PART I

Preliminaries

CHAPTER 1

For Beginners Only

If a little knowledge is dangerous, where is the man who has so much as to be out of danger?

—Thomas Henry Huxley

Purpose of This Chapter

The focus of this book is on analysis and trading. Although these subjects are explored in far greater depth than in most general commodity texts, the presentation in the following chapters does not assume any prior knowledge except for a familiarity with the basic concepts of futures markets. This chapter is intended to provide a sketch of the background information necessary to make this book accessible to the novice reader. The title of this chapter should be taken literally. Traders who are already familiar with futures markets should proceed directly to Chapter 2.

The introductory discussion provided by this chapter is deliberately brief and does not purport to cover all background subjects. Topics such as the history of exchanges, choosing a broker, and operation of the clearinghouse are not covered because a familiarity with these subjects is unnecessary for the analysis and trading of futures markets. Readers who desire a more detailed discussion of commodity market basics can refer to a wide range of introductory commodity texts.

The Nature of Futures Markets

A futures contract is a commitment to deliver or receive a standardized quantity and quality of a commodity or financial instrument at a specified future date. The price associated with this commitment is the trade entry level.

The essence of a futures market is in its name: Trading involves a commodity or financial instrument for a future delivery date, as opposed to the present time. Thus, if a cotton farmer wished to make a current sale, he would sell his crop in the local cash market. However, if the same farmer wanted to lock in a price for an anticipated future sale (e.g., the marketing of a still unharvested crop), he would have two options: He could locate an interested buyer and negotiate a contract specifying the price and other details (quantity, quality, delivery time, location, etc.). Alternatively, he could sell futures. Some of the major advantages of the latter approach are the following:

1. The futures contract is standardized; hence, the farmer does not have to find a specific buyer.
2. The transaction can be executed virtually instantaneously online.
3. The cost of the trade (commissions) is minimal compared with the cost of an individualized forward contract.
4. The farmer can offset his sale at any time between the original transaction date and the final trading day of the contract. The reasons this may be desirable are discussed later in this chapter.
5. The futures contract is guaranteed by the exchange.

Until the early 1970s, futures markets were restricted to commodities (e.g., wheat, sugar, copper, cattle). Since that time, the futures area has expanded to incorporate additional market sectors, most significantly stock indexes, interest rates, and currencies (foreign exchange). The same basic principles apply to these financial futures markets. Trading quotes represent prices for a future expiration date rather than current market prices. For example, the quote for December 10-year T-note futures implies a specific price for a $100,000, 10-year U.S. Treasury note to be delivered in December. Financial markets have experienced spectacular growth since their introduction, and today trading volume in these contracts dwarfs that in commodities. Nevertheless, futures markets are still commonly, albeit erroneously, referred to as commodity markets, and these terms are synonymous.

Delivery

Shorts who maintain their positions in deliverable futures contracts after the last trading day are obligated to deliver the given commodity or financial instrument against the contract. Similarly, longs who maintain their positions after the last trading day must accept delivery. In the commodity markets, the number of open long contracts is always equal to the number of open short contracts (see section Volume and Open Interest). Most traders have no intention of making or accepting delivery, and hence will offset their positions before the last trading day. (The long offsets his position by entering a sell order, the short by entering a buy order.) It has been estimated that fewer than 3 percent of open contracts actually result in delivery. Some futures contracts (e.g., stock indexes, eurodollar) use a *cash settlement* process whereby outstanding long and short positions are offset at the prevailing price level at expiration instead of being physically delivered.

Contract Specifications

Futures contracts are traded for a wide variety of markets on a number of exchanges both in the United States and abroad. The specifications for these contracts, especially details such as daily price limits, trading hours, and ticker symbols, can change over time; exchange web sites should be consulted for up-to-date information. Table 1.1 provides the following representative trading details for six futures markets (E-mini S&P 500, 10-year T-note, euro, Brent crude oil, corn, and gold):

