STUDY SESSION

1

Ethical and Professional Standards

The readings in this study session present a framework for ethical conduct in the investment profession. The first reading discusses ethics, the role of a code of ethics in defining a profession, and the importance of ethics in the investment profession. It also introduces an ethical decision-making framework. The focus then turns to the CFA Institute Code of Ethics and Standards of Professional Conduct as well as the Global Investment Performance Standards (GIPS®).

The principles and guidance presented in the CFA Institute *Standards of Practice Handbook* (*Handbook*) form the basis for the CFA Institute self-regulatory program to maintain the highest professional standards among investment practitioners. "Guidance" in the *Handbook* addresses the practical application of the Code of Ethics and Standards of Professional Conduct. The guidance expands upon the purpose and scope of each standard, presents recommended procedures for compliance, and provides examples of the standard in practice.

The Global Investment Performance Standards (GIPS) facilitate efficient comparison of investment performance across investment managers and country borders by prescribing methodology and standards that are consistent with a clear and honest presentation of returns. Having a global standard for reporting investment performance to prospective clients minimizes the potential for ambiguous or misleading presentations.

READING ASSIGNMENTS

Reading 1	Ethics and Trust in the Investment Profession by Bidhan L. Parmar, PhD, Dorothy C. Kelly, CFA, and David B. Stevens, CFA
Reading 2	Code of Ethics and Standards of Professional Conduct *Standards of Practice Handbook*, Eleventh Edition

(continued)

Reading 3	Guidance for Standards I–VII *Standards of Practice Handbook*, Eleventh Edition
Reading 4	Introduction to the Global Investment Performance Standards (GIPS)
Reading 5	Global Investment Performance Standards (GIPS)

LEARNING OUTCOMES

READING 1. ETHICS AND TRUST IN THE INVESTMENT PROFESSION

The candidate should be able to:

a explain ethics;

b describe the role of a code of ethics in defining a profession;

c identify challenges to ethical behavior;

d describe the need for high ethical standards in the investment industry;

e distinguish between ethical and legal standards;

f describe and apply a framework for ethical decision making.

READING 2. CODE OF ETHICS AND STANDARDS OF PROFESSIONAL CONDUCT

The candidate should be able to:

a describe the structure of the CFA Institute Professional Conduct Program and the process for the enforcement of the Code and Standards;

b state the six components of the Code of Ethics and the seven Standards of Professional Conduct;

c explain the ethical responsibilities required by the Code and Standards, including the sub-sections of each Standard.

READING 3. GUIDANCE FOR STANDARDS I–VII

The candidate should be able to:

a demonstrate the application of the Code of Ethics and Standards of Professional Conduct to situations involving issues of professional integrity;

b distinguish between conduct that conforms to the Code and Standards and conduct that violates the Code and Standards;

c recommend practices and procedures designed to prevent violations of the Code of Ethics and Standards of Professional Conduct.

READING 4. INTRODUCTION TO THE GLOBAL INVESTMENT PERFORMANCE STANDARDS (GIPS)

The candidate should be able to:

a explain why the GIPS standards were created, what parties the GIPS standards apply to, and who is served by the standards;

b explain the construction and purpose of composites in performance reporting;

c explain the requirements for verification.

READING 5. THE GIPS STANDARDS

The candidate should be able to:

a describe the key features of the GIPS standards and the fundamentals of compliance;

b describe the scope of the GIPS standards with respect to an investment firm's definition and historical performance record;

c explain how the GIPS standards are implemented in countries with existing standards for performance reporting and describe the appropriate response when the GIPS standards and local regulations conflict;

d describe the nine major sections of the GIPS standards.

STUDY SESSION

2

Quantitative Methods

Basic Concepts

This introductory study session presents the fundamentals of some quantitative techniques essential in financial analysis. These techniques are used throughout the CFA Program curriculum. This session introduces several tools of quantitative analysis: time value of money, descriptive statistics, and probability.

Time value of money techniques are used throughout financial analysis. Time value of money calculations are the basic tools used to support corporate finance decisions and to estimate the fair value of fixed income, equity, and other types of securities or investments.

Descriptive statistics provide essential tools for describing and evaluating return and risk. Probability theory concepts are needed to understand investment decision-making under conditions of uncertainty.

READING ASSIGNMENTS

Reading 6	The Time Value of Money by Richard A. DeFusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, PhD, CFA, and David E. Runkle, PhD, CFA
Reading 7	Discounted Cash Flow Applications by Richard A. DeFusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, PhD, CFA, and David E. Runkle, PhD, CFA

(continued)

Reading 8	Statistical Concepts and Market Returns by Richard A. DeFusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, PhD, CFA, and David E. Runkle, PhD, CFA
Reading 9	Probability Concepts by Richard A. DeFusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, PhD, CFA, and David E. Runkle, PhD, CFA

LEARNING OUTCOMES

READING 6. THE TIME VALUE OF MONEY

The candidate should be able to:

- **a** interpret interest rates as required rates of return, discount rates, or opportunity costs;
- **b** explain an interest rate as the sum of a real risk-free rate and premiums that compensate investors for bearing distinct types of risk;
- **c** calculate and interpret the effective annual rate, given the stated annual interest rate and the frequency of compounding;
- **d** solve time value of money problems for different frequencies of compounding;
- **e** calculate and interpret the future value (FV) and present value (PV) of a single sum of money, an ordinary annuity, an annuity due, a perpetuity (PV only), and a series of unequal cash flows;
- **f** demonstrate the use of a time line in modeling and solving time value of money problems.

READING 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, and identify problems associated with the IRR rule;
- **c** calculate and interpret a holding period return (total return);
- **d** calculate and compare the money-weighted and time-weighted rates of return of a portfolio and evaluate 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 US Treasury bills and other money market instruments;
- **f** convert among holding period yields, money market yields, effective annual yields, and bond equivalent yields.

READING 8. STATISTICAL CONCEPTS AND MARKET RETURNS

The candidate should be able to:

a distinguish between descriptive statistics and inferential statistics, between a population and a sample, and among the types of measurement scales;

b define a parameter, a sample statistic, and a frequency distribution;

c calculate and interpret relative frequencies and cumulative relative frequencies, given a frequency distribution;

d describe the properties of a data set presented as a histogram or a frequency polygon;

e calculate and interpret measures of central tendency, including the population mean, sample mean, arithmetic mean, weighted average or mean, geometric mean, harmonic mean, median, and mode;

f calculate and interpret quartiles, quintiles, deciles, and percentiles;

g calculate and interpret 1) a range and a mean absolute deviation and 2) the variance and standard deviation of a population and of a sample;

h calculate and interpret the proportion of observations falling within a specified number of standard deviations of the mean using Chebyshev's inequality;

i calculate and interpret the coefficient of variation and the Sharpe ratio;

j explain skewness and the meaning of a positively or negatively skewed return distribution;

k describe the relative locations of the mean, median, and mode for a unimodal, nonsymmetrical distribution;

l explain measures of sample skewness and kurtosis;

m compare the use of arithmetic and geometric means when analyzing investment returns.

READING 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 state the two defining properties of probability and distinguish among empirical, subjective, and a priori probabilities;

c state the probability of an event in terms of odds for and against the event;

d distinguish between unconditional and conditional probabilities;

e explain the multiplication, addition, and total probability rules;

f calculate and interpret 1) the joint probability of two events, 2) the probability that at least one of two events will occur, given the probability of each and the joint probability of the two events, and 3) a joint probability of any number of independent events;

g distinguish between dependent and independent events;

h calculate and interpret an unconditional probability using the total probability rule;

i explain the use of conditional expectation in investment applications;

j explain the use of a tree diagram to represent an investment problem;

k calculate and interpret covariance and correlation;

- **l** calculate and interpret the expected value, variance, and standard deviation of a random variable and of returns on a portfolio;
- **m** calculate and interpret covariance given a joint probability function;
- **n** calculate and interpret an updated probability using Bayes' formula;
- **o** identify the most appropriate method to solve a particular counting problem and solve counting problems using factorial, combination, and permutation concepts.

STUDY SESSION

3

Quantitative Methods

Application

This study session introduces some of the discrete and continuous probability distributions most commonly used to describe the behavior of random variables. Probability theory and calculations are widely used in finance, for example, in the field of investment and project valuation and in financial risk management.

Furthermore, this session explains how to estimate different parameters (e.g., mean and standard deviation) of a population if only a sample, rather than the whole population, can be observed. Hypothesis testing is a closely related topic. This session presents techniques that are used to accept or reject an assumed hypothesis (null hypothesis) about various parameters of a population.

