

## 2 Futures Markets

### Answers to Questions and Problems

1. Explain the different roles of a floor broker and an account executive.

A floor broker is located on the floor of the exchange and executes orders for traders off-the-floor of the exchange. Typically, the floor broker will either be an independent trader who executes orders on a contractual basis for a futures commission merchant (FCM), or the floor broker may be an employee of an FCM. An account executive is almost always employed by an FCM and is located off-the-floor of the exchange. The account executive is the person one typically thinks of as a broker. The account executive could be located in the local office of any major brokerage firm and has customers for whom he or she executes orders by communicating them to the exchange via the communication facilities of the FCM.

2. At a party, a man tells you that he is an introducing broker. He goes on to explain that his job is introducing prospective traders such as yourself to futures brokers. He also relates that he holds margin funds as a service to investors. What do you make of this explanation?

The guy is a fraud. First, a defining characteristic of an introducing broker (IB) is that the IB does not hold customers' funds. Instead, the IB is associated with an FCM who holds the customers' funds. Second, the last person the IB wants his customer to meet is another broker. The IB's income depends on executing orders for his customers, so the IB wants to keep his flock of customers away from the wolves (other brokers) who are hungry for customers.

3. Assume that you are a floor broker and a friend of yours is a market maker who trades soybeans on the floor of the Chicago Board of Trade. Beans are trading at \$6.53 per bushel. You receive an order to buy beans and you buy one contract from your friend at \$6.54, one cent above the market. Who wins, who loses, and why? Explain the rationale for making such practice illegal.

As described, this transaction costs your customer \$.01 per bushel and transfers those funds to the friend from whom you purchase the contract at \$6.54. On a 5,000-bushel contract, this amounts to \$50. Thus, as described, the customer loses and the friend wins. It is important to see the motivation for the floor broker's engaging in this transaction. As described, the floor broker cheats her customer and helps the friend. Presumably, the motivation for such an action is the expectation that the friend will return the favor on another transaction. The rationale for making this transaction illegal is clear; it amounts to a direct theft from the customer.

4. You are back at the party, several hours later. Your buddy from question 2 buttonholes you again and starts to explain his great success as a dual trader, trading both beans and corn. What do you think?

This guy is not bright. A dual trader is a person who trades for his or her own account and who executes orders for others at the same time.

5. You are having trouble escaping from your friend in question 4. He goes on to explain that liquidation-only trading involves trading soybean against soyoil to profit from the liquidation that occurs when beans are crushed. Explain how your understanding of *liquidation-only trading* differs from your friend's.

We hope that your understanding of liquidation-only trading runs as follows: Under liquidation-only trading, each trade must result in a reduction of a trader's open interest. Every trade must be an offsetting trade. Liquidation-only trading essentially amounts to the closing of a market, and this is done during serious market disturbances, such as a manipulation. Liquidation-only trading has nothing in particular to do with beans or any other commodities.

6. In purchasing a house, contracting to buy the house occurs at one time. Typically, closing occurs weeks later. At the closing, the buyer pays the seller for the house and the buyer takes possession. Explain how this transaction is like a futures or forward transaction.

The purchase of a house has many features of a forward contract. Contracting occurs at one date, with performance on the contract occurring later at the closing. In buying a house, there is usually a good faith deposit or earnest money put up at the time of contracting. The contract is tailored to the individual circumstances, with the performance terms and the closing date being agreed on between the buyer and seller. The contract is not like a futures, because there is no organized exchange, the contract terms are not fixed, and settlement can occur at any time instead of at a fixed date.

7. In the futures market, a widget contract has a standard contract size of 5,000 widgets. What advantage does this have over the well-known forward market practice of negotiating the size of the transaction on a case-by-case basis? What disadvantages does the standardized contract size have?

With standardized contract size and other terms, a futures contract avoids uncertainty about what is being traded. If these terms were not specified, traders would have to specify all of the features of the underlying good anew each time there is a contract. The futures style of trading has the disadvantage of losing flexibility due to the standardization. For example, the amount of the contract is fixed, as is the quality of the underlying good and the time the contract will be settled.

8. What factors need to be considered in purchasing a commodity futures exchange seat? What are all the possible advantages that could come from owning a seat?

A seat on a commodity exchange is essentially a capital asset. The purchaser would want to consider the risk, including systematic risk, associated with such a purchase. The value of the seat depends mainly on the expected trading volume on the exchange, so we expect seat prices to be sensitive to the business cycle and to competition from foreign exchanges. Owning a seat allows one to trade on the exchange. Also, the seat holder can lease the seat for someone else to trade. Therefore, the seat offers the potential for cash inflows as well as capital appreciation.

9. Explain the difference between initial and maintenance margin.

Initial margin is the amount a trader must deposit before trading is permitted. Maintenance margin is the minimum amount that must be held in the trader's account while a futures position is open. If the account value falls below the amount specified as the maintenance margin, the trader must deposit additional funds to bring the account value back to the level of the initial margin.

