify the common types of long-term assets and their carrying values on the balance sheet;
b) determine the cost and record the purchase, of property, plant, and equipment;
c) explain depreciation accounting (including the reasons for depreciation), calculate depreciation using the straight-line production (also known as units-of-production), and declining-balance methods, and calculate depreciation after revising the estimated useful life of an asset;
d) describe how to account for the sale, exchange, or disposal of depreciable assets, and determine whether a gain or loss is recorded;
e) identify assets that should be classified as natural resources and prepare entries to account for such assets, including entries to record depletion;
f) identify the types of intangible assets and describe how the accounting treatment for goodwill under U.S. GAAP differs from the accounting treatment for other intangible assets.

31. **"Accounting Income and Assets: The Accrual Concept"**

The candidate should be able to

a) describe the format of the income statement and describe the components of net income;

b) explain the importance of the matching principle for revenue and expense recognition, identify the requirements for revenue recognition to occur, identify and describe the appropriate revenue recognition, given the status of completion of the earning process and the assurance of payment, and discuss different revenue recognition methods and their implications for financial analysis;
c) identify the appropriate income statement and balance sheet entries using the percentage-of-completion method and the completed contract method and describe and calculate the effects on cash flows and selected financial ratios that result from using the percentage-of-completion method versus the completed contract method;
d) describe the types and analysis of unusual or infrequent items, extraordinary items, discontinued operations, accounting changes, and prior period adjustments;
e) discuss managerial discretion in areas such as classification of good news/bad news, income smoothing, big bath behavior, and accounting changes, and explain how this discretion can affect the financial statements;
f) describe the format and the components of the balance sheet and the format, classification, and use of each component of the statement of stockholders' equity.

Problems: 1, 2, 7, 21

32. **"The Statement of Cash Flows"**

The candidate should be able to

a) identify the types of important information for investment decision making presented in the statement of cash flows;
b) compare and contrast the categories (i.e., cash provided or used by operating activities, investing activities, and financing activities) in a statement of cash flows, and describe how noncash investing and financing transactions are reported;
c) calculate and interpret, using the indirect method, the net cash provided or used by operating activities;
d) prepare and interpret, using the indirect method, the statement of cash flows for investing activities and financing activities.

33. **"Analysis of Cash Flows"**

The candidate should be able to

a) classify a particular transaction or item as cash flow from 1) operations, 2) investing, or 3) financing;
b) compute and interpret a statement of cash flows, using the direct method and the indirect method;
c) convert an indirect statement of cash flows to a direct basis;
d) explain the two primary factors that may cause discrepancies between balances of operating assets and liabilities reported on the balance sheet and those reported in the cash flow statement;
e) describe and compute free cash flow;
f) distinguish between the U.S. GAAP and IAS GAAP classifications of dividends paid or received and interest paid or received for statement of cash flow purposes.

Problems: 1, 2, 3, 5

34. **"Future FASB Changes and the Analytical Challenges of GAAP"**

The candidate should be able to

a) identify the projects on the FASB agenda that were/are related to international convergence;

b) describe two different guidance rules for revenue recognition discussed by in the FASB and IASB.

Study Session 8
Investment Tools
Financial Statement Analysis: Financial Ratios and Earnings per Share

Reading Assignments

35. "Analysis of Financial Statements," Ch. 10, pp. 319–358 and Exhibits 10.1, 10.2, and 10.3, *Investment Analysis and Portfolio Management*, 7th edition, Frank K. Reilly and Keith C. Brown (Dryden, 2003)

36.* "Dilutive Securities and Earnings per Share," Ch. 16, pp. 788–801 and Appendix 16B, pp. 809–814, *Intermediate Accounting*, 11th edition, Donald E. Kieso, Jerry J. Weygandt, and Terry D. Warfield (Wiley, 2004)

Financial Shenanigans, 2nd edition, Howard Schilit (McGraw-Hill, 2002)

37.* "Seek and Ye Shall Find," Ch. 2

38.* "Searching for Shenanigans," Ch. 3

Note: Candidates should be aware that certain ratios may be defined slightly differently in the two books assigned in the Financial Statement Analysis study sessions, *The Analysis and Use of Financial Statements* (White, Sondhi, and Fried) and *Investment Analysis and Portfolio Management* (Reilly and Brown). The two books may also use different names for the same ratio or category of ratios. Such differences are part of the nature of financial analysis. For Level I examination purposes, when a ratio is defined and calculated differently, candidates should use the definition given in the Reilly and Brown text.

Candidates should also note that the operating performance ratios are divided into two categories: operating efficiency and operating profitability. In other texts (e.g., White, Sondhi, and Fried), operating efficiency ratios are called "activity ratios." Efficiency (activity) ratios typically include those ratios identified as "turnover" ratios.

Note: Candidates are responsible for the questions, exercises, and problems listed following the learning outcome statements for readings 35 and 36. Solutions to the questions, exercises, and problems are printed in the *2005 CFA Level I Candidate Readings*.

Learning Outcomes

35. **"Analysis of Financial Statements"**

The candidate should be able to

a) interpret common-size balance sheets and common-size income statements, and discuss the circumstances under which the use of common-size financial statements is appropriate;

b) calculate, interpret, and discuss the uses of measures of a company's internal liquidity, operating performance (i.e., operating efficiency (activity) and operating profitability), risk profile, and growth potential;

c) calculate and interpret the various components of the company's return on equity using the original and extended DuPont systems and a company's financial ratios relative to its industry, to the aggregate economy, and to the company's own performance over time;

* Readings marked with an asterisk are contained in the 2006 Level I Candidate Readings.

Questions/Problems: Questions 2, 4, 9; Problems 2, 3, 4

Corrections/Clarifications

- On **page 314**, in Exhibit 10.1, Total Current Assets for 2001 should be 4,394.
- On **page 324**, in the calculation of Cash Ratio for 2000, the numerator should be 13.
- On **page 326**, in the cash conversion cycle table, the Receivables Days for 2000 should be 9, resulting in a cash conversion cycle of 43 days.

36. **"Dilutive Securities and Earnings per Share"**

The candidate should be able to

a) differentiate between simple and complex capital structures for purposes of calculating earnings per share (EPS), describe the components of EPS, and calculate a company's EPS in a simple capital structure;
b) calculate a company's weighted average number of shares outstanding;
c) describe stock dividends and stock splits and determine the effect of each on a company's weighted average number of shares outstanding;
d) distinguish between dilutive and antidilutive securities and calculate a company's basic and diluted EPS in a complex capital structure and describe and determine the effects of convertible securities, options, and warrants on a company's EPS;
e) compare and contrast the requirements for EPS reporting in simple versus complex capital structures.