The final reading introduces the fundamentals of technical analysis and illustrates how it is used to analyze securities and securities markets.

READING ASSIGNMENTS

Reading 10	Common Probability Distributions by Richard A. DeFusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, PhD, CFA, and David E. Runkle, PhD, CFA
Reading 11	Sampling and Estimation by Richard A. DeFusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, PhD, CFA, and David E. Runkle, PhD, CFA
Reading 12	Hypothesis Testing by Richard A. DeFusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, PhD, CFA, and David E. Runkle, PhD, CFA
Reading 13	Technical Analysis by Barry M. Sine, CMT, CFA, and Robert A. Strong, PhD, CFA

LEARNING OUTCOMES

READING 10. COMMON PROBABILITY DISTRIBUTIONS

The candidate should be able to:

- **a** define a probability distribution and distinguish between discrete and continuous random variables and their probability functions;
- **b** describe the set of possible outcomes of a specified discrete random variable;
- **c** interpret a cumulative distribution function;
- **d** calculate and interpret probabilities for a random variable, given its cumulative distribution function;
- **e** define a discrete uniform random variable, a Bernoulli random variable, and a binomial random variable;
- **f** calculate and interpret probabilities given the discrete uniform and the binomial distribution functions;
- **g** construct a binomial tree to describe stock price movement;
- **h** calculate and interpret tracking error;
- **i** define the continuous uniform distribution and calculate and interpret probabilities, given a continuous uniform distribution;
- **j** explain the key properties of the normal distribution;
- **k** distinguish between a univariate and a multivariate distribution and explain the role of correlation in the multivariate normal distribution;
- **l** determine the probability that a normally distributed random variable lies inside a given interval;
- **m** define the standard normal distribution, explain how to standardize a random variable, and calculate and interpret probabilities using the standard normal distribution;
- **n** define shortfall risk, calculate the safety-first ratio, and select an optimal portfolio using Roy's safety-first criterion;
- **o** explain the relationship between normal and lognormal distributions and why the lognormal distribution is used to model asset prices;
- **p** distinguish between discretely and continuously compounded rates of return and calculate and interpret a continuously compounded rate of return, given a specific holding period return;
- **q** explain Monte Carlo simulation and describe its applications and limitations;
- **r** compare Monte Carlo simulation and historical simulation.

READING 11. SAMPLING AND ESTIMATION

The candidate should be able to:

- **a** define simple random sampling and a sampling distribution;
- **b** explain sampling error;
- **c** distinguish between simple random and stratified random sampling;
- **d** distinguish between time-series and cross-sectional data;
- **e** explain the central limit theorem and its importance;
- **f** calculate and interpret the standard error of the sample mean;
- **g** identify and describe desirable properties of an estimator;

h distinguish between a point estimate and a confidence interval estimate of a population parameter;

i describe properties of Student's *t*-distribution and calculate and interpret its degrees of freedom;

j calculate and interpret a confidence interval for a population mean, given a normal distribution with 1) a known population variance, 2) an unknown population variance, or 3) an unknown variance and a large sample size;

k describe the issues regarding selection of the appropriate sample size, data-mining bias, sample selection bias, survivorship bias, look-ahead bias, and time-period bias.

READING 12. HYPOTHESIS TESTING

The candidate should be able to:

a define a hypothesis, describe the steps of hypothesis testing, and describe and interpret the choice of the null and alternative hypotheses;

b distinguish between one-tailed and two-tailed tests of hypotheses;

c explain a test statistic, Type I and Type II errors, a significance level, and how significance levels are used in hypothesis testing;

d explain a decision rule, the power of a test, and the relation between confidence intervals and hypothesis tests;

e distinguish between a statistical result and an economically meaningful result;

f explain and interpret the *p*-value as it relates to hypothesis testing;

g identify the appropriate test statistic and interpret the results for a hypothesis test concerning the population mean of both large and small samples when the population is normally or approximately normally distributed and the variance is 1) known or 2) unknown;

h identify the appropriate test statistic and interpret the results for a hypothesis test concerning the equality of the population means of two at least approximately 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;

j identify the appropriate test statistic and interpret the results for a hypothesis test concerning 1) the variance of a normally distributed population, and 2) the equality of the variances of two normally distributed populations based on two independent random samples;

k distinguish between parametric and nonparametric tests and describe situations in which the use of nonparametric tests may be appropriate.

READING 13. TECHNICAL ANALYSIS

The candidate should be able to:

a explain principles of technical analysis, its applications, and its underlying assumptions;

b describe the construction of different types of technical analysis charts and interpret them;

c explain uses of trend, support, resistance lines, and change in polarity;

- **d** describe common chart patterns;
- **e** describe common technical analysis indicators (price-based, momentum oscillators, sentiment, and flow of funds);
- **f** explain how technical analysts use cycles;
- **g** describe the key tenets of Elliott Wave Theory and the importance of Fibonacci numbers;
- **h** describe intermarket analysis as it relates to technical analysis and asset allocation.

STUDY SESSION

4

Economics

Microeconomics and Macroeconomics

Candidates should be familiar with the material covered in the prerequisite economics readings available in your Candidate Resources on the CFA Institute website:

- Demand and Supply Analysis: Introduction
- Demand and Supply Analysis: Consumer Demand
- Demand and Supply Analysis: The Firm

This study session provides an introduction to fundamental microeconomic and macroeconomic concepts relevant to investment management practice. The first reading in this study session covers selected concepts and tools of demand and supply analysis. The second reading describes revenues and cost structures associated with the different types of markets in which firms sell output. The third reading covers aggregate output and income measurement, aggregate demand and supply analysis, and the analysis of the factors affecting economic growth. The final reading explains the effects of business cycles on businesses and investment markets.

READING ASSIGNMENTS

Reading 14	Topics in Demand and Supply Analysis by Richard V. Eastin, PhD, and Gary L. Arbogast, PhD, CFA
Reading 15	The Firm and Market Structures by Richard G. Fritz, PhD, and Michele Gambera, PhD, CFA
Reading 16	Aggregate Output, Prices, and Economic Growth by Paul R. Kutasovic, PhD, CFA, and Richard G. Fritz, PhD
Reading 17	Understanding Business Cycles by Michele Gambera, PhD, CFA, Milton Ezrati, and Bolong Cao, PhD, CFA

LEARNING OUTCOMES

READING 14. TOPICS IN DEMAND AND SUPPLY ANALYSIS

The candidate should be able to

- **a** calculate and interpret price, income, and cross-price elasticities of demand and describe factors that affect each measure;
- **b** compare substitution and income effects;
- **c** distinguish between normal goods and inferior goods;
- **d** describe the phenomenon of diminishing marginal returns;
- **e** determine and describe breakeven and shutdown points of production;
- **f** describe how economies of scale and diseconomies of scale affect costs.

READING 15. THE FIRM AND MARKET STRUCTURES

The candidate should be able to:

- **a** describe characteristics of perfect competition, monopolistic competition, oligopoly, and pure monopoly;
- **b** explain relationships between price, marginal revenue, marginal cost, economic profit, and the elasticity of demand under each market structure;
- **c** describe a firm's supply function under each market structure;
- **d** describe and determine the optimal price and output for firms under each market structure;
- **e** explain factors affecting long-run equilibrium under each market structure;
- **f** describe pricing strategy under each market structure;
- **g** describe the use and limitations of concentration measures in identifying market structure;
- **h** identify the type of market structure within which a firm operates.

READING 16. AGGREGATE OUTPUT, PRICES, AND ECONOMIC GROWTH

The candidate should be able to:

- **a** calculate and explain gross domestic product (GDP) using expenditure and income approaches;
- **b** compare the sum-of-value-added and value-of-final-output methods of calculating GDP;
- **c** compare nominal and real GDP and calculate and interpret the GDP deflator;
- **d** compare GDP, national income, personal income, and personal disposable income;
- **e** explain the fundamental relationship among saving, investment, the fiscal balance, and the trade balance;
- **f** explain the IS and LM curves and how they combine to generate the aggregate demand curve;
- **g** explain the aggregate supply curve in the short run and long run;

- **h** explain causes of movements along and shifts in aggregate demand and supply curves;
- **i** describe how fluctuations in aggregate demand and aggregate supply cause short-run changes in the economy and the business cycle;
- **j** distinguish between the following types of macroeconomic equilibria: long-run full employment, short-run recessionary gap, short-run inflationary gap, and short-run stagflation;
- **k** explain how a short-run macroeconomic equilibrium may occur at a level above or below full employment;
- **l** analyze the effect of combined changes in aggregate supply and demand on the economy;
- **m** describe sources, measurement, and sustainability of economic growth;
- **n** describe the production function approach to analyzing the sources of economic growth;
- **o** distinguish between input growth and growth of total factor productivity as components of economic growth.

