

# STUDY SESSION

# 1

## Behavioral Finance

**B**ehavioral 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

|                  |                                                                                                                                          |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Reading 1</b> | The Behavioral Biases of Individuals<br>by Michael M. Pompian, CFA                                                                       |
| <b>Reading 2</b> | Behavioral Finance and Investment Processes<br>by Michael M. Pompian, CFA, Colin McLean, MBA, FIA,<br>FSIP, and Alistair Byrne, PhD, CFA |

### LEARNING OUTCOMES

#### READING 1. THE BEHAVIORAL BIASES OF INDIVIDUALS

The candidate should be able to:

- a** compare and contrast 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;

**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.

## READING 2. 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

# 2

## Capital Market Expectations

**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. A central theme of both readings is that a disciplined approach to setting expectations will be rewarded. After outlining a framework for developing expectations and reviewing potential pitfalls, the first reading focuses on the use of macroeconomic analysis in setting expectations. The second reading in this session builds on that foundation to examine setting expectations for specific asset classes—fixed income, equities, real estate, and currencies.

### READING ASSIGNMENTS

- |                  |                                                                                                              |
|------------------|--------------------------------------------------------------------------------------------------------------|
| <b>Reading 3</b> | Capital Market Expectations, Part I: Framework and Macro Considerations<br>by Christopher D. Piros, PhD, CFA |
| <b>Reading 4</b> | Capital Market Expectations, Part II: Forecasting Asset Class Returns<br>by Christopher D. Piros, PhD, CFA   |

**LEARNING OUTCOMES****READING 3. CAPITAL MARKET EXPECTATIONS, PART 1:  
FRAMEWORK AND MACRO CONSIDERATIONS**

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** explain how exogenous shocks may affect economic growth trends;
- d** discuss the application of economic growth trend analysis to the formulation of capital market expectations;
- e** compare major approaches to economic forecasting;
- f** discuss how business cycles affect short- and long-term expectations;
- g** explain the relationship of inflation to the business cycle and the implications of inflation for cash, bonds, equity, and real estate returns;
- h** discuss the effects of monetary and fiscal policy on business cycles;
- 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 macroeconomic, interest rate, and exchange rate linkages between economies.

**READING 4. CAPITAL MARKET EXPECTATIONS, PART 2:  
FORECASTING ASSET CLASS RETURNS**

The candidate should be able to:

- a** discuss approaches to setting expectations for fixed-income returns;
- b** discuss risks faced by investors in emerging market fixed-income securities and the country risk analysis techniques used to evaluate emerging market economies;
- c** discuss approaches to setting expectations for equity investment market returns;
- d** discuss risks faced by investors in emerging market equity securities;
- e** explain how economic and competitive factors can affect expectations for real estate investment markets and sector returns;
- f** discuss major approaches to forecasting exchange rates;
- g** discuss methods of forecasting volatility;
- h** recommend and justify changes in the component weights of a global investment portfolio based on trends and expected changes in macroeconomic factors.

## STUDY SESSION

# 3

### Asset Allocation and Related Decisions in Portfolio Management

**O**ften 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.

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. The final reading 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.

#### READING ASSIGNMENTS

- |                  |                                                                                                             |
|------------------|-------------------------------------------------------------------------------------------------------------|
| <b>Reading 5</b> | Overview of Asset Allocation<br>by William W. Jennings, PhD, CFA, and Eugene L. Podkaminer, CFA             |
| <b>Reading 6</b> | Principles of Asset Allocation<br>by Jean L.P. Brunel, CFA, Thomas M. Idzorek, CFA, and John M. Mulvey, PhD |

*(continued)*

**Reading 7**

Asset Allocation with Real-World Constraints  
by Peter Mladina, Brian J. Murphy, CFA, Mark Ruloff, FSA,  
EA, CERA

**LEARNING OUTCOMES****READING 5. OVERVIEW OF ASSET ALLOCATION**

The candidate should be able to:

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

**READING 6. PRINCIPLES OF ASSET ALLOCATION**

The candidate should be able to:

- a** describe and evaluate the use of mean–variance optimization in asset allocation;
- b** recommend and justify an asset allocation using mean–variance optimization;
- c** interpret and evaluate 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 evaluate heuristic and other approaches to asset allocation;
- o** discuss factors affecting rebalancing policy.

