

STUDY SESSION

1

Ethical and Professional Standards

The readings in this study session present a framework for ethical conduct in the investment profession by focusing on the CFA Institute Code of Ethics and Standards of Professional Conduct (the Code and Standards) as well as the CFA Institute Soft Dollar Standards and the CFA Institute Research Objectivity Standards.

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. A clear understanding of the CFA Institute Code of Ethics and Standards of Professional Conduct (both found in the *Handbook*) should allow the practitioner to identify and appropriately resolve ethical conflicts. The resulting recognition for integrity should benefit both the individual and the profession. “Guidance” in the *Handbook* addresses the practical application of the Code of Ethics and Standards of Professional Conduct. The guidance reviews the purpose and scope of each Standard, presents recommended procedures for compliance, and provides examples of the Standard in practice.

The CFA Institute Soft Dollar Standards and CFA Institute Research Objectivity Standards address contemporary issues for which CFA Institute has believed further, more specific guidance is warranted. Both documents are consistent with and complement the CFA Institute Code of Ethics and Standards of Professional Conduct.

Soft-dollar payment arrangements, involving the investment manager’s use of client brokerage to obtain services related to the manager’s investment decision-making process, have become extremely complex. As a consequence, ethically ambiguous situations can arise in which it is not immediately clear that the manager remains in compliance with the obligation, under the CFA Institute Code of Ethics, to place client interests ahead of personal or firm interests. The Soft Dollar Standards provide guidance on what services and products are appropriate for purchase with client brokerage, the appropriate disclosure of soft-dollar practices, and the necessary record keeping.

Investment research objectivity should be the logical consequence of ethical conduct, consistent with the CFA Institute Code of Ethics and Standards of Professional Conduct, in which client interests are placed first and conflicts of interest are fully

disclosed. When temptation or pressure leads to biased or misleading research reports, the integrity of all financial professionals is tainted. The CFA Institute Research Objectivity Standards present specific policies and procedures designed to create a research environment in which conflicts of interests and opportunities for ethical lapses are minimized and disclosed.

READING ASSIGNMENTS

Reading 1	Code of Ethics and Standards of Professional Conduct <i>Standards of Practice Handbook</i> , Tenth Edition
Reading 2	Guidance for Standards I–VII <i>Standards of Practice Handbook</i> , Tenth Edition
Reading 3	CFA Institute Soft Dollar Standards <i>CFA Institute Soft Dollar Standards</i>
Reading 4	CFA Institute Research Objectivity Standards

LEARNING OUTCOMES

READING 1. CODE OF ETHICS AND STANDARDS OF PROFESSIONAL CONDUCT

The candidate should be able to:

- a** describe the six components of the Code of Ethics and the seven Standards of Professional Conduct;
- b** explain the ethical responsibilities required of CFA Institute members and candidates in the CFA Program by the Code and Standards.

READING 2. GUIDANCE FOR STANDARDS I–VII

The candidate should be able to:

- a** demonstrate a thorough knowledge of the Code of Ethics and Standards of Professional Conduct by applying the Code and Standards to specific situations;
- b** recommend practices and procedures designed to prevent violations of the Code of Ethics and Standards of Professional Conduct.

READING 3. CFA INSTITUTE SOFT DOLLAR STANDARDS

The candidate should be able to:

- a** define soft-dollar arrangements, and state the general principles of the Soft Dollar Standards;
- b** evaluate company soft-dollar practices and policies;
- c** determine whether a product or service qualifies as “permissible research” that can be purchased with client brokerage.

READING 4. CFA INSTITUTE RESEARCH OBJECTIVITY STANDARDS

The candidate should be able to:

- a** explain the objectives of the Research Objectivity Standards;
- b** evaluate company policies and practices related to research objectivity, and distinguish between changes required and changes recommended for compliance with the Research Objectivity Standards.

STUDY SESSION

2

Ethical and Professional Standards

Application

This study session uses case studies as an aid to understanding and internalizing the values and standards presented in the CFA Institute Code of Ethics and Standards of Professional Conduct.

The cases present realistic but fictional situations that closely approximate how individuals practicing in the investment industry encounter ethical issues in their day-to-day activities. The discussions following each case identify key violations of the Standards of Professional Conduct, recommend corrective actions, and, when appropriate, present policy statements a firm could use in seeking to prevent the violations. The *Standards Reporter* readings present regulatory actions taken in response to actual cases of violations and explain how the violations would be viewed from the perspective of the Code of Ethics and Standards of Professional Conduct.

Widespread recognition exists that certain situations create a relationship in which an elevated level of fidelity, due diligence, and prudence is required of the investment manager. Historically, the term “fiduciary” has been defined in country-specific laws and regulations, making generic definitions difficult. Nonetheless, the underlying principles of the prudent investor rule, presented in “Prudence in Perspective,” capture much of what is expected of investment professionals entrusted with the prudent management of client assets.

READING ASSIGNMENTS

Reading 5 The Glenarm Company
Ethics Cases

Reading 6 Preston Partners
Ethics Cases

- Reading 7** Super Selection
Ethics Cases
- Reading 8** Trade Allocation: Fair Dealing and Disclosure
Standards Reporter
- Reading 9** Changing Investment Objectives
Standards Reporter
- Reading 10** Prudence in Perspective
Investing and Managing Trusts under the New Prudent Investor Rule: A Guide for Trustees, Investment Advisors, and Lawyers,
by John Train and Thomas A. Melfe

LEARNING OUTCOMES

READING 5. THE GLENARM COMPANY

The candidate should be able to:

- a** evaluate the practices and policies presented;
- b** explain the appropriate action to take in response to conduct that violates the CFA Institute Code of Ethics and Standards of Professional Conduct.

READING 6. PRESTON PARTNERS

The candidate should be able to:

- a** evaluate the practices and policies presented;
- b** explain the appropriate action to take in response to conduct that violates the CFA Institute Code of Ethics and Standards of Professional Conduct.

READING 7. SUPER SELECTION

The candidate should be able to:

- a** evaluate the practices and policies presented;
- b** explain the appropriate action to take in response to conduct that violates the CFA Institute Code of Ethics and Standards of Professional Conduct.

READING 8. TRADE ALLOCATION: FAIR DEALING AND DISCLOSURE

The candidate should be able to:

- a** evaluate trade allocation practices, and determine whether they comply with the CFA Institute Standards of Professional Conduct addressing fair dealing and client loyalty;
- b** describe appropriate actions to take in response to trade allocation practices that do not adequately respect client interests.

READING 9. CHANGING INVESTMENT OBJECTIVES

The candidate should be able to:

- a** evaluate the disclosure of investment objectives and basic policies, and determine whether they comply with the CFA Institute Standards of Professional Conduct;
- b** describe appropriate actions needed to ensure adequate disclosure of the investment process.

READING 10. PRUDENCE IN PERSPECTIVE

The candidate should be able to:

- a** explain the basic principles of the new Prudent Investor Rule;
- b** explain general fiduciary standards to which a trustee must adhere;
- c** distinguish between the old Prudent Man Rule and the new Prudent Investor Rule;
- d** explain key factors that a trustee should consider when investing and managing trust assets.

Quantitative Methods for Valuation

This study session begins with a discussion of linear correlation and then focuses on linear regression, one of the most widely used statistical techniques in financial modeling. In addition to a discussion of building and interpreting multiple regression models, the readings present information about testing the significance of the estimated parameters and determining the validity of the assumed regression model. It is important to understand the assumptions behind the structure of regression models, to make corrections if the observed variables do not exhibit the assumed properties, and to avoid misspecification of the models.

Time-series analysis is used to describe the dynamic behavior of an economic or financial variable, to forecast its future values, and to detect relations between the time series of different variables. Indeed, regression models must be treated within a time-series context if the variables are measured over time. Regression reports for such models should include standard time-series tests to ensure that the results of the regression are interpreted correctly. In any application, the satisfaction of model assumptions and the consequences of model misspecification must be considered. In addition to covering the above topics, the reading addresses time-series properties, including stationarity and mean reversion, that are important in many investment contexts.

READING ASSIGNMENTS

- Reading 11** Correlation and Regression
Quantitative Methods for Investment Analysis, Second Edition,
by Richard A. DeFusco, CFA, Dennis W. McLeavey, CFA,
Jerald E. Pinto, CFA, and David E. Runkle, CFA
- Reading 12** Multiple Regression and Issues in Regression Analysis
Quantitative Methods for Investment Analysis, Second Edition,
by Richard A. DeFusco, CFA, Dennis W. McLeavey, CFA,
Jerald E. Pinto, CFA, and David E. Runkle, CFA
- Reading 13** Time-Series Analysis
Quantitative Methods for Investment Analysis, Second Edition,
by Richard A. DeFusco, CFA, Dennis W. McLeavey, CFA,
Jerald E. Pinto, CFA, and David E. Runkle, CFA

LEARNING OUTCOMES

READING 11. CORRELATION AND REGRESSION

The candidate should be able to:

- a** calculate and interpret a sample covariance and a sample correlation coefficient, and interpret a scatter plot;
- b** describe limitations to correlation analysis;
- 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** distinguish between the dependent and independent variables in a linear regression;
- e** describe the assumptions underlying linear regression, and interpret regression coefficients;
- f** calculate and interpret the standard error of estimate, the coefficient of determination, and a confidence interval for a regression coefficient;
- g** formulate a null and alternative hypothesis about a population value of a regression coefficient, and determine the appropriate test statistic and whether the null hypothesis is rejected at a given level of significance;
- h** calculate the predicted value for the dependent variable, given an estimated regression model and a value for the independent variable;
- i** calculate and interpret a confidence interval for the predicted value of the dependent variable;
- j** describe the use of analysis of variance (ANOVA) in regression analysis, interpret ANOVA results, and calculate and interpret the F -statistic;
- k** describe limitations of regression analysis.

