

STUDY SESSION

1

Ethical and Professional Standards (1)

CFA Institute members and CFA Program candidates continually face situations requiring professional and ethical judgement. By acting in a manner consistent with the CFA Institute Code of Ethics and Standards of Professional Conduct (Code and Standards), members and candidates help build greater levels of trust in the investment profession.

This study session provides a framework for ethical conduct in the investment profession. 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 and Standards (both found in the *Handbook*) should allow practitioners to identify and appropriately resolve ethical conflicts, leading to a reputation for integrity that benefits both the individual and the profession. Material under “Guidance” in the *Handbook* addresses the practical application of the Code and Standards. The guidance for each standard reviews its purpose and scope, presents recommended procedures for compliance, and provides examples of the standard in practice.

READING ASSIGNMENTS

Reading 1	Code of Ethics and Standards of Professional Conduct <i>Standards of Practice Handbook</i> , Eleventh Edition
Reading 2	Guidance for Standards I–VII <i>Standards of Practice Handbook</i> , Eleventh Edition

LEARNING OUTCOMES**READING 1. 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 disciplinary review process for the enforcement of the CFA Institute Code of Ethics and Standards of Professional Conduct;
- b** explain the ethical responsibilities required by the Code and Standards, including the sub-sections of each standard.

READING 2. GUIDANCE FOR STANDARDS I–VII

The candidate should be able to:

- a** demonstrate a thorough knowledge of the CFA Institute Code of Ethics and Standards of Professional Conduct by interpreting the Code and Standards in various situations involving issues of professional integrity;
- b** recommend practices and procedures designed to prevent violations of the Code and Standards.

STUDY SESSION

2

Ethical and Professional Standards (2)

This study session uses case studies to demonstrate the practical application of the CFA Institute Code of Ethics and Standards of Professional Conduct (Code and Standards) in everyday situations. The session concludes with discussion on the Asset Manager Code of Professional Conduct.

The Asset Manager Code of Professional Conduct uses the basic tenets of the Code and Standards to establish ethical and professional standards for firms managing client assets. The Asset Manager Code of Professional Conduct also extends the Code and Standards to address investment management firm practices regarding trading, compliance, risk management, security pricing, and disclosure.

READING ASSIGNMENTS

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|------------------|--|
| Reading 3 | Application of the Code and Standards
<i>Ethics Cases</i> |
| Reading 4 | Asset Manager Code of Professional Conduct
by Kurt N. Schacht, JD, CFA, Jonathan J. Stokes, JD, and
Glenn Doggett, CFA |

LEARNING OUTCOMES

READING 3. APPLICATION OF THE CODE AND STANDARDS

The candidate should be able to:

- a** evaluate professional conduct and formulate an appropriate response to actions that violate the CFA Institute Code of Ethics and Standards of Professional Conduct;
- b** formulate appropriate policy and procedural changes needed to assure compliance with the Code and Standards.

READING 4. ASSET MANAGER CODE OF PROFESSIONAL CONDUCT

The candidate should be able to

- a** explain the purpose of the Asset Manager Code and the benefits that may accrue to a firm that adopts the Code;
- b** explain the ethical and professional responsibilities required by the six General Principles of Conduct of the Asset Manager Code;
- c** determine whether an asset manager's practices and procedures are consistent with the Asset Manager Code;
- d** recommend practices and procedures designed to prevent violations of the Asset Manager Code.

STUDY SESSION

3

The Asset Management Industry and Professionalism

This study session provides an overview of the asset management industry, including major client types, products, and trends. Coverage on the portfolio management process and the importance of an effective investment governance function follows. The study session concludes with discussion on the need for professionalism in investment management.

READING ASSIGNMENTS

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|------------------|--|
| Reading 5 | Overview of the Asset Management Industry and Portfolio Management
by Owen M. Concannon, CFA, and Vahan Janjigian, PhD, CFA |
| Reading 6 | Professionalism in Investment Management
by Colin McLean, FSIP, and Nitin Mehta, CFA |

LEARNING OUTCOMES

READING 5. OVERVIEW OF THE ASSET MANAGEMENT INDUSTRY AND PORTFOLIO MANAGEMENT

The candidate should be able to:

- a** describe the structure of the asset management industry;
- b** discuss a portfolio management process that supports achieving asset owners' objectives;
- c** discuss the elements of effective investment governance.

READING 6. PROFESSIONALISM IN INVESTMENT MANAGEMENT

The candidate should be able to:

- a** describe professions and how they establish trust;
- b** explain professionalism in investment management;
- c** describe expectations of and challenges for investment management professionals.

STUDY SESSION

4

Behavioral Finance

Behavioral finance is introduced in the first study session on portfolio management because all market participants, regardless of expertise or experience, may be subject to behavioral biases. Behavioral finance provides insight into how emotional biases and cognitive errors may influence individuals' perceptions and investment decisions. As a consequence, knowledge of behavioral biases may help in understanding client goals, in constructing investment portfolios, and in identifying inconsistencies in investment decision making. Behavioral finance also provides insights into issues such as market anomalies. The readings propose that integration of behavioral and traditional finance may lead to a better outcome than either approach used in isolation.

READING ASSIGNMENTS

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|------------------|--|
| Reading 7 | The Behavioral Finance Perspective
by Michael M. Pompian, CFA |
| Reading 8 | The Behavioral Biases of Individuals
by Michael M. Pompian, CFA |
| Reading 9 | Behavioral Finance and Investment Processes
by Michael M. Pompian, CFA, Colin McLean, FSIP, and
Alistair Byrne, PhD, CFA |

Note: The readings in this study session use widely recognized terminology. Nevertheless, readers should be aware that writers on behavioral finance vary in their choice of terminology.

LEARNING OUTCOMES**READING 7. THE BEHAVIORAL FINANCE PERSPECTIVE**

The candidate should be able to:

- a** contrast traditional and behavioral finance perspectives on investor decision making;
- b** contrast expected utility and prospect theories of investment decision making;
- c** discuss the effect that cognitive limitations and bounded rationality may have on investment decision making;
- d** compare traditional and behavioral finance perspectives on portfolio construction and the behavior of capital markets.

READING 8. THE BEHAVIORAL BIASES OF INDIVIDUALS

The candidate should be able to:

- a** distinguish between cognitive errors and emotional biases;
- b** discuss commonly recognized behavioral biases and their implications for financial decision making;
- c** identify and evaluate an individual's behavioral biases;
- d** evaluate how behavioral biases affect investment policy and asset allocation decisions and recommend approaches to mitigate their effects.