## **READING 7. 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.

# STUDY SESSION

# 4

## Derivatives and Currency Management

**T**he purpose of this study session is to illustrate ways in which derivatives might be used in typical investment situations. Few asset managers or individual investors will ever use all of the strategies described here. However, an informed investment professional should still be aware of these important strategies and understand the associated risk–return trade-offs.

The first reading examines widely used options strategies, including covered calls, protective puts and select spread and combination option strategies. Derivatives strategy selection is discussed and demonstrated in a series of applications.

The second reading shows how swaps, forwards, and futures can be used to change the risk exposure of an existing position. There are many ways in which investment managers and investors can use swaps, forwards, futures, and volatility derivatives. The typical applications of these derivatives involve modifying investment positions for hedging purposes or for taking directional bets, creating or replicating desired payoffs, implementing asset allocation and portfolio rebalancing decisions, and even inferring current market expectations.

When the strategic asset allocation includes exposure to global markets, non-domestic currencies create additional sources of portfolio volatility and potential returns. The final reading in this study session explores how currency exposures can be managed to reflect a client's investment objectives and constraints.

### READING ASSIGNMENTS

|                   |                                                                            |
|-------------------|----------------------------------------------------------------------------|
| <b>Reading 8</b>  | Option Strategies<br>by Adam Schwartz, PhD, CFA, and Barbara Valbuzzi, CFA |
| <b>Reading 9</b>  | Swaps, Forwards, and Futures Strategies<br>by Barbara Valbuzzi, CFA        |
| <b>Reading 10</b> | Currency Management: An Introduction<br>by William A. Barker, PhD, CFA     |

**LEARNING OUTCOMES****READING 8. OPTIONS STRATEGIES**

The candidate should be able to:

- a** demonstrate how an asset's returns may be replicated by using options;
- b** discuss the investment objective(s), structure, payoff, risk(s), value at expiration, profit, maximum profit, maximum loss, and breakeven underlying price at expiration of a covered call position;
- c** discuss the investment objective(s), structure, payoff, risk(s), value at expiration, profit, maximum profit, maximum loss, and breakeven underlying price at expiration of a protective put position;
- d** compare the delta of covered call and protective put positions with the position of being long an asset and short a forward on the underlying asset;
- e** compare the effect of buying a call on a short underlying position with the effect of selling a put on a short underlying position;
- f** discuss the investment objective(s), structure, payoffs, risk(s), value at expiration, profit, maximum profit, maximum loss, and breakeven underlying price at expiration of the following option strategies: bull spread, bear spread, straddle, and collar;
- g** describe uses of calendar spreads;
- h** discuss volatility skew and smile;
- i** identify and evaluate appropriate option strategies consistent with given investment objectives;
- j** demonstrate the use of options to achieve targeted equity risk exposures.

**READING 9. SWAPS, FORWARDS, AND FUTURES STRATEGIES**

The candidate should be able to:

- a** demonstrate how interest rate swaps, forwards, and futures can be used to modify a portfolio's risk and return;
- b** demonstrate how currency swaps, forwards, and futures can be used to modify a portfolio's risk and return;
- c** demonstrate how equity swaps, forwards, and futures can be used to modify a portfolio's risk and return;
- d** demonstrate the use of volatility derivatives and variance swaps;
- e** demonstrate the use of derivatives to achieve targeted equity and interest rate risk exposures;
- f** demonstrate the use of derivatives in asset allocation, rebalancing, and inferring market expectations.