1. **Exchange.** Note that some markets are traded on more than one exchange. In some cases, different contracts for the same commodity (or financial instrument) may even be traded on the same exchange.
2. **Ticker symbol.** The quote symbol is the letter code that identifies each market (e.g., ES for the E-mini S&P 500, C for corn, EC for the euro), combined with an alphanumeric suffix to represent the month and year.
3. **Contract size.** The specification of a uniform quantity per contract is one of the key ways in which a futures contract is standardized. By multiplying the contract size by the price, the trader can determine the dollar value of a contract. For example, if corn is trading at \$4.00/bushel (bu), the contract value equals \$20,000 (\$4 × 5,000 bu per contract). If Brent crude oil is trading at \$48.30, the contract value is \$48,300 (\$48.30 × 1,000 barrels). Although there are many important exceptions, very roughly speaking, higher per-contract dollar values will imply a greater potential/risk level. (The concept of contract value has no meaning for interest rate contracts.)
4. **Price quoted in.** This row indicates the relevant unit of measure for the given market.
5. **Minimum price fluctuation ("tick") size and value.** This row indicates the minimum increment in which prices can trade, and the dollar value of that move. For example, the minimum fluctuation for the E-mini S&P 500 contract is 0.25 index points. Thus, you can enter an order to buy December E-mini S&P futures at 1,870.25 or 1,870.50, but not 1,870.30. The minimum fluctuation for corn is $\frac{1}{4}$¢/bu, which means you can enter an order to buy December corn at \$4.01 $\frac{1}{2}$ or \$4.01 $\frac{3}{4}$, but not \$4.01 $\frac{5}{8}$ per bushel. The tick value is obtained by multiplying the minimum fluctuation by the contract size. For example, for Brent crude oil, one cent (\$0.01) per barrel × 1,000 barrels = \$10. For corn, $\frac{1}{4}$¢/bu × 5,000 = \$12.50.
6. **Contract months.** Each market is traded for specific months. For example, the E-mini S&P 500 futures contract is traded for March, June, September, and December. Corn is traded for March, May, July, September, and December. Table 1.2 shows the letter designations for each month of the year, which are added (along with the contract year) to a market's base ticker symbol to create a contract-specific ticker symbol. For example, December 2017 E-mini S&P 500 futures have a ticker symbol of ESZ17, while the symbol for the March 2018 contract is ESH18. The symbol for May 2017 corn is CK17. The last trading day for a contract typically occurs on a specified date in the contract month, although in some markets (such as crude oil), the last trading day falls in the month preceding the contract month. For most markets, futures are listed for contract months at least one year forward from the current date. However, trading activity is normally heavily concentrated in the nearest two contracts.

TABLE 1.1 Sample Futures Contract Specifications

	E-Mini S&P 500	10-Year T-Note	Euro FX	Brent Crude Oil	Corn	Gold
Exchange	CME Group	CME Group/CBOT	CME Group	Intercontinental Exchange (ICE Futures Europe)	CME Group/CBOT	CME Group/NYMEX
Ticker Symbol	ES	TY	EC	B	C	GC
Contract Size	$50 × S&P 500 Index	U.S. Treasury note with a face value at maturity of $100,000.	125,000 euros	1,000 barrels	5,000 bushels (~ 127 metric tons)	100 troy ounces
Price Quoted In	Index points	Points ($1,000) and halves of 1/32 of a point (e.g., 126-16 represents 126 16/32 and 126-165 represents 126 16.5/32).	U.S. dollars per euro	U.S. dollars and cents	Cents per bushel	U.S. dollars and cents per troy ounce
Minimum Price Fluctuation ("tick") Size and Value	0.25 index points = $12.50	One-half of 1/32 of one point ($15.625, rounded to the nearest cent per contract).	$0.00005 per euro increments ($6.25/contract)	One cent ($0.01) per barrel = $10	1/4 cent per bushel = $12.50	$0.10 per troy ounce = $10
Contract Months	Mar, Jun, Sep, Dec	Mar, Jun, Sep, Dec	Mar, Jun, Sep, Dec	All months of the year	Mar, May, Jul, Sep, Dec	The current month; the next two months; any Feb, Apr, Aug, and Oct within a 23-month period; and any June and Dec within a 72-month period beginning with the current month.
Trading Hours	Mon–Fri, 5:00 p.m. previous day to 4:15 p.m.; trading halt from 3:15 p.m. to 3:30 p.m.	5:00 p.m. to 4:00 p.m., Sun–Fri.	Sun–Fri. 5 p.m. to 4 p.m. CT with a 60-min. break each day beginning at 4:00 p.m.	1 a.m. to 11 p.m. London time	Sun–Fri, 7:00 p.m. to 7:45 a.m. CT and Mon–Fri, 8:30 a.m. to 1:20 p.m. CT.	Sun–Fri, 6:00 p.m. to 5:00 p.m. (5:00 p.m. to 4:00 p.m. Chicago time/CT) with a 60-minute break each day beginning at 5:00 p.m. (4:00 p.m. CT).

Daily Price Limit	7%, 13%, and 20% limits are applied to the futures fixing price, effective 8:30 a.m. to 3 p.m. CT, Mon–Fri.	7%, 13%, and 20% limits are applied to the futures fixing price, effective 8:30 a.m. to 3 p.m. CT, Mon–Fri. (See exchange for specifics.)	N/A	N/A	$0.25	N/A
Settlement Type	Cash settlement	Deliverable	Deliverable	Physical delivery based on EFP delivery, with an option to cash settle against the ICE Brent Index price for the last trading day of the futures contract.	Deliverable	Deliverable
First Notice Day	N/A	Final business day of the month preceding the contract month.	N/A	N/A	Last business day of month preceding contract month.	The last business day of the month preceding the delivery month.
Last Notice Day	N/A	Final business day of the contract month.	N/A	N/A	The business day after the last contract's last trading day.	The second-to-last business day of the delivery month.
Last Trading Day	Until 8:30 a.m. on the 3rd Friday of the contract month.	12:01 p.m. on the 7th business day preceding the last business day of the delivery month.	9:16 a.m. CT on the second business day immediately preceding the third Wed of the contract month.	The last business day of the second month preceding the relevant contract month.	Business day prior to the 15th calendar day of the contract month.	The third-to-last business day of the delivery month.
Deliverable Grade	N/A	U.S. T-notes with a remaining term to maturity of 6.5 to 10 years from the first day of the delivery month.	N/A	N/A	#2 Yellow at contract price, #1 Yellow at a 1.5 cent/bushel premium, #3 Yellow at a 1.5 cent/bushel discount.	Gold delivered under this contract shall assay to a minimum of 995 fineness.