READING 9. BEHAVIORAL FINANCE AND INVESTMENT PROCESSES

The candidate should be able to:

- a** explain the uses and limitations of classifying investors into personality types;
- b** discuss how behavioral factors affect adviser–client interactions;
- c** discuss how behavioral factors influence portfolio construction;
- d** explain how behavioral finance can be applied to the process of portfolio construction;
- e** discuss how behavioral factors affect analyst forecasts and recommend remedial actions for analyst biases;
- f** discuss how behavioral factors affect investment committee decision making and recommend techniques for mitigating their effects;
- g** describe how behavioral biases of investors can lead to market characteristics that may not be explained by traditional finance.

STUDY SESSION

5

Private Wealth Management (1)

This study session addresses the process of private wealth management and the construction of an investment policy statement (IPS) for the individual investor. The IPS is a blueprint for investing client assets. The IPS identifies the needs, goals, and risk tolerance of the investor, as well as constraints under which the investment portfolio must operate. The adviser then formulates an investment strategy to tax-efficiently reconcile these potentially conflicting requirements.

Taxes and regulations are important considerations for individual investors. Because taxes and regulations vary from locality to locality, tax-efficient strategies for portfolio construction and wealth transfer are necessarily specific to the locality in which the investor is taxed. The study session focuses on investment strategies applicable across a wide range of localities. Although illustrations of such strategies may be presented from a country-specific perspective, candidates should focus on the underlying investment principles and be able to apply them to other tax settings.

READING ASSIGNMENTS

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|-------------------|--|
| Reading 10 | Managing Individual Investor Portfolios
by James W. Bronson, CFA, Matthew Scanlan, CFA, and Jan R. Squires, DBA, CFA |
| Reading 11 | Taxes and Private Wealth Management in a Global Context
by Stephen M. Horan, PhD, CFA, CIPM, and Thomas R. Robinson, PhD, CFA |
| Reading 12 | Estate Planning in a Global Context
by Stephen M. Horan, PhD, CFA, CIPM, and Thomas R. Robinson, PhD, CFA |

LEARNING OUTCOMES**READING 10. MANAGING INDIVIDUAL INVESTOR PORTFOLIOS**

The candidate should be able to:

- a** discuss how source of wealth, measure of wealth, and stage of life affect an individual investor's risk tolerance;
- b** explain the role of situational and psychological profiling in understanding an individual investor's attitude toward risk;
- c** explain the influence of investor psychology on risk tolerance and investment choices;
- d** explain potential benefits, for both clients and investment advisers, of having a formal investment policy statement;
- e** explain the process involved in creating an investment policy statement;
- f** distinguish between required return and desired return and explain how these affect the individual investor's investment policy;
- g** explain how to set risk and return objectives for individual investor portfolios;
- h** discuss the effects that ability and willingness to take risk have on risk tolerance;
- i** discuss the major constraint categories included in an individual investor's investment policy statement;
- j** prepare and justify an investment policy statement for an individual investor;
- k** determine the strategic asset allocation that is most appropriate for an individual investor's specific investment objectives and constraints;
- l** compare Monte Carlo and traditional deterministic approaches to retirement planning and explain the advantages of a Monte Carlo approach.

READING 11. TAXES AND PRIVATE WEALTH MANAGEMENT IN A GLOBAL CONTEXT

The candidate should be able to:

- a** compare basic global taxation regimes as they relate to the taxation of dividend income, interest income, realized capital gains, and unrealized capital gains;
- b** determine the effects of different types of taxes and tax regimes on future wealth accumulation;
- c** explain how investment return and investment horizon affect the tax impact associated with an investment;
- d** discuss the tax profiles of different types of investment accounts and explain their effects on after-tax returns and future accumulations;
- e** explain how taxes affect investment risk;
- f** discuss the relation between after-tax returns and different types of investor trading behavior;
- g** explain tax loss harvesting and highest-in/first-out (HIFO) tax lot accounting;
- h** demonstrate how taxes and asset location relate to mean–variance optimization.

READING 12. ESTATE PLANNING IN A GLOBAL CONTEXT

The candidate should be able to:

- a** discuss the purpose of estate planning and explain the basic concepts of domestic estate planning, including estates, wills, and probate;
- b** explain the two principal forms of wealth transfer taxes and discuss effects of important non-tax issues, such as legal system, forced heirship, and marital property regime;
- c** determine a family's core capital and excess capital, based on mortality probabilities and Monte Carlo analysis;
- d** evaluate the relative after-tax value of lifetime gifts and testamentary bequests;
- e** explain the estate planning benefit of making lifetime gifts when gift taxes are paid by the donor, rather than the recipient;
- f** evaluate the after-tax benefits of basic estate planning strategies, including generation skipping, spousal exemptions, valuation discounts, and charitable gifts;
- g** explain the basic structure of a trust and discuss the differences between revocable and irrevocable trusts;
- h** explain how life insurance can be a tax-efficient means of wealth transfer;
- i** discuss the two principal systems (source jurisdiction and residence jurisdiction) for establishing a country's tax jurisdiction;
- j** discuss the possible income and estate tax consequences of foreign situated assets and foreign-sourced income;
- k** evaluate a client's tax liability under each of three basic methods (credit, exemption, and deduction) that a country may use to provide relief from double taxation;
- l** discuss how increasing international transparency and information exchange among tax authorities affect international estate planning.

STUDY SESSION

6

Private Wealth Management (2)

The wealth of many individuals and families is often concentrated in a limited number of securities, business holdings, or real estate properties. The sale of concentrated positions to facilitate desired diversification may not be feasible or may create a substantial tax liability.

This study session examines the considerations and risks associated with concentrated single asset positions. Strategies for managing concentrated positions in publicly traded common shares, privately held businesses, and real estate are presented. Coverage on the dynamics of human and financial capital and the challenge of meeting financial goals throughout an investor's lifetime follows. The discussion specifically addresses investment strategies and financial products structured to mitigate the risk of not achieving these goals.

