

# STUDY SESSION

# 15

## Derivatives

**T**his study session builds the conceptual framework for understanding the basic derivatives and derivative markets. Essential features and valuation concepts for forward commitments such as forwards, futures, and swaps and contingent claims such as options are introduced.

### READING ASSIGNMENTS

<b>Reading 45</b>	Derivative Markets and Instruments by Don M. Chance, PhD, CFA
<b>Reading 46</b>	Basics of Derivative Pricing and Valuation by Don M. Chance, PhD, CFA

### LEARNING OUTCOMES

#### READING 45. DERIVATIVE MARKETS AND INSTRUMENTS

The candidate should be able to:

- a** define a derivative and distinguish between exchange-traded and over-the-counter derivatives;
- b** contrast forward commitments with contingent claims;
- c** define forward contracts, futures contracts, options (calls and puts), swaps, and credit derivatives and compare their basic characteristics;
- d** determine the value at expiration and profit from a long or a short position in a call or put option;

- e describe purposes of, and controversies related to, derivative markets;
- f explain arbitrage and the role it plays in determining prices and promoting market efficiency.

## READING 46. BASICS OF DERIVATIVE PRICING AND VALUATION

The candidate should be able to:

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