TABLE 1.2 Contract Month Designations

Month	Ticker Designation
January	F
February	G
March	H
April	J
May	K
June	M
July	N
August	Q
September	U
October	V
November	X
December	Z

7. **Trading hours.** Trading hours are listed in terms of the local times for the given exchange. (All U.S. exchanges are currently located in either the Eastern or Central time zones.)
8. **Daily price limit.** Exchanges normally specify a maximum amount by which the contract price can change on a given day. For example, if the December corn contract closed at $4.10 on the previous day, and the daily price limit is 25¢/bu, corn cannot trade above $4.35 or below $3.85. Some markets employ formulas for increasing the daily limit after a specified number of consecutive limit days.

   In cases in which free market forces would normally seek an equilibrium price outside the range boundaries implied by the limit, the market will simply move to the limit and virtually cease to trade. For example, if after the market close the U.S. Department of Agriculture (USDA) releases a very bullish corn crop production estimate, which hypothetically would result in an immediate 30¢/bu price rise in an unrestricted market, prices will be *locked limit up* (25¢/bu) the next day. This means that the market will open and stay at the limit, with virtually no trading taking place. The reason for the absence of trading activity is that the limit rule restriction maintains an artificially low price, leading to a deluge of buy orders at that price but few if any sell orders.

   In the case of a very severe surprise event (e.g., sudden major crop damage), a market could move several limits in succession, although such moves are less common than in the days before near-24-hour electronic trading. In such situations, traders on the wrong side of the fence might not be able to liquidate their positions until the market trades freely. The new trader should be aware of, but not be overly frightened by, this possibility, since such events of extreme volatility rarely come as a complete surprise. In most cases, markets vulnerable to such volatile price action can be identified. Some examples of such markets would include commodities in which the USDA is scheduled to release a major report, coffee or frozen concentrated orange juice during their respective freeze seasons, and markets that have exhibited recent extreme trading volatility. For some markets, the limit on the nearby contract is removed at some point

approaching expiration (frequently *first notice day*—see item 10). Daily price limits can change frequently, so traders should consult the exchange on which their products trade to ensure they are aware of current thresholds.

9. **Settlement type.** Markets are designated either as physically deliverable or cash settled. In Table 1.1, the E-mini S&P 500 futures are cash settled, while all the other markets can be physically delivered.
10. **First notice day.** This is the first day on which a long can receive a delivery notice. First notice day presents no problem for shorts, since they are not obligated to issue a notice until after the last trading day. Furthermore, in some markets, first notice day occurs after last trading day, presenting no problem to the long either, since all remaining longs at that point presumably wish to take delivery. However, in markets in which first notice day precedes last trading day, longs who do not wish to take delivery should be sure to offset their positions in time to avoid receiving a delivery notice. (Brokerage firms routinely supply their clients with a list of these important dates.) Although longs can pass on an undesired delivery notice by liquidating their position, this transaction will incur extra transaction costs and should be avoided. ***Last notice day*** is the final day a long can receive a delivery notice.
11. **Last trading day.** This is the last day on which positions can be offset before delivery becomes obligatory for shorts and the acceptance of delivery obligatory for longs. As indicated previously, the vast majority of traders will liquidate their positions before this day.
12. **Deliverable grade.** This is the specific quality and type of the underlying commodity or financial instrument that is acceptable for delivery.

Volume and Open Interest

Volume is the total number of contracts traded on a given day. Volume figures are available for each traded month in a market, but most traders focus on the total volume of all traded months.

Open interest is the total number of outstanding long contracts, or equivalently, the total number of outstanding short contracts—in futures, the two are always the same. When a new contract begins trading (typically about 12 to 18 months before its expiration date), its open interest is equal to zero. If a buy order and sell order are matched, then the open interest increases to 1. Basically, open interest increases when a new buyer purchases from a new seller and decreases when an existing long sells to an existing short. The open interest will remain unchanged if a new buyer purchases from an existing long or a new seller sells to an existing short.

Volume and open interest are very useful as indicators of a market's liquidity. Not all listed futures markets are actively traded. Some are virtually dormant, while others are borderline cases in terms of trading activity. Illiquid markets should be avoided, because the lack of an adequate order flow will mean that the trader will often have to accept very poor trade execution prices if he wants to get in or out of a position.

