Derivatives

LEARNING OUTCOMES

Derivative Instrument and Derivative Market Features

The candidate should be able to:

- □ define a derivative and describe basic features of a derivative instrument
- □ describe the basic features of derivative markets, and contrast over-the-counter and exchange-traded derivative markets

Forward Commitment and Contingent Claim Features and Instruments

The candidate should be able to:

- □ define forward contracts, futures contracts, swaps, options (calls and puts), and credit derivatives and compare their basic characteristics
- □ determine the value at expiration and profit from a long or a short position in a call or put option
- □ contrast forward commitments with contingent claims

Derivative Benefits, Risks, and Issuer and Investor Uses

The candidate should be able to:

- □ describe benefits and risks of derivative instruments
- □ compare the use of derivatives among issuers and investors

Arbitrage, Replication, and the Cost of Carry in Pricing Derivatives

The candidate should be able to:

- □ explain how the concepts of arbitrage and replication are used in pricing derivatives

- explain the difference between the spot and expected future price of an underlying and the cost of carry associated with holding the underlying asset

Pricing and Valuation of Forward Contracts and for an Underlying with Varying Maturities

The candidate should be able to:

- explain how the value and price of a forward contract are determined at initiation, during the life of the contract, and at expiration
- explain how forward rates are determined for interest rate forward contracts and describe the uses of these forward rates.

Pricing and Valuation of Futures Contracts

The candidate should be able to:

- compare the value and price of forward and futures contracts
- explain why forward and futures prices differ

Pricing and Valuation of Interest Rates and Other Swaps

The candidate should be able to:

- describe how swap contracts are similar to but different from a series of forward contracts
- contrast the value and price of swaps

Pricing and Valuation of Options

The candidate should be able to:

- explain the exercise value, moneyness, and time value of an option
- contrast the use of arbitrage and replication concepts in pricing forward commitments and contingent claims
- identify the factors that determine the value of an option and describe how each factor affects the value of an option

Option Replication Using Put–Call Parity

The candidate should be able to:

- explain put–call parity for European options
- explain put–call *forward* parity for European options

Valuing a Derivative Using a One-Period Binomial Model

The candidate should be able to:

- explain how to value a derivative using a one-period binomial model
- describe the concept of risk neutrality in derivatives pricing