Exercises on forward and futures contracts.

1. An investor enters into a short forward contract to sell 100000 British pounds for US dollars at an exchange rate of 1.9000 US dollars per pound. How much does the investor gain or lose if the exchange rate at the end of the contract is (a) 1.8900 and (b) 1.9200?

2. A trader enters into a short cotton futures contract when the futures price is 50 cents per pound. The contract is for the delivery of 50,000 pounds. How much does the trader gain or lose if the cotton price at the end of the contract is (a) 48.20 cents per pound and (b) 51.30 cents per pound?

3. Suppose that the sterling exchange rate for a 90-day forward contract is 1.9000 and that this rate is also the futures price for a contract that will be delivered in exactly 90 days. What is the difference between the gains and losses under the two contracts?

4. Suppose that you enter into a short futures contract to sell July silver for $10.20 per ounce on the New York Commodity Exchange (NYME), The size of the contract is 5000 ounces. The initial margin is $4000, and the maintenance margin is $3000. What change in the futures price will lead to a margin call? What happens if you do not meet the margin call?

5. Suppose that in September 2009 a company takes a long position in a contract on May 2010 crude oil futures. It closes out its position in March 2010. The futures price (per barrel) is $68.30 when it enters into the contract, $70.50 when it closes out its position, and $69.10 at the end of December 2009. One contract is for the delivery of 1000 barrels. What is the company's total profit? When is it realized?

6. Explain how margins protect investors against the possibility of default.

7. A trader buys two July futures contracts on orange juice. Each contract is for the delivery of 15000 pounds. The current futures price is 160 cents per pound; the-initial margin is $6000 per contract, and the maintenance margin is $4500 per contract. What price change would lead to a margin call?

8. On July 1, 2009, a Japanese company enters into a forward contract to buy $1 million on January 1, 2010. On September 1, 2009, it enters into a forward contract to sell $1 million on January 1, 2010. Describe the profit or loss the company will make in yen as a function of the forward exchange rates on July 1, 2009, and September 1, 2009.

9. The forward price of the Swiss franc for delivery in 45 days is quoted as 1.2500. The futures price for a contract that will be delivered in 45 days is 0.7980. Explain these two quotes. Which is more favorable for an investor wanting to sell Swiss francs?