Generally speaking, markets with open interest levels below 5,000 contracts, or average daily volume levels below 1,000 contracts, should be avoided, or at least approached very cautiously. New markets will usually exhibit volume and open interest figures below these levels during their

initial months (and sometimes even years) of trading. By monitoring the volume and open interest figures, a trader can determine when the market's level of liquidity is sufficient to warrant participation. Figure 1.1 shows February 2016 gold (top) and April 2016 gold (bottom) prices, along with their respective daily volume figures. February gold's volume is negligible until November 2015, at which point it increases rapidly into December and maintains a high level through January (the February contract expires in late February). Meanwhile, April gold's volume is minimal until January, at which point it increases steadily and becomes the more actively traded contract in the last two days of January—even though the February gold contract is still a month from expiration at that point.

The breakdown of volume and open interest figures by contract month can be very useful in determining whether a specific month is sufficiently liquid. For example, a trader who prefers to initiate a long position in a nine-month forward futures contract rather than in more nearby contracts because of an assessment that it is relatively underpriced may be concerned whether its level of trading activity is sufficient to avoid liquidity problems. In this case, the breakdown of volume and open interest figures by contract month can help the trader decide whether it is reasonable to enter the position in the more forward contract or whether it is better to restrict trading to the nearby contracts.

Traders with short-term time horizons (e.g., intraday to a few days) should limit trading to the most liquid contract, which is usually the nearby contract month.

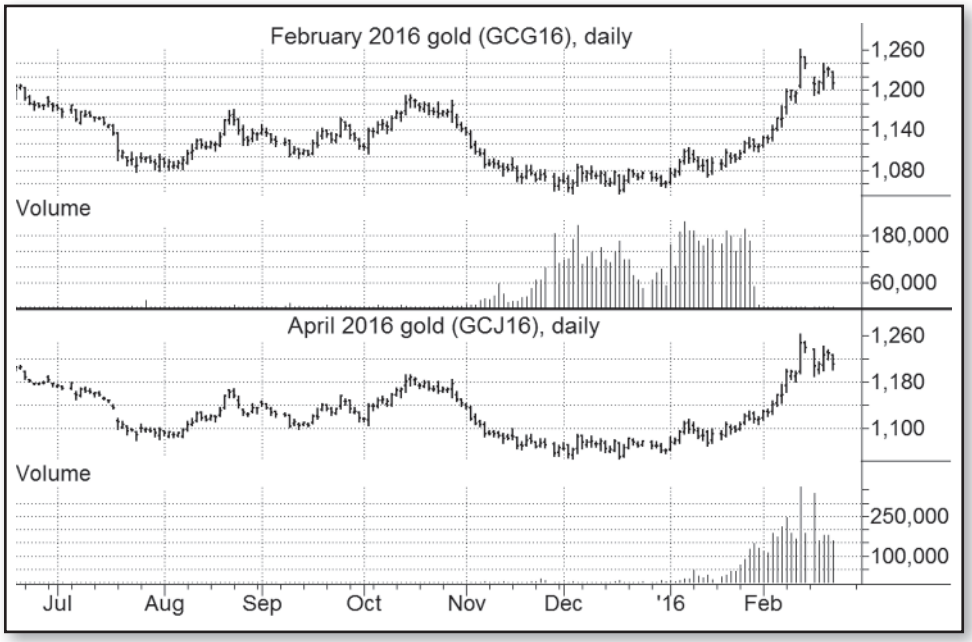

FIGURE 1.1 Volume Shift in Gold Futures

Hedging

A sell hedge is the sale of a futures contract as a temporary substitute for an anticipated future sale of the cash commodity.[1] Similarly, a buy hedge is a temporary substitute for an anticipated forward purchase of the cash commodity. In essence, the goal of the hedger is to lock in an approximate future price in order to eliminate exposure to interim price fluctuations. The concept of hedging is perhaps best explained through illustration. Let's look at several examples of hedging.

Hedging Examples for a Commodity

Cotton Producer Sell Hedge The date is April 1. A cotton farmer estimates his potential production at approximately 200,000 lbs, assuming average yields. The current cash price is 95¢/lb—an extremely attractive price, but one the producer cannot take advantage of, since his crop will not be harvested until November. December futures are trading at 85¢/lb, reflecting market expectations for an interim price decline. The producer believes the December price may actually be overly optimistic. He expects that a large increase in U.S. production, in response to high prices, will result in a major price collapse by the time the new crop is harvested. Given his bearish expectations, the producer is eager to lock in a price on his anticipated production.

Historical comparisons indicate the November–December cash prices in the producer's region tend to average approximately 2–4¢ below the December futures price. (The difference between cash and futures is called the *basis.* In this case, the November–December basis is said to be "2–4¢ under.") Thus, by selling December futures at the current price of 85¢/lb, the farmer can lock in an approximate cash price of 81–83¢. Because the producer believes prices will be significantly below 80¢/lb by harvest time, he decides to sell three December futures contracts against the expected post-harvest sale of his crop. This is called a *sell hedge*.