Questions/Exercises/Problems: Questions 17, 19, 20; Exercise 16-16; Problem 16-4

37. **"Seek and Ye Shall Find"** and
38. **"Searching for Shenanigans"**

The candidate should be able to

a) explain the two basic strategies underlying all accounting "shenanigans," and describe seven categories of techniques that may be used by management to distort a company's reported financial performance and financial condition;
b) identify conservative and aggressive accounting policies;
c) describe why "shenanigans" exist and explain where they are most likely to occur;
d) list the documents that an analyst should use to identify "shenanigans" and explain what information to look for in such documents.

Study Session 9
Investment Tools
Financial Statement Analysis: Assets

Reading Assignments
The Analysis and Use of Financial Statements, 3rd edition, Gerald I. White, Ashwinpaul C. Sondhi, and Dov Fried (Wiley, 2003)

39. "Analysis of Inventories," Ch. 6, pp. 192–215 and pp. 219–220
40. "Analysis of Long-Lived Assets: Part I – The Capitalization Decision," Ch. 7, pp. 227–240, including Box 7-1, and pp. 242–244
41. "Analysis of Long-Lived Assets: Part II – Analysis of Depreciation and Impairment," Ch. 8, pp. 257–278 and pp. 280–282

Note: See the discussion in Study Session 8 about different names and definitions for financial ratios in the two textbooks assigned in the Financial Statement Analysis study sessions.

Learning Outcomes

39. **"Analysis of Inventories"**
The candidate should be able to
a) compute ending inventory balances and cost of goods sold using the LIFO, FIFO, and average cost methods to account for product inventory and explain the relationship among and the usefulness of inventory and cost-of-goods-sold data provided by the LIFO, FIFO, and average cost methods when prices are 1) stable or 2) changing;
b) adjust the financial statements of companies using different inventory accounting methods to compare and describe the effect of the different methods on cost of goods sold and inventory balances, discuss how a company's choice of inventory accounting method affects other financial items such as income, cash flow, and working capital, and compute and describe the effects of the choice of inventory method on profitability, liquidity, activity, and solvency ratios;
c) discuss the reasons why a LIFO reserve might decline during a given period and discuss the implications of such a decline for financial analysis;
d) discuss how inventories are reported in the financial statements and how cost, market and net realizable value are generally determined.
Problems: 1, 2, 6, 10, 20, 21

40. **"Analysis of Long-Lived Assets: Part I – The Capitalization Decision"**
The candidate should be able to
a) compute and describe the effects of capitalizing versus expensing on net income, shareholders' equity, cash flow from operations, and financial ratios and explain the effects on financial statements and the interest coverage ratio (times interest earned) of capitalizing interest costs, and explain the circumstances in which intangible assets, including software development costs and research and development costs, are capitalized;
b) calculate and describe both the initial and long-term effects of asset revaluations on financial ratios.

Problems: 1, 5, 9

41. **"Analysis of Long-Lived Assets: Part II – Analysis of Depreciation and Impairment"**

The candidate should be able to

a) identify the different depreciation methods, discuss how the choice of depreciation method affects a company's financial statements, ratios, and taxes, explain the role of depreciable lives and salvage values in the computation of depreciation expenses, and compute and describe how changing depreciation methods or changing the estimated useful life or salvage value of an asset affects financial statements and ratios;
b) discuss the use of fixed asset disclosures to compare companies' average age of depreciable assets, and calculate, using such disclosures, the average age and average depreciable life of fixed assets;
c) define impairment of long-lived assets and explain what effect such impairment has on a company's financial statements and ratios;
d) list the requirements of SFAS 143, Accounting for Asset Retirement Obligations (AROs), and explain the likely financial statement and ratio effects for most firms.

Problems: 1, 2, 6, 8, 12, 14

Study Session 10
Investment Tools
Financial Statement Analysis: Liabilities

Reading Assignments
The Analysis and Use of Financial Statements, 3rd edition, Gerald I. White, Ashwinpaul C. Sondhi, and Dov Fried (Wiley, 2003)
42. "Analysis of Income Taxes," Ch. 9, pp. 290–314, including Boxes 9-1 and 9-2
43. "Analysis of Financing Liabilities," Ch. 10, pp. 322–332 and 337–343
44. "Leases and Off-Balance-Sheet Debt," Ch. 11, pp. 363–383, including Box 11-1 and pp. 386–393

Note: See the discussion in Study Session 8 about different names and definitions for financial ratios in the two textbooks assigned in the Financial Statement Analysis study sessions.

Learning Outcomes
42. **"Analysis of Income Taxes"**
Note: Deferred taxes are applicable globally with respect to consolidated financial statements and, therefore, are the focus of the Learning Outcomes for this chapter.
The candidate should be able to
a) list and explain the key terms used in income tax accounting, explain why and how deferred tax liabilities and assets are created, and describe the liability method of accounting for deferred taxes;
b) discuss the implications of a valuation allowance (i.e., when it is required, what impact it has on the financial statements, and how it might affect an analyst's view of a company);
c) explain the factors that determine whether a company's deferred tax liabilities should be treated as a liability or as equity for purposes of financial analysis;
d) distinguish between temporary and permanent items in pretax financial income and taxable income;
e) compute income tax expense, income taxes payable, deferred tax assets, and deferred tax liabilities;
f) calculate the adjustment to the financial statements related to a change in the tax rate.
Problems: 1, 2, 3, 4, 5, 6

43. **"Analysis of Financing Liabilities"**
The candidate should be able to
a) compute the effects of debt issuance and amortization of bond discounts and premiums on the financial statements and ratios, discuss the effect on reported cash flows of issuing zero-coupon debt, and determine the appropriate classification for debt with equity features and calculate the effect of issuance of such instruments on the debt to total capital ratio;
b) discuss the effect of changing interest rates on the market value of debt and on financial statements and ratios;

Problems: 1, 4, 6, 10, 21

44. **"Leases and Off-Balance-Sheet Debt"**

The candidate should be able to

a) classify a lease as capital or operating and discuss the factors that determine whether a company would tend to favor leasing over outright asset purchases and more specifically, factors that would favor capital or operating leases;
b) calculate the effects of capital and operating leases on the financial statements and ratios of the lessees;
c) explain and differentiate the accounting treatment for a sale and leaseback of assets under U.S. and IASB GAAP;
d) describe the types and economic consequences of off-balance-sheet financing and determine how take-or-pay contracts, throughput arrangements, and the sale of receivables affect selected financial ratios;
e) distinguish between a sales-type lease and a direct-financing lease and describe the effects on the financial statements and ratios of sales-type and operating leases.