READING 17. UNDERSTANDING BUSINESS CYCLES

The candidate should be able to:

- **a** describe the business cycle and its phases;
- **b** describe how resource use, housing sector activity, and external trade sector activity vary as an economy moves through the business cycle;
- **c** describe theories of the business cycle;
- **d** describe types of unemployment and compare measures of unemployment;
- **e** explain inflation, hyperinflation, disinflation, and deflation;
- **f** explain the construction of indices used to measure inflation;
- **g** compare inflation measures, including their uses and limitations;
- **h** distinguish between cost-push and demand-pull inflation;
- **i** interpret a set of economic indicators and describe their uses and limitations.

STUDY SESSION

5

Economics

Monetary and Fiscal Policy, International Trade, and Currency Exchange Rates

This study session begins by presenting monetary and fiscal policy, then introduces economics in a global context. The first reading describes monetary and fiscal policy and how they are used by central banks and governments. The second reading discusses the flows of goods and services, physical capital, and financial capital across national borders. The reading explains how the different types of flows are linked and how trade may benefit trade partners. The final reading provides an overview of currency market fundamentals.

READING ASSIGNMENTS

Reading 18	Monetary and Fiscal Policy by Andrew Clare, PhD, and Stephen Thomas, PhD
Reading 19	International Trade and Capital Flows by Usha Nair-Reichert, PhD, and Daniel Robert Witschi, PhD, CFA
Reading 20	Currency Exchange Rates by William A. Barker, CFA, Paul D. McNelis, and Jerry Nickelsburg

LEARNING OUTCOMES

READING 18. MONETARY AND FISCAL POLICY

The candidate should be able to:

a compare monetary and fiscal policy;

b describe functions and definitions of money;

c explain the money creation process;

- **d** describe theories of the demand for and supply of money;
- **e** describe the Fisher effect;
- **f** describe roles and objectives of central banks;
- **g** contrast the costs of expected and unexpected inflation;
- **h** describe tools used to implement monetary policy;
- **i** describe the monetary transmission mechanism;
- **j** describe qualities of effective central banks;
- **k** explain the relationships between monetary policy and economic growth, inflation, interest, and exchange rates;
- **l** contrast the use of inflation, interest rate, and exchange rate targeting by central banks;
- **m** determine whether a monetary policy is expansionary or contractionary;
- **n** describe limitations of monetary policy;
- **o** describe roles and objectives of fiscal policy;
- **p** describe tools of fiscal policy, including their advantages and disadvantages;
- **q** describe the arguments about whether the size of a national debt relative to GDP matters;
- **r** explain the implementation of fiscal policy and difficulties of implementation;
- **s** determine whether a fiscal policy is expansionary or contractionary;
- **t** explain the interaction of monetary and fiscal policy.

READING 19. INTERNATIONAL TRADE AND CAPITAL FLOWS

The candidate should be able to:

- **a** compare gross domestic product and gross national product;
- **b** describe benefits and costs of international trade;
- **c** distinguish between comparative advantage and absolute advantage;
- **d** explain the Ricardian and Heckscher–Ohlin models of trade and the source(s) of comparative advantage in each model;
- **e** compare types of trade and capital restrictions and their economic implications;
- **f** explain motivations for and advantages of trading blocs, common markets, and economic unions;
- **g** describe common objectives of capital restrictions imposed by governments;
- **h** describe the balance of payments accounts including their components;
- **i** explain how decisions by consumers, firms, and governments affect the balance of payments;
- **j** describe functions and objectives of the international organizations that facilitate trade, including the World Bank, the International Monetary Fund, and the World Trade Organization.

READING 20. CURRENCY EXCHANGE RATES

The candidate should be able to:

- **a** define an exchange rate and distinguish between nominal and real exchange rates and spot and forward exchange rates;

- **b** describe functions of and participants in the foreign exchange market;
- **c** calculate and interpret the percentage change in a currency relative to another currency;
- **d** calculate and interpret currency cross-rates;
- **e** convert forward quotations expressed on a points basis or in percentage terms into an outright forward quotation;
- **f** explain the arbitrage relationship between spot rates, forward rates, and interest rates;
- **g** calculate and interpret a forward discount or premium;
- **h** calculate and interpret the forward rate consistent with the spot rate and the interest rate in each currency;
- **i** describe exchange rate regimes;
- **j** explain the effects of exchange rates on countries' international trade and capital flows.

STUDY SESSION

6

Financial Reporting and Analysis

An Introduction

The readings in this study session describe the general principles of financial reporting, underscoring the critical role of the analysis of financial reports in investment decision making.

The first reading introduces the range of information that is available to analyze the financial performance of a company, including the principal financial statements (the income statement, balance sheet, cash flow statement, and statement of changes in owners' equity), notes to those statements, and management discussion and analysis of results. A general framework for addressing most financial statement analysis tasks is also presented.

A company's financial statements are the end-products of a process for recording the business transactions of the company. The second reading illustrates this process, introducing such basic concepts as the accounting equation and accounting accruals.

The presentation of financial information to the public by a company must conform to applicable financial reporting standards based on factors such as the jurisdiction in which the information is released. The final reading in this study session explores the roles of financial reporting standard-setting bodies and regulatory authorities. The International Accounting Standards Board's conceptual framework and the movement towards global convergence of financial reporting standards are also described.

Note: New rulings and/or pronouncements issued after the publication of the readings in financial reporting and analysis may cause some of the information in these readings to become dated. 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. Candidates are not responsible for changes that occur after the material was written.
Candidates should be aware that certain ratios may be defined and calculated differently. Such differences are part of the nature of practical financial analysis. For examination purposes, when alternative ratio definitions exist and no specific definition is given in the question, candidates should use the ratio definitions emphasized in the CFA Institute copyrighted readings.

READING ASSIGNMENTS

Reading 21	Financial Statement Analysis: An Introduction by Elaine Henry, PhD, CFA, and Thomas R. Robinson, PhD, CFA
Reading 22	Financial Reporting Mechanics Thomas R. Robinson, PhD, CFA, Jan Hendrik van Greuning, DCom, CFA, Karen O'Connor Rubsam, CFA, Elaine Henry, PhD, CFA, and Michael A. Broihahn, CPA, CIA, CFA
Reading 23	Financial Reporting Standards by Elaine Henry, PhD, CFA, Jan Hendrik van Greuning, DCom, CFA, and Thomas R. Robinson, PhD, CFA

LEARNING OUTCOMES

READING 21. FINANCIAL STATEMENT ANALYSIS: AN INTRODUCTION

The candidate should be able to:

a describe the roles of financial reporting and financial statement analysis;

b describe the roles of the statement of financial position, statement of comprehensive income, statement of changes in equity, and statement of cash flows in evaluating a company's performance and financial position;

c describe the importance of financial statement notes and supplementary information—including disclosures of accounting policies, methods, and estimates—and management's commentary;

d describe the objective of audits of financial statements, the types of audit reports, and the importance of effective internal controls;

e identify and describe information sources that analysts use in financial statement analysis besides annual financial statements and supplementary information;

f describe the steps in the financial statement analysis framework.

READING 22. FINANCIAL REPORTING MECHANICS

The candidate should be able to:

a describe how business activities are classified for financial reporting purposes;

b explain the relationship of financial statement elements and accounts, and classify accounts into the financial statement elements;

c explain the accounting equation in its basic and expanded forms;

d describe the process of recording business transactions using an accounting system based on the accounting equation;

e describe the need for accruals and valuation adjustments in preparing financial statements;

f describe the relationships among the income statement, balance sheet, statement of cash flows, and statement of owners' equity;

g describe the flow of information in an accounting system;

h describe the use of the results of the accounting process in security analysis.

READING 23. FINANCIAL REPORTING STANDARDS

The candidate should be able to:

a describe the objective of financial statements and the importance of financial reporting standards in security analysis and valuation;

b describe roles and desirable attributes of financial reporting standard-setting bodies and regulatory authorities in establishing and enforcing reporting standards, and describe the role of the International Organization of Securities Commissions;

c describe the status of global convergence of accounting standards and ongoing barriers to developing one universally accepted set of financial reporting standards;

d describe the International Accounting Standards Board's conceptual framework, including the objective and qualitative characteristics of financial statements, required reporting elements, and constraints and assumptions in preparing financial statements;

e describe general requirements for financial statements under International Financial Reporting Standards (IFRS);

f compare key concepts of financial reporting standards under IFRS and US generally accepted accounting principles (US GAAP) reporting systems;

g identify characteristics of a coherent financial reporting framework and the barriers to creating such a framework;

h describe implications for financial analysis of differing financial reporting systems and the importance of monitoring developments in financial reporting standards;

i analyze company disclosures of significant accounting policies.