**READING 10. 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

# 5

## Fixed-Income Portfolio Management (1)

**F**ixed-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. Fixed-income portfolio risk measures such as duration and convexity are addressed, and the effects of liquidity, leverage, and taxes on fixed-income portfolios are discussed. The session reviews alternatives to direct bond investments such as mutual funds and exchange-traded funds as well as fixed-income derivatives and their role in a portfolio. 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. Primary risk factors associated with an index, enhanced indexing and benchmark selection are also covered in this session.

### READING ASSIGNMENTS

- |                   |                                                                                                                |
|-------------------|----------------------------------------------------------------------------------------------------------------|
| <b>Reading 11</b> | Overview of Fixed-Income Portfolio Management<br>by Bernd Hanke, PhD, CFA, and Brian J. Henderson, PhD,<br>CFA |
| <b>Reading 12</b> | Liability-Driven and Index-Based Strategies<br>by James F. Adams, PhD, CFA, and Donald J. Smith, PhD           |

**LEARNING OUTCOMES****READING 11. OVERVIEW OF FIXED-INCOME PORTFOLIO MANAGEMENT**

The candidate should be able to:

- a** discuss roles of fixed-income securities in portfolios and how fixed-income mandates may be classified;
- b** describe fixed-income portfolio measures of risk and return as well as correlation characteristics;
- 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 12. 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** describe construction, benefits, limitations, and risk–return characteristics of a laddered bond portfolio;
- e** evaluate liability-based strategies under various interest rate scenarios and select a strategy to achieve a portfolio's objectives;
- f** explain risks associated with managing a portfolio against a liability structure;
- g** discuss bond indexes and the challenges of managing a fixed-income portfolio to mimic the characteristics of a bond index;
- h** compare alternative methods for establishing bond market exposure passively;
- i** discuss criteria for selecting a benchmark and justify the selection of a benchmark.

# STUDY SESSION

# 6

## Fixed-Income Portfolio Management (2)

**T**his 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

|                   |                                                                                                     |
|-------------------|-----------------------------------------------------------------------------------------------------|
| <b>Reading 13</b> | Yield Curve Strategies<br>by Robert W. Kopprasch, PhD, CFA, and Steven V. Mann,<br>PhD              |
| <b>Reading 14</b> | Fixed-Income Active Management: Credit Strategies<br>by Campe Goodman, CFA, and Oleg Melentyev, CFA |

### LEARNING OUTCOMES

#### READING 13. YIELD CURVE STRATEGIES

The candidate should be able to:

- a** describe the factors affecting fixed-income portfolio returns due to a change in benchmark yields;
- b** formulate a portfolio positioning strategy given forward interest rates and an interest rate view that coincides with the market view;

- c formulate a portfolio positioning strategy given forward interest rates and an interest rate view that diverges from the market view in terms of rate level, slope, and shape;
- d formulate a portfolio positioning strategy based upon expected changes in interest rate volatility;
- e evaluate a portfolio's sensitivity using key rate durations of the portfolio and its benchmark;
- f discuss yield curve strategies across currencies;
- g evaluate the expected return and risks of a yield curve strategy.

## READING 14. FIXED-INCOME ACTIVE MANAGEMENT: CREDIT STRATEGIES

The candidate should be able to:

- a describe risk considerations for spread-based fixed-income portfolios;
- b discuss the advantages and disadvantages of credit spread measures for spread-based fixed-income portfolios, and explain why option-adjusted spread is considered the most appropriate measure;
- 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 the use of credit default swap strategies in active fixed-income portfolio management;
- h discuss various portfolio positioning strategies that managers can use to implement a specific credit spread view;
- i discuss considerations in constructing and managing portfolios across international credit markets;
- j describe the use of structured financial instruments as an alternative to corporate bonds in credit portfolios;
- k describe key inputs, outputs, and considerations in using analytical tools to manage fixed-income portfolios.