Problems: 1, 5, 14, 18, 24

Corporate Finance

The candidate should be able to demonstrate a working knowledge of capital budgeting concepts and analysis, capital structure issues, and dividend policy considerations. Candidates should understand how corporate finance concepts, such as cash flow, liquidity, leverage, cost of capital, and dividends, are used in the valuation process.

Study Session 11
Investment Tools
Corporate Finance

Reading Assignments

Fundamentals of Financial Management, 8th edition, Eugene F. Brigham and Joel F. Houston (Dryden, 1998)

45. "An Overview of Financial Management," Ch. 1, pp. 18–22
46. "The Cost of Capital," Ch. 9
47. "The Basics of Capital Budgeting," Ch. 10
48. "Cash Flow Estimation and Other Topics in Capital Budgeting," Ch. 11
49. "Risk Analysis and the Optimal Capital Budget," Ch. 12
50. "Capital Structure and Leverage," Ch. 13, including Appendix 13A
51. "Dividend Policy," Ch. 14

Note: Candidates are responsible for the questions and problems listed following the learning outcome statements for the Brigham and Houston readings. These questions and problems are categorized as Questions (Q), Self-Test Problems (ST), Starter Problems (SP), Exam-Type Problems (ETP), or Problems (P). Solutions to the questions and problems can be found in the Instructor's Manual for the Brigham and Houston text. The Instructor's Manual is listed on the textbook order form in this Study Guide.

Learning Outcomes

45. **"An Overview of Financial Management"**

    The candidate should be able to discuss potential agency problems of stockholders versus 1) managers and 2) creditors and describe four mechanisms used to motivate managers to act in stockholders' best interests.

46. **"The Cost of Capital"**

    The candidate should be able to

    a) explain and interpret the cost of capital used in capital budgeting as a weighted average of the opportunity costs of various types of capital the company targets for use;
    b) calculate the component costs of 1) debt, 2) preferred stock, 3) retained earnings (three different methods), and 4) newly issued stock or external equity;
    c) define target (optimal) capital structure, calculate a company's weighted-average cost of capital, calculate a company's marginal cost of capital and distinguish between the weighted-average cost of capital and marginal cost of capital;

d) explain the factors that affect the cost of capital, and distinguish between those factors that can and cannot be controlled by the company.

Questions/Problems: ETP 9-5, 9-6, 9-7, 9-8, 9-9

47. **"The Basics of Capital Budgeting"**

The candidate should be able to

a) calculate and interpret payback period, discounted payback period, net present value (NPV), and internal rate of return (IRR), and evaluate capital projects using each method;
b) explain the effect on shareholders of the adoption of investment opportunities with 1) zero net present values and 2) positive net present values;
c) explain the NPV profile, the relative advantages and disadvantages of the NPV and IRR methods, particularly with respect to independent versus mutually exclusive projects, the "multiple IRR problem" and the cash flow pattern that causes the problem, and why NPV and IRR methods can produce conflicting rankings for capital projects;
d) describe the role of the post-audit in the capital budgeting process.

Questions/Problems: ST-1 a through j; SP 10-1 through 10-4, 10-6, and 10-7; ETP 10-8, 10-9, and 10-10

48. **"Cash Flow Estimation and Other Topics in Capital Budgeting,"**

The candidate should be able to

a) distinguish between cash flows and accounting profits and discuss the relevance to capital budgeting of the following: incremental cash flow, sunk cost, opportunity cost, externality, and cannibalization;
b) explain the importance of changes in net working capital in the capital budgeting process;
c) determine by NPV analysis whether a project (expansion or replacement) should be undertaken and compute and interpret each of the following for an expansion project and a replacement project: initial investment outlay, operating cash flow over a project's life, and terminal-year cash flow;
d) compare two projects with unequal lives, using both the replacement chain and equivalent annual annuity approaches;
e) discuss how the effects of inflation are reflected in capital budgeting analysis.

Questions/Problems: Q 11-1, 11-3, 11-5; ST-1b, -2, and -3; P 11-4, 11-6, and 11-11

49. **"Risk Analysis and the Optimal Capital Budget"**

Note: This chapter discusses the concepts of beta and the security market line. These concepts are also discussed in Ch. 8 of the Reilly and Brown text, which is assigned in Study Session 18.

The candidate should be able to

a) distinguish among three types of project risk: stand-alone, corporate, and market;
b) distinguish among sensitivity analysis, scenario analysis, and Monte Carlo simulation as risk analysis techniques;

c) describe how the security market line is used in the capital budgeting process and describe the pure play and accounting beta methods for estimating individual project betas;
d) discuss the procedure for developing a risk-adjusted discount rate;
e) define capital rationing.

Questions/Problems: Q 12-2; ST-1 a through e

50. **"Capital Structure and Leverage,"** including **Appendix 13A**

The candidate should be able to

a) describe, and state the impact of changes in, factors that influence a company's capital structure decision;
b) explain business risk, discuss factors that influence business risk, calculate and interpret the effects of changes in sales or earnings before interest and taxes (EBIT) on earnings per share for companies with differing amounts of debt financing, define operating leverage, calculate and interpret degree of operating leverage, and explain how it affects a project's or company's expected rate of return;
c) calculate the breakeven quantity of sales and determine the company's gain or loss at various sales levels;
d) explain financial risk, define financial leverage, describe the relationship between financial leverage and financial risk, and calculate and interpret degree of financial leverage;
e) discuss why the use of greater amounts of debt in the capital structure can raise both the cost of debt and the cost of equity capital and describe how changes in the use of debt can cause changes in the company's earnings per share and in the company's stock price;
f) distinguish between the value of a company and the value of the company's common stock;
g) explain the relationships between a firm's optimal capital structure and the firm's 1) weighted average cost of capital and 2) stock price;
h) explain the effect of taxes and bankruptcy costs on the cost of capital, the optimal capital structure, and the Modigliani and Miller (MM) capital structure irrelevance proposition;
i) compare the MM capital structure irrelevance proposition with the trade-off theory of leverage;
j) describe how a company signals its prospects through its financing choices;
k) calculate and interpret degree of total leverage.

Questions/Problems: Q 13-13; SP 13-1; ETP 13-3; P 13A-1, 13A-2, 13A-4c

51. **"Dividend Policy"**

The candidate should be able to

a) explain the relationship between a firm's optimal dividend policy and the firm's stock price;
b) describe the dividend irrelevance theory, the "bird-in-the-hand" theory, and the tax preference theory and explain the dividend irrelevance theory in the context of the determinants of the value of the company, discuss the principal conclusion for

dividend policy of the dividend irrelevance theory, and describe how any shareholder can construct his or her own dividend policy;

c) calculate, assuming a constant return on equity, a company's implied dividend growth rate, given the company's dividend payout rate;
d) describe how managers signal their company's earnings forecast through changes in dividend policy and describe the clientele effect;
e) describe the residual dividend model, and discuss the model's possible advantages or disadvantages to the company;
f) describe dividend payment procedures, including the declaration, holder-of-record, ex-dividend, and payment dates;
g) describe stock dividends and stock splits, and explain their likely pricing effects and discuss the advantages and disadvantages of stock repurchases, and calculate and interpret the price effect of a stock repurchase.

