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Major: International Business
Module: Commodity Market

Solution of exercises series n°3

Part 1 *choose the right answer*

1. Commodity risk is the possibility that commodity price changes will cause financial losses for ?
   - Commodity Buyers
   - Commodity Producers
   - Commodity Market
   - Either Commodity Buyers or Producers
2. Diversification is one of the commodity risk management strategies for?
   - Commodity Producers
   - Commodity buyers
   - Both producers and buyers
3. Which of these strategies is the producers' commodity risk management strategy?
   - Pooling price arrangement
   - Suppliers Negotiations
   - Forward contract
4. The futures contract could be used by producer and buyers of commodity to hedge against price fluctuation?
   - False
   - True
5. Someone that plans to sell corn in next three months to hedge he has to take?
   - Long position
   - Short position
   - None of the above

Part 2:

I. On November 2022, company A and company B entered into a forward contract, whereby company A has to sold 100,000 bushels of wheat to Company B at $10/bushel and delivery on February 20, 2023. On the date of delivery if the price is $15/bushel, $10/bushel, 6 $/ per bushel. Did the company A make profit or loss in each case?

Answer

- First if the spot price is 10$/bushel, then, the parties of the contract did not achieve neither profit nor loss; (the spot price is the same as the agreed price in the forward contract).
- Second, the spot price is 15$/bushel, then the company A incurs loss (the agreed price in the forward contract is lower than the spot price on the date of execution) of 500000$, 100000(10-15) =500000$. The company B makes a profit (avoid extra cost by entering into a forward contract) of 500000$.
- Third case, the spot price is 85$/ton, then the company A makes profit (the agreed price in the forward contract is higher than the spot price on the date of execution) of 40000$, 100000(10-6)=400000$. The company B incurs a loss of 400000$

II. In March, an investor plans to buy **15,000 bushels** of corn in July to cover his future needs of this commodity. He is unsure about the future price of corn and wants to hedge against price fluctuation. The current market price of corn **in March is $6.8/bushel**, and corn **futures contracts for July are trading at $6.89/bushel**. Assume that the **size of the corn futures contract is 5000 bushels** and that the **initial margin is 6%** and **the maintenance margin is 80%**, how many futures contracts should the investor enter into to cover his future needs? Calculate the initial margin and maintenance margin? What position should the investor take to cover the risk of price fluctuation in the future? If the price in July is $7/bushel or $6/bushel, show the position of the investor in each case? What is the net purchase price, in each case?

Answer:

Note: The initial margin is the amount a trader must deposit with their broker to initiate a trading position, the margin requirements can be any value between 3% - 15% of the traded contract value.

The maintenance margin is the amount of money a trader must have on deposit in their account to continue holding their position, which is typically 70% to 85% of the initial margin.

1. The number of future contract that the investor should purchase is 15000/5000 = 3 Contracts
2. Calculate the initial margin and maintenance margin: first the future contract value = 15000 x 6.89 = 103350; then the initial margin is 0.06 x 103350 = 6201; the maintenance margin is 6201 x 0.8 = 4960.4.

3. The investor must take a long position (buy a July future contract) to cover the risk of price increase in July.
4. If the price in July is $7/bushel the position of the investor is as follow:

Spot Market	Future Market
March: price of corn is 6.8$/bushel	March: Buy a future contract at 6.89$/bushel
July: purchase a corn at 7$/bushel	July: close the position by selling the future contract at 7$/bushel
	Make a profit of (7-6.89=0.11)

The net purchase price is:

- A bushel of corn was purchased in July at a price of ……7$
- Make a profit on the future contract position ..... 0.11$
- The net purchase price .....6.89$

If the price in July is $6/bushel the position of the investor is as follow:

Spot Market	Future Market
March: price of corn is 6.8$/bushel	March: Buy a future contract at 6.89$/bushel
July: purchase a corn at 6$/bushel	July: close the position by selling the future contract at 6 $/bushel
	Incurs a loss (6-6.89= - 0.89)

The net purchase price is:

- A bushel of corn was purchased in July at a price of ……...6$
- Incurs a loss on the future contract position ..... 0.89$
- The net purchase price .....6.89$