# STUDY SESSION

# 7

## Equity Portfolio Management (1)

**B**ecause 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

|                   |                                                                                                                  |
|-------------------|------------------------------------------------------------------------------------------------------------------|
| <b>Reading 15</b> | Overview of Equity Portfolio Management<br>by James Clunie, PhD, CFA, and James Alan Finnegan,<br>CAIA, RMA, CFA |
| <b>Reading 16</b> | Passive Equity Investing<br>by David M. Smith, PhD, CFA, and Kevin K. Yousif, CFA                                |

### LEARNING OUTCOMES

#### READING 15. OVERVIEW OF 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 16. 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.

# STUDY SESSION

# 8

## Equity Portfolio Management (2)

**T**his 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 17**

Active Equity Investing: Strategies  
by Bing Li, PhD, CFA, Yin Luo, CPA, PStat, CFA, and Pranay Gupta, CFA

**Reading 18**

Active Equity Investing: Portfolio Construction  
by Jacques Lussier, PhD, CFA, and Marc R. Reinganum, PhD

### LEARNING OUTCOMES

#### READING 17. 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 18. 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

**A**lternative investments comprise groups of investments with risk and return characteristics that differ from those of traditional stock and bond investments. For the purposes of this study session, private equity, hedge funds, real assets (including energy and commodity investments), commercial real estate, and private credit are included as alternative assets.

The first reading presents distinctive regulatory and investment characteristics of the major categories of hedge fund strategies. It also provides a conditional risk factor model as a unifying framework for understanding and analyzing the risk exposures of these strategies.

The second reading discusses the role alternative assets play in a multi-asset portfolio and explores how alternatives may serve to mitigate long-only equity risk. Approaches to asset allocation when incorporating alternatives in the opportunity set—whether through the traditional asset class lens or, more recently, using a risk- or factor-based lens—are examined. The reading concludes with a discussion of the need for liquidity planning in private investment alternatives and the unique monitoring requirements of an alternatives portfolio.

### READING ASSIGNMENTS

|                   |                                                                                                                            |
|-------------------|----------------------------------------------------------------------------------------------------------------------------|
| <b>Reading 19</b> | Hedge Fund Strategies<br>by Barclay T. Leib, CFE, CAIA, Kathryn M. Kaminski, PhD,<br>CAIA, and Mila Getmansky Sherman, PhD |
| <b>Reading 20</b> | Asset Allocation to Alternative Investments<br>by Adam Kobor, PhD, CFA, and Mark D. Guinney, CFA                           |

**LEARNING OUTCOMES****READING 19. HEDGE FUND STRATEGIES**

The candidate should be able to:

- a** discuss how hedge fund strategies may be classified;
- b** discuss investment characteristics, strategy implementation, and role in a portfolio of *equity-related* hedge fund strategies;
- c** discuss investment characteristics, strategy implementation, and role in a portfolio of *event-driven* hedge fund strategies;
- d** discuss investment characteristics, strategy implementation, and role in a portfolio of *relative value* hedge fund strategies;
- e** discuss investment characteristics, strategy implementation, and role in a portfolio of *opportunistic* hedge fund strategies;
- f** discuss investment characteristics, strategy implementation, and role in a portfolio of *specialist* hedge fund strategies;
- g** discuss investment characteristics, strategy implementation, and role in a portfolio of *multi-manager* hedge fund strategies;
- h** describe how factor models may be used to understand hedge fund risk exposures;
- i** evaluate the impact of an allocation to a hedge fund strategy in a traditional investment portfolio.

**READING 20. ASSET ALLOCATION TO ALTERNATIVE INVESTMENTS**

The candidate should be able to:

- a** explain the roles that alternative investments play in multi-asset portfolios;
- b** compare alternative investments and bonds as risk mitigators in relation to a long equity position;
- c** compare traditional and risk-based approaches to defining the investment opportunity set, including alternative investments;
- d** discuss investment considerations that are important in allocating to different types of alternative investments;
- e** discuss suitability considerations in allocating to alternative investments;
- f** discuss approaches to asset allocation to alternative investments;
- g** discuss the importance of liquidity planning in allocating to alternative investments;
- h** discuss considerations in monitoring alternative investment programs.