Note that three contracts represent 150,000 lbs of cotton, an amount equivalent to three-quarters of the producer's anticipated crop. The farmer does not hedge his entire crop, because his eventual output is still open to considerable uncertainty. If weather conditions are extremely poor, his yields could be reduced by more than 25 percent. Consequently, to avoid the possibility of overhedging his crop, an action that would leave him with a net short position, he prudently decides to sell only three contracts.

Table 1.3 illustrates two hypothetical outcomes of this hedge. In case 1, the producer is entirely correct in his expectations, and cash prices decline to 72¢/lb by December 1. In line with the normal historical basis relationship, December futures are simultaneously trading at 75¢/lb. The producer sells his cash crop at 72¢/lb, but also realizes a profit of 10¢/lb on his futures position. Thus, on the 150,000 lbs of crop that he has hedged, his effective price is 82¢/lb. (Commissions have not been included in this or the following illustrations in order to keep exposition as simple as possible. The adjustment for commissions would not meaningfully alter the results.) As a result of hedging, the

[1] The sell hedge may also be used as a proxy for temporary inventory reduction (see example of stock portfolio manager later in this section).

TABLE 1.3 Cotton Producer Sell Hedge

Case 1: Severely Weakening Cash Price		Case 2: Relatively Firm Cash Price	
Apr. 1	**Dec. 1**	**Apr. 1**	**Dec. 1**
Cash price 95¢	72¢	Cash price 95¢	92¢
Futures price 85¢	75¢	Futures price 85¢	95¢
Results:		Results:	
Cash sale price: 72¢		Cash sale price: 92¢	
Profit on futures: 10¢		Loss on futures: 10¢	
Effective sale price: 82¢		Effective sale price: 82¢	

farmer has locked in a much better price than he would have realized had he waited until his crop was harvested before taking any marketing action. In dollar terms, the producer's income is $15,000 higher than it would have been without the hedge:

$$3 \times 10¢/\text{lb} \times 50,000 \text{ lbs} = \$15,000$$

A hedge will not always be profitable. In the situation illustrated by case 2, Table 1.3, the producer's projections proved wrong as cash prices remained firm, declining a mere 3¢/lb from their lofty April 1 levels. In this case, the farmer is able to sell his crop at a much better than expected 92¢/lb, but he experiences a loss of 10¢/lb on his futures position. His effective sales price is once again 82¢/lb. Of course, in this instance, with the benefit of hindsight, the producer would have been much better off had he had not hedged. Nonetheless, note that even though he has sacrificed the opportunity for a windfall profit by hedging, he still realizes his target sales price of 82¢/lb.

The value of hedging is that it provides the producer with a much wider range of marketing strategies. Remember, if he prefers to take his chances and wait until after the harvest to market his crop, he can do so. Futures widen the range of possibilities by allowing the producer to lock in any futures-implied price during the interim. Thus, although he will not always make the right choice, presumably, over the long run, the increased marketing flexibility provided by futures should prove advantageous.

Cotton Mill Buy Hedge The date is June 1. A cotton mill has forward contracted to supply a fabric order for the following March. To meet this production order, the mill will need 1 million lbs of cotton on hand by December.

The current cash price is 77¢/lb, and December futures are trading at 80¢/lb. Assuming the same −3¢/lb basis established in the aforementioned cotton producer example, the December futures price quote implies cash prices will be unchanged in December relative to their current levels.

Although the mill has plenty of time to purchase the actual cotton, it is concerned that cash prices will rise significantly in the coming months. Since the end-product sales price has already been negotiated, the company must lock in its input price in order to guarantee a satisfactory profit margin. Given this scenario, the mill has two choices:

1. Increase its inventory sufficiently to cover its anticipated December–March requirements.
2. Hedge its forward requirements by buying December cotton futures.

Given the price structure in this example, the mill will be much better off buying futures. Why? Because the purchase of futures covers the forward commitment without incurring any storage costs. (This is true since the December futures price implies an unchanged cash price relative to current levels.) In contrast, the purchase of actual cotton would incur storage-related costs for the six-month period. The most important of these expenses would be borrowing costs, or lost interest, if the firm was using its own funds.

Table 1.4 illustrates two alternative outcomes for this hedge. In both cases, it is assumed the firm purchases the actual cotton on December 1, simultaneously offsetting its long hedge position in futures. In the first situation, cash prices increase between June and December, and the actual cash market purchase price on December 1 is 87¢/lb. However, as a result of a 10¢/lb profit on the futures hedge, the effective price to the firm is 77¢ (the cash price on June 1). In the second illustration, cash prices decline, and the firm's actual purchase price is 67¢/lb. However, as a result of a 10¢/lb loss in futures, the effective price is once again 77¢/lb. Although in this case the mill would have been better off not hedging, it is still purchasing the cotton at the previously desired locked-in price.

Since most companies will be more concerned about locking in adequate profit margins than about giving up windfall profits, hedging should provide a useful tool for business management. Furthermore, it should be emphasized that the firm always has the option not to hedge if, for any reason, the price implied by futures is not considered attractive. In short, users of commodities who incorporate hedging should have an advantage over their competitors, because they have a much wider range of purchasing strategies.