READING 12. MULTIPLE REGRESSION AND ISSUES IN REGRESSION ANALYSIS

The candidate should be able to:

- a** formulate a multiple regression equation to describe the relation between a dependent variable and several independent variables, and determine the statistical significance of each independent variable;
- b** interpret estimated regression coefficients and their p -values;

- c formulate a null and an alternative hypothesis about the population value of a regression coefficient, calculate the value of the test statistic, and determine whether to reject the null hypothesis at a given level of significance;
- d interpret the results of hypothesis tests of regression coefficients;
- e calculate and interpret 1) a confidence interval for the population value of a regression coefficient and 2) a predicted value for the dependent variable, given an estimated regression model and assumed values for the independent variables;
- f explain the assumptions of a multiple regression model;
- g calculate and interpret the F -statistic, and describe how it is used in regression analysis;
- h distinguish between and interpret the R^2 and adjusted R^2 in multiple regression;
- i evaluate how well a regression model explains the dependent variable by analyzing the output of the regression equation and an ANOVA table;
- j formulate a multiple regression equation by using dummy variables to represent qualitative factors, and interpret the coefficients and regression results;
- k explain the types of heteroskedasticity and how heteroskedasticity and serial correlation affect statistical inference;
- l describe multicollinearity, and explain its causes and effects in regression analysis;
- m describe how model misspecification affects the results of a regression analysis, and describe how to avoid common forms of misspecification;
- n describe models with qualitative dependent variables;
- o evaluate and interpret a multiple regression model and its results.

READING 13. TIME-SERIES ANALYSIS

The candidate should be able to:

- a calculate and evaluate the predicted trend value for a time series, modeled as either a linear trend or a log-linear trend, given the estimated trend coefficients;
- b describe factors that determine whether a linear or a log-linear trend should be used with a particular time series, and evaluate limitations of trend models;
- c explain the requirement for a time series to be covariance stationary, and describe the significance of a series that is not stationary;
- d describe the structure of an autoregressive (AR) model of order p , and calculate one- and two-period-ahead forecasts given the estimated coefficients;
- e explain how autocorrelations of the residuals can be used to test whether the autoregressive model fits the time series;
- f explain mean reversion, and calculate a mean-reverting level;
- g contrast in-sample and out-of-sample forecasts, and compare the forecasting accuracy of different time-series models based on the root mean squared error criterion;
- h explain the instability of coefficients of time-series models;
- i describe characteristics of random walk processes, and contrast them to covariance stationary processes;
- j describe implications of unit roots for time-series analysis, explain when unit roots are likely to occur and how to test for them, and demonstrate how a time series with a unit root can be transformed so it can be analyzed with an AR model;

- k** describe the steps of the unit root test for nonstationarity, and explain the relation of the test to autoregressive time-series models;
- l** explain how to test and correct for seasonality in a time-series model, and calculate and interpret a forecasted value using an AR model with a seasonal lag;
- m** explain autoregressive conditional heteroskedasticity (ARCH), and describe how ARCH models can be applied to predict the variance of a time series;
- n** explain how time-series variables should be analyzed for nonstationarity and/or cointegration before use in a linear regression;
- o** determine an appropriate time-series model to analyze a given investment problem, and justify that choice.

STUDY SESSION

4

Economics for Valuation

This study session builds on the principles of economics from Level I and links them to the valuation process. The readings explain how the economic environment affects a firm's performance.

The first reading describes theories of exchange rate determination and how these can be used to forecast exchange rates. There are at least two reasons why these topics are important to investment analysts. First, analysts need to evaluate the currency risks faced by the companies they analyze. Most large companies do business internationally, so exchange rate fluctuations may affect their profitability and value. Second, most portfolios are directly exposed to the risk of exchange rate fluctuations. This reading lays a foundation for understanding management of a portfolio's currency risk.

The second reading describes factors affecting economic growth and how economic growth affects investment decisions and stock market appreciation. The final reading in the study session describes regulation, its purposes, and its potential effects on a company's operating environment. Understanding regulation is important for industry and company analysis.

READING ASSIGNMENTS

- Reading 14** Currency Exchange Rates: Determination and Forecasting
by Michael R. Rosenberg and William A. Barker, CFA
- Reading 15** Economic Growth and the Investment Decision
by Paul Kutasovic, CFA
- Reading 16** Economics of Regulation
by Chester S. Spatt

LEARNING OUTCOMES**READING 14. CURRENCY EXCHANGE RATES: DETERMINATION AND FORECASTING**

The candidate should be able to:

- a** calculate and interpret the bid–ask spread on a spot or forward foreign currency quotation and describe the factors that affect the bid–offer spread;
- b** identify a triangular arbitrage opportunity, and calculate its profit, given the bid–offer quotations for three currencies;
- c** distinguish between spot and forward rates and calculate the forward premium/discount for a given currency;
- d** calculate the mark-to-market value of a forward contract;
- e** explain international parity relations (covered and uncovered interest rate parity, purchasing power parity, and the international Fisher effect);
- f** describe relations among the international parity conditions;
- g** evaluate the use of the current spot rate, the forward rate, purchasing power parity, and uncovered interest parity to forecast future spot exchange rates;
- h** explain approaches to assessing the long-run fair value of an exchange rate;
- i** describe the carry trade and its relation to uncovered interest rate parity and calculate the profit from a carry trade;
- j** explain how flows in the balance of payment accounts affect currency exchange rates;
- k** describe the Mundell–Fleming model, the monetary approach, and the asset market (portfolio balance) approach to exchange rate determination;
- l** forecast the direction of the expected change in an exchange rate based on balance of payment, Mundell–Fleming, monetary, and asset market approaches to exchange rate determination;
- m** explain the potential effects of monetary and fiscal policy on exchange rates;
- n** describe objectives of central bank intervention and capital controls and describe the effectiveness of intervention and capital controls;
- o** describe warning signs of a currency crisis;
- p** describe uses of technical analysis in forecasting exchange rates.

READING 15. ECONOMIC GROWTH AND THE INVESTMENT DECISION

The candidate should be able to:

- a** compare factors favoring and limiting economic growth in developed and developing economies;
- b** describe the relation between the long-run rate of stock market appreciation and the sustainable growth rate of the economy;
- c** explain why potential GDP and its growth rate matter for equity and fixed income investors;
- d** distinguish between capital deepening investment and technological progress and explain how each affects economic growth and labor productivity;
- e** forecast potential GDP based on growth accounting relations;
- f** explain how natural resources affect economic growth and evaluate the argument that limited availability of natural resources constrains economic growth;

- g** explain how demographics, immigration, and labor force participation affect the rate and sustainability of economic growth;
- h** explain how investment in physical capital, human capital, and technological development affects economic growth;
- i** compare classical growth theory, neoclassical growth theory, and endogenous growth theory;
- j** explain and evaluate convergence hypotheses;
- k** describe the economic rationale for governments to provide incentives to private investment in technology and knowledge;
- l** describe the expected impact of removing trade barriers on capital investment and profits, employment and wages, and growth in the economies involved.

READING 16. ECONOMICS OF REGULATION

The candidate should be able to:

- a** describe classifications of regulations and regulators;
- b** describe uses of self-regulation in financial markets;
- c** describe the economic rationale for regulatory intervention;
- d** describe regulatory interdependencies and their effects;
- e** describe tools of regulatory intervention in markets;
- f** explain purposes in regulating commerce and financial markets;
- g** describe anticompetitive behaviors targeted by antitrust laws globally and evaluate the antitrust risk associated with a given business strategy;
- h** describe benefits and costs of regulation;
- i** evaluate how a specific regulation affects an industry, company, or security.

Financial Reporting and Analysis

Inventories and Long-lived Assets

The readings in this study session focus on the effects that different accounting methods can have on financial statements and ratios. Comparing the performance of companies is challenging due to a variety of allowable accounting choices. Analysts must identify and understand the accounting differences and make appropriate adjustments to reported financial statements to achieve comparability.

If inventory prices levels change over time, the choice of inventory valuation method affects a company's financial statements and ratios. Analysts must know the various effects of inventory valuation methods, and be able to compare financial statements prepared using the same or different methods.

Analysts also must understand how 1) capitalizing versus expensing costs, 2) the choice of depreciation method, 3) asset impairment and revaluation, 4) leasing versus purchasing an asset, and 5) recording a lease as a finance lease versus an operating lease affect financial statements and ratios.

