END OF CHAPTER EXERCISES

Chapter 20 : Futures Markets

Investments : Spot and Derivatives Markets

(Keith Cuthbertson, Dirk Nitzsche)

1. Explain how a forward/futures contract can be used for hedging and speculation.

2. Briefly explain “open interest”, “trading volume”, “margin account and margin payments” for futures contracts.

3. What is basis risk in a hedge and is it ever zero ?

4. You are *already long* 100 contracts at a settlement price of \$50,000 per contract. Next day at 11am you acquire an additional 20 contracts at a price of \$51,000 per contract. The initial margin is \$2,000 per contract. The settlement price at the end of the day is \$50,200 per contract. What happens to the margin account on day-2 ?

5. You enter into a forward contract on a non-dividend paying stock with maturity of 1-year, with S_0=\$40 and r = 10% p.a.
   (a) What is the “no-arbitrage” (synthetic) futures price of the contract ?
   (b) If the *actual futures* price is F = 46 how can you make a riskless arbitrage profit ?
   (c) If the *actual futures* price is F = 42 how can you make a riskless arbitrage profit ?

6. When are a ‘long hedge’ and a ‘short hedge’ appropriate? Use the examples of an oil producer and an oil consumer.

7. A *forward* contract is usually held to maturity (at T) when delivery then takes place in exchange for a payment of the forward price initially agreed, F_0. Why then does the *value* of the forward contract vary between t=0 and t=T ?