Hedging in Financial Futures

The previous examples illustrate the buy-and-sell hedge for a commodity. The same basic principles apply to the financial markets, as shown by the following examples.

A corporation expecting the need for a loan in six months and concerned about rising borrowing costs in the interim could lock in an approximate fixed rate by selling short-term interest rate futures (e.g., eurodollars). (An increase in interest rates will cause the *price* of interest rate instruments to decline.)

TABLE 1.4 Cotton Mill Buy Hedge

Case 1: Rising Cash Price		**Case 2: Declining Cash Price**	
June 1	**Dec. 1**	**June 1**	**Dec. 1**
Cash price 77¢	87¢	Cash price 77¢	67¢
Futures price 80¢	90¢	Futures price 80¢	70¢
Results:		Results:	
Cash purchase price: 87¢		Cash purchase price: 67¢	
Profit on futures: 10¢		Loss on futures: 10¢	
Effective purchase price: 77¢		Effective purchase price: 77¢	

A bond fund manager anticipating a cash influx in three months and an imminent decline in interest rates could lock in a rate of return by going long T-note futures.

A stock portfolio manager concerned about the possibility of a sharp, temporary break in stock prices could reduce market exposure by selling stock index futures (E-mini S&P 500, E-mini Nasdaq 100, Russell 2000 Index Mini). Such action would be far more cost effective (i.e., would incur much lower commission costs) than liquidating part or all of his portfolio and reinstating the position at a later date.

A U.S. company that knew it would require 10 million euros in three months to pay for an import transaction could lock in the exchange rate by purchasing euro futures.

General Observations Regarding Hedging

1. In all the preceding examples, the hedger offsets either an anticipated future transaction in the actual market or a current position with an equal but opposite transaction in futures. Thus, for the hedger, participation in futures can reduce risks associated with price changes. In effect, the true speculators among producers and users of commodities (or the financial markets) are those who do not hedge. For example, the farmer who does not hedge is speculating on the direction of prices during the interim before his crop is harvested.
2. Some written discussions of hedging almost seem to imply that producers and users of exchange-traded commodities should automatically hedge. This is ridiculous—hedging should be considered only if the futures-implied price is desirable. Otherwise, one is merely exchanging the futures-implied price for the subsequent actual cash price. Over the long run, this type of hedging should be a break-even process in terms of trades and a net loss generator because of commissions.
3. Hedging should be viewed as an important marketing tool, because it provides the producer and user with a wide range of purchase and sale strategies. Hedgers can always choose not to hedge, but nonhedgers eliminate the possibility of enhancing their profits through futures-related opportunities.
4. The hedger need not wait until the time of the actual transaction to lift the hedge. For example, reconsider the case of the cotton producer who sells December futures at 85¢/lb. If by October, futures have declined to 70¢/lb, the hedger might very well decide to cover his short hedge position. Although at a price of 85¢/lb the farmer was eager to protect against the possibility of declining prices, at a price of 70¢/lb he might well prefer to take his chances. If prices were subsequently to rally, the producer might decide to reinstate his hedge. In fact, sophisticated hedgers will often use such a trading approach in hedging. The key point is that, contrary to most textbook illustrations, a hedge should be maintained only as long as the implied price protection is deemed desirable.
5. It is important to keep the time differential and expectations in mind when comparing a current cash price with the cash price implied by futures. For example, in the hedge illustrated in case 1, Table 1.3, the futures-implied cash price is 13¢/lb below the current cash price. Yet, despite

this wide discount, the hedge is still very profitable because the price differential is ultimately far outweighed by the intervening price decline. Thus, the relevant question is not whether the futures-implied cash price is attractive relative to the *current* cash price, but rather whether it is attractive relative to the *expected future* cash price.

6. The hedger does not precisely lock in a transaction price. His effective price will depend on the basis. For example, if the cotton producer sells futures at 85¢/lb, assuming a −3¢ basis, his effective sales price will be 80¢/lb, rather than the anticipated 82¢/lb, if the actual basis at the time of offset is −5¢. However, it should be emphasized that this basis-price uncertainty is far smaller than the outright price uncertainty in an unhedged position. Furthermore, by using reasonably conservative basis assumptions the hedger can increase the likelihood of achieving, or bettering, the assumed locked-in price.
7. Although a hedger plans to buy or sell the actual commodity, it will usually be far more efficient to offset the futures position and use the local cash market for the actual transaction. Futures should be viewed as a pricing tool, not as a vehicle for making or taking delivery.
8. Most standard discussions of hedging make no mention whatsoever of price forecasting. This omission seems to imply that hedgers need not be concerned about the direction of prices. Although this conclusion may be valid for some hedgers (e.g., a middleman seeking to lock in a profit margin between the purchase and sales price), it is erroneous for most hedgers. There is little sense in following an automatic hedging program. Rather, the hedger should evaluate the relative attractiveness of the price protection offered by futures. Price forecasting would be a key element in making such an evaluation. In this respect, it can easily be argued that price forecasting is as important to many hedgers as it is to speculators.