READING ASSIGNMENTS

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|-------------------|---|
| Reading 13 | Concentrated Single Asset Positions
by Thomas J. Boczar, Esq., LL.M., CFA, and Nischal R. Pai, CFA |
| Reading 14 | Risk Management for Individuals
by David M. Blanchett, PhD, CFP, CFA, David M. Cordell, PhD, CFP, CFA, Michael S. Finke, PhD, and Thomas M. Idzorek, CFA |

LEARNING OUTCOMES**READING 13. CONCENTRATED SINGLE-ASSET POSITIONS**

The candidate should be able to:

- a** explain investment risks associated with a concentrated position in a single asset and discuss the appropriateness of reducing such risks;
- b** describe typical objectives in managing concentrated positions;
- c** discuss tax consequences and illiquidity as considerations affecting the management of concentrated positions in publicly traded common shares, privately held businesses, and real estate;
- d** discuss capital market and institutional constraints on an investor's ability to reduce a concentrated position;
- e** discuss psychological considerations that may make an investor reluctant to reduce his or her exposure to a concentrated position;
- f** describe advisers' use of goal-based planning in managing concentrated positions;
- g** explain uses of asset location and wealth transfers in managing concentrated positions;
- h** describe strategies for managing concentrated positions in publicly traded common shares;
- i** discuss tax considerations in the choice of hedging strategy;
- j** describe strategies for managing concentrated positions in privately held businesses;
- k** describe strategies for managing concentrated positions in real estate;
- l** evaluate and recommend techniques for tax efficiently managing the risks of concentrated positions in publicly traded common stock, privately held businesses, and real estate.

READING 14. RISK MANAGEMENT FOR INDIVIDUALS

The candidate should be able to:

- a** compare the characteristics of human capital and financial capital as components of an individual's total wealth;
- b** discuss the relationships among human capital, financial capital, and net wealth;
- c** discuss the financial stages of life for an individual;
- d** describe an economic (holistic) balance sheet;
- e** discuss risks (earnings, premature death, longevity, property, liability, and health risks) in relation to human and financial capital;
- f** describe types of insurance relevant to personal financial planning;
- g** describe the basic elements of a life insurance policy and how insurers price a life insurance policy;
- h** discuss the use of annuities in personal financial planning;
- i** discuss the relative advantages and disadvantages of fixed and variable annuities;
- j** analyze and critique an insurance program;

- k** discuss how asset allocation policy may be influenced by the risk characteristics of human capital;
- l** recommend and justify appropriate strategies for asset allocation and risk reduction when given an investor profile of key inputs.

STUDY SESSION

7

Portfolio Management for Institutional Investors

Broadly defined, institutional investors include retirement plans such as defined-benefit or defined-contribution plans, grant making organizations, endowments, insurance companies, banks, sovereign wealth funds, and investment intermediaries. These institutions typically have a well-defined purpose or business model in which their investment portfolio plays a pivotal role. Each group faces a unique set of investment objectives and constraints.

This study session provides a conceptual, yet practical, framework for understanding institutional portfolio management. Concepts and practices important in determining the investment policy statement (IPS) are presented for different types of institutional investors.

READING ASSIGNMENT

Reading 15

Managing Institutional Investor Portfolios
by R. Charles Tschampion, CFA, Laurence B. Siegel, Dean J.
Takahashi, and John L. Maginn, CFA

LEARNING OUTCOMES

READING 15. MANAGING INSTITUTIONAL INVESTOR PORTFOLIOS

The candidate should be able to:

- a** contrast a defined-benefit plan to a defined-contribution plan and discuss the advantages and disadvantages of each from the perspectives of the employee and the employer;
- b** discuss investment objectives and constraints for defined-benefit plans;

Note: The concepts and practices important to institutional investment management appear in many readings throughout the Level III study sessions.

- c** evaluate pension fund risk tolerance when risk is considered from the perspective of the 1) plan surplus, 2) sponsor financial status and profitability, 3) sponsor and pension fund common risk exposures, 4) plan features, and 5) workforce characteristics;
- d** prepare an investment policy statement for a defined-benefit plan;
- e** evaluate the risk management considerations in investing pension plan assets;
- f** prepare an investment policy statement for a participant directed defined-contribution plan;
- g** discuss hybrid pension plans (e.g., cash balance plans) and employee stock ownership plans;
- h** distinguish among various types of foundations, with respect to their description, purpose, and source of funds;
- i** compare the investment objectives and constraints of foundations, endowments, insurance companies, and banks;
- j** discuss the factors that determine investment policy for pension funds, foundation endowments, life and non-life insurance companies, and banks;
- k** prepare an investment policy statement for a foundation, an endowment, an insurance company, and a bank;
- l** contrast investment companies, commodity pools, and hedge funds to other types of institutional investors;
- m** compare the asset/liability management needs of pension funds, foundations, endowments, insurance companies, and banks;
- n** compare the investment objectives and constraints of institutional investors given relevant data, such as descriptions of their financial circumstances and attitudes toward risk.

STUDY SESSION

8

Applications of Economic Analysis to Portfolio Management

A necessary task in the investment management process is to formulate capital market expectations. These forecasts of risk and return for various asset classes form the basis for constructing portfolios that maximize expected return for given levels of risk.

This study session examines the process of setting capital market expectations and covers major tools of economic analysis. The application of neo-classical growth theory to develop economic forecasts is presented. The discussion includes how economic forecasts can be integrated with equity valuation techniques to value an equity market.

READING ASSIGNMENT

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|-------------------|---|
| Reading 16 | Capital Market Expectations
by John P. Calverley, Alan M. Meder, CPA, CFA, Brian D. Singer, CFA, and Renato Staub, PhD |
| Reading 17 | Equity Market Valuation
by Peter C. Stimes, CFA, and Stephen E. Wilcox, PhD, CFA |

LEARNING OUTCOMES

READING 16. CAPITAL MARKET EXPECTATIONS

The candidate should be able to:

- a** discuss the role of, and a framework for, capital market expectations in the portfolio management process;
- b** discuss challenges in developing capital market forecasts;

- c** demonstrate the application of formal tools for setting capital market expectations, including statistical tools, discounted cash flow models, the risk premium approach, and financial equilibrium models;
- d** explain the use of survey and panel methods and judgment in setting capital market expectations;
- e** discuss the inventory and business cycles and the effects that consumer and business spending and monetary and fiscal policy have on the business cycle;
- f** discuss the effects that the phases of the business cycle have on short-term/long-term capital market returns;
- g** explain the relationship of inflation to the business cycle and the implications of inflation for cash, bonds, equity, and real estate returns;
- h** demonstrate the use of the Taylor rule to predict central bank behavior;
- i** interpret the shape of the yield curve as an economic predictor and discuss the relationship between the yield curve and fiscal and monetary policy;
- j** identify and interpret the components of economic growth trends and demonstrate the application of economic growth trend analysis to the formulation of capital market expectations;
- k** explain how exogenous shocks may affect economic growth trends;
- l** identify and interpret macroeconomic, interest rate, and exchange rate linkages between economies;
- m** discuss the risks faced by investors in emerging-market securities and the country risk analysis techniques used to evaluate emerging market economies;
- n** compare the major approaches to economic forecasting;
- o** demonstrate the use of economic information in forecasting asset class returns;
- p** explain how economic and competitive factors can affect investment markets, sectors, and specific securities;
- q** discuss the relative advantages and limitations of the major approaches to forecasting exchange rates;
- r** recommend and justify changes in the component weights of a global investment portfolio based on trends and expected changes in macroeconomic factors.