## STUDY SESSION

# 10

## Private Wealth Management (1)

**T**his 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

|                   |                                                                                                           |
|-------------------|-----------------------------------------------------------------------------------------------------------|
| <b>Reading 21</b> | Overview of Private Wealth Management<br>by Christopher J. Sidoni, CFP, CFA, and Vineet Vohra, CFA        |
| <b>Reading 22</b> | Topics in Private Wealth Management<br>by Paul Bouchey, CFA, Helena Eaton, PhD, CFA, and Philip Marcovici |

**LEARNING OUTCOMES****READING 21. OVERVIEW OF PRIVATE WEALTH MANAGEMENT**

The candidate should be able to:

- a** contrast private client and institutional client investment concerns;
- b** discuss information needed in advising private clients;
- c** identify tax considerations affecting a private client's investments;
- d** identify and formulate client goals based on client information;
- e** evaluate a private client's risk tolerance;
- f** describe technical and soft skills needed in advising private clients;
- g** evaluate capital sufficiency in relation to client goals;
- h** discuss the principles of retirement planning;
- i** discuss the parts of an investment policy statement (IPS) for a private client;
- j** prepare the investment objectives section of an IPS for a private client;
- k** evaluate and recommend improvements to an IPS for a private client;
- l** recommend and justify portfolio allocations and investments for a private client;
- m** describe effective practices in portfolio reporting and review;
- n** evaluate the success of an investment program for a private client;
- o** discuss ethical and compliance considerations in advising private clients;
- p** discuss how levels of service and range of solutions are related to different private clients.

**READING 22. TOPICS IN PRIVATE WEALTH MANAGEMENT**

The candidate should be able to:

- a** compare taxation of income, wealth, and wealth transfers;
- b** describe global considerations of jurisdiction that are relevant to taxation;
- c** discuss and analyze the tax efficiency of investments;
- d** analyze the impact of taxes on capital accumulation and decumulation in taxable, tax-exempt, and tax-deferred accounts;
- e** explain portfolio tax management strategies and their application;
- f** discuss risk and tax objectives in managing concentrated single-asset positions;
- g** describe strategies for managing concentrated positions in public equities;
- h** describe strategies for managing concentrated positions in privately owned businesses and real estate;
- i** discuss objectives—tax and non-tax—in planning the transfer of wealth;
- j** discuss strategies for achieving estate, bequest, and lifetime gift objectives in common law and civil law regimes;
- k** describe considerations related to managing wealth across multiple generations.

# STUDY SESSION

# 11

## Private Wealth Management (2)

**T**he 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

#### Reading 23

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 23. 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 economic net worth;
- 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 evaluate 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

# 12

## Portfolio Management for Institutional Investors

**B**roadly 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 24

Portfolio Management for Institutional Investors  
by Arjan Berkelaar, PhD, CFA, Kate Misic, CFA, and Peter  
Stimes, CFA

### LEARNING OUTCOMES

#### READING 24. PORTFOLIO MANAGEMENT FOR INSTITUTIONAL INVESTORS

The candidate should be able to:

- a** discuss common characteristics of institutional investors as a group;
- b** discuss investment policy of institutional investors;
- c** discuss the stakeholders in the portfolio, the liabilities, the investment time horizons, and the liquidity needs of different types of institutional investors;

- d** describe the focus of legal, regulatory, and tax constraints affecting different types of institutional investors;
- e** evaluate risk considerations of private defined benefit (DB) pension plans in relation to 1) plan funded status, 2) sponsor financial strength, 3) interactions between the sponsor's business and the fund's investments, 4) plan design, and 5) workforce characteristics;
- f** prepare the investment objectives section of an institutional investor's investment policy statement;
- g** evaluate the investment policy statement of an institutional investor;
- h** evaluate the investment portfolio of a private DB plan, sovereign wealth fund, university endowment, and private foundation;
- i** describe considerations affecting the balance sheet management of banks and insurers.