10. Explain the difference between maintenance and variation margin.

Maintenance margin is the amount a trader must keep in the account to avoid a margin call. Variation margin is the payment a trader must make in a margin call. The margin call occurs when the account value drops below the level set for the maintenance margin. Upon receiving a margin call, the trader must make a cash payment of the variation margin. The maintenance margin is a stock variable, while the variation margin is a flow variable.

11. On February 1, a trader is long the JUN wheat contract. On February 10, she sells a SEP wheat futures, and sells a JUN wheat contract on February 20. On February 15, what is her position in wheat futures? On February 25, what is her position? How would you characterize her transaction on February 20?

On February 15, the trader holds an intracommodity spread, being long the JUN and short the SEP wheat. On February 25, the trader is short one SEP wheat contract. The transaction on February 20 was a transaction offsetting the original long position in SEP wheat.

12. Explain the difference between volume and open interest.

Open interest is the number of contracts currently obligated for delivery. The volume is the number of contracts traded during some period. For every purchase there is a sale, and the purchase and sale of one contract generates one contract of trading volume.

13. Define *tick* and *daily price limit*.

A tick is the minimum amount a futures contract can change. For example, in the T-bond contract, the tick size is 1/32 of one point of par. This gives a dollar tick value of \$31.25 per T-bond futures contract. The daily price limit is the amount the contract can change in price in one day. It is usually expressed as some number of ticks, and it is measured from the previous day's settlement price. No trade can be executed at a price that differs from the previous day's settlement price by more than the daily price limit.

14. A trader is long one SEP crude oil contract. On May 15, he contracts with a business associate to receive 1,000 barrels of oil in the spot market. The business associate is short one SEP crude oil contract. How can the two traders close their futures positions without actually transacting in the futures market?

The traders close their futures positions through an exchange-for-physicals transaction (EFP). In an EFP, two traders with futures positions exchange the physical good for cash and report this transaction to the exchange, asking the exchange to offset their futures contracts against each other. This transaction is also called an ex-pit or against actuals transaction.

15. Explain how a trader closes a futures market position via cash settlement.

For a contract satisfied by cash settlement, there is no delivery. Instead, when the futures contract expires, the final settlement price on the futures is set equal to the cash price for that date. This practice ensures convergence of the futures price and the cash price. Traders then make or receive payments based on the difference between the previous day's settlement price and the final settlement price on the contract.

16. Explain *price discovery*.

In futures markets, price discovery refers to the revealing of information about future prices that the market facilitates. It is one of the two major social functions of the futures market. (The other is risk transference.) As an example, the futures price for wheat for delivery in nine months reveals information to the public about the expected future spot price of wheat at the time of delivery. While controversial, there is some reason to believe that the futures price (almost?) equals the spot price that is expected to hold at the futures expiration. This price discovery function helps economic agents plan their investment and consumption by providing information about future commodity prices.

17. Contrast anticipatory hedging with hedging in general.

In anticipatory hedging, a trader enters the futures market and transacts before (or in anticipation of) some cash market transaction. This differs from a hedge of an existing position. For example, a farmer might sell wheat futures in anticipation of the harvest. Alternatively, a merchant holding an inventory of wheat might hedge the inventory by selling wheat futures. The farmer is engaged in anticipatory hedging, because he or she is expecting to have the cash market position and hedges this anticipation. The wheat merchant already has the cash market position, in virtue of holding the wheat inventory, and therefore is not engaged in anticipatory hedging.

18. What is *front running*?

Front running is a market practice in which a broker holds a customer's order for execution and executes a similar order of his or her own before executing the customer's order. This practice can be particularly pernicious if the customer's order is large, because the order may itself move prices. By front running, the broker seeks to capitalize on the privileged information that the order is coming to market. This practice is unethical and against the rules of the futures exchange.

## 19. Explain the difference in the roles of the National Futures Association and the Commodity Futures Trading Commission.

The National Futures Association (NFA) is an industry self-regulatory body, while the Commodity Futures Trading Commission (CFTC) is an agency of the federal government. The same law that instituted the CFTC also provided for the futures industry to establish self-regulatory bodies. The NFA enforces ethical standards on most futures industry members and provides testing for licensing of brokers and other futures industry professionals. The NFA operates under the supervision of the CFTC.

## 20. What are the two types of financial safeguard models used by futures clearinghouses?

Two main types of clearinghouse financial safeguard systems models are observed across the market. The first type is called "Good to the Last Drop." In this model, the clearinghouse commits its capital to satisfy any default obligations not covered by 1) the margin posted by clearing members on behalf of customers and the member's proprietary accounts; or 2) a separately capitalized guarantee fund. In the good-to-the-last-drop model, the clearinghouse commits to satisfying all obligations to the point where the clearinghouse itself is insolvent.

The second type of financial safeguard model is the "Live Another Day" model. In this model, clearing members are protected primarily with guarantee funds and without committing the core capital of the clearinghouse. In this model, a primary objective is to sustain the clearinghouse so that it can continue to perform its risk-mitigating role during times of crisis when is needed the most. In this model, default obligations are ultimately borne by clearing members who must absorb unpaid invoices.

## 21. What does it mean for an exchange to "demutualize?"

When a non-profit member-owned exchange converts to for-profit status it is said to have demutualized. In a demutualization, the members receive shares of stock in the new corporation. Ultimately, the shares in the demutualized corporation may be offered to the public in an initial public offering (IPO). The shares can then be traded on the open market.

