# Chapter 1

# Introduction

## Practice Questions

**Problem 1.8**

*A stock when it is first issued provides funds for a company. Is the same true of an exchange-traded stock option? Discuss.*

**Problem 1.9**

*Explain why a futures contract can be used for either speculation or hedging.*

**Problem 1.10**

*An investor writes a December put option with a strike price of $30. The price of the option is $4. Under what circumstances does the investor make a gain?*

**Problem 1.12**

*A company knows that it is due to receive a certain amount of a foreign currency in four months. What type of option contract is appropriate for hedging?*

**Problem 1.13**

*'Options and futures are zero-sum games.' What do you think is meant by this statement?*

**Problem 1.14**

*Suppose you own 5,000 shares that are worth $25 each. How can put options be used to provide you with insurance against a decline in the value of your holding over the next four months?*

**Problem 1.15**

*A wheat farmer expects to have 100 metric tonnes of Western Australian wheat to sell in three months. The Western Australian wheat futures contract on the Australian Securities Exchange is for the delivery of 20 metric tonnes of wheat. How can the farmer use the contract for hedging? From the farmer's viewpoint, what are the pros and cons of hedging?*

**Problem 1.16**

*Suppose that a March call option on a stock with a strike price of $50 costs $2.50 and is held until March. Under what circumstances will the holder of the option make a gain? Under what circumstances will the option be exercised? Draw a diagram showing how the profit on a long position in the option depends on the stock price at the maturity of the option.*

**Problem 1.17**

*Suppose that a June put option on a stock with a strike price of $60 costs $4 and is held until June. Under what circumstances will the holder of the option make a gain? Under what circumstances will the option be exercised? Draw a diagram showing how the profit on a short position in the option depends on the stock price at the maturity of the option.*

**Problem 1.18**

*It is May and a trader writes a September call option with a strike price of $20. The stock price is $18 and the option price is $2. Describe the investor's cash flows if the option is held until September and the stock price is $25 at this time.*

**Problem 1.19**

*An airline executive has argued: 'There is no point in our using oil futures. There is just as much chance that the price of oil in the future will be less than the futures price as there is that it will be greater than this price.' Discuss the executive's viewpoint.*

**Problem 1.21**

*A trader enters into a short greasy wool futures contract when the futures price is 1,170 cents per kg. The contract is for the delivery of 2,000 kgs clean weight. How much does the trader gain or lose if the greasy wool at the end of the contract is: (a) 1,150 cents per kg, (b) 1,190 cents per kg?*

**Problem 1.24 (Excel file)**

*Trader A enters into a forward contract to buy gold for $1,000 an ounce in one year. Trader B buys a call option to buy gold for $1,000 an ounce in one year. The cost of the option is $100 an ounce. What is the difference between the positions of the traders? Show the profit per ounce as a function of the price of gold in one year for the two traders.*

**Problem 1.28**

*The price of gold is currently $800 per ounce. Forward contracts are available to buy or sell gold at $1,000 for delivery in one year. An arbitrageur can borrow money at 10% per annum. What should the arbitrageur do? Assume that the cost of storing gold is zero and that gold provides no income.*

**Problem 1.29**

*Discuss how foreign currency options can be used for hedging in the situation described in Example 1.1 so that: (a) ImportCo is guaranteed that its exchange rate will be less than 0.98257, and (b) ExportCo is guaranteed that its exchange rate will be at least 0.98223.*

**Problem 1.30**

*The current price of a stock is $94, and three-month European call options with a strike price of $95 currently sell for $4.70. An investor who feels that the price of the stock will increase is trying to decide between buying 100 shares and buying 2,000 call options (20 contracts). Both strategies involve an investment of $9,400. What advice would you give? How high does the stock price have to rise for the option strategy to be more profitable?*