## Trading, Performance Evaluation, and Manager Selection

**T**he investment process is not complete until securities are bought or sold, and so the quality of trade execution is an important determinant of investment results. The first reading examines how portfolio managers need to work closely with traders to determine the most appropriate trading strategy given their motivation for trading, risk aversion, trade urgency, and other factors such as order characteristics and market conditions. Portfolio manager motivations to trade, inputs to trade strategy selection, and the range of trade implementation choices, trading algorithms, and a comparison of various markets are discussed. Guidance is provided on evaluating a firm's trading procedures for good governance practices, measuring trade costs, and evaluating success in trade execution.

Performance evaluation is one of the most critical areas of investment analysis. Performance results can be used to assess the quality of the investment approach and suggest changes that might improve it. They are also used to communicate the results of the investment process to other stakeholders and may even be used to compensate the investment managers.

The second reading on performance evaluation includes three primary components, each corresponding to a specific question needed to answer to evaluate a portfolio's performance:

- performance measurement—what was the portfolio's performance?;
- performance attribution—how was the performance achieved?; and
- performance appraisal—was the performance achieved through manager skill or luck?

The last reading of this study session addresses the complex and detailed process involved in evaluating an investment manager. The focus is on understanding how the investment results were achieved and on assessing the likelihood that the investment process that generated these returns will produce superior or at least satisfactory

investment results going forward. It also entails an evaluation of a firm's integrity, operations, and personnel. This reading provides a framework that introduces and describes the important elements of the manager selection process.

## READING ASSIGNMENTS

|                   |                                                                                                                  |
|-------------------|------------------------------------------------------------------------------------------------------------------|
| <b>Reading 25</b> | Trade Strategy and Execution<br>by Bernd Hanke, PhD, CFA, Robert Kissell, PhD, Connie Li,<br>and Roberto Malamut |
| <b>Reading 26</b> | Portfolio Performance Evaluation<br>edited by Marc A. Wright, CFA                                                |
| <b>Reading 27</b> | Investment Manager Selection<br>by Jeffrey C. Heisler, PhD, CFA, and Donald W. Lindsey, CFA                      |

## LEARNING OUTCOMES

### READING 25. TRADE STRATEGY AND EXECUTION

The candidate should be able to:

- a** discuss motivations to trade and how they relate to trading strategy;
- b** discuss inputs to the selection of a trading strategy;
- c** compare benchmarks for trade execution;
- d** recommend and justify a trading strategy (given relevant facts);
- e** describe factors that typically determine the selection of a trading algorithm class;
- f** contrast key characteristics of the following markets in relation to trade implementation: equity, fixed income, options and futures, OTC derivatives, and spot currency;
- g** explain how trade costs are measured and determine the cost of a trade;
- h** evaluate the execution of a trade;
- i** evaluate a firm's trading procedures, including processes, disclosures, and record keeping with respect to good governance.

### READING 26. PORTFOLIO PERFORMANCE EVALUATION

The candidate should be able to:

- a** explain the following components of portfolio evaluation and their interrelationships: performance measurement, performance attribution, and performance appraisal;
- b** describe attributes of an effective attribution process;
- c** contrast return attribution and risk attribution; contrast macro and micro return attribution;
- d** describe returns-based, holdings-based, and transactions-based performance attribution, including advantages and disadvantages of each;
- e** interpret the sources of portfolio returns using a specified attribution approach;
- f** interpret the output from fixed-income attribution analyses;
- g** discuss considerations in selecting a risk attribution approach;

- h** identify and interpret investment results attributable to the asset owner versus those attributable to the investment manager;
- i** discuss uses of liability-based benchmarks;
- j** describe types of asset-based benchmarks;
- k** discuss tests of benchmark quality;
- l** describe problems that arise in benchmarking alternative investments;
- m** describe the impact of benchmark misspecification on attribution and appraisal analysis;
- n** calculate and interpret the Sortino ratio, the appraisal ratio, upside/downside capture ratios, maximum drawdown, and drawdown duration;
- o** describe limitations of appraisal measures and related metrics;
- p** evaluate the skill of an investment manager.