Questions/Problems: SP 14-1, 14-3; P 14-9c, d, and e

Corrections/Clarifications

- There are several errors in the discussion of dividend payment procedures on **pp. 558–559**. In the U.S., the ex-dividend date is two working days before the record date. For stock transactions, the normal settlement period is three working days. This means that for a transaction on Monday, the settlement date is Thursday (assuming no holidays occur during the week). The buyer becomes the owner-of-record on the settlement date. In the text example, to become an owner-of-record on December 12 and be entitled to receive the declared cash dividend, a prospective purchaser would have to buy the stock no later than December 9. An investor buying the stock on or after December 10 would not be entitled to the dividend, making December 10 the ex-dividend date.

Analysis of Equity Investments

The candidate should be able to demonstrate a working knowledge of the analysis of equity investments, including securities markets, efficient market theory, the analysis of equity risk and return (for industries and companies), and technical analysis.

Study Session 12
Asset Valuation
Equity Investments: Securities Markets

Reading Assignments

Investment Analysis and Portfolio Management, 7th edition, Frank K. Reilly and Keith C. Brown (South-Western, 2003)

52. "Organization and Functioning of Securities Markets," Ch. 4
53. "Security-Market Indicator Series," Ch. 5
54. "Efficient Capital Markets," Ch. 6

Note: Candidates are responsible for the questions and problems listed following the learning outcome statements. Solutions to the questions and problems can be found in the Solutions Manual for the Reilly and Brown text. The Solutions Manual is listed on the textbook order form in this Study Guide.

Learning Outcomes

52. **"Organization and Functioning of Securities Markets"**

The candidate should be able to

a) describe the characteristics of a well-functioning securities market;
b) distinguish between competitive bids, negotiated sales, and private placements for issuing bonds;
c) distinguish between primary and secondary capital markets, and explain how secondary markets support primary markets;
d) distinguish between call and continuous markets, compare and contrast the structural differences among national stock exchanges, regional stock exchanges, and the over-the-counter (OTC) markets, and compare and contrast major characteristics of exchange markets, including exchange membership, types of orders, and market makers;
e) describe the process of selling a stock short and discuss an investor's likely motivation for selling short;
f) describe the process of buying a stock on margin, compute the rate of return on a margin transaction, define maintenance margin and determine the stock price at which the investor would receive a margin call;
g) discuss major effects of the institutionalization of securities markets.

Problems: 2, 3, 4

Corrections/Clarifications

- On **page 122,** in the table, the ask price of "$20.65" for dealer # 3 should be "$30.65."
- On **page 125**, in the fourth line of the last paragraph, the "$75" should be "$45."

53. **"Security-Market Indicator Series"**

The candidate should be able to

a) distinguish among the composition and characteristics of the three predominant weighting schemes used in constructing stock market series, discuss the source and direction of bias exhibited by each of the three predominant weighting schemes, and compute a price-weighted, a market-weighted, and an unweighted index series for three stocks;
b) compare and contrast major structural features of domestic and global stock indexes, bond indexes, and composite stock-bond indexes.

Problems: 1, 2

54. **"Efficient Capital Markets"**

The candidate should be able to

a) define an efficient capital market, discuss arguments supporting the concept of efficient capital markets, describe and contrast the forms of the efficient market hypothesis (EMH): weak, semistrong, and strong, and describe the tests used to examine the weak form, the semistrong form, and the strong form of the EMH;
b) identify six market anomalies and explain their implications for the semistrong form of the EMH, and explain the overall conclusions about each form of the EMH;
c) explain the implications of stock market efficiency for technical analysis and fundamental analysis, discuss the implications of efficient markets for the portfolio management process and the role of the portfolio manager, and explain the rationale for investing in index funds.

Questions: 1, 2, 3, 10, 25(a and b), 27(a, b, c)

Study Session 13
Asset Valuation
Equity Investments: Industry and Company Analysis

Reading Assignments

55. "An Introduction to Security Valuation," Ch. 11, *Investment Analysis and Portfolio Management*, 7th edition, Frank K. Reilly and Keith C. Brown (South-Western, 2003)
56. "Stock-Market Analysis," Ch. 13, *Investment Analysis and Portfolio Management*, 7th edition, Frank K. Reilly and Keith C. Brown (South-Western, 2003)
57. "Industry Analysis," Ch. 14, pp. 493–495, *Investment Analysis and Portfolio Management,* 7th edition, Frank K. Reilly and Keith C. Brown (South-Western, 2003)
58. "Equity: Concepts and Techniques," Ch. 6, pp. 256–273, *International Investments,* 5th edition, Bruno Solnik and Dennis McLeavey (Addison Wesley, 2003).
59. "Company Analysis and Stock Valuation," Ch. 15, pp. 540–544 and 559–577, *Investment Analysis and Portfolio Management*, 7th edition, Frank K. Reilly and Keith C. Brown (South-Western, 2003)
60. "Technical Analysis," Ch. 16, *Investment Analysis and Portfolio Management*, 7th edition, Frank K. Reilly and Keith C. Brown (South-Western, 2003)
61.* "Introduction to Price Multiples," John D. Stowe, Thomas R. Robinson, Jerald E. Pinto, and Dennis W. McLeavey (AIMR, 2003)

Note: Candidates are responsible for the questions and problems listed following the learning outcome statements for readings 55, 56, and 59. Solutions to the questions and problems can be found in the Solutions Manual for the Reilly and Brown text. The Solutions Manual is listed on the textbook order form in this Study Guide. Candidates are also responsible for the problems listed following the learning outcome statements for reading 58, and the problems at the end of reading 61. Solutions to the problems are found at the end of the readings.

Learning Outcomes

55. **"An Introduction to Security Valuation"**

The candidate should be able to

a) explain the top-down approach, and its underlying logic, to the security valuation process;
b) explain the various forms of investment returns;
c) calculate and interpret the value of a preferred stock, or of a common stock, using the dividend discount model (DDM);
d) show how to use the DDM to develop an earnings multiplier model, and explain the factors in the DDM that affect a stock's price-to-earnings (P/E) ratio;
e) explain the components of an investor's required rate of return (i.e., the real risk-free rate, the expected rate of inflation, and a risk premium) and discuss the risk factors to be assessed in determining a country risk premium for use in estimating the required return for foreign securities;
f) estimate the implied dividend growth rate, given the components of the required return on equity and incorporating the earnings retention rate and current stock

* Readings marked with an asterisk are contained in the 2006 Level I Candidate Readings.

price;

g) describe a process for developing estimated inputs to be used in the DDM, including the required rate of return and expected growth rate of dividends.