STUDY SESSION

7

Financial Reporting and Analysis

Income Statements, Balance Sheets, and Cash Flow Statements

The first three readings in this study session focus on the three major financial statements: the income statement, the balance sheet, and the cash flow statement. For each financial statement, the reading describes its purpose, construction, pertinent ratios, and common-size analysis. These readings provide a background for evaluating trends in a company's performance over several measurement periods and for comparing the performance of different companies over a given period. The final reading covers in greater depth financial analysis techniques based on the financial reports.

READING ASSIGNMENTS

Reading 24	Understanding Income Statements by Elaine Henry, PhD, CFA, and Thomas R. Robinson, PhD, CFA
Reading 25	Understanding Balance Sheets by Elaine Henry, PhD, CFA, and Thomas R. Robinson, PhD, CFA
Reading 26	Understanding Cash Flow Statements by Elaine Henry, PhD, CFA, Thomas R. Robinson, PhD, CFA, Jan Hendrik van Greuning, DCom, CFA, and Michael A. Broihahn, CPA, CIA, CFA
Reading 27	Financial Analysis Techniques by Elaine Henry, PhD, CFA, Thomas R. Robinson, PhD, CFA, and Jan Hendrik van Greuning, DCom, CFA

Note: New rulings and/or pronouncements issued after the publication of the readings in financial reporting and analysis may cause some of the information in these readings to become dated. 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. Candidates are not responsible for changes that occur after the material was written.

LEARNING OUTCOMES

READING 24. UNDERSTANDING INCOME STATEMENTS

The candidate should be able to:

a describe the components of the income statement and alternative presentation formats of that statement;

b describe general principles of revenue recognition and accrual accounting, specific revenue recognition applications (including accounting for long-term contracts, installment sales, barter transactions, gross and net reporting of revenue), and implications of revenue recognition principles for financial analysis;

c calculate revenue given information that might influence the choice of revenue recognition method;

d describe key aspects of the converged accounting standards for revenue recognition issued by the International Accounting Standards Board and Financial Accounting Standards Board in May 2014;

e describe general principles of expense recognition, specific expense recognition applications, and implications of expense recognition choices for financial analysis;

f describe the financial reporting treatment and analysis of non-recurring items (including discontinued operations, unusual or infrequent items) and changes in accounting policies;

g distinguish between the operating and non-operating components of the income statement;

h describe how earnings per share is calculated and calculate and interpret a company's earnings per share (both basic and diluted earnings per share) for both simple and complex capital structures;

i distinguish between dilutive and antidilutive securities and describe the implications of each for the earnings per share calculation;

j convert income statements to common-size income statements;

k evaluate a company's financial performance using common-size income statements and financial ratios based on the income statement;

l describe, calculate, and interpret comprehensive income;

m describe other comprehensive income and identify major types of items included in it.

READING 25. UNDERSTANDING BALANCE SHEETS

The candidate should be able to:

a describe the elements of the balance sheet: assets, liabilities, and equity;

b describe uses and limitations of the balance sheet in financial analysis;

c describe alternative formats of balance sheet presentation;

d distinguish between current and non-current assets and current and non-current liabilities;

e describe different types of assets and liabilities and the measurement bases of each;

f describe the components of shareholders' equity;

g convert balance sheets to common-size balance sheets and interpret common-size balance sheets;

h calculate and interpret liquidity and solvency ratios.

READING 26. UNDERSTANDING CASH FLOW STATEMENTS

The candidate should be able to:

a compare cash flows from operating, investing, and financing activities and classify cash flow items as relating to one of those three categories given a description of the items;

b describe how non-cash investing and financing activities are reported;

c contrast cash flow statements prepared under International Financial Reporting Standards (IFRS) and US generally accepted accounting principles (US GAAP);

d distinguish between the direct and indirect methods of presenting cash from operating activities and describe arguments in favor of each method;

e describe how the cash flow statement is linked to the income statement and the balance sheet;

f describe the steps in the preparation of direct and indirect cash flow statements, including how cash flows can be computed using income statement and balance sheet data;

g convert cash flows from the indirect to direct method;

h analyze and interpret both reported and common-size cash flow statements;

i calculate and interpret free cash flow to the firm, free cash flow to equity, and performance and coverage cash flow ratios.

READING 27. FINANCIAL ANALYSIS TECHNIQUES

The candidate should be able to:

a describe tools and techniques used in financial analysis, including their uses and limitations;

b classify, calculate, and interpret activity, liquidity, solvency, profitability, and valuation ratios;

c describe relationships among ratios and evaluate a company using ratio analysis;

d demonstrate the application of DuPont analysis of return on equity and calculate and interpret effects of changes in its components;

e calculate and interpret ratios used in equity analysis and credit analysis;

f explain the requirements for segment reporting and calculate and interpret segment ratios;

g describe how ratio analysis and other techniques can be used to model and forecast earnings.

STUDY SESSION

8

Financial Reporting and Analysis

Inventories, Long-lived Assets, Income Taxes, and Non-current Liabilities

The readings in this study session examine financial reporting for specific categories of assets and liabilities. Analysts must understand the effects of alternative financial reporting policies on financial statements and ratios and be able to execute appropriate adjustments to enhance comparability between companies. In addition, analysts must be alert to differences between a company's reported financial statements and economic reality.

The description and measurement of inventories require careful attention because inventories are frequently the largest current asset for merchandising and manufacturing companies. For these companies, the measurement of inventory cost (i.e., cost of sales) is a critical factor in determining gross profit and other measures of profitability. Long-lived operating assets are often the largest category of assets on a company's balance sheet. The analyst needs to scrutinize management's choices with respect to recognizing expenses associated with these operating assets because of the potentially large effect such choices can have on reported earnings and the opportunities for financial statement manipulation.

A company's accounting policies (such as depreciation choices) can cause differences in taxes reported in financial statements and taxes reported on tax returns. Issues relating to deferred taxes are discussed.

Non-current liabilities affect a company's liquidity and solvency and have consequences for its long-term growth and viability. The notes to the financial statements must be carefully reviewed to ensure that all potential liabilities (e.g., leasing arrangements and other contractual commitments) are appropriately evaluated for their conformity to economic reality. Adjustments to the financial statements may be required to achieve comparability when evaluating several companies.

Note: New rulings and/or pronouncements issued after the publication of the readings on financial reporting and analysis may cause some of the information in these readings to become dated. 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. Candidates are not responsible for changes that occur after the material was written.

READING ASSIGNMENTS

Reading 28	Inventories by Michael Broihahn, CPA, CIA, CFA
Reading 29	Long-lived Assets by Elaine Henry, PhD, CFA, and Elizabeth A. Gordon, PhD, MBA
Reading 30	Income Taxes By Elbie Louw, CFA, CIPM, and Michael A. Broihahn, CPA, CIA, CFA
Reading 31	Non-current (Long-term) Liabilities by Elizabeth A. Gordon, PhD, MBA, and Elaine Henry, PhD, CFA

LEARNING OUTCOMES

READING 28. INVENTORIES

The candidate should be able to:

a distinguish between costs included in inventories and costs recognised as expenses in the period in which they are incurred;

b describe different inventory valuation methods (cost formulas);

c calculate and compare cost of sales, gross profit, and ending inventory using different inventory valuation methods and using perpetual and periodic inventory systems;

d calculate and explain how inflation and deflation of inventory costs affect the financial statements and ratios of companies that use different inventory valuation methods;

e explain LIFO reserve and LIFO liquidation and their effects on financial statements and ratios;

f convert a company's reported financial statements from LIFO to FIFO for purposes of comparison;

g describe the measurement of inventory at the lower of cost and net realisable value;

h describe implications of valuing inventory at net realisable value for financial statements and ratios;

i describe the financial statement presentation of and disclosures relating to inventories;

j explain issues that analysts should consider when examining a company's inventory disclosures and other sources of information;

k calculate and compare ratios of companies, including companies that use different inventory methods;

l analyze and compare the financial statements of companies, including companies that use different inventory methods.