READING ASSIGNMENTS

- Reading 17** Inventories: Implications for Financial Statements and Ratios
by Michael A. Broihahn, CFA
- Reading 18** Long-lived Assets: Implications for Financial Statements and Ratios
by Elaine Henry, CFA, and Elizabeth A. Gordon

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 17. INVENTORIES: IMPLICATIONS FOR FINANCIAL STATEMENTS AND RATIOS**

The candidate should be able to:

- a** calculate and explain how inflation and deflation of inventory costs affects the financial statements and ratios of companies that use different inventory valuation methods;
- b** explain LIFO reserve and LIFO liquidation and their effects on financial statements and ratios;
- c** convert a company's reported financial statements from LIFO to FIFO for purposes of comparison;
- d** describe the implications of valuing inventory at net realisable value for financial statements and ratios;
- e** analyze and compare the financial statements and ratios of companies, including those that use different inventory valuation methods;
- f** explain issues that analysts should consider when examining a company's inventory disclosures and other sources of information.

READING 18. LONG-LIVED ASSETS: IMPLICATIONS FOR FINANCIAL STATEMENTS AND RATIOS

The candidate should be able to:

- a** explain and evaluate how capitalising versus expensing costs in the period in which they are incurred affects financial statements and ratios;
- b** explain and evaluate how the different depreciation methods for property, plant, and equipment affect financial statements and ratios;
- c** explain and evaluate how impairment and revaluation of property, plant, and equipment, and intangible assets affect financial statements and ratios;
- d** analyze and interpret financial statement disclosures regarding long-lived assets;
- e** explain and evaluate how leasing assets instead of purchasing them affects financial statements and ratios;
- f** explain and evaluate how finance leases and operating leases affect financial statements and ratios from the perspective of both the lessor and the lessee.

Financial Reporting and Analysis

Intercorporate Investments, Post-Employment and Share- Based Compensation, and Multinational Operations

Intercorporate investments receive different accounting treatments depending on the percentage ownership, amount of control, and other variables that define the relation between the company making the investment (the investor) and the investee. An analysis of intercorporate investments is necessary to separate operating performance from investing performance and to understand the potential accounting distortions that arise as a result of accounting standards and/or earnings management.

Mergers and acquisitions can be an important strategic consideration that affects financial statements and ratios. The accounting standards that govern business combinations are the result of a joint project between the IASB and the FASB. IFRS and U.S. GAAP require the use of the acquisition method. The structure and scope of business combinations create comparability challenges because the financial statements of the acquiring company may be radically changed. An analyst must understand how business combinations, including full consolidation and proportionate consolidation, affect the comparability of financial statements and ratios.

IFRS and U.S. GAAP require the reporting of net obligations (or net assets) for pensions and other post-employment benefits on the balance sheet. IFRS and U.S. GAAP may differ in their treatment of periodic pension costs and reporting of pension expenses. Analysts must also understand how the accounting treatment of employee stock options affects financial statements.

Multinational companies often have subsidiaries in different countries that maintain their books and records in currencies different from that of the parent company. Floating exchange rates present an additional challenge. Foreign currency transactions and translations in a parent company's financial statements must be analyzed to evaluate a company's performance and financial position.

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.

READING ASSIGNMENTS

- Reading 19** Intercorporate Investments
by Susan Perry Williams
- Reading 20** Employee Compensation: Post-Employment and Share-Based
by Elaine Henry, CFA, and Elizabeth A. Gordon
- Reading 21** Multinational Operations
International Financial Statement Analysis, by Thomas R. Robinson,
CFA, Jan Hendrik van Greuning, CFA, Elaine Henry, CFA, and
Michael A. Broihahn, CFA

LEARNING OUTCOMES**READING 19. INTERCORPORATE INVESTMENTS**

The candidate should be able to:

- a** describe the classification, measurement, and disclosure under International Financial Reporting Standards (IFRS) for 1) investments in financial assets, 2) investments in associates, 3) joint ventures, 4) business combinations, and 5) special purpose and variable interest entities;
- b** distinguish between IFRS and U.S. GAAP in the classification, measurement, and disclosure of investments in financial assets, investments in associates, joint ventures, business combinations, and special purpose and variable interest entities;
- c** analyze how different methods used to account for intercorporate investments affect financial statements and ratios.

READING 20. EMPLOYEE COMPENSATION: POST-EMPLOYMENT AND SHARE-BASED

The candidate should be able to:

- a** describe the types of post-employment benefit plans and implications for financial reports;
- b** explain and calculate measures of a defined benefit pension obligation (i.e., present value of the defined benefit obligation and projected benefit obligation) and net pension liability (or asset);
- c** describe the components of a company's defined benefit pension costs;
- d** explain and calculate the effect of a defined benefit plan's assumptions on the defined benefit obligation and periodic pension cost;
- e** explain and calculate how adjusting for items of pension and other post-employment benefits that are reported in the notes to the financial statements affects financial statements and ratios;
- f** interpret pension plan note disclosures including cash flow related information;
- g** explain issues associated with accounting for share-based compensation;
- h** explain how accounting for stock grants and stock options affects financial statements, and the importance of companies' assumptions in valuing these grants and options.

READING 21. MULTINATIONAL OPERATIONS

The candidate should be able to:

- a** distinguish among presentation currency, functional currency, and local currency;
- b** describe foreign currency transaction exposure, including accounting for and disclosures about foreign currency transaction gains and losses;
- c** analyze how changes in exchange rates affect the translated sales of the subsidiary and parent company;
- d** compare the current rate method and the temporal method, evaluate how each affects the parent company's balance sheet and income statement, and determine which method is appropriate in various scenarios;
- e** calculate the translation effects and evaluate the translation of a subsidiary's balance sheet and income statement into the parent company's presentation currency;
- f** analyze how the current rate method and the temporal method affect a company's financial statements and ratios;
- g** analyze how alternative translation methods for subsidiaries operating in hyperinflationary economies affect financial statement and ratios;
- h** describe how multinational operations affect a company's effective tax rate;
- i** explain how changes in the components of sales affect earnings sustainability;
- j** analyze how currency fluctuations potentially affect financial results, given a company's countries of operation.

Financial Reporting and Analysis

Earnings Quality Issues and Financial Ratio Analysis

The readings in this study session explain the significance of uncovering a company's true sustainable cash flow performance as well as the importance of the analyst's comparative and/or economic adjustments to a company's financial statements prior to applying comparative ratio analysis to evaluate financial performance and risk. The readings also explain the identification of red flags and warning signs related to earnings management.

The first reading includes some practical principles (lessons) to consider when applying the tools and techniques of financial analysis. The second reading explains how the analysis of a company's financial statements can reveal problems. Analysts must be able to evaluate accruals and other problem areas in the financial statements and notes that suggest that the financial reporting quality of a company has been compromised.

The study session concludes with a reading presenting mini-cases that demonstrate the use of a framework for the analysis of a company's financial statements and ratios.

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.

READING ASSIGNMENTS

- Reading 22** The Lessons We Learn
Analysis of Financial Statements, Third Edition, by Pamela Peterson Drake, CFA, and Frank J. Fabozzi, CFA
- Reading 23** Evaluating Financial Reporting Quality
International Financial Statement Analysis, by Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, Elaine Henry, CFA, and Michael A. Broihahn, CFA
- Reading 24** Integration of Financial Statement Analysis Techniques
by Jack T. Ciesielski, Jr., CFA

LEARNING OUTCOMES**READING 22. THE LESSONS WE LEARN**

The candidate should be able to:

- a** distinguish among various definitions of earnings (e.g., EBITDA, operating earnings, net income, etc.);
- b** explain how trends in cash flow from operations can be more reliable than trends in earnings;
- c** describe the accounting treatment for derivatives being used to hedge exposure to changes in the value of assets and liabilities, exposure to variable cash flows, and foreign currency exposure of investments in foreign corporations.

READING 23. EVALUATING FINANCIAL REPORTING QUALITY

The candidate should be able to:

- a** contrast cash-basis and accrual-basis accounting, and explain why accounting discretion exists in an accrual accounting system;
- b** describe the relation between the level of accruals and the persistence of earnings and relative multiples that the cash and accrual components of earnings should rationally receive in valuation;
- c** explain opportunities and motivations for management to intervene in the external financial reporting process and mechanisms that discipline such intervention;
- d** describe earnings quality and measures of earnings quality, and compare the earnings quality of peer companies;
- e** explain mean reversion in earnings and how the accrual component of earnings affects the speed of mean reversion;
- f** explain potential problems that affect the quality of financial reporting, including revenue recognition, expense recognition, balance sheet issues, and cash flow statement issues, and interpret warning signs of these potential problems.

READING 24. INTEGRATION OF FINANCIAL STATEMENT ANALYSIS TECHNIQUES

The candidate should be able to:

- a** demonstrate the use of a framework for the analysis of financial statements, given a particular problem, question, or purpose (e.g., valuing equity based on comparables, critiquing a credit rating, obtaining a comprehensive picture of financial leverage, evaluating the perspectives given in management's discussion of financial results);
- b** identify financial reporting choices and biases that affect the quality and comparability of companies' financial statements, and explain how such biases affect financial decisions;
- c** evaluate the quality of a company's financial data, and recommend appropriate adjustments to improve quality and comparability with similar companies, including adjustments for differences in accounting standards, methods, and assumptions;
- d** evaluate how a given change in accounting standards, methods, or assumptions affects financial statements and ratios;
- e** analyze and interpret how balance sheet modifications, earnings normalization, and cash flow statement related modifications affect a company's financial statements, financial ratios, and overall financial condition.