Trading

The trader seeks to profit by anticipating price changes. For example, if the price of December gold is $1,150/oz, a trader who expects the price to rise above $1,250/oz will go long. The trader has no intention of actually taking delivery of the gold in December. Right or wrong, the trader will offset the position sometime before expiration. For example, if the price rises to $1,275 and the trader decides to take profits, the gain on the trade will be $12,500 per contract (100 oz × $125/oz). If, on the other hand, the trader's forecast is wrong and prices decline to $1,075/oz, with the expiration date drawing near, the trader has little choice but to liquidate. In this situation, the loss would be equal to $7,500 per contract. Note that the trader would not take delivery even given a desire to maintain the long gold position. In this case, the trader would liquidate the December contract and simultaneously go long in a more forward contract. (This type of transaction is called a *rollover* and would be implemented with a *spread* order—defined in the next section.) Traders should avoid taking delivery, since it can often result in substantial extra costs without any compensating benefits.

Novice traders should caution against the securities-based bias of trading only from the long side. In futures trading, there is no distinction between going short and going long.[2] Since prices can go down as well as up, the trader who takes only long positions will eliminate approximately half the potential trading opportunities. Also, it should be noted that futures frequently command a premium to current prices; consequently, the inflation argument for a long-side bias is frequently erroneous.

The successful trader must employ some method for forecasting prices. The two basic analytical approaches are:

1. **Technical analysis.** The technical analyst bases projections on non-economic data. Price data are by far the most important—and often only—input in technical analysis. The basic assumption of technical analysis is that prices exhibit repetitive patterns and that the recognition of these patterns can be used to identify trading opportunities. Technical analysis can also include other data, such as volume, open interest, and sentiment measures.
2. **Fundamental analysis.** The fundamental analyst uses economic data (e.g., production, consumption, exports) to forecast prices. In essence, the fundamentalist seeks to uncover trading opportunities by identifying potential transitions to significantly more ample or tighter supply-demand balances.

As discussed in Chapter 2, technical and fundamental analysis are not mutually exclusive approaches. Many traders use both in the decision-making process or as components of automated trading systems.

Types of Orders

Day versus Good Till Canceled (GTC)

Unless specified otherwise, orders are assumed to be good only for the day of entry. If the trader wants the order to remain open until canceled, he must specify that it is a good-till-canceled (GTC) order.

Market

This instruction directs the broker to execute the order upon receipt at the prevailing price level. Market orders are used when the trader is more concerned with initiating or liquidating a position immediately than with trying to achieve a specific execution price. Market orders ensure the trade will be executed unless prices are locked in at the daily limit or the order is entered too close to the end of the trading session.

[2] Some beginners are confused about how it is possible for a trader to sell a commodity he does not own. The key to the answer lies in the fact that the trader is selling a *futures* contract, not the cash commodity. Even though the trader who stays short past the last trading day must acquire the actual commodity to fulfill his contractual obligation, there is no need for him to own the commodity before that time. The short sale is simply a bet that prices will go down before the last trading day. Right or wrong, the trader will offset his short position before the last trading day, eliminating any need for actual ownership of the commodity.

Limit

The limit order, also called an *or-better* order, is used when the trader wants to ensure that the execution price will be no worse than a certain level. For example, an order to buy December gold at a $1,150/ounce limit can only be executed at a price equal to or below $1,150.

If the market is trading higher than that level when the brokerage receives the order, it must wait for the price to decline to $1,150 before it can execute the trade. If the price fails to return to that level, the brokerage is unable to fill the order. Similarly, an order to sell December gold at a $1,190/ounce limit would indicate that the order can only be filled at a price equal to or above $1,190. Limit orders will normally provide better fills than will market orders, but the trade-off is that they may not be executed. A trader whose primary concern is to get the order filled, particularly if it is an order to liquidate a losing position, should not use a limit order.

Stop

A stop order is not executed until the market reaches the given price level. The indicated price on a buy stop must always be above the market, while the indicated price on a sell stop must always be below the market.

In effect, a stop order will always be filled at a price worse than the market price. Why then would a trader use a stop order? There are two very important reasons: First, stop orders are used to limit losses or protect open profits. For example, a trader who buys March sugar at 14.50¢/lb might place an order to sell March sugar at 13.50¢/lb stop, GTC. If the market subsequently declines to 13.50¢/lb or lower, the stop order becomes a market order. In this way, the trader limits his risk on the trade to approximately 100 points. The reason for the word *approximately* is that markets often move beyond the stop price before the order can be executed. In the case of a short position, the protective stop order would be placed at a higher price. For example, if the trader went short March sugar at 14.50¢/lb, an order might be placed to buy March sugar at 15.50¢/lb stop, GTC.

Second, a stop order may be used if a trader views the market's ability to reach a certain level as a price signal. For example, if March sugar has been trading between 12.00¢ and 15.00¢/lb for several months, a trader might believe that the ability of the market to significantly penetrate the high of this range would be a sign of strength, suggesting a potential bull move. In this case, the trader might enter an order to buy March sugar at 15.50¢/lb stop. Thus, even though March sugar can be purchased more cheaply at the current price, the trader prefers to use the stop order because he only wants to be long if the market is able to demonstrate a specified degree of strength.