READING 29. LONG-LIVED ASSETS

The candidate should be able to:

a distinguish between costs that are capitalised and costs that are expensed in the period in which they are incurred;

b compare the financial reporting of the following types of intangible assets: purchased, internally developed, acquired in a business combination;

c explain and evaluate how capitalising versus expensing costs in the period in which they are incurred affects financial statements and ratios;

d describe the different depreciation methods for property, plant, and equipment and calculate depreciation expense;

e describe how the choice of depreciation method and assumptions concerning useful life and residual value affect depreciation expense, financial statements, and ratios;

f describe the different amortisation methods for intangible assets with finite lives and calculate amortisation expense;

g describe how the choice of amortisation method and assumptions concerning useful life and residual value affect amortisation expense, financial statements, and ratios;

h describe the revaluation model;

i explain the impairment of property, plant, and equipment and intangible assets;

j explain the derecognition of property, plant, and equipment and intangible assets;

k explain and evaluate how impairment, revaluation, and derecognition of property, plant, and equipment and intangible assets affect financial statements and ratios;

l describe the financial statement presentation of and disclosures relating to property, plant, and equipment and intangible assets;

m analyze and interpret financial statement disclosures regarding property, plant, and equipment and intangible assets;

n compare the financial reporting of investment property with that of property, plant, and equipment;

o explain and evaluate how leasing rather than purchasing assets affects financial statements and ratios;

p explain and evaluate how finance leases and operating leases affect financial statements and ratios from the perspective of both the lessor and the lessee.

READING 30. INCOME TAXES

The candidate should be able to:

a describe the differences between accounting profit and taxable income and define key terms, including deferred tax assets, deferred tax liabilities, valuation allowance, taxes payable, and income tax expense;

b explain how deferred tax liabilities and assets are created and the factors that determine how a company's deferred tax liabilities and assets should be treated for the purposes of financial analysis;

c calculate the tax base of a company's assets and liabilities;

- **d** calculate income tax expense, income taxes payable, deferred tax assets, and deferred tax liabilities, and calculate and interpret the adjustment to the financial statements related to a change in the income tax rate;
- **e** evaluate the impact of tax rate changes on a company's financial statements and ratios;
- **f** distinguish between temporary and permanent differences in pre-tax accounting income and taxable income;
- **g** describe the valuation allowance for deferred tax assets—when it is required and what impact it has on financial statements;
- **h** explain recognition and measurement of current and deferred tax items;
- **i** analyze disclosures relating to deferred tax items and the effective tax rate reconciliation and explain how information included in these disclosures affects a company's financial statements and financial ratios;
- **j** identify the key provisions of and differences between income tax accounting under International Financial Reporting Standards (IFRS) and US generally accepted accounting principles (GAAP).

READING 31. NON-CURRENT (LONG-TERM) LIABILITIES

The candidate should be able to

- **a** determine the initial recognition, initial measurement and subsequent measurement of bonds;
- **b** describe the effective interest method and calculate interest expense, amortisation of bond discounts/premiums, and interest payments;
- **c** explain the derecognition of debt;
- **d** describe the role of debt covenants in protecting creditors;
- **e** describe the financial statement presentation of and disclosures relating to debt;
- **f** explain motivations for leasing assets instead of purchasing them;
- **g** distinguish between a finance lease and an operating lease from the perspectives of the lessor and the lessee;
- **h** determine the initial recognition, initial measurement, and subsequent measurement of finance leases;
- **i** compare the disclosures relating to finance and operating leases;
- **j** compare the presentation and disclosure of defined contribution and defined benefit pension plans;
- **k** calculate and interpret leverage and coverage ratios.

STUDY SESSION

9

Financial Reporting and Analysis

Financial Reporting Quality and Financial Statement Analysis

This study session discusses financial reporting quality and shows the application of financial statement analysis to debt and equity investments. Frequently used tools and techniques for evaluating companies include common-size analysis, cross-sectional analysis, trend analysis, and ratio analysis. Beyond mere knowledge of these tools and techniques, however, the analyst must recognize the implications of accounting choices on the quality of a company's reported financial results. Then the analyst can apply financial analysis techniques to tasks such as the evaluation of past and future financial performance, credit risk and analysis, the screening of potential equity investments, and other job needs. The readings also explain adjustments to reported financials that analysts often make. Such adjustments are often needed to put companies' reported results on a comparable basis.

READING ASSIGNMENTS

Reading 32	Financial Reporting Quality by Jack T. Ciesielski, Jr., CPA, CFA, Elaine Henry, PhD, CFA, and Thomas I. Selling, PhD, CPA
Reading 33	Financial Statement Analysis: Applications by Thomas R. Robinson, PhD, CFA, Jan Hendrik van Greuning, DCom, CFA, Elaine Henry, PhD, CFA, and Michael A. Broihahn, CPA, CIA, CFA

Note: New rulings and/or pronouncements issued after the publication of the readings in financial reporting and analysis may cause some of the information in these readings to become dated. 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. Candidates are not responsible for changes that occur after the material was written.

LEARNING OUTCOMES

READING 32. FINANCIAL REPORTING QUALITY

The candidate should be able to:

a distinguish between financial reporting quality and quality of reported results (including quality of earnings, cash flow, and balance sheet items);

b describe a spectrum for assessing financial reporting quality;

c distinguish between conservative and aggressive accounting;

d describe motivations that might cause management to issue financial reports that are not high quality;

e describe conditions that are conducive to issuing low-quality, or even fraudulent, financial reports;

f describe mechanisms that discipline financial reporting quality and the potential limitations of those mechanisms;

g describe presentation choices, including non-GAAP measures, that could be used to influence an analyst's opinion;

h describe accounting methods (choices and estimates) that could be used to manage earnings, cash flow, and balance sheet items;

i describe accounting warning signs and methods for detecting manipulation of information in financial reports.

READING 33. FINANCIAL STATEMENT ANALYSIS: APPLICATIONS

The candidate should be able to:

a evaluate a company's past financial performance and explain how a company's strategy is reflected in past financial performance;

b forecast a company's future net income and cash flow;

c describe the role of financial statement analysis in assessing the credit quality of a potential debt investment;

d describe the use of financial statement analysis in screening for potential equity investments;

e explain appropriate analyst adjustments to a company's financial statements to facilitate comparison with another company.

STUDY SESSION

10

Corporate Finance

Corporate Governance, Capital Budgeting, and Cost of Capital

This study session provides an introduction to corporate governance and corporate investing and financing decisions. The first reading provides a framework for understanding and analyzing corporate governance and stakeholder management. The reading also provides an introduction to environmental and social considerations in investing. The second reading covers capital budgeting. Capital budgeting is the process of making decisions about which long-term projects the corporation should accept for investment. The final reading introduces how to estimate a company's cost of capital.

READING ASSIGNMENTS

Reading 34	Corporate Governance and ESG: An Introduction by Assem Safieddine, PhD, Young Lee, CFA, Donna F. Anderson, CFA, and Deborah Kidd, CFA
Reading 35	Capital Budgeting by John D. Stowe, PhD, CFA, and Jacques R. Gagné, FSA, CFA, CIPM
Reading 36	Cost of Capital by Yves Courtois, CMT, CFA, Gene C. Lai, PhD, and Pamela Peterson Drake, PhD, CFA

LEARNING OUTCOMES

READING 34. CORPORATE GOVERNANCE AND ESG: AN INTRODUCTION

The candidate should be able to:

a describe corporate governance;

- **b** describe a company's stakeholder groups and compare interests of stakeholder groups;
- **c** describe principal–agent and other relationships in corporate governance and the conflicts that may arise in these relationships;
- **d** describe stakeholder management;
- **e** describe mechanisms to manage stakeholder relationships and mitigate associated risks;
- **f** describe functions and responsibilities of a company's board of directors and its committees;
- **g** describe market and non-market factors that can affect stakeholder relationships and corporate governance;
- **h** identify potential risks of poor corporate governance and stakeholder management and identify benefits from effective corporate governance and stakeholder management;
- **i** describe factors relevant to the analysis of corporate governance and stakeholder management;
- **j** describe environmental and social considerations in investment analysis;
- **k** describe how environmental, social, and governance factors may be used in investment analysis.

READING 35. CAPITAL BUDGETING

The candidate should be able to:

- **a** describe the capital budgeting process and distinguish among the various categories of capital projects;
- **b** describe the basic principles of capital budgeting;
- **c** explain how the evaluation and selection of capital projects is affected by mutually exclusive projects, project sequencing, and capital rationing;
- **d** calculate and interpret net present value (NPV), internal rate of return (IRR), payback period, discounted payback period, and profitability index (PI) of a single capital project;
- **e** explain the NPV profile, compare the NPV and IRR methods when evaluating independent and mutually exclusive projects, and describe the problems associated with each of the evaluation methods;
- **f** describe expected relations among an investment's NPV, company value, and share price.