STUDY SESSION

8

Corporate Finance

This study session first presents capital budgeting analysis, focusing on the application of concepts in the corporate finance decision-making process. These capital budgeting principles are critical for an analyst inside a company preparing capital budgeting recommendations as well as for an external analyst estimating the value of the company.

The remainder of the study session covers capital structure and dividend policy. The presentation of capital structure starts with the classic Modigliani–Miller irrelevance proposition. This proposition states that a company’s value is not affected by capital structure choices. The reading then considers how the optimal capital structure is affected by taxes, agency costs, and the possibility of financial distress. The reading on dividend policy discusses the company’s choice between reinvesting or distributing earnings, and the choice between paying cash dividends and repurchasing shares. Analysts are interested in capital structure and dividend policies because of their effect on the risk and return characteristics of corporate equities and bonds.

READING ASSIGNMENTS

- Reading 25** Capital Budgeting
Corporate Finance: A Practical Approach, by Michelle R. Clayman, CFA, Martin S. Fridson, CFA, and George H. Troughton, CFA
- Reading 26** Capital Structure
by Raj Aggarwal, CFA, Pamela Peterson Drake, CFA, Adam Kobor, CFA, and Gregory Noronha, CFA
- Reading 27** Dividends and Share Repurchases: Analysis
by Gregory Noronha, CFA, and George H. Troughton, CFA

LEARNING OUTCOMES**READING 25. CAPITAL BUDGETING**

The candidate should be able to:

- a** calculate the yearly cash flows of expansion and replacement capital projects, and evaluate how the choice of depreciation method affects those cash flows;
- b** explain the effects of inflation on capital budgeting analysis;
- c** evaluate capital projects and determine the optimal capital project in situations of 1) mutually exclusive projects with unequal lives, using either the least common multiple of lives approach or the equivalent annual annuity approach, and 2) capital rationing;
- d** explain how sensitivity analysis, scenario analysis, and Monte Carlo simulation can be used to assess the stand-alone risk of a capital project;
- e** explain and calculate the discount rate, based on market risk methods, to use in valuing a capital project;
- f** describe types of real options and evaluate a capital project using real options;
- g** describe common capital budgeting pitfalls;
- h** calculate and interpret accounting income and economic income in the context of capital budgeting;
- i** distinguish among the economic profit, residual income, and claims valuation models for capital budgeting and evaluate a capital project using each.

READING 26. CAPITAL STRUCTURE

The candidate should be able to:

- a** explain the Modigliani–Miller propositions regarding capital structure, including the effects of leverage, taxes, financial distress, agency costs, and asymmetric information on a company’s cost of equity, cost of capital, and optimal capital structure;
- b** describe the target capital structure and explain why a company’s actual capital structure may fluctuate around its target;
- c** describe the role of debt ratings in capital structure policy;
- d** explain factors an analyst should consider in evaluating the effect of capital structure policy on valuation;
- e** describe international differences in the use of financial leverage, factors that explain these differences, and implications of these differences for investment analysis.

READING 27. DIVIDENDS AND SHARE REPURCHASES: ANALYSIS

The candidate should be able to:

- a** compare theories of dividend policy, and explain implications of each for share value given a description of a corporate dividend action;
- b** describe types of information (signals) that dividend initiations, increases, decreases, and omissions may convey;
- c** explain how clientele effects and agency issues may affect a company’s payout policy;
- d** explain factors that affect dividend policy;

- e** calculate and interpret the effective tax rate on a given currency unit of corporate earnings under double taxation, dividend imputation, and split-rate tax systems;
- f** compare stable dividend, constant dividend payout ratio, and residual dividend payout policies, and calculate the dividend under each policy;
- g** explain the choice between paying cash dividends and repurchasing shares;
- h** describe broad trends in corporate dividend policies;
- i** calculate and interpret dividend coverage ratios based on 1) net income and 2) free cash flow;
- j** identify characteristics of companies that may not be able to sustain their cash dividend.

STUDY SESSION

9

Corporate Finance

Financing and Control Issues

This study session presents two major organizational topics of corporate finance. First, corporate governance covers the system of principles and policies used to manage conflicts of interest among various groups of stakeholders of a corporation. Second, mergers and acquisitions and corporate restructurings, which redistribute ownership and control, are analyzed.

READING ASSIGNMENTS

- Reading 28** Corporate Governance
Corporate Finance: A Practical Approach, by Michelle R. Clayman, CFA, Martin S. Fridson, CFA, and George H. Troughton, CFA
- Reading 29** Mergers and Acquisitions
Corporate Finance: A Practical Approach, by Michelle R. Clayman, CFA, Martin S. Fridson, CFA, and George H. Troughton, CFA

LEARNING OUTCOMES

READING 28. CORPORATE GOVERNANCE

The candidate should be able to:

- a** describe objectives and core attributes of an effective corporate governance system, and evaluate whether a company's corporate governance has those attributes;
- b** compare major business forms, and describe the conflicts of interest associated with each;

- c** explain conflicts that arise in agency relationships, including manager–shareholder conflicts and director–shareholder conflicts;
- d** describe responsibilities of the board of directors, and explain qualifications and core competencies that an investment analyst should look for in the board of directors;
- e** explain effective corporate governance practice as it relates to the board of directors, and evaluate strengths and weaknesses of a company’s corporate governance practice;
- f** describe elements of a company’s statement of corporate governance policies that investment analysts should assess;
- g** describe environmental, social, and governance risk exposures;
- h** explain the valuation implications of corporate governance.

READING 29. MERGERS AND ACQUISITIONS

The candidate should be able to:

- a** classify merger and acquisition (M&A) activities based on forms of integration and relatedness of business activities;
- b** explain common motivations behind M&A activity;
- c** explain bootstrapping of earnings per share (EPS) and calculate a company’s postmerger EPS;
- d** explain, based on industry life cycles, the relation between merger motivations and types of mergers;
- e** contrast merger transaction characteristics by form of acquisition, method of payment, and attitude of target management;
- f** distinguish among pre-offer and post-offer takeover defense mechanisms;
- g** calculate and interpret the Herfindahl–Hirschman Index, and evaluate the likelihood of an antitrust challenge for a given business combination;
- h** compare the discounted cash flow, comparable company, and comparable transaction analyses for valuing a target company, including the advantages and disadvantages of each;
- i** calculate free cash flows for a target company, and estimate the company’s intrinsic value based on discounted cash flow analysis;
- j** estimate the value of a target company using comparable company and comparable transaction analyses;
- k** evaluate a takeover bid, and calculate the estimated post-acquisition value of an acquirer and the gains accrued to the target shareholders versus the acquirer shareholders;
- l** explain how price and payment method affect the distribution of risks and benefits in M&A transactions;
- m** describe characteristics of M&A transactions that create value;
- n** distinguish among equity carve-outs, spin-offs, split-offs, and liquidation;
- o** explain common reasons for restructuring.

STUDY SESSION

10

Equity Valuation

Valuation Concepts

This study session provides an overview of established methodologies of equity valuation. It outlines a process for equity valuation and selection. The session ends with a presentation of various return concepts, theories, and calculations.

READING ASSIGNMENTS

- Reading 30** Equity Valuation: Applications and Processes
Equity Asset Valuation, Second Edition, by Jerald Pinto, CFA, Elaine Henry, CFA, Thomas Robinson, CFA, and John Stowe, CFA
- Reading 31** Return Concepts
Equity Asset Valuation, Second Edition, by Jerald Pinto, CFA, Elaine Henry, CFA, Thomas Robinson, CFA, and John Stowe, CFA

LEARNING OUTCOMES

READING 30. EQUITY VALUATION: APPLICATIONS AND PROCESSES

The candidate should be able to:

- a** define valuation and intrinsic value, and explain sources of perceived mispricing;
- b** explain the going concern assumption, and contrast a going concern value to a liquidation value;
- c** describe definitions of value, and justify which definition of value is most relevant to public company valuation;

- d** describe applications of equity valuation;
- e** describe questions that should be addressed in conducting an industry and competitive analysis;
- f** contrast absolute and relative valuation models, and describe examples of each type of model;
- g** describe sum-of-the-parts valuation, and explain a conglomerate discount;
- h** explain broad criteria for choosing an appropriate approach for valuing a given company.

READING 31. RETURN CONCEPTS

The candidate should be able to:

- a** distinguish among realized holding period return, expected holding period return, required return, return from convergence of price to intrinsic value, discount rate, and internal rate of return;
- b** calculate and interpret an equity risk premium using historical and forward-looking estimation approaches;
- c** estimate the required return on an equity investment using the capital asset pricing model, the Fama–French model, the Pastor–Stambaugh model, macroeconomic multifactor models, and the build-up method (e.g., bond yield plus risk premium);
- d** explain beta estimation for public companies, thinly traded public companies, and nonpublic companies;
- e** describe strengths and weaknesses of methods used to estimate the required return on an equity investment;
- f** explain international considerations in required return estimation;
- g** explain and calculate the weighted average cost of capital for a company;
- h** evaluate the appropriateness of using a particular rate of return as a discount rate, given a description of the cash flow to be discounted and other relevant facts.

