

# STUDY SESSION

# 16

## Portfolio Management

### Process, Asset Allocation, and Risk Management

**T**his study session begins by examining portfolio management as a process, including its three steps (planning, execution, feedback) and related investment objectives and constraints. Multifactor models including the arbitrage pricing theory (APT) and Carhart (4 factor) model are introduced as alternatives to the capital asset pricing model (CAPM). Considerations and applications of the three multifactor model types (macroeconomic, fundamental, statistical) are presented. The session ends with a discussion on value at risk (VaR) and its use in measuring and managing market risk. The three VaR approaches (parametric, historical simulation, Monte Carlo) along with the advantages and limitations of each are examined.

#### READING ASSIGNMENTS

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| <b>Reading 47</b> | The Portfolio Management Process and the Investment Policy Statement<br>by John L. Maginn, CFA, Donald L. Tuttle, PhD, CFA,<br>Dennis W. McLeavey, CFA, and Jerald E. Pinto, PhD, CFA |
| <b>Reading 48</b> | An Introduction to Multifactor Models<br>by Jerald E. Pinto, PhD, CFA, and<br>Eugene L. Podkaminer, CFA   |
| <b>Reading 49</b> | Measuring and Managing Market Risk<br>by Don M. Chance, PhD, CFA, and Michelle McCarthy Beck  |

**LEARNING OUTCOMES****READING 47. THE PORTFOLIO MANAGEMENT PROCESS AND THE INVESTMENT POLICY STATEMENT**

The candidate should be able to:

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

**READING 48. AN INTRODUCTION TO MULTIFACTOR MODELS**

The candidate should be able to:

- a** describe arbitrage pricing theory (APT), including its underlying assumptions and its relation to multifactor models;
- b** define arbitrage opportunity and determine whether an arbitrage opportunity exists;
- c** calculate the expected return on an asset given an asset's factor sensitivities and the factor risk premiums;
- d** describe and compare macroeconomic factor models, fundamental factor models, and statistical factor models;
- e** explain sources of active risk and interpret tracking risk and the information ratio;
- f** describe uses of multifactor models and interpret the output of analyses based on multifactor models;
- g** describe the potential benefits for investors in considering multiple risk dimensions when modeling asset returns.

**READING 49. MEASURING AND MANAGING MARKET RISK**

The candidate should be able to:

- a** explain the use of value at risk (VaR) in measuring portfolio risk;
- b** compare the parametric (variance–covariance), historical simulation, and Monte Carlo simulation methods for estimating VaR;
- c** estimate and interpret VaR under the parametric, historical simulation, and Monte Carlo simulation methods;

- d** describe advantages and limitations of VaR;
- e** describe extensions of VaR;
- f** describe sensitivity risk measures and scenario risk measures and compare these measures to VaR;
- g** demonstrate how equity, fixed-income, and options exposure measures may be used in measuring and managing market risk and volatility risk;
- h** describe the use of sensitivity risk measures and scenario risk measures;
- i** describe advantages and limitations of sensitivity risk measures and scenario risk measures;
- j** describe risk measures used by banks, asset managers, pension funds, and insurers;
- k** explain constraints used in managing market risks, including risk budgeting, position limits, scenario limits, and stop-loss limits;
- l** explain how risk measures may be used in capital allocation decisions.