Stop-Limit

A stop-limit order is a stop order in which the actual execution price is limited. For example, an order to "buy March 10-year T-notes at 124'16 stop, 124'24 limit, GTC" means that if March 10-year T-note futures advance to 124'16, the buy order is activated but cannot be executed at a price above 124'24. Similarly, an order to "sell March T-notes at 122 stop, 121'22 limit, GTC" is a sell stop that is activated if the market declines to 122, but which cannot be filled at a price below 121'22. The stop and limit portions of the order need not necessarily be at different prices.

Stop Close-Only

A stop close-only is a stop order that is activated only if any portion of the closing price range is beyond the indicated price. (This type of order is not accepted on all exchanges.)

Market If Touched

A market-if-touched (MIT) order is similar to a limit order except that it becomes a market order anytime the limit price is reached. For example, given the following sequence of prices—79.40, 79.35, 79.25, 79.20, 79.25, 79.30, 79.40, 79.50 . . .—a 79.20 MIT buy order would become a market order once 79.20 was reached, but a 79.20 limit order could be filled only at a price of 79.20 or better. In this illustration, the market decline to 79.20 is so fleeting that the limit order might very well not be filled, while the MIT order would be executed (probably at some price above 79.20). The MIT is a hairsplitting type of order that is largely superfluous. Over the long run, a trader will achieve equivalent results by using slightly higher buy limits (lower sell limits) instead of MIT orders.

Fill or Kill

As the name implies, a fill-or-kill (FOK) order is a limit order that must be filled immediately or canceled.

Scale

A scale order is used for multicontract positions in which the trader wants to enter different contracts at different prices. For example, if June British pound futures are trading at 153.00, a trader who wants to sell 10 contracts on a possible rally to the 155.00–157.00 zone might enter a scale order to sell 10 June British pound contracts, one at 155.20 limit and one contract every 0.20 points higher, with the last contract having a limit price of 157.00.

One Cancels Other

The one-cancels-other (OCO) order is a two-sided order in which the execution of one side cancels the other. For example, a trader who is long February live cattle at 117.00, with an objective of 125.00 and a stop point at 109.00, might enter the following order: sell 1 February cattle 125.00 limit/109.00 stop, OCO, GTC.

Contingent

In this type of order the execution instruction for one contract is contingent on another contract. An example would be: Sell October sugar at the market if March sugar trades at 13.00 or lower. (This type of order is not accepted on all exchanges.)

Spread

A spread involves the simultaneous purchase of one futures contract against the sale of another futures contract, either in the same market or in a related market. In essence, a spread trader is primarily concerned with the *difference* between prices rather than the *direction* of price. An example of a spread trade would be: Buy 1 July cotton/sell 1 December cotton, July 200 points premium December. This order would be executed if July could be bought at a price 200 points or less above the level at which December is sold. Such an order would be placed if the trader expected July cotton to widen its premium relative to December cotton.

Not all brokerages will accept all the order types in this section (and may offer others not listed here). Traders should consult with their brokerage to determine which types of orders are available to them.

Commissions and Margins

In futures trading, commissions are typically charged on a per-contract basis. In most cases, large traders will be able to negotiate a reduced commission rate. Although commodity commissions are relatively moderate, commission costs can prove substantial for the active trader—an important reason why position trading is preferable unless one has developed a very effective short-term trading method.

Futures margins are basically good-faith deposits and represent only a small percentage of the contract value (roughly 5 percent with some significant variability around this level). Futures exchanges will set minimum margin requirements for each of their contracts, but many brokerage houses will frequently require higher margin deposits. Since the initial margin represents only a small portion of the contract value, traders will be required to provide additional margin funds if the market moves against their positions. These additional margin payments are referred to as *maintenance*.

Many traders tend to be overly concerned with the minimum margin rate charged by a brokerage house. If a trader is adhering to prudent money management principles, the actual margin level should be all but irrelevant. As a general rule, the trader should allocate at least three to five times the minimum margin requirement to each trade. Trading an account anywhere near the full margin allowance greatly increases the chances of experiencing a severe loss. Traders who do not maintain at least several multiples of margin requirements in their accounts are clearly overtrading.

Tax Considerations

Tax laws change over time, but for the average speculator in the United States, the essential elements of the futures contract tax regulations can be summarized in three basic points:

1. There is no holding period for futures trades (i.e., all trades are treated equally, regardless of the length of time a position is held, or whether a position is long or short).

2. Sixty percent of futures trading gains are treated as long-term capital gains, and the remaining 40 percent are treated as short-term capital gains. Since current maximum tax rates on long- and short-term capital gains are 20 percent and 50 percent, respectively, this formula suggests a maximum tax rate of 32 percent on futures trades.
3. Gain (loss) in a given year is calculated as the total of realized gain (loss) plus unrealized gain (loss) as of December 31.