STUDY SESSION

11

Equity Valuation

Industry and Company Analysis in a Global Context

This study session provides insights on issues that affect security valuation internationally. Analyzing industries in a global context and evaluating competitive forces that will affect returns provide a foundation for security valuation decisions. Discounted dividend models are examined in detail.

READING ASSIGNMENTS

- Reading 32** The Five Competitive Forces That Shape Strategy
Harvard Business Review
- Reading 33** Your Strategy Needs a Strategy
Harvard Business Review
- Reading 34** Industry and Company Analysis
by Matthew L. Coffina, CFA, Anthony M. Fiore, CFA, and Antonius J. van Ooijen, CFA
- Reading 35** Discounted Dividend Valuation
Equity Asset Valuation, Second Edition, by Jerald Pinto, CFA, Elaine Henry, CFA, Thomas Robinson, CFA, and John Stowe, CFA

LEARNING OUTCOMES

READING 32. THE FIVE COMPETITIVE FORCES THAT SHAPE STRATEGY

The candidate should be able to:

- a distinguish among the five competitive forces and explain how they drive industry profitability in the medium and long run;

- b** describe why industry growth rate, technology and innovation, government, and complementary products and services are fleeting factors rather than forces shaping industry structure;
- c** identify changes in industry structure, and forecast their effects on the industry's profit potential;
- d** explain how positioning a company, exploiting industry change, and shaping industry structure may be used to achieve a competitive advantage.

READING 33. YOUR STRATEGY NEEDS A STRATEGY

The candidate should be able to:

- a** describe predictability and malleability as factors in assessing an industry;
- b** describe how an industry's predictability and malleability are expected to affect the choice of an appropriate corporate strategy (classical, adaptive, visionary, or shaping);
- c** evaluate the predictability and malleability of an industry and select an appropriate strategy.

READING 34. INDUSTRY AND COMPANY ANALYSIS

The candidate should be able to:

- a** compare top-down, bottom-up, and hybrid approaches for developing inputs to equity valuation models;
- b** compare "growth relative to GDP growth" and "market growth and market share" approaches to forecasting revenue;
- c** evaluate whether economies of scale are present in an industry by analyzing operating margins and sales levels;
- d** forecast the following costs: cost of goods sold, selling general and administrative costs, financing costs, and income taxes;
- e** describe approaches to balance sheet modeling;
- f** describe the relationship between return on invested capital and competitive advantage;
- g** explain how competitive factors affect prices and costs;
- h** judge the competitive position of a company based on a Porter's five forces analysis;
- i** explain how to forecast industry and company sales and costs when they are subject to price inflation and deflation;
- j** evaluate the effects of technological developments on demand, selling prices, costs, and margins;
- k** explain considerations in the choice of an explicit forecast horizon;
- l** explain an analyst's choices in developing projections beyond the short-term forecast horizon;
- m** demonstrate the development of a sales-based pro forma company model.

READING 35. DISCOUNTED DIVIDEND VALUATION

The candidate should be able to:

- a** compare dividends, free cash flow, and residual income as inputs to discounted cash flow models, and identify investment situations for which each measure is suitable;

- b** calculate and interpret the value of a common stock using the dividend discount model (DDM) for single and multiple holding periods;
- c** calculate the value of a common stock using the Gordon growth model, and explain the model's underlying assumptions;
- d** calculate and interpret the implied growth rate of dividends using the Gordon growth model and current stock price;
- e** calculate and interpret the present value of growth opportunities (PVGO) and the component of the leading price-to-earnings ratio (P/E) related to PVGO;
- f** calculate and interpret the justified leading and trailing P/Es using the Gordon growth model;
- g** calculate the value of noncallable fixed-rate perpetual preferred stock;
- h** describe strengths and limitations of the Gordon growth model, and justify its selection to value a company's common shares;
- i** explain the assumptions and justify the selection of the two-stage DDM, the H-model, the three-stage DDM, or spreadsheet modeling to value a company's common shares;
- j** explain the growth phase, transitional phase, and maturity phase of a business;
- k** describe terminal value, and explain alternative approaches to determining the terminal value in a DDM;
- l** calculate and interpret the value of common shares using the two-stage DDM, the H-model, and the three-stage DDM;
- m** estimate a required return based on any DDM, including the Gordon growth model and the H-model;
- n** explain the use of spreadsheet modeling to forecast dividends and to value common shares;
- o** calculate and interpret the sustainable growth rate of a company, and demonstrate the use of DuPont analysis to estimate a company's sustainable growth rate;
- p** evaluate whether a stock is overvalued, fairly valued, or undervalued by the market based on a DDM estimate of value.

Equity Investments

Valuation Models

This study session presents additional valuation methods for estimating a company's intrinsic value. The dividend discount model discussed in Study Session 11 remains a baseline model. The free cash flow approach to valuation is an important alternative to the dividend discount model when dividends are not the best representation of a company's value. Price and enterprise multiples are among the most familiar and widely used valuation measures because of their simplicity and the ease with which they can be used and communicated. Residual income models have become common alternatives to the other models. The final reading addresses valuation issues associated with private companies.

READING ASSIGNMENTS

- Reading 36** Free Cash Flow Valuation
Equity Asset Valuation, Second Edition, by Jerald Pinto, CFA, Elaine Henry, CFA, Thomas Robinson, CFA, and John Stowe, CFA
- Reading 37** Market-Based Valuation: Price and Enterprise Value Multiples
Equity Asset Valuation, Second Edition, by Jerald Pinto, CFA, Elaine Henry, CFA, Thomas Robinson, CFA, and John Stowe, CFA
- Reading 38** Residual Income Valuation
Equity Asset Valuation, Second Edition, by Jerald Pinto, CFA, Elaine Henry, CFA, Thomas Robinson, CFA, and John Stowe, CFA
- Reading 39** Private Company Valuation
by Raymond D. Rath, ASA, CFA

LEARNING OUTCOMES**READING 36. FREE CASH FLOW VALUATION**

The candidate should be able to:

- a** compare the free cash flow to the firm (FCFF) and free cash flow to equity (FCFE) approaches to valuation;
- b** explain the ownership perspective implicit in the FCFE approach;
- c** explain the appropriate adjustments to net income, earnings before interest and taxes (EBIT), earnings before interest, taxes, depreciation, and amortization (EBITDA), and cash flow from operations (CFO) to calculate FCFF and FCFE;
- d** calculate FCFF and FCFE;
- e** describe approaches for forecasting FCFF and FCFE;
- f** compare the FCFE model and dividend discount models;
- g** explain how dividends, share repurchases, share issues, and changes in leverage may affect future FCFF and FCFE;
- h** evaluate the use of net income and EBITDA as proxies for cash flow in valuation;
- i** explain the single-stage (stable-growth), two-stage, and three-stage FCFF and FCFE models, and select and justify the appropriate model given a company's characteristics;
- j** estimate a company's value using the appropriate free cash flow model(s);
- k** explain the use of sensitivity analysis in FCFF and FCFE valuations;
- l** describe approaches for calculating the terminal value in a multistage valuation model;
- m** evaluate whether a stock is overvalued, fairly valued, or undervalued based on a free cash flow valuation model.

READING 37. MARKET-BASED VALUATION: PRICE AND ENTERPRISE VALUE MULTIPLES

The candidate should be able to:

- a** distinguish between the method of comparables and the method based on forecasted fundamentals as approaches to using price multiples in valuation, and explain economic rationales for each approach;
- b** calculate and interpret a justified price multiple;
- c** describe rationales for and possible drawbacks to using alternative price multiples and dividend yield in valuation;
- d** calculate and interpret alternative price multiples and dividend yield;
- e** calculate and interpret underlying earnings, explain methods of normalizing earnings per share (EPS), and calculate normalized EPS;
- f** explain and justify the use of earnings yield (E/P);
- g** describe fundamental factors that influence alternative price multiples and dividend yield;
- h** calculate and interpret the justified price-to-earnings ratio (P/E), price-to-book ratio (P/B), and price-to-sales ratio (P/S) for a stock, based on forecasted fundamentals;
- i** calculate and interpret a predicted P/E, given a cross-sectional regression on fundamentals, and explain limitations to the cross-sectional regression methodology;
- j** evaluate a stock by the method of comparables, and explain the importance of fundamentals in using the method of comparables;
- k** calculate and interpret the P/E-to-growth ratio (PEG), and explain its use in relative valuation;
- l** calculate and explain the use of price multiples in determining terminal value in a multistage discounted cash flow (DCF) model;
- m** explain alternative definitions of cash flow used in price and enterprise value (EV) multiples, and describe limitations of each definition;
- n** calculate and interpret EV multiples, and evaluate the use of EV/EBITDA;
- o** explain sources of differences in cross-border valuation comparisons;
- p** describe momentum indicators and their use in valuation;
- q** explain the use of the arithmetic mean, the harmonic mean, the weighted harmonic mean, and the median to describe the central tendency of a group of multiples;
- r** evaluate whether a stock is overvalued, fairly valued, or undervalued based on comparisons of multiples.