Problems: 3 through 10, 14, 15

56. **"Stock-Market Analysis"**

The candidate should be able to

a) calculate the earnings per share (EPS) of a stock market series and the expected P/E ratio (earnings multiplier) of a stock market series, using the series' expected dividend payout ratio, required rate of return, and expected growth rate of dividends;

b) estimate and interpret the earnings multiplier of a stock market series, explain changes in it, and calculate the expected rate of return for a stock market series;

c) explain how the top-down approach can be used to analyze the valuation of world stock markets.

Questions/Problems: Q 4 through 7; P 2, 4, 5

Corrections/Clarifications

- On **page 449**, the second equation from the bottom of the page should read:
  $P_j/D_1 = 1/(k - g)$.

57. **"Industry Analysis"**

The candidate should be able to describe how structural economic changes (e.g., demographics, technology, politics, and regulation) may affect industries.

58. **"Equity: Concepts and Techniques"**

The candidate should be able to

a) classify business cycle stages and identify, for each stage, attractive investment opportunities;

b) discuss, with respect to global industry analysis, the key elements related to return expectations;

c) describe the industry life cycle and identify an industry's stage in its life cycle;

d) calculate and interpret a concentration ratio and a Herfindahl index;

e) discuss, with respect to global industry analysis, the elements related to risk, and describe the basic forces that determine industry competition.

Problem: 6

59. **"Company Analysis and Stock Valuation"**

The candidate should be able to

a) differentiate between 1) a growth company and a growth stock, 2) a defensive company and a defensive stock, 3) a cyclical company and a cyclical stock, and 4) a speculative company and a speculative stock;

b) describe and estimate the expected earnings per share (EPS) and earnings multiplier for a company;

c) calculate and compare the expected rate of return based on the estimate of intrinsic value to the required rate of return.

60. **"Technical Analysis"**

The candidate should be able to

a) explain the underlying assumptions of technical analysis and explain how technical analysis differs from fundamental analysis;
b) discuss the advantages and challenges of technical analysis;
c) identify examples of each of the major categories of technical indicators.

61. **"Introduction to Price Multiples"**

The candidate should be able to

a) discuss the rationales for the use of price to earnings (P/E), price to book value (P/BV), price to sales (P/S), and price to cash flow (P/CF) in equity valuation and discuss the possible drawbacks to the use of each price multiple;
b) calculate and interpret P/E, P/BV, P/S, and P/CF.

Analysis of Fixed Income Investments

The candidate should be able to demonstrate a working knowledge of the analysis of fixed income investments, including basic characteristics of bonds in alternative sectors, valuation tools, and factors that influence bond yields.

Study Session 14
Asset Valuation
Fixed Income Investments: Basic Concepts

Reading Assignments

Fixed Income Analysis for the Chartered Financial Analyst® Program, 2nd edition, Frank J. Fabozzi (Frank J. Fabozzi Associates, 2004)

62. "Features of Debt Securities," Ch. 1
63. "Risks Associated with Investing in Bonds," Ch. 2
64. "Overview of Bond Sectors and Instruments," Ch. 3
65. "Understanding Yield Spreads," Ch. 4

Note: Candidates are responsible for the questions at the end of readings 62 through 65. Solutions to the questions are found at the end of each chapter.

Learning Outcomes

62. **"Features of Debt Securities"**

The candidate should be able to

a) explain the purposes of a bond's indenture, and describe affirmative and negative covenants;
b) describe the basic features of a bond (e.g., maturity, par value, coupon rate, provisions for redeeming bonds, currency denomination, options granted to the issuer or investor), the various coupon rate structures (e.g., zero-coupon bonds, step-up notes, deferred coupon bonds, floating-rate securities), the structure of floating-rate securities (i.e., the coupon formula, caps and floors), and define accrued interest, full price, and clean price;
c) explain the provisions for early retirement of debt, including call and refunding provisions, prepayment options, and sinking fund provisions, differentiate between a regular redemption price and a special redemption price and explain the importance of options embedded in a bond issue, and indicate whether such options benefit the issuer or the bondholder;
d) describe methods used by institutional investors in the bond market to finance the purchase of a security (i.e., margin buying and repurchase agreements).

63. **"Risks Associated with Investing in Bonds"**

The candidate should be able to

a) explain the risks associated with investing in bonds (e.g., interest rate risk, yield curve risk, call and prepayment risk, reinvestment risk, credit risk, liquidity risk, exchange-rate risk, inflation risk, volatility risk, and event risk);

b) identify the relationship among a bond's coupon rate, the yield required by the market, and the bond's price relative to par value (i.e., discount, premium, or equal to par);
c) explain how features of a bond (e.g., maturity, coupon, and embedded options) affect the bond's interest rate risk;
d) identify the relationship among the price of a callable bond, the price of an option-free bond, and the price of the embedded call option;
e) explain the interest rate risk of a floating-rate security and why such a security's price may differ from par value;
f) compute and interpret the duration of a bond, given the bond's change in price when interest rates change, the approximate percentage price change of a bond, given the bond's duration, and the approximate new price of a bond, given the bond's duration and new yield level, explain why duration does not account for yield curve risk for a portfolio of bonds, and explain how the yield level impacts the interest rate risk of a bond;
g) explain the disadvantages of a callable or prepayable security to an investor;
h) identify the factors that affect the reinvestment risk of a security and explain why prepayable amortizing securities expose investors to greater reinvestment risk than nonamortizing securities;
i) describe the various forms of credit risk (i.e., default risk, credit spread risk, downgrade risk) and describe the meaning and role of credit ratings;
j) explain why liquidity risk might be important to investors even if they expect to hold a security to the maturity date;
k) describe the exchange rate risk an investor faces when a bond makes payments in a foreign currency;
l) describe inflation risk and explain why it exists;
m) explain how yield volatility affects the price of a bond with an embedded option and how changes in volatility affect the value of a callable bond and a putable bond;
n) describe the various forms of event risk (e.g., natural catastrophe, corporate takeover/restructuring and regulatory risk) and the components of sovereign risk.