## READING 27. INVESTMENT MANAGER SELECTION

The candidate should be able to:

- a** describe the components of a manager selection process, including due diligence;
- b** contrast Type I and Type II errors in manager hiring and continuation decisions;
- c** describe uses of returns-based and holdings-based style analysis in investment manager selection;
- d** describe uses of the upside capture ratio, downside capture ratio, maximum drawdown, drawdown duration, and up/down capture in evaluating managers;
- e** evaluate a manager's investment philosophy and investment decision-making process;
- f** evaluate the costs and benefits of pooled investment vehicles and separate accounts;
- g** compare types of investment manager contracts, including their major provisions and advantages and disadvantages;
- h** describe the three basic forms of performance-based fees;
- i** analyze and interpret a sample performance-based fee schedule.

## Cases in Portfolio Management and Risk Management

**T**his study session provides three cases that integrate material across Level III study sessions. Each case provides a stylized scenario involving several issues that are used to illustrate how to evaluate the needs of a client and synthesize techniques to provide appropriate solutions.

The first case study considers issues associated with the development of a strategic asset allocation (SAA) for a long-horizon institutional investor—a university endowment—with special challenges including supporting spending policies while ensuring the long-term sustainability of the endowment and establishing optimal exposure to illiquid investment strategies in the context of a diversified portfolio. These issues are explored from the perspective of a large university endowment undertaking a review of its asset allocation and then implementing proposed allocation changes and a tactical overlay program.

The second case study explores issues raised in a private wealth management setting of providing advice on risk management to individuals and families. These issues include the extent to which identified and evaluated risks can be reduced, addressed using insurance policies, or self-insurance. Families' financial circumstances and risks evolve over time, and the arrangements addressing the risks should be reviewed and updated. Risk management solutions recommended by advisers should take the overall wealth of the family into consideration. The choice of an adviser may also pose practical and ethical challenges.

The third case study looks at various challenges faced by institutional investors from a risk management perspective including: financial risks, enterprise risk management, environmental risks, and social risks. The focus of the reading is a theoretical case study addressing risk management aspects of a Sovereign Wealth Fund's (SWF) potential long-term direct investments in infrastructure and private equity. The structure of the case itself brings the learner inside two Investment Committee (IC) meetings where various aspects of risk are discussed, and potential investments evaluated. The learner

is expected to review IC memos and IC discussions and analyze various risk elements of the investment opportunities as the case unfolds over a 5-year period. Ultimately, the learner is expected to make recommendations for improvement.

## READING ASSIGNMENTS

|                   |                                                                                                                                               |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Reading 28</b> | Case Study in Portfolio Management: Institutional<br>by Gabriel Petre, CFA                                                                    |
| <b>Reading 29</b> | Case Study in Risk Management: Private Wealth<br>by Giuseppe Balocchi, PhD, CFA                                                               |
| <b>Reading 30</b> | Case Study in Risk Management: Institutional<br>by Steve Balaban, CFA, Arjan Berkelaar, PhD, CFA, Nasir<br>Hasan, and Hardik Sanjay Shah, CFA |

## LEARNING OUTCOMES

### READING 28. CASE STUDY IN PORTFOLIO MANAGEMENT: INSTITUTIONAL

The candidate should be able to:

- a** discuss tools for managing portfolio liquidity risk;
- b** discuss capture of the illiquidity premium as an investment objective;
- c** analyze asset allocation and portfolio construction in relation to liquidity needs and risk and return requirements and recommend actions to address identified needs;
- d** analyze actions in asset manager selection with respect to the Code of Ethics and Standards of Professional Conduct;
- e** analyze the costs and benefits of derivatives versus cash market techniques for establishing or modifying asset class or risk exposures;
- f** demonstrate the use of derivatives overlays in tactical asset allocation and rebalancing.