READING 36. COST OF CAPITAL

The candidate should be able to:

- **a** calculate and interpret the weighted average cost of capital (WACC) of a company;
- **b** describe how taxes affect the cost of capital from different capital sources;
- **c** describe the use of target capital structure in estimating WACC and how target capital structure weights may be determined;
- **d** explain how the marginal cost of capital and the investment opportunity schedule are used to determine the optimal capital budget;

e explain the marginal cost of capital's role in determining the net present value of a project;

f calculate and interpret the cost of debt capital using the yield-to-maturity approach and the debt-rating approach;

g calculate and interpret the cost of noncallable, nonconvertible preferred stock;

h calculate and interpret the cost of equity capital using the capital asset pricing model approach, the dividend discount model approach, and the bond-yield-plus risk-premium approach;

i calculate and interpret the beta and cost of capital for a project;

j describe uses of country risk premiums in estimating the cost of equity;

k describe the marginal cost of capital schedule, explain why it may be upward-sloping with respect to additional capital, and calculate and interpret its break-points;

l explain and demonstrate the correct treatment of flotation costs.

STUDY SESSION

11

Corporate Finance

Leverage, Dividends and Share Repurchases, and Working Capital Management

This study session covers how companies measure leverage, distribute earnings, and manage working capital. The first reading discusses the various forms and measures of leverage and how leverage affects a company's earnings and financial ratios. The second reading provides an introduction to earnings distribution policies, including dividends and share repurchases. The final reading discusses short-term liquidity and working capital management.

READING ASSIGNMENTS

Reading 37	Measures of Leverage by Pamela Peterson Drake, PhD, CFA, Raj Aggarwal, PhD, CFA, Cynthia Harrington, CFA, and Adam Kobor, CFA
Reading 38	Dividends and Share Repurchases: Basics by George H. Troughton, PhD, CFA, and Gregory Noronha, PhD, CFA
Reading 39	Working Capital Management by Edgar A. Norton, Jr., PhD, CFA, Kenneth L. Parkinson, MBA, CCM, and Pamela Peterson Drake, PhD, CFA

LEARNING OUTCOMES

READING 37. MEASURES OF LEVERAGE

The candidate should be able to:

a define and explain leverage, business risk, sales risk, operating risk, and financial risk and classify a risk;

b calculate and interpret the degree of operating leverage, the degree of financial leverage, and the degree of total leverage;

c analyze the effect of financial leverage on a company's net income and return on equity;

d calculate the breakeven quantity of sales and determine the company's net income at various sales levels;

e calculate and interpret the operating breakeven quantity of sales.

READING 38. DIVIDENDS AND SHARE REPURCHASES: BASICS

The candidate should be able to:

a describe regular cash dividends, extra dividends, liquidating dividends, stock dividends, stock splits, and reverse stock splits, including their expected effect on shareholders' wealth and a company's financial ratios;

b describe dividend payment chronology, including the significance of declaration, holder-of-record, ex-dividend, and payment dates;

c compare share repurchase methods;

d calculate and compare the effect of a share repurchase on earnings per share when 1) the repurchase is financed with the company's excess cash and 2) the company uses debt to finance the repurchase;

e calculate the effect of a share repurchase on book value per share;

f explain why a cash dividend and a share repurchase of the same amount are equivalent in terms of the effect on shareholders' wealth, all else being equal.

READING 39. WORKING CAPITAL MANAGEMENT

The candidate should be able to:

a describe primary and secondary sources of liquidity and factors that influence a company's liquidity position;

b compare a company's liquidity measures with those of peer companies;

c evaluate working capital effectiveness of a company based on its operating and cash conversion cycles and compare the company's effectiveness with that of peer companies;

d describe how different types of cash flows affect a company's net daily cash position;

e calculate and interpret comparable yields on various securities, compare portfolio returns against a standard benchmark, and evaluate a company's short-term investment policy guidelines;

f evaluate a company's management of accounts receivable, inventory, and accounts payable over time and compared to peer companies;

g evaluate the choices of short-term funding available to a company and recommend a financing method.

STUDY SESSION

12

Portfolio Management

This study session provides the critical framework and context for subsequent Level I study sessions covering equities, fixed income, derivatives, and alternative investments. Furthermore, this study session also provides a basis for the coverage of portfolio management at Levels II and III.

The first reading introduces the concept of a portfolio approach to investments. After discussing the investment needs of various types of individual and institutional investors, the reading compares the types of pooled investment management products that are available to investors. The second reading introduces risk management, including a risk management framework and sources of risk. The following two readings cover portfolio risk and return measures and introduce modern portfolio theory—a quantitative framework for portfolio selection and asset pricing. The last reading focuses on the portfolio planning and construction process, including the development of an investment policy statement.

READING ASSIGNMENTS

Reading 40	Portfolio Management: An Overview by Robert M. Conroy, DBA, CFA, and Alistair Byrne, PhD, CFA
Reading 41	Risk Management: An Introduction by Don M. Chance, PhD, CFA, and Michael E. Edleson, PhD, CFA
Reading 42	Portfolio Risk and Return: Part I by Vijay Singal, CFA

(continued)

Reading 43	Portfolio Risk and Return: Part II by Vijay Singal, CFA
Reading 44	Basics of Portfolio Planning and Construction by Alistair Byrne, PhD, CFA, and Frank E. Smudde, CFA

LEARNING OUTCOMES

READING 40. PORTFOLIO MANAGEMENT: AN OVERVIEW

The candidate should be able to:

a describe the portfolio approach to investing;

b describe types of investors and distinctive characteristics and needs of each;

c describe defined contribution and defined benefit pension plans;

d describe the steps in the portfolio management process;

e describe mutual funds and compare them with other pooled investment products.

READING 41. RISK MANAGEMENT: AN INTRODUCTION

The candidate should be able to:

a define risk management;

b describe features of a risk management framework;

c define risk governance and describe elements of effective risk governance;

d explain how risk tolerance affects risk management;

e describe risk budgeting and its role in risk governance;

f identify financial and non-financial sources of risk and describe how they may interact;

g describe methods for measuring and modifying risk exposures and factors to consider in choosing among the methods.

READING 42. PORTFOLIO RISK AND RETURN: PART I

The candidate should be able to:

a calculate and interpret major return measures and describe their appropriate uses;

b describe characteristics of the major asset classes that investors consider in forming portfolios;

c calculate and interpret the mean, variance, and covariance (or correlation) of asset returns based on historical data;

d explain risk aversion and its implications for portfolio selection;

e calculate and interpret portfolio standard deviation;

f describe the effect on a portfolio's risk of investing in assets that are less than perfectly correlated;

- **g** describe and interpret the minimum-variance and efficient frontiers of risky assets and the global minimum-variance portfolio;
- **h** explain the selection of an optimal portfolio, given an investor's utility (or risk aversion) and the capital allocation line.

READING 43. PORTFOLIO RISK AND RETURN: PART II

The candidate should be able to:

- **a** describe the implications of combining a risk-free asset with a portfolio of risky assets;
- **b** explain the capital allocation line (CAL) and the capital market line (CML);
- **c** explain systematic and nonsystematic risk, including why an investor should not expect to receive additional return for bearing nonsystematic risk;
- **d** explain return generating models (including the market model) and their uses;
- **e** calculate and interpret beta;
- **f** explain the capital asset pricing model (CAPM), including its assumptions, and the security market line (SML);
- **g** calculate and interpret the expected return of an asset using the CAPM;
- **h** describe and demonstrate applications of the CAPM and the SML.

READING 44. BASICS OF PORTFOLIO PLANNING AND CONSTRUCTION

The candidate should be able to:

- **a** describe the reasons for a written investment policy statement (IPS);
- **b** describe the major components of an IPS;
- **c** describe risk and return objectives and how they may be developed for a client;
- **d** distinguish between the willingness and the ability (capacity) to take risk in analyzing an investor's financial risk tolerance;
- **e** describe the investment constraints of liquidity, time horizon, tax concerns, legal and regulatory factors, and unique circumstances and their implications for the choice of portfolio assets;
- **f** explain the specification of asset classes in relation to asset allocation;
- **g** describe the principles of portfolio construction and the role of asset allocation in relation to the IPS.

STUDY SESSION

13

Equity

Market Organization, Market Indices, and Market Efficiency

This study session explains important characteristics of the markets in which equities, fixed-income instruments, derivatives, and alternative investments trade. The reading on market organization and structure describes market classifications, types of assets and market participants, and how assets are traded. The reading on security market indices explains how indices are constructed, managed, and used in investments. The reading on market efficiency discusses the degree to which market prices reflect information. It also explains implications of different degrees of market efficiency for security analysis and portfolio management.