64. **"Overview of Bond Sectors and Instruments"**

The candidate should be able to

a) describe the different types of international bonds (e.g., Eurobonds, global bonds, sovereign debt);
b) describe the types of securities issued by the U.S. Department of the Treasury (e.g. bills, notes, bonds, and inflation protection securities), differentiate between on-the-run and off-the-run Treasury securities, discuss how stripped Treasury securities are created, and distinguish between coupon strips and principal strips;
c) describe a mortgage-backed security, and explain the cash flows for a mortgage-backed security, define prepayments, and explain prepayment risk;
d) describe the types and characteristics of securities issued by federal agencies (including mortgage passthroughs and collateralized mortgage obligations);
e) state the motivation for creating a collateralized mortgage obligation, describe the types of securities issued by municipalities in the United States, and distinguish between tax-backed debt and revenue bonds;

f) describe insured bonds and prerefunded bonds;
g) summarize the bankruptcy process and bondholder rights, explain the factors considered by rating agencies in assigning a credit rating to a corporate debt instrument, and describe secured debt, unsecured debt, and credit enhancements for corporate bonds;
h) distinguish between a corporate bond and a medium-term note;
i) describe a structured note, explain the motivation for their issuance by corporations, describe commercial paper, and distinguish between directly-placed paper and dealer-placed paper, and describe the salient features, uses and limitations of bank obligations (negotiable CDs and bankers acceptances);
j) define an asset-backed security, describe the role of a special purpose vehicle in an asset-backed securities transaction, state the motivation for a corporation to issue an asset-backed security, and describe the types of external credit enhancements for asset-backed securities;
k) describe collateralized debt obligations;
l) contrast the structures of the primary and secondary markets in bonds.

65. **"Understanding Yield Spreads"**

The candidate should be able to

a) identify the interest rate policy tools available to a central bank (such as the U.S. Federal Reserve or the European Central Bank);
b) describe a yield curve and the different yield curve shapes observed and explain the basic theories of the term structure of interest rates (i.e., pure expectations theory, liquidity preference theory, and market segmentation theory) and describe the implications of each theory for the shape of the yield curve; explain the different types of yield spread measures (e.g., absolute yield spread, relative yield spread, yield ratio), and compute yield spread measures given the yields for two securities;
c) explain why investors may find a relative yield spread to be a better measure of yield spread than the absolute yield spread, distinguish between an intermarket and intramarket sector spread, and describe a credit spread and discuss the suggested relationship between credit spreads and the economic well being of the economy;
d) identify how embedded options affect yield spreads;
e) explain how the liquidity of an issue affects its yield spread relative to Treasury securities and relative to other issues that are comparable in all other ways except for liquidity and describe the relationships that are argued to exist among the size of an issue, liquidity, and yield spread;
f) compute the after-tax yield of a taxable security and the tax-equivalent yield of a tax-exempt security;
g) define LIBOR and why it is an important measure to funded investors who borrow short-term.

Study Session 15
Asset Valuation
Fixed Income Investments: Analysis and Valuation

Reading Assignments
Fixed Income Analysis for the Chartered Financial Analyst® Program, 2nd edition, Frank J. Fabozzi (Frank J. Fabozzi Associates, 2004)
66. "Introduction to the Valuation of Debt Securities," Ch. 5
67. "Yield Measures, Spot Rates, and Forward Rates," Ch. 6
68. "Introduction to the Measurement of Interest Rate Risk," Ch. 7

Note: Candidates are responsible for the questions at the end of each chapter. Solutions to the questions and problems are found at the end of each chapter.

Learning Outcomes
66. **"Introduction to the Valuation of Debt Securities"**
The candidate should be able to
a) describe the fundamental principles of bond valuation;
b) identify the types of bonds for which estimating the expected cash flows is difficult, and explain the problems encountered when estimating the cash flows for these bonds;
c) determine the appropriate interest rates for valuing a bond's cash flows, compute the value of a bond, given the expected annual or semiannual cash flows and the appropriate single (constant) or multiple (arbitrage-free rate curve) discount rates, explain how the value of a bond changes if the discount rate increases or decreases, and compute the change in value that is attributable to the rate change, and explain how the price of a bond changes as the bond approaches its maturity date, and compute the change in value that is attributable to the passage of time;
d) compute the value of a zero-coupon bond, explain the arbitrage-free valuation approach and the market process that forces the price of a bond toward its arbitrage-free value, determine whether a bond is undervalued or overvalued, given the bond's cash flows, appropriate spot rates or yield to maturity, and current market price, explain how a dealer could generate an arbitrage profit.

67. **"Yield Measures, Spot Rates, and Forward Rates"**
The candidate should be able to
a) explain the sources of return from investing in a bond (i.e., coupon interest payments, capital gain/loss, reinvestment income);
b) compute the traditional yield measures for fixed-rate bonds (e.g., current yield, yield to maturity, yield to first call, yield to first par call date, yield to refunding, yield to put, yield to worst, cash flow yield) and explain the assumptions underlying traditional yield measures and the limitations of the traditional yield measures;
c) explain the importance of reinvestment income in generating the yield computed at the time of purchase, and calculate the amount of income required to generate that yield and discuss the factors that affect reinvestment risk;

d) compute the bond equivalent yield of an annual-pay bond, and compute the annual-pay yield of a semiannual-pay bond;
e) compute the theoretical Treasury spot rate curve, using the method of bootstrapping and given the Treasury par yield curve and compute the value of a bond using spot rates;
f) explain the limitations of the nominal spread and differentiate among the nominal spread, the zero-volatility spread, and the option-adjusted spread for a bond with an embedded option, and explain the option cost;
g) explain a forward rate, and compute the value of a bond using forward rates, explain and illustrate the relationship between short-term forward rates and spot rates, and compute spot rates given forward rates, and forward rates given spot rates.

68. **"Introduction to the Measurement of Interest Rate Risk"**

The candidate should be able to

a) distinguish between the full valuation approach (the scenario analysis approach) and the duration/convexity approach for measuring interest rate risk, and explain the advantage of using the full valuation approach;
b) compute the interest rate risk exposure of a bond position or of a bond portfolio, given a change in interest rates;
c) demonstrate the price volatility characteristics for option-free bonds when interest rates change (including the concept of "positive convexity"), the price volatility characteristics of callable bonds and prepayable securities when interest rates change (including the concept of "negative convexity"), and describe the price volatility characteristics of putable bonds;
d) compute the effective duration of a bond, given information about how the bond's price will increase and decrease for given changes in interest rates, and compute the approximate percentage price change for a bond, given the bond's effective duration and a specified change in yield;
e) distinguish among the alternative definitions of duration (modified, effective or option-adjusted, and Macaulay), explain why effective duration is the most appropriate measure of interest rate risk for bonds with embedded options, describe why duration is best interpreted as a measure of a bond's or portfolio's sensitivity to changes in interest rates, compute the duration of a portfolio, given the duration of the bonds comprising the portfolio, and discuss the limitations of portfolio duration;
f) discuss the convexity measure of a bond and estimate a bond's percentage price change, given the bond's duration and convexity and a specified change in interest rates;
g) differentiate between modified convexity and effective convexity;
h) compute the price value of a basis point (PVBP), and explain its relationship to duration.

