

Take-home Practice Opportunity 6

Due date: November 17, 5:00 p.m.

Basics and Intuition

1. In your own words (i.e., in a manner that you would explain it to someone who has not taken this course) explain the concept of offsetting futures contracts. When/why would you offset a futures contract? How would you offset a particular futures market position?

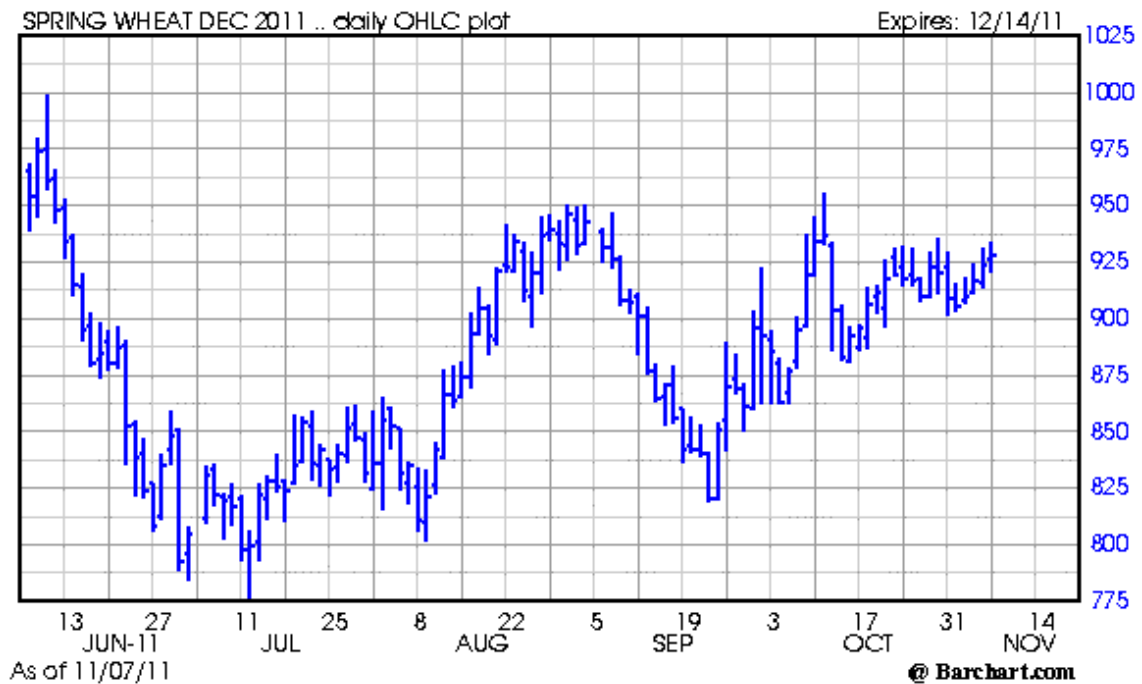
Offsetting futures contracts is taking an opposite position on an existing futures contract in order to remove the delivery obligations of the contract. For example, if you took a short position on a December 2012 wheat contract, then you would be obligated to deliver 5,000 bushels of wheat at the contract's expiration. In order to rid yourself of these delivery obligations, you can take a long position on another December 2012 contract.

2. What is the difference between a futures contract price and a local cash price? What is the relationship among these two prices? Which price would a Montana farmer/rancher care most about? Why?

A local cash price is one that occurs in the local market, which is the location where the commodity is actually sold/bought. For example, a cash price might be the price that is offered by a local elevator at the time of sale. On the other hand, futures prices are those associated with futures contracts, which describe the expected price of the commodity at some future point in time. Typically, a Montana farmer/rancher will care primarily about the local price, because it will determine the received revenue.

Speculator Market Participation

Consider the following futures price chart for the December spring wheat contract traded on the Minneapolis Grain Exchange:



Source: Minneapolis Grain Exchange

1. Provide economic intuition for the price movements observed in the price of spring wheat. Think about the supply and demand variability that drive prices. That is, why did prices fall and rise when they did?

Futures prices are simply indications of the relationship between supply and demand of wheat. Futures prices depend on the type of information that market participants have regarding the supply and demand components. In June and July, prices dropped, indicating that there was likely news of either a decreased demand or increased supply of high quality wheat. In August, prices began to rise again because the time was very close to harvest – least amount of available supply. In September, as the harvest of spring wheat occurred, the market was flooded with additional supply and prices responded by decreasing.