READING ASSIGNMENTS

Reading 45	Market Organization and Structure by Larry Harris, PhD, CFA
Reading 46	Security Market Indices by Paul D. Kaplan, PhD, CFA, and Dorothy C. Kelly, CFA
Reading 47	Market Efficiency by W. Sean Cleary, PhD, CFA, Howard J. Atkinson, CIMA, ICD.D, CFA, and Pamela Peterson Drake, PhD, CFA

LEARNING OUTCOMES

READING 45. MARKET ORGANIZATION AND STRUCTURE

The candidate should be able to:

a explain the main functions of the financial system;

- **b** describe classifications of assets and markets;
- **c** describe the major types of securities, currencies, contracts, commodities, and real assets that trade in organized markets, including their distinguishing characteristics and major subtypes;
- **d** describe types of financial intermediaries and services that they provide;
- **e** compare positions an investor can take in an asset;
- **f** calculate and interpret the leverage ratio, the rate of return on a margin transaction, and the security price at which the investor would receive a margin call;
- **g** compare execution, validity, and clearing instructions;
- **h** compare market orders with limit orders;
- **i** define primary and secondary markets and explain how secondary markets support primary markets;
- **j** describe how securities, contracts, and currencies are traded in quote-driven, order-driven, and brokered markets;
- **k** describe characteristics of a well-functioning financial system;
- **l** describe objectives of market regulation.

READING 46. SECURITY MARKET INDICES

The candidate should be able to:

- **a** describe a security market index;
- **b** calculate and interpret the value, price return, and total return of an index;
- **c** describe the choices and issues in index construction and management;
- **d** compare the different weighting methods used in index construction;
- **e** calculate and analyze the value and return of an index given its weighting method;
- **f** describe rebalancing and reconstitution of an index;
- **g** describe uses of security market indices;
- **h** describe types of equity indices;
- **i** describe types of fixed-income indices;
- **j** describe indices representing alternative investments;
- **k** compare types of security market indices.

READING 47. MARKET EFFICIENCY

The candidate should be able to:

- **a** describe market efficiency and related concepts, including their importance to investment practitioners;
- **b** distinguish between market value and intrinsic value;
- **c** explain factors that affect a market's efficiency;
- **d** contrast weak-form, semi-strong-form, and strong-form market efficiency;
- **e** explain the implications of each form of market efficiency for fundamental analysis, technical analysis, and the choice between active and passive portfolio management;

f describe market anomalies;

g describe behavioral finance and its potential relevance to understanding market anomalies.

STUDY SESSION

14

Equity Analysis and Valuation

This study session focuses on the characteristics, analysis, and valuation of equity securities. The first reading discusses various types and features of equity securities and their roles in investment management. The second reading explains how to conduct industry and company analyses; the reading's major focus is on understating a company's competitive position. The first two readings constitute necessary background knowledge for the third reading, which introduces the subject of equity valuation.

READING ASSIGNMENTS

Reading 48	Overview of Equity Securities by Ryan C. Fuhrmann, CFA, and Asjeet S. Lamba, PhD, CFA
Reading 49	Introduction to Industry and Company Analysis by Patrick W. Dorsey, CFA, Anthony M. Fiore, CFA, and Ian Rossa O'Reilly, CFA
Reading 50	Equity Valuation: Concepts and Basic Tools by John J. Nagorniak, CFA, and Stephen E. Wilcox, PhD, CFA

LEARNING OUTCOMES

READING 48. OVERVIEW OF EQUITY SECURITIES

The candidate should be able to:

a describe characteristics of types of equity securities;

b describe differences in voting rights and other ownership characteristics among different equity classes;

- **c** distinguish between public and private equity securities;
- **d** describe methods for investing in non-domestic equity securities;
- **e** compare the risk and return characteristics of different types of equity securities;
- **f** explain the role of equity securities in the financing of a company's assets;
- **g** distinguish between the market value and book value of equity securities;
- **h** compare a company's cost of equity, its (accounting) return on equity, and investors' required rates of return.

READING 49. INTRODUCTION TO INDUSTRY AND COMPANY ANALYSIS

The candidate should be able to:

- **a** explain uses of industry analysis and the relation of industry analysis to company analysis;
- **b** compare methods by which companies can be grouped, current industry classification systems, and classify a company, given a description of its activities and the classification system;
- **c** explain the factors that affect the sensitivity of a company to the business cycle and the uses and limitations of industry and company descriptors such as "growth," "defensive," and "cyclical";
- **d** explain how a company's industry classification can be used to identify a potential "peer group" for equity valuation;
- **e** describe the elements that need to be covered in a thorough industry analysis;
- **f** describe the principles of strategic analysis of an industry;
- **g** explain the effects of barriers to entry, industry concentration, industry capacity, and market share stability on pricing power and price competition;
- **h** describe industry life cycle models, classify an industry as to life cycle stage, and describe limitations of the life-cycle concept in forecasting industry performance;
- **i** compare characteristics of representative industries from the various economic sectors;
- **j** describe macroeconomic, technological, demographic, governmental, and social influences on industry growth, profitability, and risk;
- **k** describe the elements that should be covered in a thorough company analysis.

READING 50. EQUITY VALUATION: CONCEPTS AND BASIC TOOLS

The candidate should be able to:

- **a** evaluate whether a security, given its current market price and a value estimate, is overvalued, fairly valued, or undervalued by the market;
- **b** describe major categories of equity valuation models;
- **c** explain the rationale for using present value models to value equity and describe the dividend discount and free-cash-flow-to-equity models;
- **d** calculate the intrinsic value of a non-callable, non-convertible preferred stock;

- **e** calculate and interpret the intrinsic value of an equity security based on the Gordon (constant) growth dividend discount model or a two-stage dividend discount model, as appropriate;
- **f** identify characteristics of companies for which the constant growth or a multi-stage dividend discount model is appropriate;
- **g** explain the rationale for using price multiples to value equity, how the price to earnings multiple relates to fundamentals, and the use of multiples based on comparables;
- **h** calculate and interpret the following multiples: price to earnings, price to an estimate of operating cash flow, price to sales, and price to book value;
- **i** describe enterprise value multiples and their use in estimating equity value;
- **j** describe asset-based valuation models and their use in estimating equity value;
- **k** explain advantages and disadvantages of each category of valuation model.

STUDY SESSION

15

Fixed Income

Basic Concepts

This study session presents the fundamentals of fixed-income investments. Fixed income is one of the largest segments of global financial markets. The first reading introduces elements that define and characterize fixed-income securities. The second reading describes the primary issuers, sectors, and types of bonds. The third reading introduces calculation and interpretation of prices, yields, and spreads for fixed-income securities; market conventions for price/yield calculations and quotations; and spot rates, forward rates, and alternative definitions of a yield curve. The fourth reading focuses on securitization and describes types, characteristics, and risks of asset-backed securities.

READING ASSIGNMENTS

Reading 51	Fixed-Income Securities: Defining Elements by Moorad Choudhry, PhD, FCSI, FIFS, and Stephen E. Wilcox, PhD, CFA
Reading 52	Fixed-Income Markets: Issuance, Trading, and Funding by Moorad Choudhry, PhD, FCSI, FIFS, Steven V. Mann, PhD, and Lavone F. Whitmer, CFA
Reading 53	Introduction to Fixed-Income Valuation by James F. Adams, PhD, CFA, and Donald J. Smith, PhD
Reading 54	Introduction to Asset-Backed Securities by Frank J. Fabozzi, PhD, CPA, CFA

LEARNING OUTCOMES

READING 51. FIXED-INCOME SECURITIES: DEFINING ELEMENTS

The candidate should be able to:

- **a** describe basic features of a fixed-income security;
- **b** describe content of a bond indenture;
- **c** compare affirmative and negative covenants and identify examples of each;
- **d** describe how legal, regulatory, and tax considerations affect the issuance and trading of fixed-income securities;
- **e** describe how cash flows of fixed-income securities are structured;
- **f** describe contingency provisions affecting the timing and/or nature of cash flows of fixed-income securities and identify whether such provisions benefit the borrower or the lender.

READING 52. FIXED-INCOME MARKETS: ISSUANCE, TRADING, AND FUNDING

The candidate should be able to:

- **a** describe classifications of global fixed-income markets;
- **b** describe the use of interbank offered rates as reference rates in floating-rate debt;
- **c** describe mechanisms available for issuing bonds in primary markets;
- **d** describe secondary markets for bonds;
- **e** describe securities issued by sovereign governments;
- **f** describe securities issued by non-sovereign governments, quasi-government entities, and supranational agencies;
- **g** describe types of debt issued by corporations;
- **h** describe short-term funding alternatives available to banks;
- **i** describe repurchase agreements (repos) and the risks associated with them.