READING 38. RESIDUAL INCOME VALUATION

The candidate should be able to:

- a** calculate and interpret residual income, economic value added, and market value added;
- b** describe the uses of residual income models;
- c** calculate the intrinsic value of a common stock using the residual income model, and compare value recognition in residual income and other present value models;
- d** explain fundamental determinants of residual income;

- e** explain the relation between residual income valuation and the justified price-to-book ratio based on forecasted fundamentals;
- f** calculate and interpret the intrinsic value of a common stock using single-stage (constant-growth) and multistage residual income models;
- g** calculate the implied growth rate in residual income, given the market price-to-book ratio and an estimate of the required rate of return on equity;
- h** explain continuing residual income, and justify an estimate of continuing residual income at the forecast horizon, given company and industry prospects;
- i** compare residual income models to dividend discount and free cash flow models;
- j** explain strengths and weaknesses of residual income models, and justify the selection of a residual income model to value a company's common stock;
- k** describe accounting issues in applying residual income models;
- l** evaluate whether a stock is overvalued, fairly valued, or undervalued based on a residual income model.

READING 39. PRIVATE COMPANY VALUATION

The candidate should be able to:

- a** compare public and private company valuation;
- b** describe uses of private business valuation, and explain applications of greatest concern to financial analysts;
- c** explain various definitions of value, and demonstrate how different definitions can lead to different estimates of value;
- d** explain the income, market, and asset-based approaches to private company valuation and factors relevant to the selection of each approach;
- e** explain cash flow estimation issues related to private companies and adjustments required to estimate normalized earnings;
- f** calculate the value of private company using free cash flow, capitalized cash flow, and/or excess earnings methods;
- g** explain factors that require adjustment when estimating the discount rate for private companies;
- h** compare models used to estimate the required rate of return to private company equity (for example, the CAPM, the expanded CAPM, and the build-up approach);
- i** calculate the value of a private company based on market approach methods, and describe advantages and disadvantages of each method;
- j** describe the asset-based approach to private company valuation;
- k** explain and evaluate the effects on private company valuations of discounts and premiums based on control and marketability;
- l** describe the role of valuation standards in valuing private companies.

STUDY SESSION

13

Alternative Investments

This study session discusses the following categories of alternative investments; real estate, private equity, and hedge funds. Real estate investments, both private investment and investment through publicly traded securities, are described and methods for analysis and evaluation are presented. Private equity, including venture capital and leveraged buyouts, is examined from the perspectives of a private equity firm evaluating equity investments for its portfolio and an investor evaluating participation in a private equity fund. Finally, investing in hedge funds is surveyed.

READING ASSIGNMENTS

- Reading 40** Private Real Estate Investments
by Jeffery D. Fisher and Bryan D. MacGregor
- Reading 41** Publicly Traded Real Estate Securities
by Anthony Paolone, CFA, Ian Rossa O'Reilly, CFA, and David Kruth, CFA
- Reading 42** Private Equity Valuation
by Yves Courtois, CFA, and Tim Jenkinson
- Reading 43** Investing in Hedge Funds: A Survey
The Research Foundation of CFA Institute Literature Review,
by Keith H. Black, CFA
- Reading 44** A Primer on Commodity Investing
The Handbook of Commodity Investing
by Frank J. Fabozzi, CFA, Roland Füss, and Dieter G. Kaiser, Editors

LEARNING OUTCOMES**READING 40. PRIVATE REAL ESTATE INVESTMENTS**

The candidate should be able to:

- a** classify and describe basic forms of real estate investments;
- b** describe the characteristics, the classification, and basic segments of real estate;
- c** explain the role in a portfolio, economic value determinants, investment characteristics, and principal risks of private real estate;
- d** describe commercial property types, including their distinctive investment characteristics;
- e** compare the income, cost, and sales comparison approaches to valuing real estate properties;
- f** estimate and interpret the inputs (for example, net operating income, capitalization rate, and discount rate) to the direct capitalization and discounted cash flow valuation methods;
- g** calculate the value of a property using the direct capitalization and discounted cash flow valuation methods;
- h** compare the direct capitalization and discounted cash flow valuation methods;
- i** calculate the value of a property using the cost and sales comparison approaches;
- j** describe due diligence in private equity real estate investment;
- k** discuss private equity real estate investment indices, including their construction and potential biases;
- l** explain the role in a portfolio, the major economic value determinants, investment characteristics, principal risks, and due diligence of private real estate debt investment;
- m** calculate and interpret financial ratios used to analyze and evaluate private real estate investments.

READING 41. PUBLICLY TRADED REAL ESTATE SECURITIES

The candidate should be able to:

- a** describe types of publicly traded real estate securities;
- b** explain advantages and disadvantages of investing in real estate through publicly traded securities;
- c** explain economic value determinants, investment characteristics, principal risks, and due diligence considerations for real estate investment trust (REIT) shares;
- d** describe types of REITs;
- e** justify the use of net asset value per share (NAVPS) in REIT valuation and estimate NAVPS based on forecasted cash net operating income;
- f** describe the use of funds from operations (FFO) and adjusted funds from operations (AFFO) in REIT valuation;
- g** compare the net asset value, relative value (price-to-FFO and price-to-AFFO), and discounted cash flow approaches to REIT valuation;
- h** calculate the value of a REIT share using net asset value, price-to-FFO and price-to-AFFO, and discounted cash flow approaches.

READING 42. PRIVATE EQUITY VALUATION

The candidate should be able to:

- a** explain sources of value creation in private equity;
- b** explain how private equity firms align their interests with those of the managers of portfolio companies;
- c** distinguish between the characteristics of buyout and venture capital investments;
- d** describe valuation issues in buyout and venture capital transactions;
- e** explain alternative exit routes in private equity and their impact on value;
- f** explain private equity fund structures, terms, valuation, and due diligence in the context of an analysis of private equity fund returns;
- g** explain risks and costs of investing in private equity;
- h** interpret and compare financial performance of private equity funds from the perspective of an investor;
- i** calculate management fees, carried interest, net asset value, distributed to paid in (DPI), residual value to paid in (RVPI), and total value to paid in (TVPI) of a private equity fund;

A Note on Valuation of Venture Capital Deals: (Appendix 42)

- j.** calculate pre-money valuation, post-money valuation, ownership fraction, and price per share applying the venture capital method 1) with single and multiple financing rounds and 2) in terms of IRR;
- k.** demonstrate alternative methods to account for risk in venture capital.

READING 43. INVESTING IN HEDGE FUNDS: A SURVEY

The candidate should be able to:

- a** distinguish between hedge funds and mutual funds in terms of leverage, use of derivatives, disclosure requirements and practices, lockup periods, and fee structures;
- b** describe hedge fund strategies;
- c** explain possible biases in reported hedge fund performance;
- d** describe factor models for hedge fund returns;
- e** describe sources of non-normality in hedge fund returns and implications for performance appraisal;
- f** describe motivations for hedge fund replication strategies;
- g** explain difficulties in applying traditional portfolio analysis to hedge funds;
- h** compare funds of funds to single manager hedge funds.

READING 44. A PRIMER ON COMMODITY INVESTING

The candidate should be able to:

- a** describe types of market participants in commodity futures markets;
- b** explain storability and renewability in the context of commodities and determine whether a commodity is storable and/or renewable;
- c** explain the convenience yield and how it relates to stock (inventory level) of a commodity;
- d** distinguish among capital assets, store-of-value assets, and consumable or transferable assets and explain implications for valuation;

- e** compare ways of participating in commodity markets, including advantages and disadvantages of each;
- f** explain backwardation and contango in terms of spot and futures prices;
- g** describe the components of return to a commodity futures and a portfolio of commodity futures;
- h** explain how the sign of the roll return depends on the term structure of futures prices;
- i** compare the insurance perspective, the hedging pressure hypothesis, and the theory of storage and their implications for futures prices and expected future spot prices.

STUDY SESSION

14

Fixed Income Valuation Concepts

This study session covers essential knowledge and skills needed for the valuation of fixed income investments. It begins with a discussion of credit analysis and how credit standards affect liquidity. Interest rate volatility and term structure are presented next and are then followed by an introduction to embedded options in fixed income securities.

READING ASSIGNMENTS

- Reading 45** Credit Analysis Models
by Robert A. Jarrow, PhD, and Donald R. van Deventer
- Reading 46** Term Structure and Volatility of Interest Rates
Fixed Income Analysis for the Chartered Financial Analyst® Program,
Second Edition, by Frank J. Fabozzi, CFA
- Reading 47** Valuing Bonds with Embedded Options
Fixed Income Analysis for the Chartered Financial Analyst® Program,
Second Edition, by Frank J. Fabozzi, CFA

LEARNING OUTCOMES

READING 45. CREDIT ANALYSIS MODELS

The candidate should be able to:

- a explain probability of default, loss given default, expected loss, and present value of the expected loss, and describe the relative importance of each across the credit spectrum;

- b** explain credit scoring and credit ratings, including why they are called ordinal rankings;
- c** explain strengths and weaknesses of credit ratings;
- d** explain structural models of corporate credit risk, including why equity can be viewed as a call option on the company's assets;
- e** explain reduced form models of corporate credit risk, including why debt can be valued as the expected discounted cash flows after adjusting for risk;
- f** explain assumptions, strengths, and weaknesses of both structural and reduced form models of corporate credit risk;
- g** explain the determinants of the term structure of credit spreads;
- h** calculate and interpret the present value of the expected loss on a bond over a given time horizon;
- i** compare the credit analysis required for asset-backed securities with analysis of corporate debt.