READING 17. EQUITY MARKET VALUATION

The candidate should be able to:

- a** explain the terms of the Cobb-Douglas production function and demonstrate how the function can be used to model growth in real output under the assumption of constant returns to scale;
- b** evaluate the relative importance of growth in total factor productivity, in capital stock, and in labor input given relevant historical data;
- c** demonstrate the use of the Cobb-Douglas production function in obtaining a discounted dividend model estimate of the intrinsic value of an equity market;
- d** critique the use of discounted dividend models and macroeconomic forecasts to estimate the intrinsic value of an equity market;
- e** contrast top-down and bottom-up approaches to forecasting the earnings per share of an equity market index;

- f** discuss the strengths and limitations of relative valuation models;
- g** judge whether an equity market is under-, fairly, or over-valued using a relative equity valuation model.

Asset Allocation and Related Decisions in Portfolio Management (1)

Often considered the most important activity in the investment process, the strategic asset allocation decision takes place after the formation of capital market expectations. The portfolio's long-term asset class, or factor, exposures and the best means to achieve these exposures are determined only after considering the investor's unique financial situation and objectives, risk–return tradeoffs, and other key inputs.

This study session provides a conceptual framework for understanding asset allocation considerations and key implementation approaches. Consideration of an investor's overall financial context using an economic balance sheet to incorporate all relevant investor assets and liabilities is presented. Three major approaches to asset allocation are described: asset only, liability relative, and goals based. Concepts underlying active and passive implementation and strategic rebalancing are also introduced. The session then circles back to explain and illustrate the three approaches in greater depth.

READING ASSIGNMENTS

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|-------------------|---|
| Reading 18 | Introduction to Asset Allocation
by William W. Jennings, PhD, CFA, and Eugene L. Podkaminer, CFA |
| Reading 19 | Principles of Asset Allocation
by Jean L.P. Brunel, CFA, Thomas M. Idzorek, CFA, and John M. Mulvey, PhD |

LEARNING OUTCOMES**READING 18. INTRODUCTION TO ASSET ALLOCATION**

The candidate should be able to:

- a** prepare an economic balance sheet for a client and interpret its implications for asset allocation;
- b** compare the investment objectives of asset-only, liability-relative, and goals-based asset allocation approaches;
- c** contrast concepts of risk relevant to asset-only, liability-relative, and goals-based asset allocation approaches;
- d** explain how asset classes are used to represent exposures to systematic risk and discuss criteria for asset class specification;
- e** explain the use of risk factors in asset allocation and their relation to traditional asset class-based approaches;
- f** select and justify an asset allocation based on an investor's objectives and constraints;
- g** describe the use of the global market portfolio as a baseline portfolio in asset allocation;
- h** discuss strategic implementation choices in asset allocation, including passive/active choices and vehicles for implementing passive and active mandates;
- i** discuss strategic considerations in rebalancing asset allocations.

READING 19. PRINCIPLES OF ASSET ALLOCATION

The candidate should be able to:

- a** describe and critique the use of mean-variance optimization in asset allocation;
- b** recommend and justify an asset allocation using mean-variance optimization;
- c** interpret and critique an asset allocation in relation to an investor's economic balance sheet;
- d** discuss asset class liquidity considerations in asset allocation;
- e** explain absolute and relative risk budgets and their use in determining and implementing an asset allocation;
- f** describe how client needs and preferences regarding investment risks can be incorporated into asset allocation;
- g** discuss the use of Monte Carlo simulation and scenario analysis to evaluate the robustness of an asset allocation;
- h** describe the use of investment factors in constructing and analyzing an asset allocation;
- i** recommend and justify an asset allocation based on the global market portfolio;
- j** describe and evaluate characteristics of liabilities that are relevant to asset allocation;
- k** discuss approaches to liability-relative asset allocation;
- l** recommend and justify a liability-relative asset allocation;
- m** recommend and justify an asset allocation using a goals-based approach;
- n** describe and critique heuristic and other approaches to asset allocation;
- o** discuss factors affecting rebalancing policy.

STUDY SESSION

10

Asset Allocation and Related Decisions in Portfolio Management (2)

In practice, the asset allocation decision is affected by numerous constraints that present practical challenges to asset allocation. Significant investor-based constraints include investable assets, liquidity needs, time horizon, and regulatory and tax environments.

This study session examines the effects of these constraints and presents adaptations to address them by institutional investor type. Also discussed are behavioral biases that influence the asset allocation process and ways to overcome these biases.

When the strategic asset allocation includes exposure to global markets, non-domestic currencies create additional sources of portfolio volatility and potential returns. How currency exposures can be managed to reflect a client's investment objectives and constraints is explored.

READING ASSIGNMENTS

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|-------------------|---|
| Reading 20 | Asset Allocation with Real-World Constraints
by Peter Mladina, Brian J. Murphy, CFA, and Mark Ruloff,
FSA, EA, CERA |
| Reading 21 | Currency Management: An Introduction
by William A. Barker, PhD, CFA |

LEARNING OUTCOMES**READING 20. ASSET ALLOCATION WITH REAL-WORLD CONSTRAINTS**

The candidate should be able to:

- a** discuss asset size, liquidity needs, time horizon, and regulatory or other considerations as constraints on asset allocation;
- b** discuss tax considerations in asset allocation and rebalancing;
- c** recommend and justify revisions to an asset allocation given change(s) in investment objectives and/or constraints;
- d** discuss the use of short-term shifts in asset allocation;
- e** identify behavioral biases that arise in asset allocation and recommend methods to overcome them.

READING 21. CURRENCY MANAGEMENT: AN INTRODUCTION

The candidate should be able to:

- a** analyze the effects of currency movements on portfolio risk and return;
- b** discuss strategic choices in currency management;
- c** formulate an appropriate currency management program given financial market conditions and portfolio objectives and constraints;
- d** compare active currency trading strategies based on economic fundamentals, technical analysis, carry-trade, and volatility trading;
- e** describe how changes in factors underlying active trading strategies affect tactical trading decisions;
- f** describe how forward contracts and FX (foreign exchange) swaps are used to adjust hedge ratios;
- g** describe trading strategies used to reduce hedging costs and modify the risk–return characteristics of a foreign-currency portfolio;
- h** describe the use of cross-hedges, macro-hedges, and minimum-variance-hedge ratios in portfolios exposed to multiple foreign currencies;
- i** discuss challenges for managing emerging market currency exposures.

