Background

Example) Corn futures contract traded by CME

Specifications

Underlying asset

Contract size

Delivery arrangements

Delivery months

Price quotes

Price limits and Position limits

Background & Specifications Question #29

2.29. A cattle farmer expects to have 120,000 pounds of live cattle to sell in 3 months. The live cattle futures contract traded by the CME Group is for the delivery of 40,000 pounds of cattle. How can the farmer use the contract for hedging? What are the pros and cons of hedging from the farmer's viewpoint?

Background & Specifications Question #30

2.30. It is July 2021. A mining company has just discovered a small deposit of gold. It will take 6 months to construct the mine. The gold will then be extracted on a more or less continuous basis for 1 year. Futures contracts on gold are available with delivery months every 2 months from August 2021 to December 2022. Each contract is for the delivery of 100 ounces. Discuss how the mining company might use futures markets for hedging.

Background & Specifications Question #15

2.15. The party with a short position in a futures contract sometimes has options as to the precise asset that will be delivered, where delivery will take place, when delivery will take place, and so on. Do these options increase or decrease the futures price? Explain your reasoning.

Background & Specifications Question #26

2.26. What do you think would happen if an exchange started trading a contract in which the quality of the underlying asset was incompletely specified?

Convergence of Future price to the Spot price Question #18

2.18. Show that if the futures price of a commodity is greater than the spot price during the delivery period, then there is an arbitrage opportunity. Does an arbitrage opportunity exist if the futures price is less than the spot price? Explain your answer.

Convergence of Future price to the Spot price Question #35

2.35. Suppose that there are no storage costs for crude oil, and the interest rate for borrowing or lending is 4% per annum. How could you make money if the June and December futures contracts for a particular year trade at $50 and $56, respectively?

The Operation of margin accounts Specifications

Margin Call

The Initial Margin

The Variational margin / Maintenance margin

The Operation of margin accounts Example

Example for Operation of margin account[1)]

Day	Trade price ($)	Settlement price ($)	Daily gain ($)	Cumulative gain ($)	Margin account balance ($)	Margin call ($)
1	1,750.00				12,000	
1		1,741.00	−1,800	−1,800	10,200	
2		1,738.30	−540	−2,340	9,660	
3		1,744.60	1,260	−1,080	10,920	
4		1,741.30	−660	−1,740	10,260	
5		1,740.10	−240	−1,980	10,020	
6		1,736.20	−780	−2,760	9,240	
7		1,729.90	−1,260	−4,020	7,980	4,020
8		1,730.80	180	−3,840	12,180	
9		1,725.40	−1,080	−4,920	11,100	
10		1,728.10	540	−4,380	11,640	
11		1,711.00	−3,420	−7,800	8,220	3,780
12		1,711.00	0	−7,800	12,000	
13		1,714.30	660	−7,140	12,660	
14		1,716.10	360	−6,780	13,020	
15		1,723.00	1,380	−5,400	14,400	
16	1,726.90		780	−4,620	15,180	

Long position

2 gold futures contracts

The contract size is 100 ounces

The current price is $1,750

Initial margin is $6,000 per contract

Maintenance margin is $4,500 per contract

1) Hull(2021), Table 2.1

The Operation of margin accounts Question #24

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2.24. Suppose you call your broker and issue instructions to sell one July hogs contract. Describe what happens.

The Operation of margin accounts Question #16

2.16. Explain how margin accounts protect futures traders against the possibility of default.

The Operation of margin accounts Question #11

2.11. Suppose that you enter into a short futures contract to sell July silver for $17.20 per ounce. The size of the contract is 5,000 ounces. The initial margin is $4,000, and the maintenance margin is $3,000. What change in the futures price will lead to a margin call? What happens if you do not meet the margin call?

The Operation of margin accounts Question #17

2.17. A trader buys two July futures contracts on frozen orange juice concentrate. Each contract is for the delivery of 15,000 pounds. The current futures price is 160 cents per pound, the initial margin is $6,000 per contract, and the maintenance margin is $4,500 per contract. What price change would lead to a margin call? Under what circumstances could $2,000 be withdrawn from the margin account?

The Operation of margin accounts Question #21

2.21. At the end of one day, a clearing house member is long 100 contracts, and the settlement price is $50,000 per contract. The original margin is $2,000 per contract. On the following day, the member becomes responsible for clearing an additional 20 long contracts, entered into at a price of $51,000 per contract. The settlement price at the end of this day is $50,200. How much does the member have to add to its margin account with the exchange clearing house?

The Operation of margin accounts Question #34

2.34. A company enters into a short futures contract to sell 5,000 bushels of wheat for 750 cents per bushel. The initial margin is $3,000, and the maintenance margin is $2,000. What price change would lead to a margin call? Under what circumstances could $1,500 be withdrawn from the margin account?

The Operation of margin accounts Question #32

2.32. Trader A enters into futures contracts to buy 1 million euros for 1.1 million dollars in three months. Trader B enters into a forward contract to do the same thing. The exchange rate (dollars per euro) declines sharply during the first two months and then increases for the third month to close at 1.1300. Ignoring daily settlement, what is the total profit of each trader? When the impact of daily settlement is taken into account, which trader has done better?

OTC markets Specifications

Central Counterparties

Bilateral Clearing

OTC markets Question #22

2.22. Explain why collateral requirements increased in the OTC market as a result of regulations introduced since the 2008 financial crisis.

OTC markets Question #31

2.31. Explain how CCPs work. What are the advantages to the financial system of requiring CCPs to be used for all standardized derivatives transactions between financial institutions?

OTC markets Question #37

2.37. A bank's derivatives transactions with a counterparty are worth \$10 million to the bank and are cleared bilaterally. The counterparty has posted \$10 million of cash collateral. What credit exposure does the bank have?

Other Topics

Types of Orders (13, 19, 20)

Accounting and Tax (12, 28)

Foreign Exchange Quotes (14, 23)

Open interest Question #27

2.27. “When a futures contract is traded on the floor of the exchange, it may be the case that the open interest increases by one, stays the same, or decreases by one.” Explain this statement.

Open interest Question #33

2.33. Explain what is meant by open interest. Why does the open interest usually decline during the month preceding the delivery month? On a particular day, there were 2,000 trades in a particular futures contract. This means that there were 2,000 buyers and 2,000 sellers. Of the 2,000 buyers, 1,400 were closing out positions, and 600 were entering into new positions. Of the 2,000 sellers, 1,200 were closing out positions, and 800 were entering into new positions. What is the impact of the day's trading on open interest?

Miscellaneous Question #25

2.25. “Speculation in futures markets is pure gambling. It is not in the public interest to allow speculators to trade on a futures exchange.” Discuss this viewpoint.

Miscellaneous Question #36

2.36. What position is equivalent to a long forward contract to buy an asset at K on a certain date and a put option to sell it for K on that date?