READING 46. TERM STRUCTURE AND VOLATILITY OF INTEREST RATES

The candidate should be able to:

- a** explain parallel and nonparallel shifts in the yield curve;
- b** describe factors that drive U.S. Treasury security returns, and evaluate the importance of each factor;
- c** explain various universes of Treasury securities that are used to construct the theoretical spot rate curve, and evaluate their advantages and disadvantages;
- d** explain the swap rate curve (LIBOR curve) and why market participants have used the swap rate curve rather than a government bond yield curve as a benchmark;
- e** explain the pure expectations, liquidity, and preferred habitat theories of the term structure of interest rates and the implications of each for the shape of the yield curve;
- f** calculate and interpret the yield curve risk of a security or a portfolio by using key rate duration;
- g** calculate and interpret yield volatility, distinguish between historical yield volatility and implied yield volatility, and explain how to forecast yield volatility.

READING 47. VALUING BONDS WITH EMBEDDED OPTIONS

The candidate should be able to:

- a** evaluate, using relative value analysis, whether a security is undervalued, fairly valued, or overvalued;
- b** evaluate the importance of benchmark interest rates in interpreting spread measures;
- c** describe the backward induction valuation methodology within the binomial interest rate tree framework;
- d** calculate the value of a callable bond from an interest rate tree;
- e** explain the relations among the values of a callable (putable) bond, the corresponding option-free bond, and the embedded option;
- f** explain the effect of volatility on the arbitrage-free value of an option;
- g** interpret an option-adjusted spread with respect to a nominal spread and to benchmark interest rates;

- h** explain how effective duration and effective convexity are calculated using the binomial model;
- i** calculate the value of a puttable bond, using an interest rate tree;
- j** describe and evaluate a convertible bond and its various component values;
- k** compare the risk-return characteristics of a convertible bond with the risk-return characteristics of ownership of the underlying common stock.

STUDY SESSION

15

Fixed Income Structured Securities

This study session provides information on the knowledge and skills needed for valuing a unique segment of the fixed income market—structured securities. It begins with an in-depth study of the structure and characteristics of mortgage-backed and asset-backed markets and securities and concludes with a study of valuation techniques for these fixed income instruments.

READING ASSIGNMENTS

- Reading 48** Mortgage-Backed Sector of the Bond Market
Fixed Income Analysis for the Chartered Financial Analyst® Program,
Second Edition, by Frank J. Fabozzi, CFA
- Reading 49** Asset-Backed Sector of the Bond Market
Fixed Income Analysis for the Chartered Financial Analyst® Program,
Second Edition, by Frank J. Fabozzi, CFA
- Reading 50** Valuing Mortgage-Backed and Asset-Backed Securities
Fixed Income Analysis for the Chartered Financial Analyst® Program,
Second Edition, by Frank J. Fabozzi, CFA

LEARNING OUTCOMES

READING 48. MORTGAGE-BACKED SECTOR OF THE BOND MARKET

The candidate should be able to:

- a describe a mortgage loan, and explain the cash flow characteristics of a fixed-rate, level payment, and fully amortized mortgage loan;

- b** explain investment characteristics, payment characteristics, and risks of mortgage passthrough securities;
- c** calculate the prepayment amount on a mortgage passthrough security for a month, given the single monthly mortality rate;
- d** compare the conditional prepayment rate (CPR) with the Public Securities Association (PSA) prepayment benchmark;
- e** explain why the average life of a mortgage-backed security is more relevant than the security's maturity;
- f** explain factors that affect prepayments and the types of prepayment risks;
- g** explain how a collateralized mortgage obligation (CMO) is created and how it provides a better matching of assets and liabilities for institutional investors;
- h** distinguish among the sequential pay tranche, the accrual tranche, the planned amortization class tranche, and the support tranche in a CMO;
- i** evaluate the risk characteristics and relative performance of each type of CMO tranche, given changes in the interest rate environment;
- j** explain investment characteristics of stripped mortgage-backed securities;
- k** compare agency and nonagency mortgage-backed securities;
- l** compare credit risk analysis of commercial and residential nonagency mortgage-backed securities;
- m** describe the basic structure of a commercial mortgage-backed security (CMBS) and explain the ways in which a CMBS investor may realize call protection at the loan level and by means of the CMBS structure.

READING 49. ASSET-BACKED SECTOR OF THE BOND MARKET

The candidate should be able to:

- a** describe the basic structural features of and parties to a securitization transaction;
- b** explain and contrast prepayment tranching and credit tranching;
- c** distinguish between the payment structure and collateral structure of a securitization backed by amortizing assets and non-amortizing assets;
- d** distinguish among various types of external and internal credit enhancements;
- e** describe cash flow and prepayment characteristics for securities backed by home equity loans, manufactured housing loans, automobile loans, student loans, SBA loans, and credit card receivables;
- f** describe collateralized debt obligations (CDOs), including cash and synthetic CDOs;
- g** distinguish among the primary motivations for creating a collateralized debt obligation (arbitrage and balance sheet transactions).

READING 50. VALUING MORTGAGE-BACKED AND ASSET-BACKED SECURITIES

The candidate should be able to:

- a** explain the calculation, use, and limitations of the cash flow yield, nominal spread, and zero-volatility spread for a mortgage-backed security and an asset-backed security;
- b** describe the Monte Carlo simulation model for valuing a mortgage-backed security;
- c** describe path dependency in passthrough securities and the implications for valuation models;

- d** explain how the option-adjusted spread is calculated using the Monte Carlo simulation model and how this spread measure is interpreted;
- e** evaluate a mortgage-backed security using option-adjusted spread analysis;
- f** explain why effective durations reported by various dealers and vendors may differ;
- g** analyze the interest rate risk of a security, given the security's effective duration and effective convexity;
- h** explain cash flow, coupon curve, and empirical measures of duration, and describe limitations of each in relation to mortgage-backed securities;
- i** determine whether the nominal spread, zero-volatility spread, or option-adjusted spread should be used to evaluate a specific fixed income security.

STUDY SESSION

16

Derivative Investments

Forwards and Futures

This study session examines derivative investments and markets and focuses on derivative pricing, valuation, and credit risk evaluation. Assessing the relative cost/benefit of using derivative instruments or investments with embedded derivatives requires an understanding of the factors that affect valuation. This study session also addresses interest rate, equity, and currency forwards and futures.

READING ASSIGNMENTS

- Reading 51** Forward Markets and Contracts
Analysis of Derivatives for the Chartered Financial Analyst® Program, by Don M. Chance, CFA
- Reading 52** Futures Markets and Contracts
Analysis of Derivatives for the Chartered Financial Analyst® Program, by Don M. Chance, CFA

LEARNING OUTCOMES

READING 51. FORWARD MARKETS AND CONTRACTS

The candidate should be able to:

- a** explain how the value of a forward contract is determined at initiation, during the life of the contract, and at expiration;
- b** calculate and interpret the price and value of an equity forward contract, assuming dividends are paid either discretely or continuously;

- c** calculate and interpret the price and value of 1) a forward contract on a fixed-income security, 2) a forward rate agreement (FRA), and 3) a forward contract on a currency;
- d** evaluate credit risk in a forward contract, and explain how market value is a measure of exposure to a party in a forward contract.

READING 52. FUTURES MARKETS AND CONTRACTS

The candidate should be able to:

- a** explain why the futures price must converge to the spot price at expiration;
- b** determine the value of a futures contract;
- c** explain why forward and futures prices differ;
- d** describe monetary and nonmonetary benefits and costs associated with holding the underlying asset, and explain how they affect the futures price;
- e** describe backwardation and contango;
- f** explain the relation between futures prices and expected spot prices;
- g** describe the difficulties in pricing Eurodollar futures and creating a pure arbitrage opportunity;
- h** calculate and interpret the prices of Treasury bond futures, stock index futures, and currency futures.

Derivative Investments

Options, Swaps, and Interest Rate and Credit Derivatives

This study session discusses options, swaps, interest rate derivatives, and embedded derivatives and their valuation. Because derivatives are often used to reduce risk or generate additional income, it is important to understand the relative cost/benefit of derivative strategies.

READING ASSIGNMENTS

- Reading 53** Option Markets and Contracts
Analysis of Derivatives for the Chartered Financial Analyst® Program,
by Don M. Chance, CFA
- Reading 54** Swap Markets and Contracts
Analysis of Derivatives for the Chartered Financial Analyst® Program,
by Don M. Chance, CFA
- Reading 55** Interest Rate Derivative Instruments
Fixed Income Analysis for the Chartered Financial Analyst® Program,
Second Edition,
by Frank J. Fabozzi, CFA
- Reading 56** Credit Default Swaps
by Brian Rose and Don M. Chance, CFA

LEARNING OUTCOMES**READING 53. OPTION MARKETS AND CONTRACTS**

The candidate should be able to:

- a** calculate and interpret the prices of a synthetic call option, synthetic put option, synthetic bond, and synthetic underlying stock, and explain why an investor would want to create such instruments;
- b** calculate and interpret prices of interest rate options and options on assets using one- and two-period binomial models;
- c** explain and evaluate the assumptions underlying the Black–Scholes–Merton model;
- d** explain how an option price, as represented by the Black–Scholes–Merton model, is affected by a change in the value of each of the inputs;
- e** explain the delta of an option, and demonstrate how it is used in dynamic hedging;
- f** explain the gamma effect on an option's delta and how gamma can affect a delta hedge;
- g** explain the effect of the underlying asset's cash flows on the price of an option;
- h** determine the historical and implied volatilities of an underlying asset;
- i** demonstrate how put–call parity for options on forwards (or futures) is established;
- j** compare American and European options on forwards and futures, and identify the appropriate pricing model for European options.