STUDY SESSION

11

Fixed-Income Portfolio Management (1)

Fixed-income securities represent a significant portion of all available financial assets and are included in most investor portfolios.

This study session begins by explaining the role played by fixed-income securities in portfolios and then introduces the two primary types of fixed-income mandates (liability-based and total return). A model for decomposing expected bond returns, which identifies the driving forces behind expected returns, is presented. The effects of illiquidity, leverage, and taxes on fixed-income portfolios are discussed. Next, liability-driven and index-based strategies are examined in greater detail. Coverage includes approaches, risks, and challenges associated with both immunization of single and multiple liabilities and the indexation and laddering of a fixed-income portfolio.

READING ASSIGNMENTS

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|-------------------|--|
| Reading 22 | Introduction to Fixed-Income Portfolio Management
by Bernd Hanke, PhD, CFA, and Brian J. Henderson, PhD,
CFA |
| Reading 23 | Liability-Driven and Index-Based Strategies
by James F. Adams, PhD, CFA, and Donald J. Smith, PhD |

LEARNING OUTCOMES**READING 22. INTRODUCTION TO FIXED-INCOME PORTFOLIO MANAGEMENT**

The candidate should be able to:

- a** discuss roles of fixed-income securities in portfolios;
- b** describe how fixed-income mandates may be classified and compare features of the mandates;
- c** describe bond market liquidity, including the differences among market sub-sectors, and discuss the effect of liquidity on fixed-income portfolio management;
- d** describe and interpret a model for fixed-income returns;
- e** discuss the use of leverage, alternative methods for leveraging, and risks that leverage creates in fixed-income portfolios;
- f** discuss differences in managing fixed-income portfolios for taxable and tax exempt investors.

READING 23. LIABILITY-DRIVEN AND INDEX-BASED STRATEGIES

The candidate should be able to:

- a** describe liability-driven investing;
- b** evaluate strategies for managing a single liability;
- c** compare strategies for a single liability and for multiple liabilities, including alternative means of implementation;
- d** evaluate liability-based strategies under various interest rate scenarios and select a strategy to achieve a portfolio's objectives;
- e** explain risks associated with managing a portfolio against a liability structure;
- f** discuss bond indexes and the challenges of managing a fixed-income portfolio to mimic the characteristics of a bond index;
- g** compare alternative methods for establishing bond market exposure passively;
- h** discuss criteria for selecting a benchmark and justify the selection of a benchmark;
- i** describe construction, benefits, limitations, and risk–return characteristics of a laddered bond portfolio.

STUDY SESSION

12

Fixed-Income Portfolio Management (2)

This study session covers yield curve and credit strategies for fixed-income portfolios. Fundamental concepts necessary for understanding yield curves and yield curve strategies are reviewed. Portfolio management strategies, which are based on the investor's expectations regarding the level, slope, and curvature of the yield curve, are presented. Strategies used to construct and manage fixed-income credit portfolios follow. Coverage includes various credit spread measures, bottom-up and top-down approaches to credit strategies, and credit-related risks.

READING ASSIGNMENTS

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|-------------------|---|
| Reading 24 | Yield Curve Strategies
by Robert W. Kopprasch, PhD, CFA, and Steven V. Mann,
PhD |
| Reading 25 | Fixed-Income Active Management: Credit Strategies
by Campe Goodman, CFA, and Oleg Melentyev, CFA |

LEARNING OUTCOMES

READING 24. YIELD CURVE STRATEGIES

The candidate should be able to:

- a** describe major types of yield curve strategies;
- b** explain how to execute a carry trade;
- c** explain why and how a fixed-income portfolio manager might choose to alter portfolio convexity;
- d** formulate a portfolio positioning strategy given forward interest rates and an interest rate view;

- e** explain how derivatives may be used to implement yield curve strategies;
- f** evaluate a portfolio's sensitivity to a change in curve slope using key rate durations of the portfolio and its benchmark;
- g** discuss inter-market curve strategies;
- h** construct a duration-neutral government bond portfolio to profit from a change in yield curve curvature;
- i** evaluate the expected return and risks of a yield curve strategy.

READING 25. FIXED-INCOME ACTIVE MANAGEMENT: CREDIT STRATEGIES

The candidate should be able to:

- a** describe risk considerations in investment-grade and high-yield corporate bond portfolios;
- b** compare the use of credit spread measures in portfolio construction;
- c** discuss bottom-up approaches to credit strategies;
- d** discuss top-down approaches to credit strategies;
- e** discuss liquidity risk in credit markets and how liquidity risk can be managed in a credit portfolio;
- f** describe how to assess and manage tail risk in credit portfolios;
- g** discuss considerations in constructing and managing portfolios across international credit markets;
- h** describe the use of structured financial instruments as an alternative to corporate bonds in credit portfolios.

Equity Portfolio Management (1)

Because equity securities represent a significant portion of many investment portfolios, equity portfolio management is often an important component of overall investment success. This study session begins by explaining the role played by equity investments in portfolios, with consideration given to costs and shareholder responsibilities. It then discusses two approaches to equity portfolio management: passive or index-based investing and active equity strategies. The reading on passive equity investing addresses important issues such as alternative approaches to index replication and factor-based passive strategies. Tracking error, risk, and return considerations from an indexing perspective are examined.

READING ASSIGNMENT

- | | |
|-------------------|--|
| Reading 26 | Introduction to Equity Portfolio Management
by James Clunie, PhD, CFA, and James Alan Finnegan, RMA,
CFA |
| Reading 27 | Passive Equity Investing
by David M. Smith, PhD, CFA, and Kevin K. Yousif, CFA |

LEARNING OUTCOMES

READING 26. INTRODUCTION TO EQUITY PORTFOLIO MANAGEMENT

The candidate should be able to:

- a** describe the roles of equities in the overall portfolio;
- b** describe how an equity manager's investment universe can be segmented;

- c** describe the types of income and costs associated with owning and managing an equity portfolio and their potential effects on portfolio performance;
- d** describe the potential benefits of shareholder engagement and the role an equity manager might play in shareholder engagement;
- e** describe rationales for equity investment across the passive–active spectrum.