Analysis of Derivative Investments

The candidate should be able to demonstrate a working knowledge of the analysis of derivative investments, including forwards, futures, options, and swaps.

Study Session 16
Asset Valuation
Derivative Investments

Reading Assignments

Analysis of Derivatives for the CFA® Program, Don Chance (AIMR, 2003)

69. "Derivative Markets and Instruments," Ch. 1
70. "Forward Markets and Contracts," Ch. 2, pp. 25–37
71. "Futures Markets and Contracts," Ch. 3, pp. 81–103
72. "Option Markets and Contracts," Ch. 4, pp. 159–194
73. "Swap Markets and Contracts," Ch. 5, pp. 269–285
74. "Risk Management Applications of Option Strategies," Ch. 7, pp. 411–429

Note: Candidates are responsible for the problems at the end of reading 69 and the problems listed following the learning outcome statements for readings 70 through 74. Solutions to the problems are found at the end of each chapter.

Learning Outcomes

69. **"Derivative Markets and Instruments"**

The candidate should be able to

a) define a derivative and differentiate between exchange-traded and over-the-counter derivatives;
b) define a forward commitment, identify the types of forward commitments, and describe the basic characteristics of forward contracts, futures contracts, and swaps;
c) define a contingent claim and identify the types of contingent claims;
d) describe the basic characteristics of options, and distinguish between an option to buy (call) and an option to sell (put);
e) discuss the purposes and criticisms of derivative markets;
f) explain the concept of arbitrage and the role it plays in determining prices and in promoting market efficiency.

70. **"Forward Markets and Contracts"**

The candidate should be able to

a) discuss the differences between the positions held by the long and short parties to a forward contract in terms of delivery/settlement and default risk;
b) describe the procedures for settling a forward contract at expiration, and discuss how a party to a forward contract can terminate a position prior to expiration as well as how credit risk is affected by the way in which a position is terminated;
c) differentiate between a dealer and an end user of a forward contract;
d) describe the characteristics of equity forward contracts;
e) describe the characteristics of forward contracts on zero-coupon and coupon bonds;

f) explain the characteristics of the Eurodollar time deposit market, define LIBOR and Euribor, and describe the characteristics of forward rate agreements (FRAs);
g) calculate and interpret the payment at expiration of an FRA, explain each of the component terms, and describe the characteristics of currency forward contracts.

Problems: 1–5

71. **"Futures Markets and Contracts"**

The candidate should be able to

a) identify the institutional features that distinguish futures contracts from forward contracts and describe the characteristics of futures contracts;
b) differentiate between margin in the securities markets and margin in the futures markets;
c) describe how a futures trade takes place;
d) describe how a futures position may be closed out (i.e., offset) prior to expiration;
e) define initial margin, maintenance margin, variation margin, and settlement price;
f) describe the process of marking to market and compute the margin balance, given the previous day's balance and the new futures price;
g) explain price limits, limit move, limit up, limit down, and locked limit;
h) describe how a futures contract can be terminated by a close-out (i.e., offset) at expiration, delivery, an equivalent cash settlement, or an exchange-for-physicals;
i) explain delivery options in futures contracts;
j) distinguish among scalpers, day traders, and position traders;
k) describe the characteristics of the following types of futures contracts: Treasury bill, Eurodollar, Treasury bond, stock index, and currency.

Problems: 1–6

72. **"Option Markets and Contracts"**

The candidate should be able to

a) identify the basic elements and describe the characteristics of option contracts;
b) define European option, American option, moneyness, payoff, intrinsic value, and time value and differentiate between exchange-traded options and over-the-counter options;
c) identify the different types of options in terms of the underlying instruments;
d) compare and contrast interest rate options to forward rate agreements (FRAs);
e) explain how option payoffs are determined, and show how interest rate option payoffs differ from the payoffs of other types of options;
f) define interest rate caps and floors;
g) identify the minimum and maximum values of European options and American options;
h) explain how the lower bounds of European calls and puts are determined by constructing portfolio combinations that prevent arbitrage, and calculate an option's lower bound;
i) determine the lowest prices of European and American calls and puts based on the rules for minimum values and lower bounds;
j) describe how a portfolio (combination) of options establishes the relationship between options that differ only by exercise price;

k) explain how option prices are affected by the time to expiration of the option;
l) explain put-call parity for European options, given the payoffs on a fiduciary call and a protective put;
m) explain the relationship between American options and European options in terms of the lower bounds on option prices and the possibility of early exercise;
n) explain how cash flows on the underlying asset affect put-call parity and the lower bounds of option prices;
o) identify the directional effect of an interest rate change on an option's price;
p) describe the impact of a change in volatility on an option's price.

Problems: 1–8

73. **"Swap Markets and Contracts"**

The candidate should be able to

a) describe the characteristics of swap contracts and explain how swaps are terminated;
b) define and give examples of currency swaps and calculate and interpret the payments on a currency swap;
c) define and give an example of a plain vanilla interest rate swap and calculate and interpret the payments on an interest rate swap;
d) define and give examples of equity swaps and calculate and interpret the payments on an equity swap.

Problems: 1–7

74. **"Risk Management Applications of Option Strategies"**

The candidate should be able to

a) determine the value at expiration, profit, maximum profit, maximum loss, breakeven underlying price at expiration, and general shape of the graph of the strategies of buying and selling calls and buying and selling puts, and explain each strategy's characteristics;
b) determine the value at expiration, profit, maximum profit, maximum loss, breakeven underlying price at expiration, and general shape of the graph of the covered call strategy and the protective put strategy, and explain each strategy's characteristics.

Problems: 1–6

Analysis of Alternative Investments

The candidate should be able to demonstrate a working knowledge of the analysis of alternative investments, including mutual funds, exchange traded funds, real estate, venture capital, hedge funds, closely held companies, distressed securities, and commodities and commodity derivatives.

Study Session 17
Asset Valuation
Alternative Investments

Reading Assignments

75. "Alternative Investments," Ch. 8, *International Investments*, 5th edition, Bruno Solnik and Dennis McLeavey (Addison Wesley, 2004)

Note: Candidates are responsible for the problems at the end of the chapter. Solutions to the problems are found at the end of the chapter.