### READING 29. CASE STUDY IN RISK MANAGEMENT: PRIVATE WEALTH

The candidate should be able to:

- a** identify and analyze a family's risk exposures during the early career stage;
- b** recommend and justify methods to manage a family's risk exposures during the early career stage;
- c** identify and analyze a family's risk exposures during the career development stage;
- d** recommend and justify methods to manage a family's risk exposures during the career development stage;
- e** identify and analyze a family's risk exposures during the peak accumulation stage;
- f** recommend and justify methods to manage a family's risk exposures during the peak accumulation stage;

- g** identify and analyze a family's risk exposures during the early retirement stage;
- h** recommend and justify a plan to manage risks to an individual's retirement lifestyle goals.

### **READING 30. INTEGRATED CASES IN RISK MANAGEMENT: INSTITUTIONAL**

The candidate should be able to:

- a** discuss financial risks associated with the portfolio strategy of an institutional investor;
- b** discuss environmental and social risks associated with the portfolio strategy of an institutional investor;
- c** analyze and evaluate the financial and non-financial risk exposures in the portfolio strategy of an institutional investor;
- d** discuss various methods to manage the risks that arise on long-term direct investments of an institutional investor;
- e** evaluate strengths and weaknesses of an enterprise risk management system and recommend improvements.

## STUDY SESSION

# 15

### Ethical and Professional Standards (1)

**C**FA Institute members<sup>1</sup> 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.

The study session concludes with case studies that demonstrate the practical application of the CFA Institute Code of Ethics and Standards of Professional Conduct (Code and Standards) in everyday situations.

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<sup>1</sup> Eligibility and requirements for becoming a member of CFA Institute vary by jurisdiction. Please consult [www.cfainstitute.org](http://www.cfainstitute.org) for further details.

## READING ASSIGNMENTS

|                   |                                                                                                                  |
|-------------------|------------------------------------------------------------------------------------------------------------------|
| <b>Reading 31</b> | Code of Ethics and Standards of Professional Conduct<br><i>Standards of Practice Handbook</i> , Eleventh Edition |
| <b>Reading 32</b> | Guidance for Standards I–VII<br><i>Standards of Practice Handbook</i> , Eleventh Edition                         |
| <b>Reading 33</b> | Application of the Code and Standards: Level III                                                                 |

## LEARNING OUTCOMES

### READING 31. 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 32. 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.

### READING 33. APPLICATION OF THE CODE AND STANDARDS: LEVEL III

The candidate should be able to:

- a** evaluate practices, policies, and conduct relative to the CFA Institute Code of Ethics and Standards of Professional Conduct;
- b** explain how the practices, policies, or conduct does or does not violate the CFA Institute Code of Ethics and Standards of Professional Conduct.

## STUDY SESSION

# 16

## Ethical and Professional Standards (2)

**T**he 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.

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. Coverage provides a grounding in the requirements and recommendations of GIPS.

### READING ASSIGNMENTS

**Reading 34**

Asset Manager Code of Professional Conduct  
by Kurt N. Schacht, JD, CFA, Jonathan J. Stokes, JD, and  
Glenn Doggett, CFA

**Reading 35**

Overview of the Global Investment Performance Standards  
by Philip Lawton, PhD, CFA, CIPM

**LEARNING OUTCOMES****READING 34. 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.

**READING 35. OVERVIEW OF THE GLOBAL INVESTMENT PERFORMANCE STANDARDS**

The candidate should be able to:

- a** discuss the objectives and scope of the GIPS standards and their benefits to prospective clients and investors, as well as 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** discuss 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;
- d** explain requirements of the GIPS standards with respect to composite return calculations, including methods for asset-weighting portfolio returns;
- e** 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;
- f** explain the role of investment mandates, objectives, or strategies in the construction of composites;
- g** explain requirements 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;
- h** explain requirements of the GIPS standards with respect to presentation and reporting;
- i** explain the conditions under which the performance of a past firm or affiliation may be linked to or used to represent the historical performance of a new or acquiring firm;
- j** explain the recommended valuation hierarchy of the GIPS standards;
- k** discuss the purpose, scope, and process of verification.