READING 27. PASSIVE EQUITY INVESTING

The candidate should be able to:

- a** discuss considerations in choosing a benchmark for a passively managed equity portfolio;
- b** compare passive factor-based strategies to market-capitalization-weighted indexing;
- c** compare different approaches to passive equity investing;
- d** compare the full replication, stratified sampling, and optimization approaches for the construction of passively managed equity portfolios;
- e** discuss potential causes of tracking error and methods to control tracking error for passively managed equity portfolios;
- f** explain sources of return and risk to a passively managed equity portfolio.

Equity Portfolio Management (2)

This study session takes an in-depth look at active equity portfolio management. It begins with a discussion of quantitative and fundamental equity strategies, including the underlying rationale for the investment approach and how they are created, whether top-down or bottom-up. Factor-based investing, as well as key specialized equity strategies such as activist investing and statistical arbitrage, are explored. The study session concludes with a discussion of issues important in active equity portfolio construction, including Active Share, active risk, risk budgeting, and constraints on portfolio construction.

READING ASSIGNMENT

- | | |
|-------------------|---|
| Reading 28 | Active Equity Investing: Strategies
by Bing Li, PhD, CFA, Yin Luo, CFA, and Pranay Gupta,
CFA |
| Reading 29 | Active Equity Investing: Portfolio Construction
by Jacques Lussier, CFA, and Marc Reinganum, PhD |

LEARNING OUTCOMES

READING 28. ACTIVE EQUITY INVESTING: STRATEGIES

The candidate should be able to:

- a** compare fundamental and quantitative approaches to active management;
- b** analyze bottom-up active strategies, including their rationale and associated processes;
- c** analyze top-down active strategies, including their rationale and associated processes;

- d** analyze factor-based active strategies, including their rationale and associated processes;
- e** analyze activist strategies, including their rationale and associated processes;
- f** describe active strategies based on statistical arbitrage and market microstructure;
- g** describe how fundamental active investment strategies are created;
- h** describe how quantitative active investment strategies are created;
- i** discuss equity investment style classifications.

READING 29. ACTIVE EQUITY INVESTING: PORTFOLIO CONSTRUCTION

The candidate should be able to:

- a** describe elements of a manager's investment philosophy that influence the portfolio construction process;
- b** discuss approaches for constructing actively managed equity portfolios;
- c** distinguish between Active Share and active risk and discuss how each measure relates to a manager's investment strategy;
- d** discuss the application of risk budgeting concepts in portfolio construction;
- e** discuss risk measures that are incorporated in equity portfolio construction and describe how limits set on these measures affect portfolio construction;
- f** discuss how assets under management, position size, market liquidity, and portfolio turnover affect equity portfolio construction decisions;
- g** evaluate the efficiency of a portfolio structure given its investment mandate;
- h** discuss the long-only, long extension, long/short, and equitized market-neutral approaches to equity portfolio construction, including their risks, costs, and effects on potential alphas.

Alternative Investments for Portfolio Management

Alternative investments comprise groups of investments with risk and return characteristics that differ from those of traditional stock and bond investments. Alternative investments are typically, although not always, characterized by:

- relative illiquidity, which tends to be associated with a return premium as compensation;
- potential to diversify;
- high due diligence costs; and
- performance appraisal that is unusually difficult, due in part to the complexity of establishing valid benchmarks.

Allocations to alternative investments are often made with the expectation that they offer the potential for risk diversification and/or greater opportunities to apply active management skills and capture alpha.

READING ASSIGNMENTS

Reading 30

Alternative Investments Portfolio Management
by Jot K. Yau, PhD, CFA, Thomas Schneeweis, PhD, Edward
A. Szado, PhD, CFA, Thomas R. Robinson, PhD, CFA, and
Lisa R. Weiss, CFA

LEARNING OUTCOMES**READING 30. ALTERNATIVE INVESTMENTS PORTFOLIO MANAGEMENT**

The candidate should be able to:

- a** describe common features of alternative investments and their markets and how alternative investments may be grouped by the role they typically play in a portfolio;
- b** explain and justify the major due diligence checkpoints involved in selecting active managers of alternative investments;
- c** explain distinctive issues that alternative investments raise for investment advisers of private wealth clients;
- d** distinguish among types of alternative investments;
- e** discuss the construction and interpretation of benchmarks and the problem of benchmark bias in alternative investment groups;
- f** evaluate the return enhancement and/or risk diversification effects of adding an alternative investment to a reference portfolio (for example, a portfolio invested solely in common equity and bonds);
- g** describe advantages and disadvantages of direct equity investments in real estate;
- h** discuss the major issuers and suppliers of venture capital, the stages through which private companies pass (seed stage through exit), the characteristic sources of financing at each stage, and the purpose of such financing;
- i** compare venture capital funds and buyout funds;
- j** discuss the use of convertible preferred stock in direct venture capital investment;
- k** explain the typical structure of a private equity fund, including the compensation to the fund's sponsor (general partner) and typical timelines;
- l** discuss issues that must be addressed in formulating a private equity investment strategy;
- m** compare indirect and direct commodity investment;
- n** describe the principal roles suggested for commodities in a portfolio and explain why some commodity classes may provide a better hedge against inflation than others;
- o** identify and explain the style classification of a hedge fund, given a description of its investment strategy;
- p** discuss the typical structure of a hedge fund, including the fee structure, and explain the rationale for high-water mark provisions;
- q** describe the purpose and characteristics of fund-of-funds hedge funds;
- r** discuss concerns involved in hedge fund performance evaluation;
- s** describe trading strategies of managed futures programs and the role of managed futures in a portfolio;
- t** describe strategies and risks associated with investing in distressed securities;
- u** explain event risk, market liquidity risk, market risk, and "J factor risk" in relation to investing in distressed securities.

STUDY SESSION

16

Risk Management

Effective risk management identifies, assesses, and controls numerous sources of risk in an effort to maintain an appropriate balance between the expected rewards and potentially negative outcomes associated with risks incurred. With the increasingly complex nature of investment management firms and investment portfolios, sophisticated risk management techniques have been developed to provide analysts with the necessary tools to properly measure and manage various risks.

This study session presents a framework for risk management, focusing on the concepts and tools for measuring and managing market risk and credit risk.