READING 54. SWAP MARKETS AND CONTRACTS

The candidate should be able to:

- a** distinguish between the pricing and valuation of swaps;
- b** explain the equivalence of 1) interest rate swaps to a series of off-market forward rate agreements (FRAs) and 2) a plain vanilla swap to a combination of an interest rate call and an interest rate put;
- c** calculate and interpret the fixed rate on a plain vanilla interest rate swap and the market value of the swap during its life;
- d** calculate and interpret the fixed rate, if applicable, and the foreign notional principal for a given domestic notional principal on a currency swap, and estimate the market values of each of the different types of currency swaps during their lives;
- e** calculate and interpret the fixed rate, if applicable, on an equity swap and the market values of the different types of equity swaps during their lives;
- f** explain and interpret the characteristics and uses of swaptions, including the difference between payer and receiver swaptions;
- g** calculate the payoffs and cash flows of an interest rate swaption;
- h** calculate and interpret the value of an interest rate swaption at expiration;
- i** evaluate swap credit risk for each party and during the life of the swap, distinguish between current credit risk and potential credit risk, and explain how swap credit risk is reduced by both netting and marking to market;
- j** define swap spread and explain its relation to credit risk.

READING 55. INTEREST RATE DERIVATIVE INSTRUMENTS

The candidate should be able to:

- a** demonstrate how both a cap and a floor are packages of 1) options on interest rates and 2) options on fixed-income instruments;
- b** calculate the payoff for a cap and a floor, and explain how a collar is created.

READING 56. CREDIT DEFAULT SWAPS

The candidate should be able to:

- a** describe credit default swaps (CDS), single-name and index CDS, and the parameters that define a given CDS product;
- b** describe credit events and settlement protocols with respect to CDS;
- c** explain the principles underlying, and factors that influence, the market's pricing of CDS;
- d** describe the use of CDS to manage credit exposures and to express views regarding changes in shape and/or level of the credit curve;
- e** describe the use of CDS to take advantage of valuation differences among separate markets, such as bonds, loans, and equities.

STUDY SESSION

18

Portfolio Management

Capital Market Theory and the Portfolio Management Process

The first readings in this study session reviews the CAPM (the capital asset pricing model)—a foundation for this study session and one of the first rigorous models for the expected returns on risky assets in equilibrium. The second and third readings discuss active portfolio management and apply concepts from the first reading to it. The final reading summarizes the portfolio management process, introducing topics that will be covered in more detail at Level III.

READING ASSIGNMENTS

- Reading 57** Portfolio Concepts
Quantitative Methods for Investment Analysis, Second Edition,
by Richard A. DeFusco, CFA, Dennis W. McLeavey, CFA,
Jerald E. Pinto, CFA, and David E. Runkle, CFA
- Reading 58** Residual Risk and Return: The Information Ratio
*Active Portfolio Management: A Quantitative Approach for Providing
Superior Returns and Controlling Risk*,
by Richard C. Grinold and Ronald N. Kahn
- Reading 59** The Fundamental Law of Active Management
*Active Portfolio Management: A Quantitative Approach for Providing
Superior Returns and Controlling Risk*,
by Richard C. Grinold and Ronald N. Kahn
- Reading 60** The Portfolio Management Process
and the Investment Policy Statement
Managing Investment Portfolios: A Dynamic Process, Third
Edition, John L. Maginn, CFA, Donald L. Tuttle, CFA, Dennis W.
McLeavey, CFA, and Jerald E. Pinto, CFA, editors

A NOTE ON THE TERMINOLOGY OF ACTIVE PORTFOLIO MANAGEMENT

The following list defines terms as they are used in Readings 58 and 59 (Chapters 5 and 6 of Grinold and Kahn's *Active Portfolio Management*). Although some of the terms and definitions are discussed elsewhere in the CFA Program Curriculum, terminology in Grinold and Kahn's book is in some cases distinctive. They focus on equities, but the analysis applies to bonds, currencies, and other asset classes as well.

Risk	the standard deviation of return.
Benchmark portfolio	a portfolio with risk and return characteristics representative of the investment universe and style of an investment manager; the portfolio is used for performance measurement of investment efforts.
Excess return	the return on an asset (or a portfolio of assets) in excess of the risk-free rate.
Active return	the return on a portfolio in excess of its benchmark.
Active risk	the standard deviation of active return. This risk is also often referred to as the "tracking error."
Residual risk	the portion of active risk that cannot be attributed to the beta (systematic risk) of the portfolio.
Residual return	the return of a portfolio in excess of its benchmark, adjusted for the difference in beta.
Active position	the difference between portfolio and benchmark holdings of a security.
Value added	the (active) return on an investment.
Benchmark timing	the choice of an active beta, period by period.
MMI	refers to the New York Stock Exchange (NYSE) Arca Major Market Index, previously known as the American Stock Exchange (AMEX) Major Market Index (ticker code XMI or MMI). It is a price-weighted average of 20 Blue Chip industrial stocks of major U.S. Corporations; several of the stocks are also components of the Dow Jones Industrial Average (DJIA).

LEARNING OUTCOMES

READING 57. PORTFOLIO CONCEPTS

The candidate should be able to:

- a** explain mean–variance analysis and its assumptions, and calculate the expected return and the standard deviation of return for a portfolio of two or three assets;
- b** describe the minimum-variance and efficient frontiers, and explain the steps to solve for the minimum-variance frontier;
- c** explain the benefits of diversification and how the correlation in a two-asset portfolio and the number of assets in a multi-asset portfolio affect the diversification benefits;
- d** calculate the variance of an equally weighted portfolio of n stocks, explain the capital allocation and capital market lines (CAL and CML) and the relation between them, and calculate the value of one of the variables given values of the remaining variables;

- e** explain the capital asset pricing model (CAPM), including its underlying assumptions and the resulting conclusions;
- f** explain the security market line (SML), the beta coefficient, the market risk premium, and the Sharpe ratio, and calculate the value of one of these variables given the values of the remaining variables;
- g** explain the market model, and state and interpret the market model's predictions with respect to asset returns, variances, and covariances;
- h** calculate an adjusted beta, and explain the use of adjusted and historical betas as predictors of future betas;
- i** explain reasons for and problems related to instability in the minimum-variance frontier;
- j** describe and compare macroeconomic factor models, fundamental factor models, and statistical factor models;
- k** calculate the expected return on a portfolio of two stocks, given the estimated macroeconomic factor model for each stock;
- l** describe the arbitrage pricing theory (APT), including its underlying assumptions and its relation to the multifactor models, calculate the expected return on an asset given an asset's factor sensitivities and the factor risk premiums, and determine whether an arbitrage opportunity exists, including how to exploit the opportunity;
- m** explain sources of active risk, interpret tracking error, tracking risk, and the information ratio, and explain factor portfolio and tracking portfolio;
- n** compare underlying assumptions and conclusions of the CAPM and APT model, and explain why an investor can possibly earn a substantial premium for exposure to dimensions of risk unrelated to market movements.

READING 58. RESIDUAL RISK AND RETURN: THE INFORMATION RATIO

The candidate should be able to:

- a** define the terms "alpha" and "information ratio" in both their ex post and ex ante senses;
- b** compare the information ratio and the alpha's T-statistic;
- c** explain the objective of active management in terms of value added;
- d** calculate the optimal level of residual risk to assume for given levels of manager ability and investor risk aversion;
- e** justify why the choice for a particular active strategy does not depend on investor risk aversion.

READING 59. THE FUNDAMENTAL LAW OF ACTIVE MANAGEMENT

The candidate should be able to:

- a** define the terms "information coefficient" and "breadth" and describe how they combine to determine the information ratio;
- b** describe how the optimal level of residual risk of an investment strategy changes with information coefficient and breadth, and how the value added of an investment strategy changes with information coefficient and breadth;
- c** contrast market timing and security selection in terms of breadth and required investment skill;

- d** describe how the information ratio changes when the original investment strategy is augmented with other strategies or information sources;
- e** describe the assumptions on which the fundamental law of active management is based.

READING 60. THE PORTFOLIO MANAGEMENT PROCESS AND THE INVESTMENT POLICY STATEMENT

The candidate should be able to:

- a** explain the importance of the portfolio perspective;
- b** describe the steps of the portfolio management process and the components of those steps;
- c** explain the role of the investment policy statement in the portfolio management process, and describe the elements of an investment policy statement;
- d** explain how capital market expectations and the investment policy statement help influence the strategic asset allocation decision and how an investor's investment time horizon may influence the investor's strategic asset allocation;
- e** define investment objectives and constraints, and explain and distinguish among the types of investment objectives and constraints;
- f** contrast the types of investment time horizons, determine the time horizon for a particular investor, and evaluate the effects of this time horizon on portfolio choice;
- g** justify ethical conduct as a requirement for managing investment portfolios.