Learning Outcomes

75. **"Alternative Investments"**

The candidate should be able to

a) distinguish between an open-end and a closed-end fund;
b) explain how the net asset value of a fund is calculated;
c) explain the nature of various fees charged by investment companies;
d) distinguish among style, sector, index, global, and stable value strategies in equity investment;
e) distinguish among exchange traded funds (ETFs), traditional mutual funds, and closed-end funds;
f) explain the advantages and risks of ETFs;
g) describe the forms of real estate investment;
h) explain the characteristics of real estate as an investable asset class;
i) describe the various approaches to the valuation of real estate;
j) calculate the net operating income (NOI) from a real estate investment;
k) calculate the value of a property using the sales comparison and income approaches;
l) calculate the after-tax cash flows, net present value, and yield of a real estate investment;
m) explain the various stages in venture capital investing;
n) discuss venture capital investment characteristics and the challenges to venture capital valuation and performance measurement;
o) calculate the net present value (NPV) of a venture capital project, given the project's possible payoff and conditional failure probabilities;
p) discuss the descriptive accuracy of the term "hedge fund," define hedge fund in terms of objectives, legal structure, and fee structure, and describe the various classifications of hedge funds;
q) discuss the benefits and drawbacks to fund of funds investing;

r) discuss the leverage and unique risks of hedge funds;
s) discuss the performance of hedge funds, the biases present in hedge fund performance measurement, and explain the effect of survivorship bias on the reported return and risk measures for a hedge fund data base;
t) explain how the legal environment affects the valuation of closely held companies;
u) describe alternative valuation methods for closely held companies and distinguish among the bases for the discounts and premiums for these companies;
v) discuss distressed securities investing and the similarities between venture capital investing and distressed securities investing;
w) discuss the role of commodities as a vehicle for investing in production and consumption;
x) discuss the motivation for investing in commodities, commodities derivatives, and commodity-linked securities;
y) discuss the sources of return on a collateralized commodity futures position.

Corrections/Clarifications

- On **page 410**, the sentence beginning on the second line should read "The fund is limited to no more than 100 partners…"

Portfolio Management

The candidate should be able to demonstrate a working knowledge of the key elements of the portfolio management process, including the investment setting, investment policy, and asset allocation.

Study Session 18
Portfolio Management

Reading Assignments

Investment Analysis and Portfolio Management, 7th edition, Frank K. Reilly and Keith C. Brown (South-Western, 2003)

76. "The Investment Setting," Ch. 1, pp. 16–29
77. "The Asset Allocation Decision," Ch. 2
78. "An Introduction to Portfolio Management," Ch. 7
79. "An Introduction to Asset Pricing Models," Ch. 8, pp. 237–256

Note: Candidates are responsible for the problems listed following the learning outcome statements for readings 78 and 79. Solutions to the problems can be found in the Solutions Manual for the Reilly and Brown text. The Solutions Manual is listed on the textbook order form in this Study Guide.

Learning Outcomes

76. **"The Investment Setting"**

The candidate should be able to

a) explain the concept of required rate of return and discuss the components of an investor's required rate of return;
b) differentiate between the real risk-free rate of return and the nominal risk-free rate of return and, compute both return measures;
c) explain the risk premium, the associated fundamental sources of risk, and why these sources are complementary to systematic risk;
d) define the security market line, and discuss the factors that cause movements along, changes in the slope of, and shifts of the security market line.

Corrections/Clarifications

- In the first chapter, for example on page 21, there are references to "HPY", which means Holding Period Yield, i.e. the percentage return of an investment, expressed as ((Ending Value of Investment/Beginning Value of Investment)-1)

77. **"The Asset Allocation Decision"**

Note: Although this reading addresses the taxation of individual investors from the viewpoint of a U.S. investor, candidates are not expected to know the U.S. tax code. This reading is intended to illustrate the importance of taxation to investors, particularly individual investors.

The candidate should be able to

a) describe the steps in the portfolio management process and explain the reasons for a policy statement;
b) explain why investment objectives should be expressed in terms of both risk and return and list the factors that may affect an investor's risk tolerance;
c) describe the return objectives of capital preservation, capital appreciation, current income, and total return and describe the investment constraints of liquidity, time horizon, tax concerns, legal and regulatory factors, and unique needs and preferences;
d) describe the importance of asset allocation, in terms of the percentage of a portfolio's return that can be explained by the target asset allocation and list reasons for the differences in the average asset allocation among citizens of different countries.

78. **"An Introduction to Portfolio Management"**

The candidate should be able to

a) define risk aversion and cite evidence that suggests that individuals are generally risk averse;
b) list the assumptions about individuals' investment behavior of the Markowitz Portfolio Theory;
c) compute expected return for an individual investment and for a portfolio;
d) compute the variance and standard deviation for an individual investment;
e) compute the covariance of rates of return, and show how it is related to the correlation coefficient;
f) list the components of the portfolio standard deviation formula, and explain which component is most important to consider when adding an investment to a portfolio;
g) describe the efficient frontier and explain the implications for incremental returns as an investor assumes more risk;
h) define optimal portfolio and show how each investor may have a different optimal portfolio.

Problems: 3, 4, 5

Corrections/Clarifications

- On **page 213**, in footnote 4, insert an "=" after R_i.
- On **page 218**, in Exhibit 7.9, all subscripts in the Coca-Cola section should be *i*. Also on **page 218**, the first two equations following Exhibit 7.9 are calculating σ^2. The first should be subscripted "*i*" and the second "*j*." Finally, in the last equation on **page 218**, insert an "=" before the (.108) term.
- On **page 219**, in equation 7.6, under the last summation sign it should read *j*=1. Also on page 219, the "Standard Deviation of a Portfolio" sub-header in green text should be next to the second paragraph, rather than at the top left corner of the page.
- On **page 220**, in the next to last equation, under the last summation sign it should read *j*=1.
- On **page 221**, in the calculation of standard deviation for case b, in the second line, insert a plus sign between the first two terms.
- On **page 227**, the last line of the first complete paragraph the weights are reversed. It should read: "In this case, it is $W_1 = 0.588$ and $W_2 = 0.412$."

79. **"An Introduction to Asset Pricing Models"**

The candidate should be able to

a) list the assumptions of the capital market theory;
b) explain what happens to the expected return, the standard deviation of returns, and possible risk-return combinations when a risk-free asset is combined with a portfolio of risky assets;
c) identify the market portfolio, and describe the role of the market portfolio in the formation of the capital market line (CML);
d) define systematic and unsystematic risk and explain why an investor should not expect to receive additional return for assuming unsystematic risk;
e) describe the capital asset pricing model, diagram the security market line (SML), and define beta;
f) calculate and interpret using the SML, the expected return on a security, and evaluate whether the security is undervalued, overvalued, or properly valued;
g) explain how the systematic risk of an asset is estimated using the characteristic line.

Problems: 2, 15

Corrections/Clarifications

- On **page 240**, in the last equation, the last subscript should be "*i*."