READING ASSIGNMENTS

Reading 31 Risk Management
by Don M. Chance, PhD, CFA, Kenneth Grant, and John R. Marsland, CFA

LEARNING OUTCOMES

READING 31. RISK MANAGEMENT

The candidate should be able to:

- a** discuss features of the risk management process, risk governance, risk reduction, and an enterprise risk management system;
- b** evaluate strengths and weaknesses of a company's risk management process;
- c** describe steps in an effective enterprise risk management system;
- d** evaluate a company's or a portfolio's exposures to financial and nonfinancial risk factors;

- e** calculate and interpret value at risk (VaR) and explain its role in measuring overall and individual position market risk;
- f** compare the analytical (variance–covariance), historical, and Monte Carlo methods for estimating VaR and discuss the advantages and disadvantages of each;
- g** discuss advantages and limitations of VaR and its extensions, including cash flow at risk, earnings at risk, and tail value at risk;
- h** compare alternative types of stress testing and discuss advantages and disadvantages of each;
- i** evaluate the credit risk of an investment position, including forward contract, swap, and option positions;
- j** demonstrate the use of risk budgeting, position limits, and other methods for managing market risk;
- k** demonstrate the use of exposure limits, marking to market, collateral, netting arrangements, credit standards, and credit derivatives to manage credit risk;
- l** discuss the Sharpe ratio, risk-adjusted return on capital, return over maximum drawdown, and the Sortino ratio as measures of risk-adjusted performance;
- m** demonstrate the use of VaR and stress testing in setting capital requirements.

Risk Management Applications of Derivatives

This study session addresses risk management strategies using forwards and futures, option strategies, floors and caps, and swaps. These derivatives can be used for a variety of risk management purposes, including modification of portfolio duration and beta, implementation of asset allocation changes, and creation of cash market instruments. A growing number of security types now have embedded derivatives, and portfolio managers must be able to account for the effects of derivatives on the return/risk profile of the security and the portfolio. After completing this study session, the candidate will better understand advantages and disadvantages of derivative strategies, including the difficulties in creating and maintaining a dynamic hedge.

READING ASSIGNMENTS

- | | |
|-------------------|--|
| Reading 32 | Risk Management Applications of Forward and Futures Strategies
by Don M. Chance, PhD, CFA |
| Reading 33 | Risk Management Applications of Option Strategies
by Don M. Chance, PhD, CFA |
| Reading 34 | Risk Management Applications of Swap Strategies
by Don M. Chance, PhD, CFA |

LEARNING OUTCOMES**READING 32. RISK MANAGEMENT APPLICATIONS OF FORWARD AND FUTURES STRATEGIES**

The candidate should be able to:

- a** demonstrate the use of equity futures contracts to achieve a target beta for a stock portfolio and calculate and interpret the number of futures contracts required;
- b** construct a synthetic stock index fund using cash and stock index futures (equitizing cash);
- c** explain the use of stock index futures to convert a long stock position into synthetic cash;
- d** demonstrate the use of equity and bond futures to adjust the allocation of a portfolio between equity and debt;
- e** demonstrate the use of futures to adjust the allocation of a portfolio across equity sectors and to gain exposure to an asset class in advance of actually committing funds to the asset class;
- f** explain exchange rate risk and demonstrate the use of forward contracts to reduce the risk associated with a future receipt or payment in a foreign currency;
- g** explain the limitations to hedging the exchange rate risk of a foreign market portfolio and discuss feasible strategies for managing such risk.

READING 33. RISK MANAGEMENT APPLICATIONS OF OPTION STRATEGIES

The candidate should be able to:

- a** compare the use of covered calls and protective puts to manage risk exposure to individual securities;
- b** calculate and interpret the value at expiration, profit, maximum profit, maximum loss, breakeven underlying price at expiration, and general shape of the graph for the following option strategies: bull spread, bear spread, butterfly spread, collar, straddle, box spread;
- c** calculate the effective annual rate for a given interest rate outcome when a borrower (lender) manages the risk of an anticipated loan using an interest rate call (put) option;
- d** calculate the payoffs for a series of interest rate outcomes when a floating rate loan is combined with 1) an interest rate cap, 2) an interest rate floor, or 3) an interest rate collar;
- e** explain why and how a dealer delta hedges an option position, why delta changes, and how the dealer adjusts to maintain the delta hedge;
- f** interpret the gamma of a delta-hedged portfolio and explain how gamma changes as in-the-money and out-of-the-money options move toward expiration.

READING 34. RISK MANAGEMENT APPLICATIONS OF SWAP STRATEGIES

The candidate should be able to:

- a** demonstrate how an interest rate swap can be used to convert a floating-rate (fixed-rate) loan to a fixed-rate (floating-rate) loan;
- b** calculate and interpret the duration of an interest rate swap;
- c** explain the effect of an interest rate swap on an entity's cash flow risk;
- d** determine the notional principal value needed on an interest rate swap to achieve a desired level of duration in a fixed-income portfolio;
- e** explain how a company can generate savings by issuing a loan or bond in its own currency and using a currency swap to convert the obligation into another currency;
- f** demonstrate how a firm can use a currency swap to convert a series of foreign cash receipts into domestic cash receipts;
- g** explain how equity swaps can be used to diversify a concentrated equity portfolio, provide international diversification to a domestic portfolio, and alter portfolio allocations to stocks and bonds;
- h** demonstrate the use of an interest rate swaption 1) to change the payment pattern of an anticipated future loan and 2) to terminate a swap.

STUDY SESSION

18

Trading

Because the investment process is not complete until securities are bought or sold, the quality of trade execution is an important determinant of investment results. The methods by which managers and traders interact with markets, choose appropriate trading strategies and tactics, and measure success in execution are key topics addressed in this study session.

READING ASSIGNMENTS

Reading 35 Execution of Portfolio Decisions
by Ananth Madhavan, PhD, Jack L. Treynor, and Wayne H. Wagner

LEARNING OUTCOMES

READING 35. EXECUTION OF PORTFOLIO DECISIONS

The candidate should be able to:

- a** compare market orders with limit orders, including the price and execution uncertainty of each;
- b** calculate and interpret the effective spread of a market order and contrast it to the quoted bid–ask spread as a measure of trading cost;
- c** compare alternative market structures and their relative advantages;
- d** explain the criteria of market quality and evaluate the quality of a market when given a description of its characteristics;
- e** explain the components of execution costs, including explicit and implicit costs, and evaluate a trade in terms of these costs;

- f** calculate and discuss implementation shortfall as a measure of transaction costs;
- g** contrast volume weighted average price (VWAP) and implementation shortfall as measures of transaction costs;
- h** explain the use of econometric methods in pretrade analysis to estimate implicit transaction costs;
- i** discuss the major types of traders, based on their motivation to trade, time versus price preferences, and preferred order types;
- j** describe the suitable uses of major trading tactics, evaluate their relative costs, advantages, and weaknesses, and recommend a trading tactic when given a description of the investor's motivation to trade, the size of the trade, and key market characteristics;
- k** explain the motivation for algorithmic trading and discuss the basic classes of algorithmic trading strategies;
- l** discuss the factors that typically determine the selection of a specific algorithmic trading strategy, including order size, average daily trading volume, bid–ask spread, and the urgency of the order;
- m** explain the meaning and criteria of best execution;
- n** evaluate a firm's investment and trading procedures, including processes, disclosures, and record keeping, with respect to best execution;
- o** discuss the role of ethics in trading.