22. How did the Commodity Futures Modernization Act of 2000 alter the regulation of the futures industry?

The Commodity Futures Modernization Act of 2000 made sweeping changes to the way futures markets had previously been regulated. Key features include:

- A. Permitting futures trading on individual stocks and narrow-based stock indexes
- B. Clarifying the legal status of privately-negotiated swap transactions
- C. Promoting competition and innovation in futures markets
- D. Providing a predictable and calibrated regulatory structure tailored to the product, the participant, and the trading platform.
- E. Allowing exchanges to bring new contracts to market without prior regulatory approval
- F. Establishing a set of core principles, or standards, that permit futures exchanges and clearinghouses to use different methods to achieve federal requirements
- G. Giving the CFTC clear authority to stop certain illegal, foreign exchange transactions aimed at defrauding small investors
- H. Giving the CFTC separate oversight authority with respect to clearinghouse organizations.

23. In what ways do futures exchanges compete?

To understand how exchanges compete, it is helpful to understand the economic incentives to which futures exchanges are responding. First, we must recognize that a futures exchange is a business firm that creates markets. The creation of markets is an entrepreneurial activity that entails substantial costs, such as gathering information, searching for trading partners, bargaining, and enforcing contracts. Futures exchanges economize on these costs by specifying the rules of trading, the terms of exchange contracts, the conditions of exchange membership, and the technology employed for order entry and trade execution.

By viewing futures exchanges as firms that create markets, we can see more clearly some of the ways exchanges compete. Among the ways exchanges compete is through innovation in the design of the contracts they offer, the technology they employ, the fees they charge, the business models they adopt, and the quality of trading information they provide to investors. Exchanges also compete directly with each other for the exclusive right to trade particular contracts. Finally, exchanges compete for business with markets offering related products. For example, futures exchanges compete with the over-the-counter market and the market for exchange traded funds.

24. How do futures exchanges make money?

A futures exchange is a business. By far the biggest source of revenue at most exchanges is the fees they generate from executing transactions and clearing trades. Another large source of revenue is the sale of real-time data, i.e., the quotation data fees. At some

exchanges, such as the Chicago Board of Trade and the Minneapolis Grain Exchange, rent from real estate holdings is a major contributor to revenue.

25. What are bunched orders? What issues are involved in the post-trade allocation of bunched orders?

A bunched order is a collective trade placed on behalf of several accounts. In placing a bunched order, the CTA may not be able to fill the entire order at a single price. In other words, the CTA may receive “split fills” on his order. This means that the CTA will have to allocate the filled trades among the various accounts after the trade has been executed. Inevitably some customers will receive more favorable, and some less favorable, fills because of the fact that portions of the order were executed at different prices. Although there is nothing wrong with this practice *per se*, it presents the CTA with the opportunity to favor some accounts over others by allocating the more profitable trades to favored accounts. It is for this reason that federal commodities laws prohibit brokers, advisors, and other market professionals, except in specific instances, from allocating orders among accounts after trades have been executed. This prohibition is aimed at preventing such persons from abusing their discretion in allocating trades.

26. What is an “out trade?” How do futures exchanges facilitate the reconciliation of out trades?

An “out trade” occurs when a discrepancy exists between the trade data submitted by the broker representing the buyer and the trade data submitted by the broker representing the seller. There are two types of out trades: those caused by a discrepancy in the reported price and those caused by a discrepancy in the reported quantity. Exchange rules usually require the brokers to choose between the trade data submitted by the buyer and that submitted by the seller. Any compromises or adjustments are handled by side payments between the brokers. If the brokers cannot resolve the discrepancy, exchange rules may enforce a predetermined solution.

27. What are the four elements of proof required for a futures market manipulation claim?

Federal courts use a four-pronged test, that has evolved through the common law, to determine by a preponderance of the evidence whether a set of facts are consistent with an alleged manipulation. The four elements of proof in manipulation cases

- (1) that the accused had the ability to influence market prices;
- (2) that the accused specifically intended to do so;
- (3) that an artificial price occurred; and
- (4) that the accused caused an artificial price

28. What does it mean for a futures market to be *transparent*?

The word *transparency* refers to the degree to which a futures exchange publicly disseminates real-time information on transaction prices, quotations, order flow, and other

market variables. Much of the real-time information produced by futures exchanges is sold to data vendors such as Bloomberg, who in turn make the information available to their subscribers. Other information, such as delayed quotes, is provided by futures exchanges for free. Transparency can be viewed as one dimension of competition between competing marketplaces.

29. What is churning?

Churning refers to the actions of brokers who execute trades on behalf of investors with the intent of generating commissions at the expense of the investors' interests. To establish a claim for churning in futures markets, an investor must be able to demonstrate three elements by a preponderance of the evidence: (1) that the broker (or advisor) controlled the level and frequency of trading in the account; (2) that the overall volume of the broker's trading was excessive in light of the investor's trading objective; and (3) that the broker acted with the intent to defraud the investor or acted with a reckless disregard for the investor's interests