READING 53. INTRODUCTION TO FIXED-INCOME VALUATION

The candidate should be able to:

- **a** calculate a bond's price given a market discount rate;
- **b** identify the relationships among a bond's price, coupon rate, maturity, and market discount rate (yield-to-maturity);
- **c** define spot rates and calculate the price of a bond using spot rates;
- **d** describe and calculate the flat price, accrued interest, and the full price of a bond;
- **e** describe matrix pricing;
- **f** calculate and interpret yield measures for fixed-rate bonds, floating-rate notes, and money market instruments;
- **g** define and compare the spot curve, yield curve on coupon bonds, par curve, and forward curve;

h define forward rates and calculate spot rates from forward rates, forward rates from spot rates, and the price of a bond using forward rates;

i compare, calculate, and interpret yield spread measures.

READING 54. INTRODUCTION TO ASSET-BACKED SECURITIES

The candidate should be able to:

a explain benefits of securitization for economies and financial markets;

b describe securitization, including the parties involved in the process and the roles they play;

c describe typical structures of securitizations, including credit tranching and time tranching;

d describe types and characteristics of residential mortgage loans that are typically securitized;

e describe types and characteristics of residential mortgage-backed securities, including mortgage pass-through securities and collateralized mortgage obligations, and explain the cash flows and risks for each type;

f define prepayment risk and describe the prepayment risk of mortgage-backed securities;

g describe characteristics and risks of commercial mortgage-backed securities;

h describe types and characteristics of non-mortgage asset-backed securities, including the cash flows and risks of each type;

i describe collateralized debt obligations, including their cash flows and risks.

STUDY SESSION

16

Fixed Income

Analysis of Risk

This study session focuses on the analysis risks associated with fixed-income securities; emphasis is on interest rate and credit risks. The first reading describes the sources of return on fixed-income securities and measures and analysis of interest rate risk. The second reading introduces measures and analysis of credit risk of fixed-income securities.

READING ASSIGNMENTS

Reading 55	Understanding Fixed-Income Risk and Return by James F. Adams, PhD, CFA, and Donald J. Smith, PhD
Reading 56	Fundamentals of Credit Analysis by Christopher L. Gootkind, CFA

LEARNING OUTCOMES

READING 55. UNDERSTANDING FIXED-INCOME RISK AND RETURN

The candidate should be able to:

a calculate and interpret the sources of return from investing in a fixed-rate bond;

b define, calculate, and interpret Macaulay, modified, and effective durations;

c explain why effective duration is the most appropriate measure of interest rate risk for bonds with embedded options;

d define key rate duration and describe the use of key rate durations in measuring the sensitivity of bonds to changes in the shape of the benchmark yield curve;

- **e** explain how a bond's maturity, coupon, and yield level affect its interest rate risk;
- **f** calculate the duration of a portfolio and explain the limitations of portfolio duration;
- **g** calculate and interpret the money duration of a bond and price value of a basis point (PVBP);
- **h** calculate and interpret approximate convexity and distinguish between approximate and effective convexity;
- **i** estimate the percentage price change of a bond for a specified change in yield, given the bond's approximate duration and convexity;
- **j** describe how the term structure of yield volatility affects the interest rate risk of a bond;
- **k** describe the relationships among a bond's holding period return, its duration, and the investment horizon;
- **l** explain how changes in credit spread and liquidity affect yield-to-maturity of a bond and how duration and convexity can be used to estimate the price effect of the changes.

READING 56. FUNDAMENTALS OF CREDIT ANALYSIS

The candidate should be able to:

- **a** describe credit risk and credit-related risks affecting corporate bonds;
- **b** describe default probability and loss severity as components of credit risk;
- **c** describe seniority rankings of corporate debt and explain the potential violation of the priority of claims in a bankruptcy proceeding;
- **d** distinguish between corporate issuer credit ratings and issue credit ratings and describe the rating agency practice of "notching";
- **e** explain risks in relying on ratings from credit rating agencies;
- **f** explain the four Cs (Capacity, Collateral, Covenants, and Character) of traditional credit analysis;
- **g** calculate and interpret financial ratios used in credit analysis;
- **h** evaluate the credit quality of a corporate bond issuer and a bond of that issuer, given key financial ratios of the issuer and the industry;
- **i** describe factors that influence the level and volatility of yield spreads;
- **j** explain special considerations when evaluating the credit of high yield, sovereign, and non-sovereign government debt issuers and issues.

STUDY SESSION

17

Derivatives

Derivatives—financial instruments that derive their value from the value of some underlying asset—have become increasingly important and fundamental in effectively managing financial risk and creating synthetic exposures to asset classes. As in other security markets, arbitrage and market efficiency play a critical role in establishing prices.

This study session builds the conceptual framework for understanding the basic derivatives (forwards, futures, options, and swaps), derivative markets, and the use of options in risk management.

READING ASSIGNMENTS

Reading 57	Derivative Markets and Instruments by Don M. Chance, PhD, CFA
Reading 58	Basics of Derivative Pricing and Valuation by Don M. Chance, PhD, CFA
Reading 59	Risk Management Applications of Option Strategies by Don M. Chance, PhD, CFA

LEARNING OUTCOMES

READING 57. DERIVATIVE MARKETS AND INSTRUMENTS

The candidate should be able to:

a define a derivative and distinguish between exchange-traded and over-the-counter derivatives;

b contrast forward commitments with contingent claims;

- **c** define forward contracts, futures contracts, options (calls and puts), swaps, and credit derivatives and compare their basic characteristics;
- **d** describe purposes of, and controversies related to, derivative markets;
- **e** explain arbitrage and the role it plays in determining prices and promoting market efficiency.

READING 58. BASICS OF DERIVATIVE PRICING AND VALUATION

The candidate should be able to:

- **a** explain how the concepts of arbitrage, replication, and risk neutrality are used in pricing derivatives;
- **b** distinguish between value and price of forward and futures contracts;
- **c** explain how the value and price of a forward contract are determined at expiration, during the life of the contract, and at initiation;
- **d** describe monetary and nonmonetary benefits and costs associated with holding the underlying asset and explain how they affect the value and price of a forward contract;
- **e** define a forward rate agreement and describe its uses;
- **f** explain why forward and futures prices differ;
- **g** explain how swap contracts are similar to but different from a series of forward contracts;
- **h** distinguish between the value and price of swaps;
- **i** explain how the value of a European option is determined at expiration;
- **j** explain the exercise value, time value, and moneyness of an option;
- **k** identify the factors that determine the value of an option and explain how each factor affects the value of an option;
- **l** explain put–call parity for European options;
- **m** explain put–call–forward parity for European options;
- **n** explain how the value of an option is determined using a one-period binomial model;
- **o** explain under which circumstances the values of European and American options differ.

READING 59. RISK MANAGEMENT APPLICATIONS OF OPTION STRATEGIES

The candidate should be able to:

- **a** determine the value at expiration, the profit, maximum profit, maximum loss, breakeven underlying price at expiration, and payoff graph of the strategies of buying and selling calls and puts and determine the potential outcomes for investors using these strategies;
- **b** determine the value at expiration, profit, maximum profit, maximum loss, breakeven underlying price at expiration, and payoff graph of a covered call strategy and a protective put strategy, and explain the risk management application of each strategy.

STUDY SESSION

18

Alternative Investments

Investors are increasingly turning to alternative investments seeking diversification benefits and higher returns. This study session describes the common types of alternative investments, their valuation, their unique risks and opportunities, and their relation to traditional investments.

Although defining "alternative investments" is difficult, certain features (e.g., limited liquidity and specialized legal structures) are typically associated with alternative investments. This study session describes features of alternative investments and their effects on investment decisions. The study session provides an overview of major categories of alternative investments, including hedge funds, private equity, real estate, commodities, and infrastructure.

READING ASSIGNMENTS

Reading 60	Introduction to Alternative Investments by Terri Duhon, George Spentzos, CFA, FSIP, and Scott D. Stewart, CFA

LEARNING OUTCOMES

READING 60. INTRODUCTION TO ALTERNATIVE INVESTMENTS

The candidate should be able to:

a compare alternative investments with traditional investments;

b describe categories of alternative investments;

c describe potential benefits of alternative investments in the context of portfolio management;

d describe hedge funds, private equity, real estate, commodities, infrastructure, and other alternative investments, including, as applicable, strategies, sub-categories, potential benefits and risks, fee structures, and due diligence;

e describe, calculate, and interpret management and incentive fees and net-of-fees returns to hedge funds;

f describe issues in valuing and calculating returns on hedge funds, private equity, real estate, commodities, and infrastructure;

g describe risk management of alternative investments.