STUDY SESSION

19

Performance Evaluation

Performance evaluation addresses three questions that are essential in evaluating the results of the portfolio management process:

- What was the portfolio's performance?
- Why did the portfolio produce the observed performance?
- Was the portfolio's performance due to luck or skill?

These questions are answered by performance measurement, performance attribution, and performance appraisal, respectively. The information developed in performance evaluation provides key inputs to a) assessing compliance with investment policy and progress toward achieving client goals, b) determining whether an investment manager's performance has been consistent with the manager's stated investment discipline, and c) deciding whether to hire, retain, or dismiss an investment manager.

The Global Investment Performance Standards (GIPS®) contain ethical and professional standards for presenting investment performance to prospective clients. These guidelines provide for standardized performance calculation and presentation among investment managers, enabling investors to objectively compare manager return histories and evaluate performance. This study session provides a grounding in the requirements and recommendations of GIPS.

READING ASSIGNMENTS

- | | |
|-------------------|---|
| Reading 36 | Evaluating Portfolio Performance
by Jeffery V. Bailey, CFA, Thomas M. Richards, CFA, and
David E. Tierney |
| Reading 37 | Overview of the Global Investment Performance Standards
by Philip Lawton, PhD, CFA, CIPM |

LEARNING OUTCOMES**READING 36. EVALUATING PORTFOLIO PERFORMANCE**

The candidate should be able to:

- a** demonstrate the importance of performance evaluation from the perspective of fund sponsors and the perspective of investment managers;
- b** explain the following components of portfolio evaluation: performance measurement, performance attribution, and performance appraisal;
- c** calculate, interpret, and contrast time-weighted and money-weighted rates of return and discuss how each is affected by cash contributions and withdrawals;
- d** identify and explain potential data quality issues as they relate to calculating rates of return;
- e** demonstrate the decomposition of portfolio returns into components attributable to the market, to style, and to active management;
- f** discuss the properties of a valid performance benchmark and explain advantages and disadvantages of alternative types of benchmarks;
- g** explain the steps involved in constructing a custom security-based benchmark;
- h** discuss the validity of using manager universes as benchmarks;
- i** evaluate benchmark quality by applying tests of quality to a variety of possible benchmarks;
- j** discuss issues that arise when assigning benchmarks to hedge funds;
- k** distinguish between macro and micro performance attribution and discuss the inputs typically required for each;
- l** demonstrate and contrast the use of macro and micro performance attribution methodologies to identify the sources of investment performance;
- m** discuss the use of fundamental factor models in micro performance attribution;
- n** evaluate the effects of the external interest rate environment and active management on fixed-income portfolio returns;
- o** explain the management factors that contribute to a fixed-income portfolio's total return and interpret the results of a fixed-income performance attribution analysis;
- p** calculate, interpret, and contrast alternative risk-adjusted performance measures, including (in their *ex post* forms) alpha, information ratio, Treynor measure, Sharpe ratio, and M^2 ;
- q** explain how a portfolio's alpha and beta are incorporated into the information ratio, Treynor measure, and Sharpe ratio;
- r** demonstrate the use of performance quality control charts in performance appraisal;
- s** discuss the issues involved in manager continuation policy decisions, including the costs of hiring and firing investment managers;
- t** contrast Type I and Type II errors in manager continuation decisions.

READING 37. OVERVIEW OF THE GLOBAL INVESTMENT PERFORMANCE STANDARDS

The candidate should be able to:

- a** discuss the objectives, key characteristics, and scope of the GIPS standards and their benefits to prospective clients and investment managers;
- b** explain the fundamentals of compliance with the GIPS standards, including the definition of the firm and the firm's definition of discretion;
- c** explain the requirements and recommendations of the GIPS standards with respect to input data, including accounting policies related to valuation and performance measurement;
- d** discuss the requirements of the GIPS standards with respect to return calculation methodologies, including the treatment of external cash flows, cash and cash equivalents, and expenses and fees;
- e** explain the requirements and recommendations of the GIPS standards with respect to composite return calculations, including methods for asset-weighting portfolio returns;
- f** explain the meaning of "discretionary" in the context of composite construction and, given a description of the relevant facts, determine whether a portfolio is likely to be considered discretionary;
- g** explain the role of investment mandates, objectives, or strategies in the construction of composites;
- h** explain the requirements and recommendations of the GIPS standards with respect to composite construction, including switching portfolios among composites, the timing of the inclusion of new portfolios in composites, and the timing of the exclusion of terminated portfolios from composites;
- i** explain the requirements of the GIPS standards for asset class segments carved out of multi-class portfolios;
- j** explain the requirements and recommendations of the GIPS standards with respect to disclosure, including fees, the use of leverage and derivatives, conformity with laws and regulations that conflict with the GIPS standards, and noncompliant performance periods;
- k** explain the requirements and recommendations of the GIPS standards with respect to presentation and reporting, including the required timeframe of compliant performance periods, annual returns, composite assets, and benchmarks;
- l** explain the conditions under which the performance of a past firm or affiliation must be linked to or used to represent the historical performance of a new or acquiring firm;
- m** evaluate the relative merits of high/low, range, interquartile range, and equal-weighted or asset-weighted standard deviation as measures of the internal dispersion of portfolio returns within a composite for annual periods;
- n** identify the types of investments that are subject to the GIPS standards for real estate and private equity;
- o** explain the provisions of the GIPS standards for real estate and private equity;
- p** explain the provisions of the GIPS standards for Wrap fee/Separately Managed Accounts;
- q** explain the requirements and recommended valuation hierarchy of the GIPS Valuation Principles;

- r** determine whether advertisements comply with the GIPS Advertising Guidelines;
- s** discuss the purpose, scope, and process of verification;
- t** discuss challenges related to the calculation of after-tax returns;
- u** identify and explain errors and omissions in given performance presentations and recommend changes that would bring them into compliance with GIPS standards.