2. If you were going to take a futures position on the December spring wheat contract, would you take a long or short position? Why?

Recently, prices have been rising. Somewhat surprisingly, these prices rose quickly after the harvest. This may be an indicator that prices will continue to increase. Therefore, taking a long position would be appropriate.

3. Suppose that you were going to acquire five (5) futures contracts at the position you chose in (2). The associated margin requirement is 15%. If the futures price

of spring wheat is \$9.25/bu, what would be the margin requirement? That is, how much money would you be required to deposit into your margin account?

$$MR = 15\% \times 5 \text{ contracts} \times 5,000 \text{ bu/contract} \times \$9.25/\text{bu} = \$34,687.50$$

4. In your own words (i.e., in a manner that you would explain it to someone who has not taken this course) explain why margin accounts are necessary.

The margin account is necessary to ensure that market participants have available funds to pay off their debts, in case prices move against the participant.

5. Currently, you have \$10,000 in liquid assets. Reproduce (i.e., do not simply fill the table in on this sheet; you will lose points if you do) the following table to describe the following:
- How much money will be added (+) or subtracted (−) from your margin account when the futures contract is marked-to-market (margin call).
 - How much is in the margin account after the margin call.
 - How much money you will have to add from your liquid assets into the margin account to maintain the original margin requirement.
 - What the new price of the futures contract when it is marked-to-market.
 - At which point, if any, will you be placed out of the futures market, and why

Make sure to show your work when determining each of the values in the table.

Day	Price when market opens	Price change	Margin call	Margin account	Liquid assets used to replenish margin account	Liquid assets remaining	Price after marking-to-market
1	\$9.25	+ \$0.10	+2,500	37,187.50	0	10,000	9.35
2	\$9.35	− \$0.25	−6,250	30,937.50	3,750	6,250	9.10
3	\$9.10	− \$0.10	−2,500	32,187.50	2,500	3,750	9.00
4	\$9.00	+ \$0.30	+7,500	42,187.50	0	3,750	9.30
5	\$9.30	+ \$0.15	+3,750	45,937.50	0	3,750	9.45
6	\$9.45	+ \$0.25	+6,250	52,187.50	0	3,750	9.70
7	\$9.70	− \$0.10	−2,500	49,687.50	0	3,750	9.60

Now suppose that you take the *opposite* position than the one you took in the preceding problem.

- Suppose that you were going to acquire ten (10) futures contracts at the position you chose in (2). The associated margin requirement is 10%. If the futures price of spring wheat is \$9.25/bu, what would be the margin requirement? That is, how much money would you be required to deposit into your margin account?

$$MR = 10\% \times 10 \text{ contracts} \times 5,000 \text{ bu/contract} \times \$9.25/\text{bu} = \$46,250$$

- Currently, you have \$25,000 in liquid assets. Reproduce (i.e., do not simply fill the table in on this sheet; you will lose points if you do) the following table to describe the following:
 - How much money will be added (+) or subtracted (-) from your margin account when the futures contract is marked-to-market (margin call).
 - How much is in the margin account after the margin call.
 - How much money you will have to add from your liquid assets into the margin account to maintain the original margin requirement.
 - What the new price of the futures contract when it is marked-to-market.
 - At which point, if any, will you be placed out of the futures market, and why

Make sure to show your work when determining each of the values in the table.

Day	Price when market opens	Price change	Margin call	Margin account	Liquid assets used to replenish margin account	Liquid assets remaining	Price after marking-to-market
1	\$9.25	+ \$0.20	-10,000	36,250	10,000	10,000	9.45
2	\$9.45	+ \$0.40	-20,000	26,250	20,000	-10,000	9.85

Placed out of market

3. The price volatility (i.e., movement in prices) is much higher in this scenario than in the preceding problem. Discuss the impacts of high price volatility on market participants. Who might be worse off and who might be better off?

High price volatility creates opportunities to greatly benefit market participants or to greatly hurt them. If prices move substantially in your favor, then you are able to make significant amounts of money and exit the market. However, prices that move against you would require potentially very large margin calls. A single large price movement against you may completely deplete your liquid assets and place you out of the market.